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A MULTI-ETHNIC COMPARISON OF SERVICE QUALITY AND

SATISFACTION IN NATIONAL FOREST RECREATION

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ABSTRACT

Current demographic trends indicated that population growth for ethnic minority groups was increasing considerably faster than the overall rate of the U.S. population. According to current projections, non-Hispanic Whites will comprise barely one-half of the total population by 2050, and will lose their majority status by 2060. National Forest visitation patterns are likely to reflect the population's increasing ethnic diversity. Thus, managing National Forests solely for the experiences of typically Anglo-American visitors will be inadequate.

Because of demand for responsiveness and high quality service from government agencies, service quality and visitor satisfaction have emerged as important concerns for National Forest management. To provide high quality, satisfying experiences, managers must determine how visitors perceive satisfying and quality service. Research in the public and private service sectors has demonstrated that perceived service quality contributes to customer satisfaction, repeat visits, positive word-of-mouth, and strategic benefits. Thus, determining what constitutes service quality for the visiting public may lead managers to provide products and services that will maximize visitor satisfaction.

The importance of ethnic diversity has been recognized in recreation and park management for more than a decade, and studies of cultural diversity in recreation environments have become more evident in the literature. However, published studies of recreation and ethnicity focus primarily on activity participation rates and patterns. Although one outdoor recreation study addressed service quality and satisfaction among different ethnic groups (Virden & Walker, 1999), the literature contained no intra-cultural comparisons of service quality and satisfaction in a National Forest setting.

Visitors from different ethnic backgrounds might not share the same perceptions of service quality in National Forests. For example, people from different ethnic groups might perceive use levels and crowding differently. One study reported that Germans were more likely than Canadians to perceive crowding in a National Park. Furthermore, compared to people from individualistic societies (e.g., the U.S.), those from collectivistic societies (e.g., Japan) exercised a high degree of control over normal emotions. Therefore, visitors from collectivistic societies might accept resource conditions, other users, and/or management actions that would be unacceptable to visitors from individualistic societies. Thus, compared to visitors from individualistic societies, those from collectivistic societies might perceive higher levels of service quality and express higher satisfaction in a given situation.

During summer, 2002, I surveyed visitors to the Angeles National Forest near metropolitan Los Angeles. Using purposive sampling at sites known to be heavily used by visitors with diverse ethnic backgrounds, I obtained a sample of 444 Anglo-Americans, 312 Hispanic-Americans, and 319 Asian-Americans (and 97 others, overall N = 1,172). Compared to Hispanic-Americans and Asian-Americans, Anglo-Americans tended to be older, traveled farther to visit the Angeles National Forest, visited the Forest and other outdoor recreation areas more often, and were more likely to make overnight trips.

The results showed the multi-item indices for crowding, service quality, satisfaction, and behavioral intention all exhibited high levels of internal consistency. However, among Hofstede's dimensions of cultural difference (i.e., power distance, individualism, masculinity, and uncertainty avoidance), I was able to create internally

consistent indices for only power distance and masculinity. There were no significant differences in perceived crowding as well as social groups among the three ethnic groups. Analysis of covariance (ANCOVA) demonstrated that Asian-Americans tended to perceive lower service quality and express lower satisfaction than Anglo-Americans or Hispanic-Americans. Compared to Anglo-Americans and Asian-Americans, Hispanic-Americans were more willing to endorse Hofstede's power distance index. Responses on Hofstede's masculinity index did not differ significantly among the three ethnic groups.

This study provided a cross-cultural service quality/satisfaction model in a National Forest recreation context. The structural equation modeling (SEM) analysis results suggested that the path from culture to satisfaction was fully mediated by service quality. This implied that National Forest customers often were satisfied with their visits regardless of different cultural backgrounds. However, visitors with different cultural backgrounds did perceive difference in the quality of service. For example, those who endorsed power distance tended to perceive higher service quality. Managers need to determine the diverse ethnic background of customers to customize their services to the increasingly diverse visitors. This study finds that higher service quality resulted in higher customer satisfaction.

This study also finds a partial mediation effect among service quality, satisfaction, and behavioral intentions, suggesting that both satisfaction and service quality influence behavioral intentions. The results demonstrated that service quality and satisfaction are different constructs, and confirmed that high quality service and visitor satisfaction result in repeat visitation and positive word-of-mouth.

This study described recreation use patterns, trip profiles, and socio-demographic characteristics of an ethnically diverse sample of National Forest visitors and examined the relationships among different cultural background, perceived service quality, satisfaction, and related variables. Results suggested that managers must understand and appreciate the ethnic differences in ways of experiencing and enjoying the outdoors, as well as the impact of these differences on visitor satisfaction and behavioral intentions.

Table of Contents

Table of Contents (Continued)

Table of Contents (Continued)

List of Tables

List of Tables (Continued)

List of Figures

Acknowledgements

Chapter 1: Introduction

Growth of Ethnic and Racial Groups in U.S.

Current demographic trends indicate population growth for ethnic minority

groups is increasing considerably faster than the overall rate of the U.S. population (U.S.

Bureau of the Census [USBC], 2000). If race and ethnic definitions remain the same, and

so do immigration, fertility, and mortality patterns, minority groups will continue to grow

faster than the non-minority population. According to current projections, non-Hispanic

Whites will make up barely one-half of the total population by 2050 and will lose their

majority status by 2060 (Riche, 2000).

The Hispanic population in the U.S. currently exceeds 35 million, representing

almost 13% of the U.S. population. Census estimates indicate that this rapidly growing

group will exceed 43 million by the year 2010, and reach almost 100 million by the year

2050. Hispanic Americans represent an extremely heterogeneous group with

considerable variability in language use, cognitive ability, academic achievement, access

to education, socioeconomic status, temperament, personality, race, and level of

acculturation. Despite this diversity across numerous variables, language (Spanish)

remains a common thread that holds this large group together (USBC, 2000).

The Asian American population is now over 10 million (almost 4% of the

population). Although much smaller than the Hispanic American population, it is the

fastest growing ethnic group in U.S. The Asian-American population is expected to

double by the year 2010, reach 20 million in the year 2020, and 50 million by the year

2050. The three largest groups are Chinese, Filipinos, and Japanese. The Asian

American population is not only the fastest growing major ethnic minority group in the

U.S., but also the most diverse group in terms of cultural background, differing origin, and particular circumstances for immigration to U.S. For example, more than 50 ethnic groups, which may primarily speak one of more than 30 different languages, are included in this category (USBC, 2000).

Ethnic and Racial Diversity in Forest Recreation

Ethnic subcultures are based on a group sense of shared belonging and beliefs that often differ from a larger society. In-group orientation is central in ethnicity, but, to a large extent, the sense of belonging to the subcultural community is diminished by the pressure to identify with the values and behaviour of the dominant in-group of a nation. For example, Hispanic-Americans in the U.S. have to cope with this dilemma. They have to adjust to a predominantly White Anglo-Saxon Protestant culture, even though their basic assumptions, interaction models, and their sense of belonging would drive them towards the Hispanic community.

Historically, National Forests have been used by a relatively narrow segment of the population. From the perspective of the dominant ethnic majority, managers are often considered "backward" in marketing to minority groups. For example, the Forest Service of the U.S. recognizes that many of its units have not offered experiences to visitors from varied ethnic backgrounds (USDA, 1998). As the ethnic composition of the U.S. continues to grow more diverse, the success of the National Forests will depend increasingly on attracting, hosting, and educating visitors from a variety of ethnic backgrounds (Godbey, DeJong, Sasidharan, & Yarnal, 2001). It is important to assess and address the perceptions, values, and needs of our nation's growing multi-cultural, diverse ethnic minority populations with respect to forests and their management

(Sasidharan, 2002). In this changing social climate, understanding the similarities and differences among various ethnic groups will be crucial to the success of National Forest management.

In addition to serving more diverse domestic populations, National Forests around the world increasingly serve as international tourist attractions and play an important role in the international tourism industry. In many countries, National Forests have become major attractions. Like growing domestic diversity, growing international visitation contributes to the ethnic diversity of visitors and the need for understanding how best to host and educate diverse visitors. However, cross-cultural comparative research on leisure as well as the park and recreation context is extremely rare in both anthropological and leisure literatures (Chick, 2000). Research that develops a better understanding of the relationship between culture and recreation leads to enhanced appreciation of local and regional traditions and to improved knowledge about managing recreation opportunities (Li, Zinn, Barro, & Manfredo, 2003).

Perception of Service Quality/Satisfaction in Forest Recreation

Service quality and customer satisfaction are a concern to a variety of different industries including the tourism, park and recreation industry. A primary goal of park and recreation agencies is to provide quality opportunities from which users might derive satisfaction. This goal stems from a belief that users who are highly satisfied with their experience are likely to be repeat visitors, to be loyal users, to share their satisfaction with others, and to support the agency (Manning, 1999).

Measuring service quality seemed to pose difficulties for forest recreation service providers because of the unique characteristics of services. Initially, quality management

was based on the Total Quality Management (TQM). However, the focus of TQM tended to be directed at manufacturing enterprises. A criticism of TQM, as it was applied in U.S.A., was that it tended to focus on operations or mechanical procedures. Consequently, in TQM, quality customer service has been seen as of secondary importance to internal processes (Howat, Grilley, Milne, & Absher, 1993). In comparison with tangible goods, the service products provided by the tourism, park and recreation industry are often characterized by intangibility, inseparability, heterogeneity, and perishability (Hoffman & Bateson, 1997). These factors increase the difficulty for service providers to guarantee consistent quality service and customer satisfaction for their customers.

Because of demand for responsiveness and high service quality from government agencies (Clinton, 1993; Crompton, Mackay, & Fesenmaier, 1991; Godbey, 1989; Godbey, Willits, Sasidharan, & Elmendorf, 2002), service quality and visitor satisfaction have emerged as important issues in National Forest management (e.g., Absher, 1998; Baker, Absher, Knopf, & Virden, 2000; Graefe & Fedler, 1986). The USDA Forest Service manages more than 192 million acres federal land and offers a diversity of outdoor recreation for the enjoyment of the general public. To provide high quality, satisfying experiences, managers must determine how visitors perceive service quality and satisfaction (Hamilton, Crompton, & More, 1991).

Multi-Ethnic Perception of Service Quality/Satisfaction in Forest Recreation

Key purposes of National Forests include protecting natural and cultural resources of national or global significance, and helping visitors appreciate the significance of these

resources, as well as enjoy their visits. In order to achieve these goals, National Forest managers must make every effort to build positive experience for visitors.

Given the dual trends of growing domestic diversity and growing international visitation, visitors bring to forests divergent ways of experiencing and enjoying the out-of-doors. To help visitors of all ethnic backgrounds find personal meaning and opportunity in National Forests, managers must appreciate different cultural perceptions of service quality and the influence of these differences on satisfaction.

Marketing researchers are paying increasing attention to the relationships among culture, perceptions of service quality, and satisfaction (e.g., Donthu & Yoo, 1998; Mattila, 1999; Winsted, 1997). Understanding what factors contribute to higher service quality and satisfaction among different ethnic user groups may develop world-wide appreciation of environmental issues and promote international understanding.

Overall, in dealing with multi-ethnic or cross-cultural research, Schutte (1999) states that

> Culture has a profound impact on how individuals perceive who they are, what they are allowed to do and what their role is as a member of society. These perceptions are often so thoroughly internalised that they are difficult to express explicitly, but they are revealed through behaviour such as consumption. (p. 37)

Study Purpose and Hypotheses

"The beliefs and achievements of numerous ethnic groups have helped to shape America and continue to shape our responses to forests and parks today" (U.S. Department of Agriculture, 1998, on line). As American society grows more diverse, understanding relationships among ethnic background, perceived service quality, and satisfaction will help managers serve a diverse public and foster widespread appreciation of the National Forests and the natural environment.

To respond to the study purpose, I designed a National Forest visitor study with the following objectives:

1. Describe recreation use patterns, trip profiles, and socio-demographic characteristics of an ethnically diverse sample of National Forest visitors;

2. Profile ethnic subgroups using Hofstede's theory (1991) that delineates cultures into four dimensions: individualism, power distance, masculinity, and uncertainty avoidance;

3. Provide descriptive information of an individual's levels of experience, as well as perception of crowding, service quality and satisfaction.

4. Test the relationships between socio-cultural influences on an individual's perception of service quality, crowding, satisfaction, experience, as well as social group.

5. Test alternative models of relationships among culture, perceived service quality, related recreational variables (e.g., crowding), satisfaction as well as behavioral intentions.

6. Use the study's results to develop a refined theoretical model that measures the relationships among these variables in the National Forest recreation context.

The study is designed to test the following seven specific hypotheses:

1. Cultural factors will vary among different ethnic groups.

2. Experience level in forest recreation will vary among different ethnic groups.

3. Perceived crowding will vary among different ethnic groups.

4. Social group structure will vary among different ethnic groups.

5. Perceived service quality will vary among different ethnic groups.

6. Satisfaction level will vary among different ethnic groups.

7. Cultural factors, experience level, and perceived crowding will significantly influence the perception of service quality, satisfaction, and behavioral intentions.

In addition to testing the above hypotheses, I will explore the possible role of experience level, perceived crowding, perceived service quality, and satisfaction as mediators in a full structural equation model.

Delimitation

The study was delimited to visitors who were adults (i.e., 18 years of age or older) and visited the Angeles National Forest (ANF) in Southern California, U.S.A., during the summer of 2002. In collecting data, this study employed a purposive sampling procedure to gather adequate numbers and to analyze the characteristics of three major ethnic groups: Hispanic-American, Asian-American, and Anglo-American.

Definition

Ethnic groups. The concept of ethnicity refers to groups of people who share cultural characteristics such as religion, common language, customs, as well as ancestry (Manning, 1999). The concept differs from race that categorizes by biological determinations. For example, ethnic group can be measured or operationalized by asking respondents what cultural group (Anglo-American, Hispanic-Americans, Asian-American, or others) do they most closely identify with?

Culture. Culture can be defined as shared values and the behaviors and artifacts that are manifestations of those values (Chick, 1997). Hofstede (1980) established four dimensions of national culture: individualism, power distance, masculinity, and uncertainty avoidance. For example, culture can be measured or operationalized by asking respondents detailed culture value questions regarding Hofstede's four national cultural dimensions.

Crowding. Crowding can be generally defined as an individual's negative reaction to the pressure of being surrounded or impeded by a large dense group of people. Perceived crowding is affected by situational, social, and personal factors and it can impair an individual's satisfaction or performance (Stankey, 1973). For example, perception of crowding can be measured or operationalized by asking respondents how crowded do they feel during their trip to the ANF.

Experience. Experience has been defined as a basis of perspective in various concepts including recreation specialization (e.g., Bryan, 1977), experience use history (e.g., Schreyer, Lime, & Williams, 1984), and indices of past experience (e.g., Wastson & Niccollucci, 1992). For example, according to Schreyer et al. (1984), experience use history refers to the amount and extent of participation by the individual in recreation pursuits. However, there is no single operational definition of the concept. It is possible to consider participation within an activity, a related set of activities, a given environment or related set of environments, or some combination of all the above. Bryan's (1977) term recreation specialization "refers to a continuum of behavior from the general to the particular, reflected by equipment and skills used in the sport and activity setting preferences" (p. 175). Bryan suggested that as recreationists go through the process of

socialization, they approach their sports or hobbies differently, depending on their "stage of development" in the activity. In this study, experience was measured by asking the respondents number of times and days they visited to the ANF and other outdoor recreation areas.

Social group. Social groups can be defined as those individuals who share companionship based on similar values, interests, roles, and professions. As Bammel and Bammel (1992, p. 337) have noted, "Social groups, be they composed of family member, peers, neighbors, friends, club associates, workmates, and so on, might be the overriding determinant of recreational choice." For example, social group can be measured or operationalized by asking respondents which group (alone, family, friend, or family and friend) best described their group composition.

Perceived service quality. According to Parasuraman, Zeithaml, and Berry (1988), the difference between customers' expectations of service and their perceptions of the service is defined as perceived service quality. Parasuraman et al. (1988) also identified five dimensions of service quality. These dimensions are tangibles, reliability, responsiveness, assurance, and empathy. This perceived service quality model with five dimensions is operationalized as the $Q = P - E$ framework. That is, perceived service quality (Q) increases as perceptions of service (P) exceed expectations of service (E) for each dimension. In this study, I measured perception of service quality by asking respondents detailed questions with respect to facilities, service, information, and visiting experience to the ANF.

Satisfaction. Hoffman and Bateson (1997) defined satisfaction as contentment determined by comparing customer expectations to the actual perceptions regarding

service. Satisfaction has also been conceptualized as the fulfillment of drives, motives, needs, or expectations (Oliver, 1980). Brady and Cronin (2001) described satisfaction as a comparison between what people have and what they believe to be reasonable expectations. As a general rule, smaller discrepancies result in greater satisfaction. In this study, satisfaction was measured by asking respondents how satisfied they felt with three aspects of their trips to the ANF.

Behavioral intentions. According to Zeithaml, Berry, and Parasuraman (1996), behavioral intentions refer to the service outcomes such as repurchase intentions, repeat visits, word of mouth, as well as price premiums. Behavioral intentions were formed based on the service quality and satisfaction of a service encounter. In this study, behavioral intentions were measured by asking respondents their willingness to recommend the ANF to people who seek advice about outdoor recreation opportunities and their intentions of repeat visitation.

Chapter 2: Literature Review

The literature review is comprised of three stages. First, the literature on service quality literature in marketing and in parks and recreation, as well as the differences between service quality and satisfaction are reviewed. Second, Hofstede's cultural dimensions and ethnic research in the recreation and park context are reviewed. Third, service quality and related variables associated with the literature on culture and ethnic groups are reviewed. The key concepts (variables) reviewed in this section include generations and years stayed in the U.S., culture, service quality/satisfaction, behavioral intentions, perceived crowding, experience, and social group.

Perception of Service Quality

Service quality has emerged recently as an important issue in America's public and private service sectors. Delivering quality service is an essential strategy for survival and success in today's competitive environment (Powers, 1997; Reichheld & Sasser, 1990). High service quality provides a competitive edge for an organization that can lead to organizational growth (Barber, 1987). Research in the public and private service sectors demonstrates that perceived service quality contributes to customer satisfaction, repeat visits, positive word-of-mouth, and strategic benefits (Anderson & Zeithaml, 1984; Carman, 1990). Thus, understanding what constitutes quality to visiting publics allows managers to provide products and services that will maximize visitor satisfaction.

Effectively managing service quality requires a clear understanding of what service quality means to the customers. In order to conceptualize service quality, Gronroos (1982 & 1984) postulated that two types of service quality exist:

- Technical quality: which involves what the customer is actually receiving from the service. Service quality standards are commonly determined by providers' past experiences, and they most often reflect the physical and technical aspects of a service because these are most easily measurable.

- Functional quality: which involves the manner in which the service is delivered. This aspect has been proposed as being a more important criterion of quality of consumers. For example, even if the facility is clean and the program delivered meets high operational standards (functional quality), a negative impressive can be generated through poor employee-customer interaction.

Later, Parasuraman et al. (1988) identified five dimensions of service quality. These dimensions were tangibles, reliability, responsiveness, assurance, and empathy. Tangibles were defined as the physical facilities, equipment, and appearance of personnel. Reliability was the ability to perform the promised service dependably and accurately. Responsiveness represented the willingness to help customers and provide prompt service. Assurance reflected the knowledge and courtesy of employees and their ability to inspire trust and confidence. Empathy referred to the caring, individualized attention that the firm provides its customers. This perceived quality model with five dimensions is operationalized as the $Q = P - E$ framework. That is, perceived quality (Q) increases as perceptions of service (P) exceed expectations of service (E) for each dimension.

Parasuraman et al. (1991) initially suggested that SERVQUAL's dimensions and items represent core evaluation criteria that transcend specific companies and industries. Perceptions of service quality are based apparently on multiple dimensions.

Hence, there is no general agreement about the nature or content of the dimensions. Moreover, several critics have raised questions about the number of factors of service quality measurement and their stability in different contexts. Carman (1990) found that the items of SERVQUAL were not completely generic. He suggested more replication and testing of the instrument before its widespread acceptance. When he applied the instrument to four different settings, he found that the dimensions of each service setting were quite different. As a result, he recommended that items on some dimensions could be expanded, and the wording of items should be changed to fit the specific characteristics of different organizations. Babakus and Boller (1992) suggested that the domains of service quality may be more complex in some service industries and simpler in others. They also supported possible differences of SERVQUAL dimensions across the different sectors. Therefore, it has generally been agreed that SERVQUAL must be customized to fit the specific research needs of different service settings. Even Parasuraman et al. (1988) stated, "the instrument has been designed to be applicable across a broad spectrum of services. It provides a basic skeleton…[that] when necessary, can be adapted or supplemented to fit the characteristics of specific research needs of a particular organization" (p.30).

Differences between Service Quality and Satisfaction. Service quality and satisfaction are distinct but interrelated constructs. First, service quality is more likely to the perspective of managers, because they control the services provided for customers; whereas, customers are more likely to evaluate their satisfaction with services (Iacobucci, Ostrom, & Grayson, 1995; Taylor, & Baker, 1994).

Second, satisfaction is concerned with the short-term and specific transaction; on the other hand, service quality is concerned with more general, long–term, and global effects. Therefore, satisfaction is an antecedent of service quality (Oh, 1999). In contrast, some satisfaction research has explained quality as more specific judgment and satisfaction as the broader evaluation (Oliver, 1980). Thus, quality is sampled with each occurrence, and these accumulate over time to result in long-term satisfaction. Consequently, satisfaction is theoretically influenced by service quality.

Third, researchers have argued that when comparing service quality to satisfaction, satisfaction was likely based on emotional evaluations and subjective judgment (e.g., Cronin & Taylor, 1992; Iacobucci, Grayson, & Ostrom, 1994; Oh, 1999; Oliver, 1980; Zinn & Manfredo, 2000). In contrast to satisfaction, service quality, however, tends to be based on rational evaluations and objective judgments.

Fourth, when evaluating a pleasant physical environment as well as service recovery, satisfaction had greater effects than service quality (Iacobucci, Omstrom, & Grayson, 1995). This finding suggests that a pleasant physical environment and service recovery are likely to be more important to customers' evaluation of satisfaction.

Fifth, in the literature, consumer expectations have usually been defined as forecasted or anticipated levels of performance. These expectations are combined with actual performance to create the concept of disconfirmed expectations. Disconfirmed expectations, in turn, are used as predictors of consumer satisfaction. Researchers in the service quality area, however, emphasized that expectations in service quality models were not forecasts. This was an important distinction. If service expectations were defined as forecasts, the service quality model (P-E) became undifferentiated from the

disconfirmed expectations component of the consumer satisfaction model (Teas, 1994).

In other words, this distinction pointed out a discriminant validity problem. If we tried to

measure service quality and used predicted expectations, then we would be actually

measuring satisfaction rather than service quality.

     Perception of Service Quality in Park and Recreation. Because successful

management of a park and recreation agency depends, in part, on the quality of visitors'

experiences, providing high quality experiences should be the principal goal of park and

recreation managers. This goal has been identified repeatedly as a mandate in the public

sector (Crompton, Mackay, & Fesenmaier, 1991; Foster & Jackson, 1979; LaPage, 1983).

To achieve this goal, park and recreation managers must know how visitors define

service quality (Hamilton, Crompton, & More, 1991; Shu, Crompton, & Willson, 2002).

For this reason, service quality has emerged recently as an important issue in park and

recreation management (e.g., Baker, Absher, Knopf, & Virden, 2000; Graefe & Fedler,

1986; Manning, 1999).

     The concept of recreation service quality is not easily defined or measured

(Mackay & Crompton, 1988). Marketing research using dominant service quality models

(e.g., Parasurman, Zeithaml, & Berry's SERVQUAL model, 1988) has had some success

in the park and recreation context (e.g., Hamilton et al., 1991). Studies using modified

models have been slightly more successful (e.g., Graefe, Absher, & Burns, 2000), but

additional work is needed to understand service quality in this context. Since Propst and

Lime (1982) suggested that more emphasis should be placed on using concepts and

methods derived from marketing, service quality concepts and measurements have been

adapted vigorously to the field of parks and recreation. Many researchers in the parks

and recreation field have adopted SERVQUAL's conceptual framework. MacKay and Crompton (1990) applied this instrument to measure service quality in the commercial recreation sector. Their instrument consisted of 25 items including 12 original SERVQUAL items. Crompton et al. (1991) adapted SERVQUAL to measure service quality in public recreation. Their cluster sample consisted of more than 200 respondents drawn from 4 different types of recreation activities. Only 11 of the 22 SERVQUAL items were found to be efficacious in the context of public recreation services. A factor analysis suggested that respondents perceived four dimensions of service quality: assurance, reliability, responsiveness, and tangibles. The fifth factor (empathy) was not a meaningful dimension in this study.

In further investigations within the public sector, dimensions of service quality in a park context showed identical results as in the public recreation context (Hamilton et al., 1991). Thirty-six items were used to measure service quality in eight parks in Minnesota and Texas. The researchers found that the definitional difference between empathy and responsiveness is small. Further, the importance of empathy was too small to be meaningful, and, therefore, should be excluded from studies in the context of public parks. On the other hand, the importance of tangibles was prominent among the other dimensions. The authors explained that parks, unlike other recreation services, require a relatively low level of direct interaction with staff in service delivery, which increases the recognition of physical resources as a main dimension. However, when other recreational programs in public sectors were examined to measure the relative importance of service quality dimension, reliability emerged as the most important factor (Crompton & MacKay, 1989).

Even though there are subtle differences between commercial and public recreation related to service quality, some studies still show the validity of the five dimensions to the public sector. Backman and Veldkamp (1995) applied Mackay and Crompton's (1990) RECQUAL model to the YMCA context. A total of 25 items from the 5 SERVQUAL dimensions were used to represent service quality at the YMCA. This study showed that all five dimensions have an acceptable level of internal consistency. However, their study focused on the relationship between service quality and user loyalty; moreover, their service quality instrument was not analyzed due to a relatively small sample size. Therefore, it may be more appropriate as a further step to do more repeated testing of service quality dimensions in this context.

Unlike previous research of service quality in parks and recreation, Absher (1998) used a performance-only measurement rather than an adapted expectancy-disconfirmation paradigm to determine aspects of service quality in National Forests. Moreover, while previous research was based on SERVQUAL dimensions, Absher used three domains with twenty-two items assessed from a priori focus groups that specifically addressed National Forests. As a result, four domains of service quality emerged. The facility domain was split into two subdomains: Facilities-Sufficiency and Facilities-Operations. The other two domains were Services and Information.

Later, Baker, Absher, Knopf, and Virden (2000) identified (from returned questionnaires) 44 specific site characteristics based on important determinants of service quality in outdoor recreation areas. Baker et al.'s subjects were asked to rate the degree that each characteristic described the Sedona/Red Rock area. There were 26 items that visitors ranked most strongly (visitors ranked beyond 4.00 based on five-point scale, from

1 not at all desirable through 5 extremely desirable) in terms of overall quality. They included: 1) cleanliness on outdoor recreation areas 2) non-crowded areas 3) visitors who respect facilities 4) visitors who respect the environment 5) variety of views 6) non-motorized trails 7) feeling of safety 8) maps 9) facilities that blend with nature 10) courteous visitors 11) courteous forest staff 12) clear and informative signs 13) clearly marked signs for trails 14) well maintained facilities 15) well maintained bathrooms 16) friendly forest service 17) well maintained trails 18) parking areas 19) responsive staff 20) well maintained roads to sites 21) knowledgeable forest staff 22) conveniently located drinking water 23) forest staff who are welcoming 24) variety of recreational opportunities 25) marked points of interest 26) information availability.

The dominant service quality models (e.g., Parasurman et al., 1988) have had limited utility in the resource-based recreation and tourism context. Studies using modified models (see Table 1 for a summary) have been more successful, but additional work is needed to fully understand service quality in park and recreation contexts (Absher, Howat, Grilley, & Milne, 1995, 1996). For example, Graefe, Absher, & Burns (2000) investigated the service quality dimensions in the Army Corps of Engineers Lakes and found four dimensions of service quality — information, services, facilities, and recreation experience. Also, Graefe, Li, Lee, & Zinn (2001), in their re-examination of service quality dimension study, found three dimensions of service quality — tangibles, reliability, and caring in a small town YMCA context.

Table 1. Service quality dimensions in recreation and park management context

Researcher(s)	Setting(s)	Service quality dimensions
Crompton & Mackay (1989); Crompton, Mackay, & Fesenmaier (1991); Hamilton, Crompton, & More (1991); Backman & Veldkamp (1995)	State park Public recreation YMCA	Tangibles Reliability Responsiveness Assurance Empathy
Absher, Howart, Grilley, & Milne (1995)	Public sports and leisure centres	Core programs and services Secondary services Staff quality General facility
Absher (1998)	National Forest	Information Services Facilities
Absher, Baker, Green, & Virden (2000)	National Forest National Recreation Area	Facilities Employees Safety/security Information sources Other visitors Recreation opportunities
Graefe, Absher, & Burns (2000)	Army Corps of Engineers lakes	Information Services Facilities Recreation experience
Graefe, Li, Lee, & Zinn (2001)	YMCA	Tangibles Reliability Caring

Cultural Dimensions and Findings Related to Cultural Differences

A culture can be defined as shared information and the behaviors and

artifacts that are manifestations of that information (Chick, 1997). In the most

exhaustive cross-cultural study to date – 117,000 survey questionnaires, translated

into 20 languages, data from 80,000 IBM employees in 66 countries across seven

occupations – Hofstede (1980) established four dimensions of national culture:

individualism, power distance, masculinity, and uncertainty avoidance.

Hofstede's study is also one of the most widely used among international

marketing and management scholars. Additional studies have shown Hofstede's

dimensions to be generalizable across multiple contexts and societies (e.g., Furrer, Liu, & Sudharshan, 2000; Mattila, 1999). Moreover, Clark (1990) argued that Hofstede's dimensions might account for many cultural differences among individuals, suggesting that these dimensions may also prove useful for assessing ethnic differences in perceived service quality and satisfaction in National Forest settings.

Hofstede's understanding of western power distance generally responds to the basic problem of social hierarchies that establish inequality. Power distance refers to the seemingly natural sense that less powerful members of institutions and organizations within a society expect and accept the unequal distribution of power. "Institutions" are the basic elements of society like the family, school, and the community; whereas, "organizations" are the places where people work.

Hofstede defines Individualism as ties between individuals that are loose. Foremost, an individual is expected to care for oneself and his or her immediate family. By contrast, collectivism, refers to familial, communal, and commercial groups that form a social whole based on the equal distribution of power and wealth. Research has shown that collectivism is a cultural attitude characteristic of Asian-Americans (Hetts, Sakuma, & Pelham, 1999) and Mexican-Americans (Coon & Kemmelmeier, 2001), compared with the individualism of Anglo-Americans.

Hofstede distinguishes gender roles as another primary dimension. Masculinity refers to gender roles where manliness is distinctly enacted by personal assertiveness and toughness as well as confirmed by financial success. By comparison women are supposed to be more modest, tender, and concerned with the quality of life. A masculine

society clearly divides gender roles, whereas, in feminine societies gender roles tend to overlap. Both men and women share qualities of modesty, tenderness, and concern for emotional quality of life.

Uncertainty avoidance refers to the level of threat felt by a society as it eases the uncertainty of the future. This feeling is, among other things, expressed through nervousness and the need for predictability.

Hofstede later added a fifth dimension, long-term orientation to the theoretical distribution of national culture (1991). Long-term orientation names a society's pragmatic future-oriented perspective (foresting virtues like perseverance and thrift) rather than a conventional historic or short-term point of view. That is, long-term orientation with regard to one's tasks in life consists of trying to acquire skills and education, working hard, not spending more than necessary, being patient, and persevering.

These five dimensions have been empirically validated, and individual country can be positioned on the scale represented by each dimension. Moreover, the dimensions are statistically distinct and occur in all possible combinations, although some combinations are more frequent than others.

In addition to Hofstede's cultural dimensions, many authors throughout the past 50 years have speculated about the fundamental problems of societies that presented distinct dimensions of culture. For example, Aberle, Cohen, Davis, Levy, and Sutton (1950) listed nine "functional prerequisites of a society" including (1) adequate physical and social relationships with the environment; (2) role differentiation according to age, gender, and hierarchy; (3) communication; (4) shared knowledge, beliefs, and rules of

logical thinking; (5) shared goals; (6) normative regulation of means toward these goals;

(7) regulation of affective expression; (8) socialization of new members; and (9) effective

control of disruptive forms of behavior. These were conceptual categories, not supported

by empirical research, but related conceptually to some of Hofstede's dimensions. For

example, category 2 related to power distance and masculinity, categories 7 and 9 related

to uncertainty avoidance, and category 8 related to individualism.

Later, Foa and Foa (1974) looked for structure in culture-specific aspects of individual's

cognition, and explored different ways of structuring "the mind" in response to

anthropological studies.

      Hall (1976) divided cultures according to their ways of communicating: high and

low context. A high-context (HC) communication or message communicates the

information because of well understood context or is so intimately directed to a person

that no further explanation can be found explicit, transmitted part of the message. A low-

context (LC) communication is the opposite. In other words, the mass of the information

is delivered in code rather than implicit context. In practice, HC communication is more

often found in traditional cultures and LC communication is more indicative of modern

cultures.

      Fiske (1992) went a step further in proposing four "elementary forms of

sociability" that occurred within and across cultures: (1) communal sharing, (2) authority

ranking, (3) equality matching, and (4) marketing price. Each has its own set of

implications for a variety of domains, such as reciprocal exchange, distributive justice,

work, etc. With a little fantasy, one could relate forms 2 and 3 to large and small power

distance, and forms 1 and 4 to collectivism and individualism.

Studies using statistical methods for determining the relationship among quantified variables across a number of cultures have been called hologeistic. The most common method used for this purpose is factor analysis. Factor analysis is a method of data reduction and replaces a number of original variables with a smaller number of new factors. Factor analysis explains as much of the total variance in the original matrix as possible in as few factors as possible (Hofstede 1991).

Apart from the interpretation of the factors, which is subjective, there are three more arbitrary decisions that the user of factors analysis has to make. The first involves which variables and cases to include in the analysis and which to leave out. That is, the "garbage in, garbage out" rule applies entirely. If the decision maker includes strongly intercorrelated but trivial variables in the analysis, she or he will find strong but trivial factors. From an interpretation point of view, the strength of a factor (its percentage of variance explained) explains nothing of its importance unless one is sure that the variables used are important and representative of the phenomenon under study. According to Kline (1998), the other two arbitrary decisions are concerned with the number of factors to be retained and, in the case of classical factor analysis, whether to look for mutually independent factors ("orthogonal rotation") or for mutually correlated factors ("oblique rotation"). Often users will run an analysis trying several numbers of factors in succession in order to find the solution for which factors are most clearly interpretable (Hofstede, 2001).

Ethnic Research in a Recreation and Park Context. The importance of ethnic diversity has been recognized in recreation and park management for more than a decade, and studies of cultural diversity in recreation environments have become more evident in

the literature (Chavez, 1993; Chick, 1997; Ewert, Chavez, & Magill, 1993; Dwyer, 1993; Floyd, 1998; Henderson, 1998; Johnson, & Bowker, 1999; Sasidharan, 2002; Tierney, Dahl, & Chavez, 1998; Winter, 2000). However, published studies of recreation and ethnicity focus primarily on activity participation rates and patterns (Hutchison, 2000; Manning, 1999). Although one outdoor recreation study addressed service quality and satisfaction among different ethnic groups (Virden & Walker, 1999), the literature contains no intra-cultural comparisons of service quality and satisfaction in a National Forest setting. A list of the ethnic research regarding the variables tested and major findings in recreation and park management context is located in Table 2. For example, Dwyer and Hutchison (1990) studied the outdoor recreation participation and preferences by the Black and White Chicago households. They found African Americans preferred developed facilities, while the Whites preferred wilderness settings. Also, Thapa, Graefe, & Absher (2002) studied the information needs and search behaviors in two National Forests located in southern California. They found Whites were more likely than Hispanics or other minority groups to use all available information sources. Furthermore, they found the Hispanics were least likely to approach National Forest rangers or employees for information.

Table 2. Ethnic research in recreation and park management context

Researchers	Variables tested	Findings
Dwyer & Hutchison (1990)	Setting preferences	African Americans prefer developed facilities while Whites prefer wilderness settings
Virden & Walker (1999)	Setting preferences	Responses to 2 out of 6 environmental setting preference variables & 2 out of 12 affective meaning scales differed significantly among Whites, Blacks, & Hispanics
Phillip (1993)	Setting preferences	Whites ranked wilderness scenes as more attractive than Blacks
Floyd, Outley, Bixler, & Hammitt (1995)	Activity preferences	Whites rated wildland activities higher than Blacks
Bass, Ewert, & Chavez (1993); Irwin, Gartner, Phelps (1990)	Setting preferences	Mexican Americans rated developed characteristics of recreation facilities more highly than did Whites
Dargitz (1988)	Activity choices	No differences in fishing activities between Whites & Blacks
Johnson & Bowker (1999)	Activity choices	Among Blacks & Whites, differences in nonconsumptive activities, but no differences in consumptive activities
Washburne & Wall (1980)	Activity choices	Blacks participated less than Whites in camping, boating, hiking/backpacking, hunting, skiing, & sightseeing
Dwyer & Gobster (1992); Hutchison & Fidel (1984); Kelly (1980); Washburne & Wall (1980); Wallace & Smith (1997)	Activity & setting choices	Compared to Whites, minority groups tended to: 1) use and prefer "urban-oriented" facilities and services; 2) participate in larger groups of extended family and/or friends; 3) prefer & use more highly developed facilities; 4) participate more in fitness and sports oriented activities; 5) stay longer; 6) use areas close to home; and 7) use land-based rather than water-based areas
Hartmann & Overdevest (1990)	Visitation rates	Blacks comprised 2% of all visitors to federal & state parks & outdoor recreation areas but represent 12% of the U.S. population
Vaske, Donnelly, & Petruzzi (1996)	Country of origin, encounter norms, & crowding	Anglo Americans least likely to specify a norm, while Germans & Japanese were most likely; Germans more likely to perceive crowding than Americans, Canadians, or British
Cordell, Betz, & Green (2002)	Activities & attitudes	Rising proportions of minorities will result in shifts in activity participation and attitudes toward outdoor recreation
Thapa, Graefe, & Absher (2002)	Information needs & search behaviors	Whites likely to use all available information sources than Hispanics or other minority groups; Hispanics least likely to approach rangers or employees for information; other minority groups least likely to use bulletin boards

Service Quality and Related Variables Associated with Culture and Ethnic Group

    Generations in the U.S. and Years Stayed in the U.S. As immigrants and

minorities settle in the United States they encounter the different cultures and values of

American society. In time, immigrants assimilate and acculturate themselves to these

different cultural values. As Hutchison (2000) pointed out, ethnic difference must be

demonstrated by intervening measures of ethnic subculture. Floyd and Gramann (1993)

described assimilation as the degree to which a minority group has been incorporated into

social institutions, the economy, education, and the government of the dominant group.

Assimilation theories assume that minority groups wish to, and eventually will become

indistinguishable from the dominant (White) group. The measure of assimilation has

been used in several studies comparing the activity of Hispanic groups (e.g., Shaull &

Gramann, 1998).

    Later, the development of intervening measurement of assimilation was replaced

by acculturation (e.g., Sasidharan, 2002). Negy (1993) described acculturation as the

transfer of cultural indicators from one set of individuals to another:

> However, the term more often refers to a process of change experienced by minority
> group members towards the adoption of a majority group's culture. This process of
> change is viewed as a form of adaptation. In the United States, where Anglo-
> Americans constitute the majority group, those of non-Anglo-American background
> are said to have become acculturated to the American lifestyle when they have
> acquired the languages, customs, values, and so on of the Anglo-American culture.
> One should note that acculturation is not a categorical phenomenon but should be
> viewed as a continuum along which people vary. Moreover, acculturation can vary
> from trait to trait within any individual. (p.1212)

    For example, Walker, Deng, and Dieser (2001) examined the motivations of

outdoor recreationists from China and Euro-North America, and found that western

Europeans and North Americans had values that tended to be more individualistic by

comparison to Asians who tended to have interdependent collectivist goals. On the basis of their findings, they concluded that ethnicity directly affected the motivation of outdoor recreationists, particularly for Chinese respondents.

Language and generational status[a] remain the two most widely used measures of acculturation. Generally, it is assumed that more generations in the U.S. lead to a higher level of acculturation. However, the positive correlation between increases in generational status and increases in acculturation should be treated cautiously. The generational status-acculturation correlation may not necessarily be applicable to ethnic groups residing in areas where the ethnic language is the predominantly used language within the community and where the majority of residents often share similar sociocultural values and characteristics common to the traditional ethnic culture. Thus, second and later generation ethnic members may not necessarily exhibit acculturative changes toward Anglo-American culture (Sasidharan, 2002).

It is therefore important to control the variations of the generations in the U.S., or years stayed in U.S., to understand the real difference among ethnic groups regarding perceived service quality, culture and related variables.

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[a] Generational status describes individual's family history in the U.S., e.g., 1st generation, 2nd generation, 3rd generation, or 4th generation and more.

Perceived Service Quality/Satisfaction and Behavioral Intentions. With increasing competition at home, a growing number of service sectors are expanding globally. Thus, a solid understanding of the foreign and multi-ethnic target market is crucial to business success (Winsted, 1997). Marketing researchers are paying increased attention to the relationship among culture, perceptions of service quality, and satisfaction (e.g., Donthu & Yoo, 1998; Mattila, 1999; Weiermair, 2000). Understanding what factors contribute to better service quality and satisfaction among different ethnic user groups will help world-wide appreciation of environmental issues and promote international understanding.

Donthu and Yoo (1998) used a sample from four countries (Canada, Great Britain, India, and U.S.) and found that customers low on power distance tended to be less tolerant in accepting power hierarchy, tight control, vertical top-down communication, family background, education level, occupation, race, and even discrimination by age. Therefore, customers low on power distance had high overall service quality expectations and expected responsive and reliable service. On the other hand, individualistic consumers preferred to act as an individual rather than as members of groups. As a result, they expected high overall service quality in addition to empathy and assurance from the service provider. Also, consumers with a high sense of uncertainty avoidance had a strong need to control their social environment. Their need results in high expectations for service quality.

Mattila (1999) studied luxury hotel customers and found that those with Western background might be more likely than their Asian counterpart to rely on the tangible cues from the physical environment. Furthermore, she concluded that a general sense of

hedonism might be more important for Western consumers, whose core values include fun and enjoyment, than for Asians, whose value structures tend to reflect duty in life. These cultural differences might account for the variation in perceived service quality. For the managerial implications, Mattila suggested that using these findings of cultural differences might influence advertising strategies of service providers. For example, Western business travelers might be a perfect target to study customer participation in service delivery for enhanced customer participation in service delivery. On the other hand, asking an important Asian business traveler to co-produce a service, might create an embarrassing situation that overlooks a culture ordered by high level of power distance and sensitivity to status.

Furrer, Liu, and Sudharshan (2000) used data from retail banking services to address the relationship between SERVQUAL dimensions and Hofstede's cultural dimensions. They found significant negative relationships between power distance and empathy, responsiveness, and reliability dimensions, as well as the negative relationship between masculinity and responsiveness dimensions. Conversely, they found a positive relationship between individualism and responsiveness dimensions. The authors concluded that individualists, due to their drive and self-responsibility ethic, demanded that others be efficient, and therefore, demanded a higher level of service quality.

The literature has presented several theories that address the relationship between service quality and satisfaction, as well as how they affect behavioral intentions (e.g., Zeithaml, Berry, & Parasuraman, 1996). Studies have offered both theoretical justification and empirical evidence for the service quality → satisfaction → behavioral intentions relationship (e.g., Rust & Oliver, 1994). The framework of this relationship

was that more cognitive service quality evaluation led to a primarily emotive satisfaction assessment, which, in turn, drove behavioral intentions. That is, service quality was modeled as an antecedent of satisfaction based on its cognitive orientation (Zeithaml et al., 1996) and satisfaction was expected to directly affect behavioral intentions due to its more emotive nature. In addition to the theoretical framework, empirical evidence also supported the mediating role of satisfaction (Cronin & Taylor, 1992).

A more recent perspective indicated that the effect might be situation-specific. In this case, a non-recursive path between the service quality and satisfaction constructs was hypothesized and the temporal sequence would depend on transaction-specific variables. In other words, the nature of the service context drove the linkage of service quality and satisfaction (Dabholkar, 1995).

Cronin and Taylor (1992) confirmed the causal order of the relationship between the constructs of service quality and customer satisfaction: service quality was an antecedent of customer satisfaction. This notion suggested that service quality providers needed to emphasize customer satisfaction over strategies focusing mainly on service quality. In addition, they examined the relationships of service quality and satisfaction to customer's behavioral intentions. The results showed that consumers' satisfaction was significantly related with and influenced their behavioral intentions; however, this was not true of service quality.

Brady and Robertson (2001) studied U.S. and Ecuadorian fast food customers and found that the effects of service quality on behavioral intentions were mediated by a consumer's level of satisfaction. Moreover, this mediation effect was consistent across cultures.

Crowding. Crowding refers to an experiential or subjective response to situational, social, and personal factors (i.e., the negative evaluative judgment) that a given density was excessive and that it impaired an individual's satisfaction or performance (Stankey, 1973). In other words, crowding is the negative evaluative of a certain density or number of encounters – a value judgment signifying there were too many people (Graefe, Kuss, & Vaske, 1990).

Most early research on crowding focused primarily on wilderness areas or relatively primitive areas (e.g., Heberlein & Vaske, 1977; Lucas, 1980; Shelby, 1980; Stankey, 1973), probably because these areas were required by law to provide opportunities for solitude. It was reasonable to expect that one should be able to visit a wilderness area and see few, if any, people. When too many people use the same area, some traditional wild land values are lost (Wagar, 1964). This was also true for National Forest recreation, since one of the purposes of National Forests is to provide low density, dispersed recreation.

Crowding was shown to have a detrimental effect on the values of a healthy environment, esteem and prestige, aesthetic enjoyment, understanding, freedom of choice, self reliance, and solitude (Wagar, 1964). Researchers assumed that an increase in the number of people visiting a recreation area would increase the number of encounters between visitors, creating a sense of crowding that might result in lower levels of satisfaction (Hui, & Bateson 1991; Shelby, 1980). Therefore, the hypothetical relationship between crowding and satisfaction in outdoor recreation tended to presume a negative correlation. Manning (1999) proposed a normative definition of crowding:

The normative approach to crowding suggested that density is not interpreted negatively as crowding until it is perceived to interfere with or dispute one's objectives or values. This approach has been suggested as forming the basis for crowding norms; personal characteristics of visitors, characteristics of other encounter, and situational variables. (p100)

To date, only a small body of research has directly examined the perception of crowding among different ethnic and cultural groups. In a cross-cultural study, Evans, Lepore, and Allen (2001) concluded that Asian Americans and Latin Americans differed in the way they perceived crowding by comparison to Anglo-Americans and African Americans.

Experience. Research has been driven by the notion that experience might be an important variable or concept for differentiating among recreationists. A recreationist who is a beginner or novice might be inexperienced, without any understanding or any practice in the recreation activity or with the setting in which it occurred. On the other hand, an advanced or expert recreationist is likely to have a substantially greater knowledge base. Therefore, these differences in knowledge and practice may lead to different attitudes, preferences, and behavior among recreationists (Manning, 1999).

Experience has been included as a component in various concepts including recreation specialization (e.g., Bryan, 1977), experience use history (e.g., Schreyer et al., 1984), and indices of past experience (e.g., Wastson & Niccollucci, 1992). According to Bryan (1977) the term recreation specialization "refers to a continuum of behavior from the general to the particular, reflected by equipment and skills used in the sport and activity setting preferences" (p175). Bryan suggested that as recreationists go through the process of socialization, they approach their sports or hobbies differently, depending on their "stage of development" in the activity. Bryan (1977) concluded that recreationists

(1) tend to go through a predictable syndrome of experiences, moving into more specialized stages over time; (2) as they become more specialized, join a leisure social world centered around the activity; (3) change their attitudes and values from consumption to preservation; and (4) increase the dependency on particular resource types allowing for predictability and manipulation (p186). An important dimension in this scheme is resource orientation. Bryan (1977) suggested that, as level of specialization increases, recreationists join a leisure social world centered around the activity. Moreover, Bryan (2000) pointed out that "… the independent variable, specialization (or experience), has both behavioral and attitudinal components that affect … preferences for certain settings" (p. 19). Thus, experience level should partially explain the levels of perceived service quality or satisfaction by a specific group of recreationists.

Studies have confirmed that differences occur in the physical, management, and social setting preferences among experience levels. For example, using a composite index of past experience in water-based recreation, Hammitt and McDonald (1983) found that experienced river users were more sensitive to resource disturbance and were opposed to management regulations. Kauffman and Graefe (1984) found that as canoeing specialization increased, preference for difficult and challenging rivers increased.

Recreation experience has generally referred to the frequency of participation, as well as years of participation. Schreyer and Lime (1984) raised an issue regarding on-site experience and general experience. They stated that experience might be conceived of in different ways. A person might be a novice in a given environment, yet have experience

elsewhere. Thus, based on their National River Recreation Study, they concluded that if experience is to be represented meaningfully, particularly with an eye toward providing planners and managers of such resources with an accurate assessment of the perceptions of their clientele, then experience external to the environment under study should be considered.

Social group. The social groups with whom people interact may also be relevant variables for explaining the recreation behaviors. A social group is composed of individuals who recognize themselves as part of that group and who were also recognized by others as part of that group. As Bammel and Bammel (1992, p. 337) have noted, "Social groups, be they composed of family member, peers, neighbors, friends, club associates, workmates, and so on, might be the overriding determinant of recreational choice."

Earlier studies of leisure behavior focused attention on social groups as a potential important determinant of outdoor recreation activity (e.g., Dottavio, O'Leary, & Koth, 1980; Field & O'Leary, 1973; Kelly, 1990). However, little is known about how social groups influence leisure behaviors. Most early studies simply counted the different types of social groups present in different leisure settings and activities (Field, 1971). Meyersohn (1969) pointed out, however, that too much emphasis has been placed on determining what people do to the exclusion of a more accurate understanding of why they do it.

The type of social group within which an individual participates might influence recreation behavior. Burch (1964) suggested that various social groups might also differ about the levels of desire regarding a particular experience (e.g., amount of facility

development, amount of solitude). In a study of campers, Burch (1969) expanded this hypothesis when he suggested the idea of "personal communities." The notion of "personal communities" explains how intimate social circles might be a determining influence on the variation of an individual's leisure style. The personal community hypothesis attempted to identify the role of social relationships in the development of leisure life styles (Schuett, 1995). This theoretical approach suggests that individuals were socialized into recreation styles not only by means of the social groups within which they participated, but also by their broader social contacts and relationships.

In outdoor recreation, Cordell (1989) pointed out that most wildland recreation occurred in groups. Also, Cheek (1971), in his study of visitors to local parks by adult males, found that the vast majority (81%) visited the park with a social group. Allen and Donnelly (1985) found companionship was the fourth most important reason given for participation in enjoyable activities. Ewert and Hollenhorst (1989) also found the social group to be a predictor for levels of engagement (participant involvement in an activity) with a diverse sample of adventure recreators. As the engagement level of outdoor recreation participants increased from an introductory level to a commitment level, social groups shifted from peers to solo experiences.

Major findings of earlier research regarding the relationship between social groups and minority subcultural groups (e.g., Dwyer & Gobster, 1992; Hutchison & Fidel, 1984) indicated that compared to the Anglo-Americans, the minority subcultural groups tended to participate in larger groups that often included extended family and friends and different age groups.

In summary, this chapter reviews literatures associated with concepts including: ethnic groups, culture, generations in the U.S. acculturation, experience, social group, as well as perceived service quality, satisfaction, and behavioral intentions. The review indicates that culture, crowding, experience, and social group are key constructs to measure in a study of service quality, satisfaction, and ethnicity in the National Forest recreation context.

Chapter 3: Methods

The methods follows three stages. First, I describe the study design, setting, and sampling details. Second, I explain the variables and sources of these variables, as well as their measurement. Third, I identify the statistical methods used, especially analysis of covariance (ANCOVA) and structural equation modeling (SEM) analysis that were used to test for differences between ethnic groups.

Study Design and Setting

During the summer of 2002, I surveyed visitors at the ANF near metropolitan Los Angeles. The primary purpose of this study was to compare perceptions of service quality and satisfaction across different ethnic groups, particularly, three major ethnic groups: Hispanic-American (including Central American, Hispanic American, & Mexican American), Asian-American (including Chinese American, Taiwanese American, Filipino American, Korean American, Japanese American, & Vietnamese American), as well as Anglo-American. Among the National Forests across the country, the Pacific Southwest region seemed to be an appropriate area for the sampling. Therefore, I proposed an on-site survey at the ANF near metropolitan Los Angeles, California, an area presumably with ethnically diverse population of forest users.

The ANF covers over 650,000 acres and is the backyard playground to the huge metropolitan area of Los Angeles. The ANF maintains the local watershed that provides valuable water to southern California, and protects surrounding communities from catastrophic floods. The land within the Forest is as diverse in appearance and terrain as it is in the opportunities it provides for enjoyment. Elevations range from 1,200 to 10,064

feet. Much of the Forest is a dense chaparral that changes to majestic peaks covered by pine and fir at the higher elevations.

Sampling Details

Because a primary purpose of the study was to compare perceptions of service quality and satisfaction across different ethnic groups, I used purposive sampling at sites frequently visited by individuals and groups of particular ethnic backgrounds (Weisberg, Krosnick, & Bowen, 1996). The sampling sites were chosen in consultation with USDA Forest Service officers, on-site Forest Service rangers and volunteers, as well as through a literature review of former studies about ethnic diversity in southern California (e.g., Carr, & Williams, 1992). Eventually, 14 sampling sites known to be heavily used by visitors with diverse ethnic backgrounds were identified (see Table 3). For example, the visitors in Chantry Flat were quite equally distributed in three major ethnic groups (see Table 4). On the other hand, Oak Picnic Area was dominated by Hispanic-Americans visitors (all the eight responses in the sample were Hispanic-Americans).

Sampling was conducted on 26 days between 6/27/02 and 8/25/02. Sixty-nine percent of the sampling (eighteen days) took place on weekends (Sat. & Sun.) and holidays, and thirty-one percent (eight days) took place on weekdays and non-holidays (Table 5). Also, the on-site interviews were focused on day users. The focus on weekend or holidays day users was based on the information from Forest Service officers, rangers, as well as volunteers, since this segment was known as more diverse.

Table 3. Response of Sampling Sites in the Angeles National Forest

Site	Frequency	Percent
Chantry Flat	793	67.7
Charlton Flat	31	2.6
Chilao	11	.9
Clear Creek	1	.1
Crystal Lake	8	.7
Mt. Wilson	7	.6
Oak Picnic Area	9	.8
Red Box Station	157	13.4
Spunky Campground	2	.2
Stonyvale Picnic Area	11	.9
Streamside Campground	8	.7
Switzer Picnic Area	128	10.9
Vogel Flat Picnic Area	3	.3
Zuni Campground	3	.3
Total	1172	100.0

Table 4. On-Site Interview Response of Three Major Ethnic Groups at Chantry Flat, Red Box Station, and Switzer Picnic Area

	Number of response (%)[a]		
Sampling Site	Anglo-Americans	Hispanic-Americans	Asian-Americans
Chantry Flat	252 (34)	226 (30)	269 (36)
Red Box Station	86 (66)	29 (22)	16 (12)
Switzer Picnic Area	64 (58)	21 (19)	26 (23)

[a] The number of response excludes other ethnic groups (e.g., African-Americans, American Indians)

Table 5. Sampling Date

Date	Frequency	Percent	Date	Frequency	Percent
06/27/02	2	.2	07/21/02	57	4.9
06/29/02	41	3.5	07/26/02	15	1.3
06/30/02	39	3.3	07/27/02	96	8.2
07/04/02	49	4.2	07/28/02	72	6.1
07/06/02	65	5.5	08/03/02	60	5.1
07/07/02	14	1.2	08/10/02	41	3.5
07/12/02	24	2.0	08/11/02	66	5.6
07/13/02	104	8.9	08/17/02	75	6.4
07/14/02	46	3.9	08/18/02	67	5.7
07/17/02	9	.8	08/20/02	7	.6
07/18/02	11	.9	08/23/02	17	1.5
07/19/02	34	2.9	08/24/02	61	5.2
07/20/02	52	4.4	08/25/02	48	4.1
Total				1,172	100.0

Normally, I stayed at the trailheads and waited for the visitors coming back from their forest trips. Because of strict campfire restrictions in the ANF starting on July 1, 2002, there were not many campers in the campground.

When approaching a party with more than one person, each member of the party was asked to fill out a survey questionnaire. In most cases, however, one member of the party filled out a single questionnaire. The visitors were asked if they were willing to take about 10 minutes for a visitor survey. If they were willing to participate, they were asked to read the survey protocol first (Appendix A). The survey protocol was attached on the back side of the survey clip board and was printed in English as well as Spanish, Chinese, and Korean. The participants were welcome to keep the survey protocol if they wanted further information about the visitor survey. As a whole, 90% (n=1,055) of the responses were from weekend and holiday sampling days, and 94% (n=1,093) were day users. Among the 14 sampling sites in the ANF over 90% of the responses came from three developed sites, including 68% (n=793) from Chantry Flat, 13% (n=157) from Red Box Station, and 11% (n=128) from Switzer Picnic Area. At sampling sites deeper in the ANF, fewer visitors were encountered, especially on weekdays.

In order to provide adequate numbers for analysis of subgroup characteristics, target sample sizes were set at 300-400 participants each for a minimum of three major ethnic groups (Hispanic-American, Asian-American, Anglo-American). Using a purposive sampling procedure, a total of 1,332 subjects were approached, while 160 subjects refused to participate. This resulted in a response rate of 88%. Overall, 1,172 subjects responded: 38% Anglo-American (n=444); 27% Hispanic-American (n=312); 27% Asian-American, (n=319); and 8% others including African-American, American-Indian, others, and missing values (n=97). See Table 6.

Table 6. Ethnic Groups

Ethnicity	Frequency	Percent
Anglo American	444	37.9
Hispanic American		
Hispanic American	183	15.6
Mexican American	111	9.5
Central American	18	1.5
Asian American		
Chinese American	123	10.5
Taiwanese American	69	5.9
Filipino American	32	2.7
Korean American	70	6.0
Vietnamese American	14	1.2
Japanese American	11	.9
African American	17	1.5
American Indian	7	.6
Other	49	4.2
Missing	24	2.0
Total	1,172	100.0

Variables and Measurement

    Socio-demographics and trip profiles variables. I measured the following socio-demographic and trip profile variables as continuous variables: age, number of children living in the household, education, household income, years stayed in the U.S., first year visited, times visited, length of day trip, length of overnight trip, and travel distance. On the other hand, I measured marital status, current employment status, country born, first time visited, day vs. overnight visited, location of overnight trip, and group combination as categorical variables (Appendix 1, survey questionnaire).

    Acculturation and assimilation variables. To measure acculturation and assimilation in the host country, I asked participants which generation best described their family history (e.g., 1st generation or 2nd generation)? Generations in the U.S. were an intervening measure of ethnic subculture. This variable was also treated as a covariate in the test of ANCOVA section. In other words, to test the significance between dependent variables (e.g., perceived service quality) and independents (ethnic groups), I controlled the variation of generations in the U.S.

Cultural variables. To measure possible cross-cultural differences among ethnic groups, I adopted one of the most widely used models which was developed by Hofstede (1991). Hofstede identified four dimensions of cultural differences including power distance, individualism, masculinity, and uncertainty avoidance. The power distance dimension focuses on the human equality problem among different people within societies. The individualism focuses on the integration of individuals within various primary groups. The masculinity dimension focuses on the emotional characteristics that often dominate a particular society. The uncertainty avoidance focuses on the level of stress people express for an unknown future. The four dimensions have been confirmed empirically and cited heavily (Doole & Lowe, 2001). In total, there are 16 items in Hofstede's cultural measure, with 4 items in each dimension respectively. The 16 items are formatted with a 5-point scale (5=strongly agree, 1=strongly disagree).

Service quality variables. To measure service quality, I adopted four dimensions — facilities, information, service, and experience — represented by 22 service quality items. The items were developed by the USDA Forest Service in a study of similar National Forest settings (Absher, 1998). The 22 items were used as Forest Service's customer service performance measures for outdoor recreation. The 8-item facilities dimension focused on concrete aspects of the National Forest (e.g., trail, campground, parking space). The 4-item service dimension focused on how the forest visitors had been treated by the National Forest staff and rangers. The 5-item information dimension focused on whether the forest information was available or easy to obtain. The 5-item experience dimension focused on the fairness of fees, feeling of safety and security, as

well as the interaction with other visitors. Each item used a 5-point response scale

(5=strongly agree, 1=strongly disagree).

Crowding variables. I used three items to have the participants reflect on their

feelings about the crowding conditions in the ANF (Shelby, 1980; Vaske, Donnelly, &

Heberlein, 1980; Yeh, 1997). The three crowding variables were formatted with a 9-

point scale (1 = not at all crowded to 9 = extremely crowded). The standardized nine-

point crowding measure has been widely adopted and allowed direct comparison across

studies, areas, and time.

Satisfaction variables. Three items were used to measure satisfaction (Naylor,

1996). The first item, "Overall, how satisfied are you with this trip to this place?" was

formatted from 1 = not at all satisfied to 9 = extremely satisfied. The second item, "To

what extent does this outdoor recreation trip meet your expectations?" was formatted

from 1 = fell short of my expectations to 9 = exceeded my expectations. This item used

disconfirmation measure (compare to expectation) to measure satisfaction. The last

satisfaction item, "Compared to other trip experiences to outdoor recreation areas, how

would you rate your satisfaction?" was formatted from 1 = least satisfied to 9 = most

satisfied.

Behavioral intentions variables. Because service quality and satisfaction were

strongly related to behavioral intentions (e.g., Graefe, Li, Lee, & Zinn, 2001), I used five

items (Cronin, Brady, & Hult, 2000; Singh & Sirdeshmukh, 2000; Zeithaml et al., 1996)

to operationalize participants' behavioral intentions from their forest trips. These five

items were formatted with a five-point scale (5=strongly agree, 1=strongly disagree). See

Appendix B: Section F, 1-5 items.

Experience variables. As pointed out by Schreyer et al. (1984) and Kuentzel and McDonald (1992), recreation visits and recreation days differ because some visits last more than one day. To capture this difference, I asked participants both how many times and how many days in the last 12 months they visited the ANF, as well as how many times and how many days in the last12 months they visited other outdoor recreation areas. Two indices were created from this information. "Total outdoor recreation visits during the last 12 months" was computed by taking the sum of on-site (the ANF) visits in the last 12 months and other outdoor recreation area visits in the last 12 months. On the other hand, "Total outdoor recreation days in a typical year" was computed by taking the sum of on-site days visited in the last 12 month and other outdoor recreation areas days visited in the last 12 months. I used these two indices to measure experience. Both indices were treated as continuous variables.

Assessment of Reliability and Validity

Reliability. Reliability, the internal consistency of multiple construct indicators, was measured by calculating Cronbach's alpha for multiple indicators. In cases where one or more indicators reduced Cronbach's alpha to unacceptable levels, the individual indicator or the overall construct was removed from the model.

Validity. Validity indicated the extent to which the indicators "accurately" measure what they are supposed to measure. Measures that are relatively free from both random and systematic error might be called valid. It was therefore crucial that the amount of measurement error was as small as possible. This study used two methods to check validity: convergent and discriminant validity.

Convergent validity. I checked whether the indicators measuring the same construct were statistically significant (greater than twice of their standard errors). If the indicators measuring the same construct were statistically significant, this was viewed as evidence supporting the convergent validity of those indicators (Byrne, 1998; Hatcher, 1994).

Discriminant validity. I checked whether the square of the path coefficient linking the two constructs, which were being examined for discriminant validity, was less than the average variance extracted (AVE) value for the constructs. If the square of the path coefficient linking the two constructs was less than AVE, the discriminant validity between these constructs was established (Fornell & Larcker, 1981). The average variance extracted estimates were calculated using the following formula:

$$\frac{\Sigma \, (\text{loading})^2}{\Sigma \, (\text{loading})^2 + \Sigma \, (\text{variance})}$$

Data Analysis

I analyzed data following four hierarchical steps (Table 7). Step one focused on the description of the sample profile. Step two focused on the indices with reliability analysis, confirmatory/exploratory factor analysis, as well as correlation matrix analysis. Step three emphasized the empirical analysis of ethnic difference, service quality, satisfaction, crowding, experience, and social group factors while controlling the variation of generations in the U.S. That is, I tested the significance of differences between ethnic groups and service quality related variables using generations in the U.S. as a covariate. At last, I analyzed the measurement and structural models, as well as

discussed five mediation effects in the proposed cross-cultural service quality/satisfaction model.

Table 7. Procedure for Data Analysis

Analysis	Purpose
1. Description of sample profile	• Investigate socio-demographic and trip characteristics
2. Analysis of culture, service quality, crowding, experience, satisfaction, and behavioral intentions indices via reliability analysis, CFA, EFA, and correlation matrix analysis	• To confirm the theoretical factors • To reduce the items and find concept behind factors • Investigate internal consistency of indices • Determine how to treat the indices
3. Empirical analysis of ethnic differences via ANCOVA and Log-linear model	• Test socio-demographic and trip characteristics differences among ethnic groups • Test ethnic differences of cultural, service quality, satisfaction, crowding, experience, social group factors by controlling generations in the U.S.
4. Analysis of measurement model and structural model via LISREL	• Establish models including four, five, and six constructs • Discuss measurement models • Analyze causal relationship in structure models • Discuss mediation effects in structural models • Discuss total effects in structural models • Report model goodness of fit indices

Based on the choice of testing and variables, seven types of statistical tests were used: Chi-square, One-way analysis of variance (ANOVA), Analysis of covariance (ANCOVA), Log-linear model analysis, Confirmatory factor analysis (CFA), Exploratory factor analysis (EFA), and Structural equation modeling (SEM). To test the relationship between two categorical variables such as gender and ethnic group, employment status and ethnic group, as well as formal education and ethnic group, I used Chi-square tests. I used ANOVA to analyze the mean difference between continuous (dependent variables) and categorical (independent variables) variables, for example, comparing age to ethnicity or years lived in the U.S. to ethnicity. I used Log-Linear analysis to test the relationship between two categorical variables with a third variable as

a control. For example, I compared group composition to ethnic group using generations in the U.S. as a control.

I used CFA to confirm the theoretical models and hypothetical premises such as Hofstede's four cultural dimensions. Also, I used EFA to examine characteristic features, discover interesting and interpretable relationships, and reduce variables in the data. My reduction of the variables in Hofstede's cultural items for a National Forest recreation context exemplifies EFA.

I used ANCOVA to test the relationship between continuous (dependent variable) and categorical variables (independent variable) with another continuous variable (covariate) as a control. For example, I tested the relationships between: culture and ethnic groups, satisfaction and ethnic groups, perceived crowding and ethnic groups, as well as experience and ethnic groups with generations in the U.S. as a control.

Finally, I used SEM (via LISREL 8.50 software) to test the validity of the measurement model and to find the causal relationships among multiple constructs in the structural models. SEM provided a basis to analyze a number of important comparisons, such as how well the service quality indicators serve as adequate measurement instruments for the service quality construct in the measurement models. Similarly, SEM provided a basis to analyze the mediation effects in the culture $\rightarrow$ service quality $\rightarrow$ satisfaction relationship.

Chapter 4: Data Analysis and Result

The study data is presented in four stages. First, the sample socio-demographic and trip profiles are reported. Second, the reliability of indices (composite variables) used in this study are evaluated. Third, an empirical analysis of ethnic differences with regard to service quality and related concepts is described. Fourth, tests of the proposed cross-cultural service quality/satisfaction models are presented.

Socio-Demographic and Trip Profiles

Socio-demographic profile. Participants were more likely to be male (60%, n = 685) than female (40%, n = 460). They were largely young adults (mean age = 36), with only 5% 60 years or older. Forty-seven percent (n=521) of the participants were married, and 46% (n=518) single, and the remaining 7% (n=82) of participants were divorced or widowed. The mean number of children (21 or under) living in the household was 1, with 53% (n=466) of the participants having no children in the household. More than 70% (n=731) were employed outside the home, 12% (n=119) were full-time students, and 14% (n=138) were full-time homemakers, retired, or others. The level of education was fairly high; 81% (n=818) of the participants had formal education beyond high school, 34% (n=344) earned a college degree, and 24% (n=238) owned a graduate degree. The household incomes were also high; with 54% (n=501) of the participants having household incomes over $50,000, and 26% (n=246) over $80,000. Mean years lived in the U.S. was 18 (SD=11.75). Mean generations in the U.S. was 3 (SD=1.33). Over half of the participants were born in the U.S., and over 20% were born in Asian countries (Table 8).

Table 8. Birth country of respondents

Country & Region	Frequency	Percent
U.S.	639	54.5
Mexico, Central & South America	85	7.3
Europe	41	3.5
China	41	3.5
Taiwan	89	7.6
Korea	51	4.4
Southeast Asia	66	5.6
Others	51	4.4
Missing	109	9.3
Total	1172	100.0

Trip profile. Nearly two-thirds of the respondents were repeat visitors (65%, n = 759). Among the repeat visitors, the first year they visited the ANF was, on average, nine years ago (1993), and mean times visited to the ANF was nine (SD = 18.03). The majority of the participants were day users (94%, n=1,093), with mean length of their stay in the ANF around four hours. The mean length of overnight stay in the ANF was around two days (SD = 1.76); 75% (n = 126) of the overnight visitors stayed in a campground; 20% (n = 34) stayed in a resort; and 5% (n = 8) were cabin owners. Nine percent (n = 103) of participants visited the ANF alone, 32% (n = 373) visited with family, 36% (n = 420) visited with friends, and 19% (n = 223) visited with family and friends. Mean travel distance from home was 26 miles (SD = 33.35 excluding 15 subjects who traveled over 1,000 miles), and median travel distance from home was 20 miles.

Evaluation and Construction of Composite Variables/Indices

The multi-item indices for crowding, service quality, satisfaction, experience, and behavioral intention in this study exhibited high levels of internal consistency (Table 11 and Table 12). However, with Hofstede's dimensions of cultural difference, I was able to create internally consistent indices for only power distance and masculinity.

Cultural Indices. Hofstede suggested in his original dimensions that the latter two items in each dimension need to be reverse-coded to keep the same directional measurement. Before the reliability analysis, I reverse-coded the latter two items in each dimension. An analysis of the initial reliability of Hofstede's cultural items showed poor alpha for the original four dimensions. Therefore, I followed three procedures to identify reasonable dimensions as described below:

(a) Confirmatory Factor Analysis (CFA) to Confirm Hofstede's Original Four Dimensions. The purpose of this procedure was to confirm Hofstede's original four dimensions when used in the National Forest recreation context. After reverse-coding the latter two items in each dimension, they were put into a CFA test. The original model with four items per dimension of cultural value fit poorly according to several indicators (e.g., GFI = 0.797, NFI = 0.695). Table 9 illustrates the goodness of fit statistics of this four-dimension model.

Table 9. Goodness of fit statistics for Hofstede's cultural item model

Model	χ^2	χ^2/df	GFI[a]	NFI[b]	CFI[c]	RMR[d]
Four items in each dimension	1367.164	13.950	0.797	0.695	0.709	0.134

[a] GFI: Goodness of Fit Index.
[b] NFI: Normed Fit Index.
[c] CFI: Comparative Fit Index.
[d] RMR: Root Mean Square Residual.
Acceptable fit: Rule of thumb, when χ^2/df = 2 to 5; GFI ≥ 0.90; NFI > 0.90; CFI > 0.90; RMR = 0.05 to 0.10.

(b) Exploratory Factor Analysis (EFA) to Reduce Items and Find Dimensions to Better Fit the National Forest Recreation Context. Given the poor fit of the original four-dimension cultural value model, I then used EFA to explore the empirical dimensionality of Hofstede's items in a National Forest recreation context. I considered both orthogonal (uncorrelated factors) and oblique (correlated factors) solutions, via both Varimax and

Direct Oblimin rotation. The results obtained by using these two rotation methods were very similar and suggested that there were no patterns of dimensionality among the items. Instead, I consistently found that one dimension included items from all of Hofetede's original four dimensions. This dimension seemed uninterpretable.

(c) Examine Correlation Matrix to Explain CFA and EFA Results. By examining the correlation matrix of Hofstede's 16 cultural value items, I found some items within the original Hofstede's dimensions were almost uncorrelated. Often items were more highly correlated across dimensions than within dimensions. The responses of participants in this study did not reflect the pattern found in other studies, explaining why I obtained a poor fit from CFA, and failed to identify reasonable dimensions via EFA. Based on the correlation matrix and composite reliability analysis, four items were used to represent the cultural concept, with two items from the power distance dimension and the other two items from the masculinity dimension (Table 10). The reason not to include the individualism dimension was because of a poor Cronbach's alpha value. Also, the composite reliability analysis suggested dropping the uncertainty avoidance dimension. The Cronbach's alpha value of the power distance dimension was .68, and the masculinity dimension was .70. The Cronbach's alpha value representing the composite reliability of the above two dimensions of the cultural construct was .62. I used these two dimensions (indicators), that is, second order indices, to operationize the cultural concept. Since initially, Hofstede's cultural dimensions were supposed to be orthogonal among dimensions (Hofstede, 1984), it was not surprising to obtain a seemingly minimal acceptable composite reliability Cronbach's alpha value. Therefore, the decision was made to use power distance and

masculinity dimensions (indicators) to represent cultural constructs in the latter structural

equation modeling analysis.

Table 10. Reliability and Means for Power Distance and Masculinity Dimension

Dimension Items	Item Mean	Item S.D.	Dimension Alpha	Dimension Mean
Power Distance			.6781	2.8948
1. Inequalities among people are both expected and desired	3.07	1.134		
2. Less powerful people should be dependent on the more powerful	2.72	1.108		
Masculinity			.7044	3.0163
1. Money and material things are important	3.07	1.038		
2. Men are supposed to be assertive, ambitious, and tough	2.95	1.047		

Scale from 1 strongly disagree to 5 strongly agree

Service Quality Indices. Four service quality dimensions (indices) were

represented by 22 items (Table 11). The 22 service quality items were coded in the same

direction. Underlying the concept of the 22 service quality items were the facilities,

service, information, and experience dimensions (indices). The Cronbach's alpha value

of the four dimensions were .86, .88, .92, and .83 respectively. Similar to the cultural

dimensions, I combined the above four service quality dimensions (indicators) into a

second order index to operationize service quality construct in the latter structural

equation modeling analysis.

Satisfaction Index. Three satisfaction items were put into the reliability analysis.

The three items were coded in the same direction. The Cronbach's alpha value of the

index was .90 (Table 12).

Behavioral Intentions Index. Five Behavioral Intentions items (Appendix B: the

first five items of Section E in the survey questionnaire) were put into the reliability

analysis. The five items were coded in the same direction. The Cronbach's alpha value

of the index was .89 (Table 12).

Table 11. Reliability and Means for Service Quality Domains

Dimension (Index) Items	Item Mean	Item S.D.	Index Alpha	Index Mean
Facilities			.8616	3.7581
1. Access to the place(s) I like to visit	4.1478	.8814		
2. Facilities that are accessible to all visitors	3.9802	.8779		
3. Trails clearly marked and signed	3.9306	.8908		
4. Trails clean & well maintained	3.9593	.8786		
5. Enough campgrounds	3.5804	.9356		
6. Enough parking space	3.1915	1.1950		
7. Facilities are convenient	3.7728	.8659		
8. Campgrounds are well maintained	3.7262	.9190		
Service			.8836	3.8333
9. Forest Service staffs who make me feel welcome	3.9347	.8702		
10. Forest Service staffs who are available	3.7203	.9007		
11. Forest Service staffs who are willing to answer questions	3.9577	.8432		
12. Opportunity to make comments/provide feedback to Forest Service	3.7755	.9059		
Information			.9224	3.6033
13. Comprehensive information about recreation opportunities	3.6635	.8640		
14. Information that is easy to find	3.6372	.8879		
15. Accurate and current information available about the area	3.6664	.8732		
16. Natural and history information available	3.4868	.9262		
17. Information about safety and emergency	3.5686	.9021		
Experience			.8271	3.8156
18. Feel safe and secure	3.9921	.8120		
19. Rules/regulations that are enforced	3.7649	.8475		
20. Fees are reasonable	3.7014	1.0766		
21. Fair prices about maps, etc.	3.6692	1.0161		
22. I am treated courteously	4.0258	.8240		

Scale from 1 strongly disagree to 5 strongly agree

Crowding Index. Three crowding items were put into the reliability analysis. The three crowding items were coded in the same direction. The Cronbach's alpha value of the domain was .95, the highest Cronbach's alpha value among all the indices (Table 12).

Experience Index. Two experience measures were put into the reliability analysis. The first composite measure, total outdoor recreation visits during the last 12 months, was computed by adding number of visits to the ANF during the last 12 months and number of visits to other outdoor recreation areas during the last 12 months. The second composite measure, total recreation days in a typical year, was computed by adding

number of days visiting the ANF in a typical year, and number of days visiting other

outdoor recreation area in a typical year. The Cronbach's alpha value of the individual

experience index (e.g., total outdoor recreation visits during the last 12 months) was not

reported because the index was computed only for calculating the sum purpose. On the

other hand, the Cronbach's alpha value of the experience index was .82 (Table 12). I

used these two experience dimensions (indicators), that is, second order indices, to

operationize the experience construct in the latter structural equation modeling analysis.

Table 12. Reliability and means for satisfaction, behavioral intentions, crowding, and experience indices

Index Items	Item Mean	Item S.D.	Index Alpha	Index Mean
Satisfaction[a]			.9027	6.7973
1. Overall, how satisfied were you with this trip to this place?	6.9324	1.6359		
2. Compared to other trip experiences to outdoor recreation areas, how would you rate your satisfaction?	6.7694	1.5571		
3. To what extent did this outdoor recreation trip meet your expectations?	6.6901	1.6018		
Behavioral Intentions[b]			.8895	4.0082
1. I would recommend this place to people who seek my advice.	4.0402	.7535		
2. I would tell other people positive things about this place.	4.1121	.7113		
3. I would recommend this place to my friends.	4.1216	.7296		
4. My next recreation trip will most likely be this place.	3.5909	.9687		
5. I would visit this place again.	4.1765	.7804		
Crowding[c]			.9513	3.9398
1. During your visit to this place, how crowded did other people make you feel?	4.0316	1.9663		
2. How crowded did you feel at the service facilities or areas provided here.	3.8718	1.8658		
3. Overall, how crowded did you feel during your trip to this place?	3.9161	1.9560		
Experience[d]			.8157	
1. Total outdoor recreation visits during last 12 months	8.26	14.916		
2. Total outdoor recreation days in a typical year	15.675	21.936		

[a] Scale from 1 (not at all satisfied) to 9 (extremely satisfied)
[b] Scale from 1 (strongly disagree) to 5 (strongly agree)
[c] Scale from 1 (not at all crowded) to 9 (extremely crowded)
[d] Indices represent the total times and total days of visits to the ANF and other outdoor recreation areas

In conclusion, for cultural, service quality, and experience concepts, I used the second order indices in the ANCOVA as well as in the SEM analysis. On the other hand, for the crowding, satisfaction, and behavioral intentions concepts, I used the second order index in the ANCOVA analysis. In the SEM analysis, however, I used the multiple item scores to operationalize the crowding, satisfaction, and behavioral intentions concepts, rather than using index scores. This approach was consistent with suggestions that multi-item measurement be used whenever possible in structural equation modeling (e.g., Churchill, 1979) because a single-item (index) measurement does not allow opportunities to assess the reliability of the construct.

Socio-Demographic and Trip Differences Among Ethnic Groups

All the socio-demographic characteristics investigated in this study showed significant differences among ethnic groups (Table 13). For example, Anglo-Americans were more likely to be older, followed by Asian-Americans and Hispanic-Americans. On the other hand, Hispanic-Americans were likely to have more children in the household, followed by Asian-Americans and Anglo-Americans. Also, Anglo-Americans and Asian-Americans had more formal education and higher annual household income than Hispanic-Americans.

Six out of the nine trip characteristics investigated in this study showed significant differences among ethnic groups (Table 14). For example, compared to Hispanic-Americans and Asian-Americans, Anglo-Americans tended to travel farther to visit the ANF; to visit other outdoor recreation areas more often; and were more likely to make overnight trips.

Table 13. Socio-demographic profiles of Anglo-Americans, Hispanic-Americans, and Asian-Americans

Socio-demographic characteristic	Anglo Americans (n = 444)	Hispanic Americans (n = 312)	Asian Americans (n = 319)	Test for difference among ethnic groups
Gender (% male)[1]	66.1	56.8	56.0	$\chi^2 = 10.36$, p = .006
Age (mean years)[2]	39.2_a	31.4_b	35.9_c	$F = 35.62$, p < .001
Marital status (% married)[1]	46.8	46.4	48.9	$\chi^2 = 14.81$, p = .005
Children in household (mean children)[2]	$.72_a$	1.4_b	$.94_a$	$F = 20.61$, p < .001
Employed status (%)[1]				$\chi^2 = 29.94$, p = .001
Employed outside home	77.8	75.8	67.4	
Full-time homemaker	2.6	4.9	4.3	
Retired	5.5	0	3.6	
Full-time student	8.6	11.4	16.1	
Part-time student	1.8	3.4	3.6	
Not currently employed	3.7	4.5	5.0	
Formal education (%)[1]				$\chi^2 = 137.07$, p < .001
Not complete high school	.5	6.4	3.1	
High school diploma/GED	8.1	19.2	8.7	
Technical or business school	2.3	13.5	1.7	
Some college	19.7	21.8	11.1	
College degree	33.7	23.3	43.8	
Some graduate work	7.6	3.4	6.3	
Graduate degree	28.1	12.4	25.3	
Annual income (%)[1]				$\chi^2 = 89.07$, p < .001
Less than $ 20,000	11.3	19.3	12.4	
$ 20,000 – $ 34,999	12.4	25.4	15.8	
$ 35,000 – $ 49,999	10.8	25.0	15.4	
$ 50,000 – $ 64,999	16.0	11.1	14.3	
$ 65,000 – $ 79,999	13.3	10.7	15.8	
$ 80,000 or more	36.2	8.6	26.3	
Years lived in U.S. (mean years)[2]	20.6_a	22.0_a	15.4_b	$F = 17.00$, p < .001
Generation in U.S. (%)[1]				$\chi^2 = 235.06$, p < .001
1st generation	9.6	46.7	69.9	
2nd generation	13.3	33.7	19.6	
3rd generation	24.4	12.5	6.3	
4th generation	52.7	14.1	4.5	
Country born (% born in U.S.)[1]	85.8	67.8	60.2	$\chi^2 = 921.58$, p < .001

[1] Difference among groups tested with χ^2 test of independence.
[2] Difference among groups tested with one-way analysis of variance. Group means sharing the same subscript did not differ significantly in a post-hoc Scheffe test.

Service Quality and Related Variables Differences Among Ethnic Groups

I used ANCOVA to measure the differences of service quality, culture, satisfaction, crowding, and experience factors among ethnic groups. The variable, generations in the U.S. was treated as a covariate in ANCOVA. That is, in order to take the acculturation as well as assimilation effects into account, I controlled the variation of generations in the U.S. in the analysis, and tested the differences among ethnic groups.

Table 14. Trip profile of Anglo-Americans, Hispanic-Americans, and Asian-Americans

Trip characteristic	Anglo Americans (n = 444)	Hispanic Americans (n = 312)	Asian Americans (n = 319)	Test for difference among ethnic groups
Visited status (% first visit) [1]	30.0	37.2	34.5	$\chi^2 = 7.15$, p = .028
First year visited (mean years of repeat visitor) [2]	1988_a	1993_b	1996_c	$F = 26.11$, p < .001
Times visited ANF (mean times) [2]	10.3	10.7	10.4	$F = .02$, p = .98
Times visited other outdoor recreation areas (mean times) [2]	16.2_a	9.6_b	8.8_b	$F = 9.51$, p < .001
Trip type (% daytrip, not overnight) [1]	91.0	94.2	98.1	$\chi^2 = 16.49$, p < .001
Length of day trip (mean hours) [2]	4.44	4.30	4.03	$F = 2.83$, p = .059
Overnight sites (% stayed at campground, not resort) [1]	92.6	69.8	74.4	$\chi^2 = 9.35$, p = .009
Group composition (%) [1]				$\chi^2 = 10.30$, p = .113
Alone	11.8	7.6	8.0	
Family	33.8	34.9	32.2	
Friend	38.1	36.5	35.7	
Family & friend	16.3	20.9	24.1	
Travel distance (mean miles) [2]	77.0_a	24.7_b	27.8_b	$F = 6.60$, p = .001

[1] Difference among groups tested with χ^2 test of independence.
[2] Difference among groups tested with one-way analysis of variance. Group means sharing the same subscript did not differ significantly in a post-hoc Scheffe test.

Cultural factors. Based on analysis of both item correlations and composite reliability, the decision was made to use two dimensions, power distance and masculinity, to represent the cultural construct in the structural equation modeling analysis. To maintain consistency with the latter structural equation modeling analysis, I analyzed the power distance and masculinity differences among ethnic groups using generations in the U.S. as a control. The items within dimensions were measured in the same direction as in their individual dimension. The result showed that power distance was significantly related to ethnic groups. On the other hand, responses on Hofstede's masculinity dimension did not differ significantly among ethnic groups (Table 15). Compared to Anglo-Americans and Asian-Americans, Hispanic-Americans were more willing to endorse Hofstede's power distance dimension. One noteworthy point was that in the analysis of variance (ANOVA), the masculinity dimension was significant among ethnic groups (Anglo-Americans tended to less masculine than Hispanic-Americans and Asian-

Americans); however, when the covariate, generations in the U.S., was added into the

ANCOVA model, the significance disappeared. Generations in the U.S. did have an

effect on the masculinity dimension among ethnic groups.

Table 15. Comparison of culture, service quality and related variables in the Angeles National Forest between population subgroups (controlling for generations in the U.S.) using adjusted means

Concept tested Index	Anglo Americans		Hispanic Americans		Asian Americans		F for ANCOVA
	Mean	N	Mean	N	Mean	N	
Culture Indices							
Power distance[1]	2.66_a	285	3.14_b	171	2.75_a	105	11.315***
Masculinity[1]	2.88	266	2.99	159	2.98	100	***0.554***
Service Quality Indices							
Facilities[1]	3.82_a	330	3.73_a	182	3.56_b	111	4.485*
Service[1]	3.93_a	327	3.81_{ab}	181	3.64_b	111	4.461*
Information[1]	3.60_a	326	3.64_a	180	3.32_b	109	5.663**
Experience[1]	3.89_a	328	3.78_a	181	3.58_b	111	5.714**
Crowding Index[2]	3.93	329	3.92	187	4.18	125	0.858
Experience Indices							
Total visits[3]	10.19_a	330	6.14_b	181	5.56_b	111	5.197**
Total days[4]	14.97_a	326	10.61_b	182	6.63_b	109	5.179**
Satisfaction Index[5]	6.84_a	328	7.04_a	188	6.23_b	125	11.159***

*Significant at p ≤ .05. ** Significant at p ≤ .01, *** Significant at p ≤ .001
Mean with different subscript letter significantly differed at the .05 level after Least Significant Difference adjustment
The bold and Italic letters in the F for ANCOVA column represented the significant covariate (generations in the U.S.) at .05 level
[1] Variables within dimension coded on a 5-point scale from 1= Strongly disagree to 5= Strongly agree
[2] Variable coded on a 9-point scale from 1= Not at all crowded to 9 = Extremely crowded
[3] Total visits was computed by adding times visited to the Angeles National Forest and times visited to other outdoor recreation areas
[4] Total days was computed by adding days visited to the Angeles National Forest and days visited to other outdoor recreation areas
[5] Variable coded on a 9-point scale from 1= Not at all satisfied to 9 = Extremely satisfied

Service Quality. I used four dimensions, facility, service, information, and

experience to represent service quality, and tested the differences among ethnic groups

(Table 15). All four service quality dimensions were significantly related to ethnic

group. The result of the ANCOVA test for the four service quality dimensions followed

the same pattern, and demonstrated that Asian-Americans tended to perceive lower

service quality than either Anglo-Americans or Hispanic-Americans when controlling for

generations in the U.S. Also, among the three ethnic groups, Anglo-Americans tended to perceive the highest service quality among ethnic groups.

Crowding. I used ANCOVA to test the crowding index and found the crowding index was not related to ethnic groups, with generations in the U.S. as a control. Also, none of the three crowding items which represented the crowding index were significant among ethnic groups. The study found that Anglo-Americans, Hispanic-Americans, as well as Asian-Americans seemed to perceive similar levels of crowding in the ANF. (Table 15).

Experience.   Regarding experience differences among ethnic groups in this study, both indices, total outdoor recreation visits during the last 12 months and total outdoor recreation days in a typical year, differed significantly among ethnic groups and followed the same pattern. Compared to Hispanic-Americans and Asian-Americans, Anglo-Americans tended to visit the ANF and other outdoor recreation sites more often (Table 15).

Satisfaction. I used one index to operationalize satisfaction in the ANCOVA analysis. The result showed that satisfaction was related to ethnic groups (Table 15). Compared to Anglo-Americans and Hispanic-Americans, Asian-Americans were less likely to be satisfied with their trips to the ANF.

Social Group. Treating the variables ethnic group, group composition, and generations in the U.S. as categorical variables, a log-linear model was used to test the difference between ethnic group and group composition, while controlling the variations from generations in the U.S.; that is, controlling the variation due to the acculturation and assimilation effects. The log-linear model showed no significant differences between the

proportion of ethnic groups who traveled alone, with family, with friends, or with family

and friends (χ^2 = 6.1685, df = 5, p-value = 0.2902).

Cross-Cultural Service Quality/Satisfaction Models for National Forest Recreation.

This study proposed a theoretical model that measured six constructs: culture,

service quality, recreational factors (operationalized by crowding and experience

concepts), satisfaction, and behavioral intentions. I analyzed this model in three steps.

First, applying existing marketing theory in the recreation context, I modeled four

constructs: culture, service quality, satisfaction, and behavioral intentions. Second, I

introduced each recreation factor (crowding, experience) to the model individually.

Third, I tested all six constructs: culture, service quality, crowding, experience,

satisfaction, and behavioral intentions in the full model. This SEM analysis allowed me

to explain both the measurement properties and causal relationships in the model.

Measurement Model

My model, like other models in the social and behavioral sciences, uses

constructs, or latent variables, which are not directly measurable. Following standard

practice, I relied on multiple items, or indicators, to operationlize or represent these latent

variables more or less well. Typically, this measurement process contains sizable

measurement errors (Kline, 1998). A measurement model, often called a saturated

model, allows me to take these errors into account and assess how well the observed

indicators represent the latent variables. In particular, the key concerns were

measurement reliability and validity.

Reliability. Composite reliability is a measure of the degree to which the

construct indicators represent each latent construct. Composite reliability uses

Cronbach's alpha to assess the internal consistency of indicators for each construct. As reported earlier in this chapter, Cronbach's alphas for satisfaction and behavioral intentions equaled .90 and .89, respectively (Table 12). The composite reliability of the four service quality dimensions (second-order index) equaled .90. These three constructs showed good internal consistency of the construct indicators. Regarding the cultural construct, the composite reliability of power distance and masculinity dimensions (second-order index) equaled .62. Although this was not a very good figure, it was the best alpha obtained, and it was beyond the minimal acceptable threshold.

In the recreational factors, I used three items rather than a single crowding index to avoid a single indicator representing the crowding concept. To detail the experience indicators, two indices, total outdoor recreation visits during the last 12 months and total outdoor recreation days in a typical year, were used to represent the experience concept (reliabilities reported in Table 12). The Cronbach's alpha value of the above five indicators within the recreational construct (factor) equaled to .52. Since the Cronbach's alpha value was poor, the decision was made to separate the indicators that represented crowding and experience concepts in the recreational construct. Consequently, when I used three crowding items to represent the recreational construct, the composite reliability alpha equaled to .95. On the other hand, with regard to using the experience indicators in the recreational construct, the composite Cronbach's alpha for the two indices, total outdoor recreation visits during the last 12 months and total outdoor recreation days in a typical year, was .82.

Because perceived crowding and experience level influence other constructs differently in SEM, the analysis of the recreational factor was divided into two portions

that resulted in two models. That's the reason why I proposed two five-construct models in this study. The first model used the crowding concept (three items) to represent the recreational construct, while the other model used the experience concept (two indices) to represent the recreational concept. All four measurement models, four-construct, five-construct (crowding and experience models), as well as six-construct models exhibited good reliability.

Another way to examine the reliability was to check the square of the correlation between a latent factor and indicators. The R-square values represented indicator reliabilities which indicated the percent of variance in the indicator that is explained by the common factor that it is supposed to measure (Kline, 1998). The result of the four-construct measurement models showed that 11 out of the 14 indicators had R-square values exceeding .60. The result of the two five-construct measurement models showed that 14 out of the 17 indicators in the crowding model, and 12 out of 16 indicators in the experience model had R-square values exceeding .60. Finally, the result of the six-construct measurement models showed that 15 out of the 19 indicators had R-square values exceeding .60. In particular, all three crowding indicators had R-square values exceeding .80. in the five-construct crowding model and six-construct full model. The above R-square values in the four measurement models indicated that the four measurement models exhibited acceptable reliability.

Convergent validity refers to the extent to which different indicators measure the same trait or construct (see p. 45). The result of all indicators in the four measurement models was statistically significant at the .05 level, and all factor loadings for the

indicators were greater than twice their standard errors. Therefore, convergent validity of the four measurement models was established.

Discriminant validity refers to the distinctiveness of the factors (constructs) measured by different sets of indicators (see p. 45). The average variance extracted (AVE) in the four constructs model was as follows: .45 for the culture construct, .70 for the service quality construct, .76 for the satisfaction construct, and .67 for the behavioral intentions construct (Table 16). The square of the path coefficient in the four constructs model ranged from .0016 to .2704.

Table 16. Average variance extracted (AVE) estimated in the four measurement models

	Four-construct	Five-construct (Crowding)	Five-construct (Experience)	Six-construct
Culture	.45	.46	.46	.46
Service quality	.70	.70	.70	.70
Crowding	--	.86	--	.86
Experience	--	--	.82	.83
Satisfaction	.76	.75	.75	.75
Behavioral intentions	.67	.67	.67	.63

The average variance extracted in the five-construct crowding model was as follows: .46 for the culture construct, .70 for the service quality construct, .86 for the crowding construct, .75 for the satisfaction construct, and .67 for the behavioral intentions construct (Table 16). The square of the path coefficient in the five-construct crowding model ranged from .0009 to .2704.

The average variance extracted in the five-construct experience model was the following: .46 for the culture construct, .70 for the service quality construct, .82 for the experience construct, .75 for the satisfaction construct, and .67 for the behavioral intentions construct (Table 16). The square of the path coefficient in the five-construct experience model ranged from .0025 to .2704.

Finally, the average variance extracted in the six-construct, crowding and experience combined, model was as follows: .46 for the culture construct, .70 for the service quality construct, .86 for the crowding construct, .83 for the experience construct, .75 for the satisfaction construct, and .63 for the behavioral intentions construct (Table 16). The square of the path coefficient in the six-construct model ranged from .0009 to .2704. Each of the scales exceeded Fornell and Larcker's (1981) standard for assessing discriminant validity (the square of the path coefficient linking the two constructs is less than the AVE value for the constructs). Therefore, the discriminant validity for the four measurement models was established.

Structural Models

Step 1. Four-Construct Model. Consistent with existing theory in the marketing field, Figure 1 shows the four-construct model with coefficients indicating the strength of paths between constructs. Table 17 shows the χ^2/df value and goodness of fit indices of both the measurement and structural four-construct models. Both models had a relatively good fit to the data. The paths with solid lines indicate significant paths between constructs. Four out of the five paths in the four-construct model were significant. The four paths were the following: culture to service quality, service quality to satisfaction, service quality to behavioral intentions, and satisfaction to behavioral intentions. All four significant paths were positively related. One path, culture to satisfaction was non-significant in the four-construct model. Also, the path, culture to behavioral intentions was not tested because there was no theoretical or empirical support for the path (when adding this path in the model, the path was non-significant).

A chi-square difference test between the four-construct measurement and structural models showed no significant difference at .05 level in fit between models ($\Delta\chi^2$ = 1.54, p > .20). This result suggests that the constrained structural model fits the data as well as the saturated measurement model and exhibits no loss in explanatory power (Anderson & Gerbing, 1988).

Figure 1. Four-Construct Model
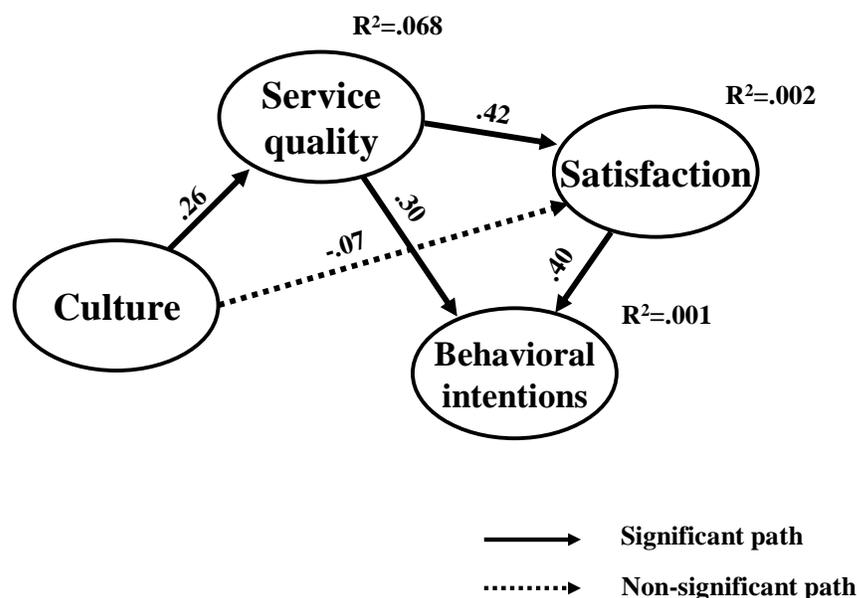
Table 17. Goodness of fit Statistics for the four-construct measurement and structure models

Model	χ^2	χ^2/df	$\Delta\chi^{2a}$	GFI[b]	NFI[c]	CFI[d]	RMR[e]
Measurement model	316.57	4.46		.95	.96	.97	.042
Structural model	318.11	4.42	1.54	.95	.96	.97	.042

[a] $\Delta\chi^2$ 1.54 = 318.11 – 316.57, with df = 72 – 71 = 1, p > 0.05. Indicate that four-construct structural model fit the data as well as measurement model.
[b] GFI: Goodness of Fit Index.
[c] NFI: Normed Fit Index.
[d] CFI: Comparative Fit Index.
[e] RMR: Root Mean Square Residual.
Acceptable fit: Rule of thumb, when χ^2/df = 2 to 5; GFI $\geq$ 0.90; NFI > 0.90; CFI > 0.90; RMR = 0.05 to 0.10

Step 2. Five-Construct Crowding Model. Figure 2 shows crowding (one of two

recreational factors) added to the original structural model. Table 18 shows the χ^2/df

value and goodness of fit indices of the five-construct crowding measurement and

structural models. Both models had a relatively good fit to the data. Six out of the eight

paths in the five-construct crowding model were significant. The six paths were the

following: culture to service quality, service quality to satisfaction, service quality to

behavioral intentions, satisfaction to behavioral intentions, crowding to service quality,

and crowding to satisfaction. Moreover, among the six significant paths, crowding to

service quality and crowding to satisfaction were negatively related. Two paths, culture

to satisfaction and culture to crowding were non-significant in the five-construct

crowding model. Also, two paths, culture to behavioral intentions and crowding to

behavioral intentions, were left out in the crowding structural model because there was no

theoretical or empirical support for these two paths (when adding these two paths in the

model, the two paths were non-significant).

Table 18. Goodness of fit statistics for the five-construct crowding measurement and structural models

Model	χ^2	χ^2/df	$\Delta\chi^{2a}$	GFI^b	NFI^c	CFI^d	RMR^e
Measurement model	371.66	3.41		.95	.96	.97	.037
Structural model	373.62	3.37	1.96	.95	.96	.97	.037

[a] $\Delta\chi^2$ 1.96 = 373.62 − 371.66, with df = 111 − 109 = 2, p > 0.05. Indicate that crowding structural model fit the data as well as measurement model.
[b] GFI: Goodness of Fit Index.
[c] NFI: Normed Fit Index.
[d] CFI: Comparative Fit Index.
[e] RMR: Root Mean Square Residual.
Acceptable fit: Rule of thumb, when χ^2/df = 2 to 5; GFI ≥ 0.90; NFI > 0.90; CFI > 0.90; RMR = 0.05 to 0.10

Figure 2. Five-Construct Crowding Model
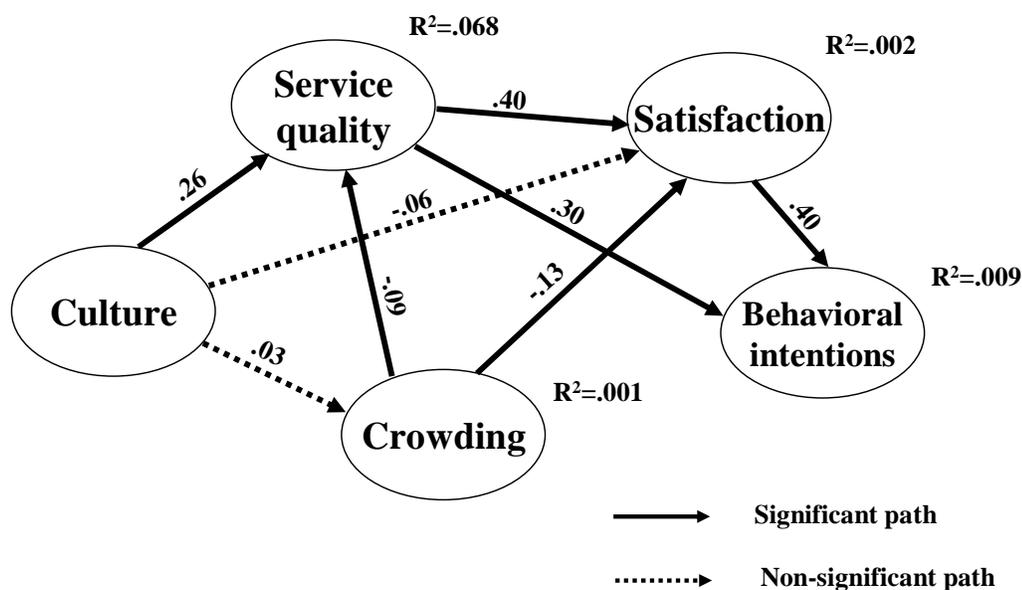
A chi-square difference test between the five-construct crowding measurement and structural models showed no significant difference at .05 level in fit between models ($\Delta\chi^2 = 1.96$, p > .25). This result suggested that the constrained structural model fit the data as well as the saturated measurement model. The chi-square difference test result implied that the five-construct crowding structural (constrained) model exhibited the explanatory power on the proposed theoretical causal relationship.

Step 3. Five-Construct Experience Model. Similarly, Figure 3 shows the proposed five-construct experience model with standard coefficients to evaluate the strength of path coefficients estimated. The paths with solid lines indicate significant paths between constructs. Different from the five-construct crowding model, the

crowding construct is replaced by the experience construct in the experience structural model. Table 19 shows the χ^2/df value and goodness of fit indices of both the five-construct experience measurement and structural models. Both models fit the data relatively well. Six out of the eight paths in the experience structural model were significant. The six paths were the following: culture to service quality, culture to experience, service quality to satisfaction, service quality to behavioral intentions, satisfaction to behavioral intentions, and experience to satisfaction. Moreover, among the six significant paths, only one path, culture to experience was negatively related. Two paths, culture to satisfaction and experience to service quality were non-significant in the five-construct experience structural model. Similarly, two paths, culture to behavioral intentions as well as experience to behavioral intentions, were left out in the experience structural model, for the same reasons as in the five-construct crowding structural model (when adding these two paths in the model, the two paths were non-significant).

A chi-square difference test between the experience measurement and structural models showed no significant difference at .05 level in fit between models ($\Delta\chi^2 = 4.60$, p > 0.10). This result suggested that the constrained structural model fit the data as well as the saturated measurement model. In other words, the result of the chi-square difference test implied that the experience constrained structural model exhibited the explanatory power on the proposed theoretical causal relationship as well.

Figure 3. Five-Construct Experience Model

R²=.074
R²=.003
R²=.010
R²=.014

Service quality .41 Satisfaction
.27 -.05 .30 .40
Culture .09 Behavioral intentions
-.12 .02
Experience

→ Significant path

·········► Non-significant path
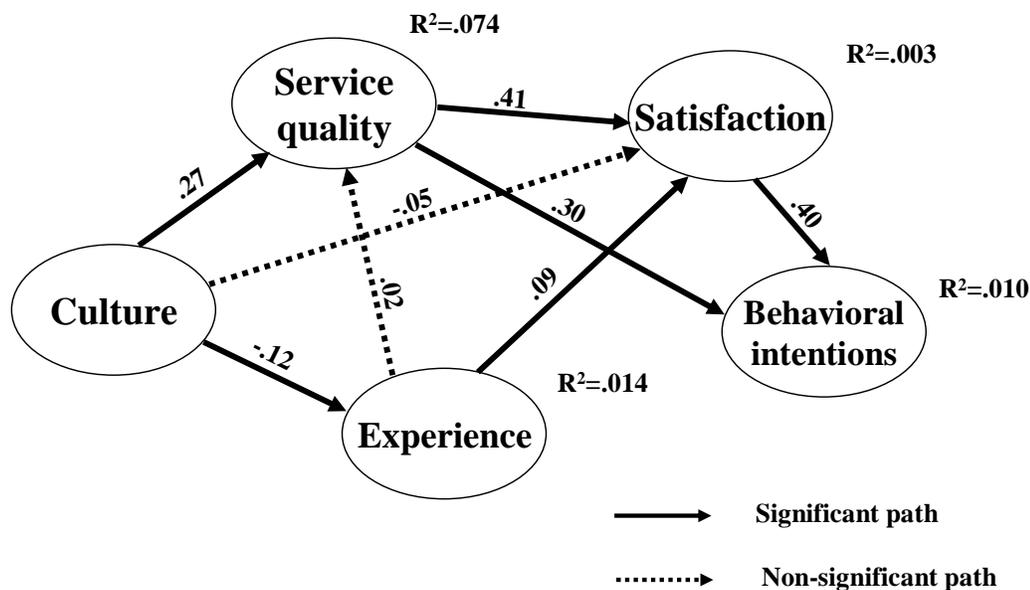
Table 19. Goodness of fit statistics for the five-construct experience measurement and structural models

Model	χ^2	χ^2/df	$\Delta\chi^{2a}$	GFI[b]	NFI[c]	CFI[d]	RMR[e]
Measurement model	347.56	3.70		.95	.96	.97	.041
Structural model	352.16	3.67	4.60	.95	.96	.97	.041

[a] $\Delta\chi^2$ 4.60 = 352.16 – 347.56, with df = 96 – 94 = 2, p > 0.05. Indicate that experience structural model fit the data as well as measurement model.
[b] GFI: Goodness of Fit Index.
[c] NFI: Normed Fit Index.
[d] CFI: Comparative Fit Index.
[e] RMR: Root Mean Square Residual.
Acceptable fit: Rule of thumb, when χ^2/df = 2 to 5; GFI ≥ 0.90; NFI > 0.90; CFI > 0.90; RMR = 0.05 to 0.10

Step 4. Six-Construct Combined Experience and Crowding Structural Model.

When adding experience and crowding constructs together in a single structural model, I found the same patterns that appeared in the five-construct models (Figure 4). In other words, paths that were significant in the crowding structural model and experience structural models remained significant in the six-construct combined model. One

additional path, experience → crowding, was added to the experience and crowding combined model; however, this path was nonsignificant. Table 20 shows the χ^2/df value and goodness of fit indices of both the measurement and structural six-construct models. Both models had a relatively good fit to the data.

A chi-square difference test between the six-construct measurement and structural models showed no significant difference at .05 level in fit between models ($\Delta\chi^2 = 5.12$, p > 0.15). Again, this result suggested that the constrained structural model fit the data as well as the saturated measurement model. In other words, the result of the chi-square difference test implied that the six-construct structural (constrained) model exhibited the explanatory power on the proposed theoretical causal relationship as well.

Figure 4. Six-Construct Combined Experience & Crowding Structural Model
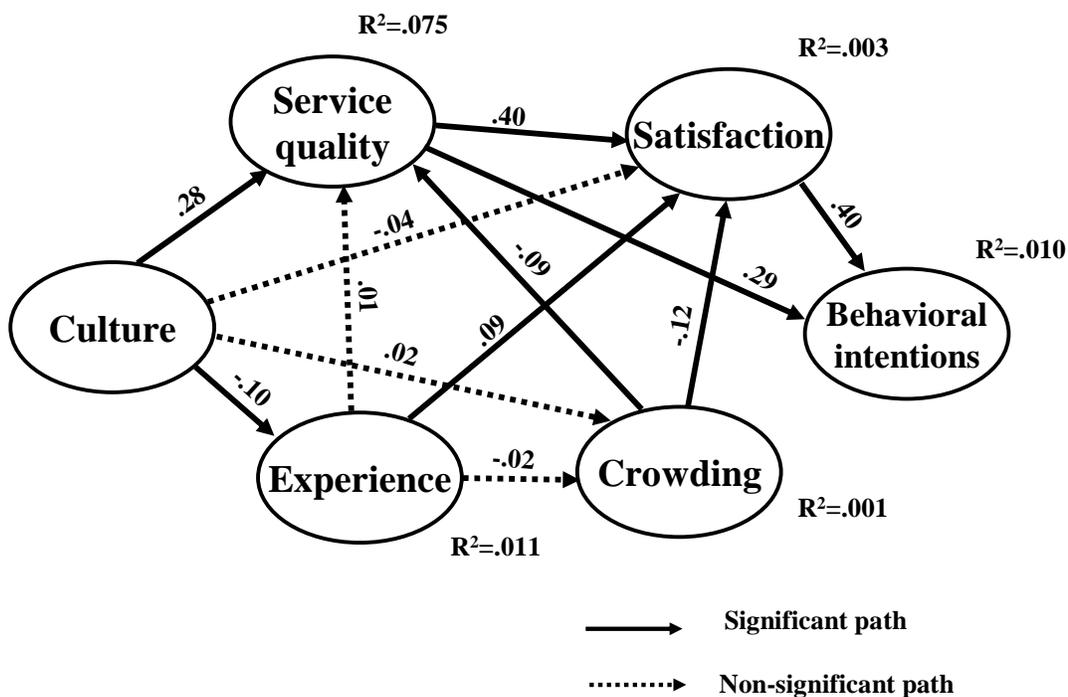
Table 20. Goodness of fit statistics for the six-construct combined experience and crowding measurement and structural models

Model	χ^2	χ^2/df	$\Delta\chi^{2a}$	GFI[b]	NFI[c]	CFI[d]	RMR[e]
Measurement model	406.50	2.97		.95	.96	.97	.037
Structural model	411.62	2.94	5.12	.95	.96	.97	.036

[a] $\Delta\chi^2$ 5.12 = 411.62 – 406.50, with df = 140 – 137 = 3, p > 0.05. Indicate that six-construct structural model fit the data as well as measurement model.
[b] GFI: Goodness of Fit Index.
[c] NFI: Normed Fit Index.
[d] CFI: Comparative Fit Index.
[e] RMR: Root Mean Square Residual.
Acceptable fit: Rule of thumb, when χ^2/df = 2 to 5; GFI ≥ 0.90; NFI > 0.90; CFI > 0.90; RMR = 0.05 to 0.10

Mediation Effects

To test whether mediation effects were established in the final six-construct structural model, I tested eleven potential mediation effects (Figure 4). For a mediation effect to be established, the paths between the predictors and the mediators and between the mediator and the criterion must be significant in both full and partial mediation models. Full mediation occurs when the direct path from the predictor to the criterion is not significant in the partial mediation model (Baron & Kenny, 1986; Bollen, 1989; Hayduk, 1987).

The eleven potential mediation effects in the final six-construct model include: 1) culture to crowding mediated by experience; 2) culture to service quality mediated by experience; 3) culture to service quality mediated by crowding; 4) culture to satisfaction mediated by experience; 5) culture to satisfaction mediated by crowding; 6) culture to satisfaction mediated by service quality; 7) experience to service quality mediated by crowding; 8) experience to satisfaction mediated by crowding; 9) experience to satisfaction mediated by service quality; 10) crowding to satisfaction mediated by service quality; and 11) service quality to behavioral intentions mediated by satisfaction.

The results established four out of the eleven mediation effects (Figure 5). The path from culture to satisfaction was fully mediated by the dual effects of service quality and experience. The path from crowding to satisfaction was partially mediated by service quality. Also, the path from service quality to behavioral intentions was partially mediated by satisfaction.

Figure 5. Mediation Effects for Six-Construct Combined Experience & Crowding Structural Model
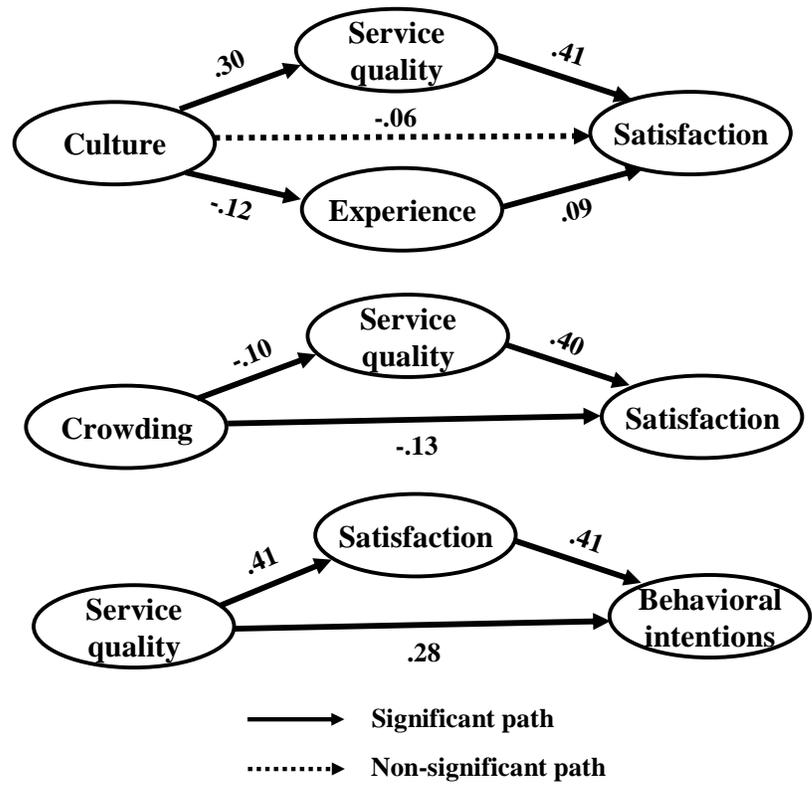
Total Effects in Six-Construct Combined Experience and Crowding Structural Model

Based on Figure 4, the direct, indirect, and total effects of all endogenous and exogenous variables in the experience and crowding combined structural model are reported in Table 21. Direct effects are the influences of one variable on another that are not mediated by any other variable (Kline, 1998). Indirect effects are ones that are mediated by at least one other variable, and total effects are the sum of direct and indirect effects. Indirect effects are estimated statistically as the products of the standardized direct effects that comprised them. For example, the standardized indirect effect of crowding on behavioral intentions through service quality and satisfaction is the product of -.09 (crowding → service quality), .40 (service quality → satisfaction), and .40 (satisfaction → behavioral intentions), or (-.09) (.40) (.40) = -.0144. Also, another indirect effect of crowding on behavioral intentions through simply satisfaction is the product of -.12 (crowding → satisfaction) and .40 (satisfaction → behavioral intentions), or (-.12) (.40) = -.048. Therefore, the indirect effect of crowding on behavioral intentions is -.0144 plus -.048 = -.062.

Overall, the total effects of all paths showed few major differences from the direct effects in the final six-construct model. This indicated that the contribution of the indirect effect to total effect was small and seemed negligible. However, two unique findings were obtained from the results of the total effect. First, because of the contribution of significantly positive indirect effects, the effect of culture to satisfaction increased significantly. Second, because of the significant contribution of the indirect effect of service quality to behavioral intentions (.160), the total effect of service quality

to behavioral intentions (.45) became higher than the total effect of satisfaction to

behavioral intentions (.40).

Table 21. Direct, indirect and total effects of exogenous and endogenous variables for six-construct combined experience & crowding structural model

| Antecedent Variables | Effect | Affected Variables | | | | |
		Experience	Crowding	Service quality	Satisfaction	Behavioral Intentions
Culture	Direct	−.10	.02	.28	−.04	--
	Indirect	--	--	--	.103	.122
	Total	−.10	.02	.28	.063	.122
Experience	Direct	--	−.02	.01	.09	--
	Indirect	--	--	--	--	.036
	Total	--	−.02	.01	.09	.036
Crowding	Direct	--	--	−.09	−.12	--
	Indirect	--	--	--	−.036	−.062
	Total	--	--	−.09	−.156	−.062
Service quality	Direct	--	--	--	.40	.29
	Indirect	--	--	--	--	.16
	Total	--	--	--	.40	.45
Satisfaction	Direct	--	--	--	--	.40
	Indirect	--	--	--	--	--
	Total	--	--	--	--	.40

Chapter 5: Discussion of Findings

The results of this study include a description of differences in the socio-demographic and trip profiles of multi-ethnic ANF visitors, an exploration of Hofstede's cultural dimensions in a National Forest recreation context, an examination of ethnic differences in perceptions of National Forest's service quality and related variables, and a structural equation model of service quality/satisfaction for multi-ethnic National Forest visitors. After discussing these findings, I will discuss the implication for forest recreation management and future research.

Socio-Demographic Profile Differences Among Ethnic Groups

All the socio-demographic variables in this study were significantly different among ethnic groups. This confirms that the ANF recreational users are not a homogeneous population. Hispanic-Americans tended to be different from Anglo-Americans and Asian-Americans, particularly with respect to the education, household income, and number of children (21 or below) living in the household. Furthermore, Hispanic-Americans were likely to be younger, and second generation Americans. Hispanic-Americans woman were more likely to be full-time homemakers. Asian-Americans reported that their families had lived in the U.S. for fewer generations than the Anglo-Americans' families, but the socio-demographic profiles of these two groups were otherwise similar. This suggests that the Asian-Americans respondents may be quite well assimilated into the dominant Anglo-American society.

Trip Profile Differences Among Ethnic Groups

Unlike the socio-demographic profile, the trip profiles of Hispanic-Americans and Asian-Americans seemed to be similar, but differed from those of the culturally dominant

Anglo-Americans. For example, compared to Hispanic-Americans and Asian-Americans, Anglo-Americans tended to travel farther to visit the ANF and to visit other outdoor recreation areas more often, and were more likely to make overnight trips. The trip profile differences seemed consistent with most former research (e.g., Floyd, Outley, Bixler, & Hammitt, 1995; Washburne & Wall, 1980) that concluded Anglo-Americans tended to participate more in outdoor activities than the minority groups.

Hofstede's Cultural Dimensions in a National Forest Recreation Context

Originally, Hofstede's cultural dimensions (1980, 1984, 1991, 2001) were used to measure work-related values and were based on national cultural differences. Since Hofstede's dimensions have been adopted across various contexts and societies (e.g., Furrer, Liu, & Sudharshan, 2000; Mattila, 1999), they are, to some degree, generalizable. However, in this study, responses to Hofstede's four cultural dimensions did not follow the same patterns found in other studies. Consequently, I was able to create internally consistent indices only for the power distance and masculinity dimensions. One reason may lie in the limitations of Hofstede's study; he only sampled IBM employees. The relatively homogenous sampling of his study was challenged by the heterogeneity of the National Forest visitor sample. Moreover, this study measured the multi-ethnic rather than multi-national cultural differences. Socio-demographic differences among forest visitors, as well as the intra-cultural and inter-cultural differences, might account for the internal inconsistency of indices in this study.

Another reason that responses did not follow the same patterns found in other studies might be because societal norms were not clear regarding cultural differences in the sample (Hofstede, 1984). For example, I found the goodness of fit statistics for the

four-dimension model showed a poor fit according to several indicators (e.g., GFI = 0.797, NFI = 0.695) via confirmatory factor analysis. Norms are activated when certain conditions are met (Hofstede, 2001; Schwartz, 1975). However, when my respondents were asked cultural questions, many objected, saying that those cultural questions were too abstract and unrelated to their forest trip.

Furthermore, Hofstede originally identified four cultural dimensions that were supposed to be largely independent of each other. However, my results often were more highly interrelated across dimensions than within dimensions. This implies that my sample of multi-ethnic National Forest visitors understood the underlying cultural concepts in Hofstede's items (e.g., inequity, interdependency) differently than respondents in other studies. Although they came from different ethnic groups, the National Forest recreation visitors seemed to engage cultural issues in quite different ways. Therefore, these four dimensions needed further analyses to determine their validity in a park and recreation context. My findings are consistent with Hofstede's suggestion that " ….. *my theory of cultural differentiation is like a product of research laboratory, which awaits the efforts of development technicians to elaborate it into something of particular use*" (2001, p. 462). The transformation that he calls for implies continued international and inter-disciplinary development:

> ….. the concepts of four dimensions of national culture should be further underpinned, criticized, and complemented by reference to additional literature, in particular to literature of non-Anglo-Saxon origins. And by exposure to the comments of scholars and practitioners from a variety of backgrounds (Hofstede, 2001, p. 462).

The failure of exploratory factor analysis to identify interpretable cultural dimensions in this study suggested that additional studies are needed. Rather than simply

adopt Hofstede's cultural items to measure forest visitors' cultural differences, further studies should include focus groups to develop a common pool of useful items. When factor analyzed, these items might provide more meaningful dimensions that better fit the specific context.

Culture, Service Quality, and Related Variables Differences Among Ethnic Groups

Culture. Hofstede's power distance cultural dimension showed significant differences among ethnic groups. Compared to Anglo-Americans and Asian-Americans, Hispanic-Americans were more willing to endorse Hofstede's power distance dimension. These results are consistent with Hofstede's findings (1984, 1991). For example, Hofstede found that power distance of Latin countries (e.g., Mexican) were higher than those of Asian countries (e.g., Japanese). Hispanic-Americans may be more willing to tolerate power hierarchy, tight control, vertical top-down communication, and differentiation by age, gender, family background, education level, race, and occupation.

On the other hand, Hofstede's masculinity dimension showed no significant differences among Anglo-Americans, Asian-Americans, and Hispanic-Americans in this study. This indicates that the gender role of the National Forest visitors tended to be close to neutral (mean of masculinity dimension equaled 3.0) regardless of ethnic background. That is, the dominant value of visitors is neither too masculine nor too feminine. In contrast, this finding differs from Hofstede's (2001) finding that Japan ranked the highest (95) in the Masculinity Index Value, while the countries like United States (62) and Mexico (69) ranked much lower.

Perceived Crowding. There were no significant differences in perceived crowding among ethnic groups. Moreover, in the SEM analysis, I found the path from

culture to crowding to be nonsignificant. Forest visitors perceived similar levels of

crowding regardless of ethnic backgrounds. Similar findings were reported by Chavez

(1993) at two National Forests in southern California. She found no significant

difference between Anglo-Americans and Hispanic-Americans regarding perceived

crowding. In a different context, Evan, Lepore, and Allen (2001) studied the relationship

between housing quality and social relationships in four U.S. metropolitan areas. They

found Asian-Americans and Latin-Americans differed in the way they perceived

crowding in comparison to Anglo-Americans and African-Americans. Moreover, Vaske,

Donnelly, and Heberlein (1980) found that Anglo-Americans, who had been visiting

Apostle Islands National Lakeshore tended to evaluate crowding more negatively than

Asian-Americans, who had begun to visit the area more recently. This seems contrary to

my results. The nonsignificance of perceived crowding in my study might be because

more than 90 percent of the sample was obtained from developed sites. It has been

reported that crowding factors in developed areas might not be as sensitive as in primitive

areas (Lucas, 1980; Manning, Lime, & Freimund, 1996; Stankey, 1973). Further, the

majority of my visitors came from the Los Angeles metropolitan area (mean traveling

distance was 26 miles), and metropolitan residents may be more tolerant of high density

conditions than the general population.

Although crowding did not differ among ethnic groups, I found significant paths

from crowding to service quality and satisfaction in the SEM analysis. Perceived

crowding was negatively correlated with perceived service quality and satisfaction.

Similar relationships among crowding, service quality, and satisfaction were also

reported by Vaske, Donnelly, and Deblinger (1990). In this study and my own, those

who experienced crowding tended to rate service quality lower and report they were less satisfied with their trips.

Experience. Compared to Hispanic-Americans and Asian-Americans, Anglo-Americans tended to visit the ANF and other outdoor recreation areas more often. In other words, Anglo-American tended to be more experienced visitors. This finding is consistent with the dominant research (e.g., Dwyer & Gobster, 1997; Kelly, 1980; Washburne & Wall, 1980) showing that Anglo-Americans tend to participate more often than minority populations in traditional outdoor recreation activities (e.g., hiking, biking). Furthermore, Anglo-Americans tend to travel farther from home and to have fewer children in their household (i.e., tend to be more mobile and flexible) than the other two ethnic groups. Also, Anglo-Americans tend to stay in the U.S. longer and might have more opportunities visiting the ANF. This might relate to why Anglo-Americans tend to visit the ANF more often.

Social Group. There were no significant findings regarding visitors traveling alone, with family, with friend, or with family and friend among ethnic groups in this study. Similar results were reported by Li, Burns, Zinn, and Graefe (2002) in their study of Columbia River Gorge National Scenic Area visitors. However, the dominant study findings concluded that compared to Whites, minority groups tended to participate in larger groups of extended family and/or friends, and comprised more diverse age groups (Dwyer & Gobster, 1992; Hutchison, 1987; Hutchison & Fidel, 1984; Kelly, 1980; Washburne & Wall, 1980; Wallace & Smith, 1997). The result in this study seemed to contradict those dominant findings. Nevertheless, this result also provided another nonsignificant finding to the ethnic difference literature.

Perceived Service Quality and Satisfaction. I found in this study that Asian-Americans were likely to perceive lower service quality than Anglo-Americans or Hispanic-Americans. This result seemed to be contrary to the finding of Donthu and Yoo (1998) when understood from a cultural perspective. They concluded that high power distance customers tended to endorse the distance between weak and powerful people, and, thus, tended to have lower service quality expectations (i.e., perceived higher service quality) than low power distance customers. Given Donthu and Yoo's conclusion, Hispanic-Americans who tend to be high power distance visitors should have perceived higher service quality by comparison to Anglo-Americans and Asian-Americans. This conclusion seemed to contradict the power distance difference finding among ethnic groups in this study. In contrast, Mattila (1999) found the hedonic dimensions might be more important for Western consumers. Their core values tended to include fun and enjoyment; whereas, Asian values tended to emphasize a sense of duty in life. Furthermore, according to Walker, Deng, and Dieser (2001), Western Europeans or North Americans tended to value individuality, uniqueness, self-expression, and self-promotion; whereas, Asians tended to value social interdependence, communal identity and social conformity, and the promotion of others' goals. Thus, Mattila and Walker et al., imply that Asian-Americans should perceive lower service quality. These studies seemed consistent to my findings, and may explain the perceived service quality difference among ethnic groups in this study.

Because Asian-Americans perceived lower service quality, it is not surprising that they also tended to be less satisfied than Anglo-Americans and Hispanic-Americans with their trip to the ANF. In the SEM analysis, perceived service quality and satisfaction

were highly positively correlated, and perceived lower service quality led to less satisfaction. As a result, because the perception of service quality was lower, Asian-Americans tended to be less satisfied with their trips to the ANF.

Cross-Cultural Service Quality/Satisfaction Model for National Forest Recreation

My four-, five-, and six-construct models all demonstrated good fit to the data (Table 17-20), and exhibited good reliability and validity.

Measurement Models. The factor loadings of constructs in all four measurement models showed the same patterns. The factor loadings in the experience, crowding, service quality, and satisfaction constructs were all beyond .69. In particular, the factor loadings of the three crowding indicators ranged from .92 to .94 in the five-construct crowding and six-construct full models. The high factor loadings indicated evidence of both reliability and validity. The factor loadings of the two indicators in the cultural construct ranged from .61 to .73. in all four measurement models. They seemed to load lower than the experience, crowding, service quality, and satisfaction constructs. However, as reported in the data analysis and results section, the composite reliability, convergent validity, as well as discriminant validity of all four measurement models were demonstrated. Regarding the behavioral intentions construct, four out of five indicators loaded beyond .80. One indicator (My next recreation trip will most likely to be this place) loaded between .52 and .53 in all four measurement models. The reason to keep this indicator was based on the composite reliability analysis, since Cronbach's alpha of this construct showed good findings (.89) without dropping this indicator.

With regard to error variance in the four measurement models, the higher factor loading indicators showed lower error variance as well. The lower error variance

established more confidence in verifying the measurement of construct reliability and validity (Kline, 1998). Among the six constructs, the cultural construct showed relatively higher error variance. This, again, pointed out the problems with Hofstede's cultural measurement as reported earlier in this chapter.

Structural Models. The six-construct combined experience and crowding structural models fit the data well based on the Goodness-of-Fix Indices using LISREL 8.50 software (e.g., GFI = .95, NFI = .96, CFI = .97). Moreover, when the chi-square difference tests were performed between the six-construct measurement and structural models, there were no significant differences of model fit between two models (Tables 20). This implied that the six-construct structural models had a reasonable model fit with the data, similar to the measurement models. The nonsignificant chi-square test results suggested that there was no need for model modification. The results of the chi-square difference tests also demonstrated the explanatory power on the theoretically causal relationship in the six-construct structural models.

Based on the Goodness-of-Fix Indices, all four structural models fit the data almost equally. It was difficult to compare which model fit the data better. For example, values for the Goodness of Fit Index (GFI), the Comparative Fit Index (CFI) as well as the Normed Fit Index (NFI) were the same between models, indicating that all four models were an acceptable fit for the data (Bollen, 1989). For the Root Mean Square Residual (RMR) that measured the average discrepancies between the observed and the model-generated covariances, the value ranged from .036 to .042. The difference was very small among the four structural models. The χ^2/df value that adjusted the inflation of χ^2 due to the large sample size, ranged from 2.94 to 4.42. The six-construct structural

model seemed to fit the data a bit better than the other three structural models. Nevertheless, the χ^2/df value in the four structural models were within the acceptable fit of 2 to 5 (Bollen, 1989).

The structural model starts with a four-construct model from classic marketing research, extended by including experience and crowding recreational factors to the original structural model. Combining six constructs all together, I found the full model fits the data well. This indicates that both experience and crowding factors provided a significant contribution to the final full model. This also supports the important role of crowding and experience factors in transiting the models from the marketing field to the park and recreation context.

Because there were four constructs overlapping in four structural models, the paths that linked the four constructs resulted in similar patterns (Figure 1 & Figure 2). Four paths (culture → service quality, service quality → satisfaction, service quality → behavioral intentions, and satisfaction → behavioral intentions) exhibited significantly positive relationships across all four models. One path, the direct path from culture to satisfaction, was nonsignificant across all four models. In each case, this relationship was fully mediated by other variables.

The difference of the five-construct crowding and experience structural models results from the crowding and experience constructs. In the five-construct crowding structural model, the path from culture to crowding was nonsignificant. In contrast, both paths from crowding to service quality, and the path from crowding to satisfaction were negatively related. On the other hand, in the five-construct experience structural model, both the paths from culture to experience, and the path from experience to satisfaction

were significant, with the former relationship negatively related and the latter one positively related. The path from experience to service quality was nonsignificant in the five-construct experience structure model. In the six-construct full model, one additional path, experience to crowding, was added to the model. However, this path was nonsignificant.

Rather than discuss path by path in the four structural models, I divided each structural model into several mediation effects.

Mediation Effects

The mediation effects in the combined experience and crowding structural model showed similar patterns as those in the four-construct, as well as five-construct experience and crowding model. Since the six-construct combined experience and crowding structural model has included all the mediation effects in four-construct, as well as five-construct experience and crowding structural models, for discussion of mediation effects, I focus on the six-construct full model. The results established four out of the eleven mediation effects in six-construct full model. The path from culture to satisfaction was fully mediated by the dual effects of service quality and experience. The path from crowding to satisfaction was partially mediated by service quality. Also, the path from service quality to behavioral intentions was partially mediated by satisfaction (Figure 5).

The path of culture to satisfaction was fully mediated by the dual effects of service quality and experience. This indicates that both service quality and experience play an important role on the relationship between culture and satisfaction, but the effect of service quality is stronger than experience. This finding was consistent across the four-construct, as well as five-construct experience and crowding models.

First, the path from culture to satisfaction was fully mediated by service quality. This implied that National Forest visitors tended to be satisfied with their visits regardless of different cultural backgrounds. However, individuals from different cultural backgrounds did differ in their perception of service quality. For example, cultures with more power distance (e.g., Hispanic-Americans) tended to perceive higher service quality. In cultures with a large power distance, such distance is both expected and desired. Because some concrete regulations (e.g., rules and regulation enforcement) helped to maintain an order of distance, there were considerable differences between the behavior of weak visitors and the powerful service providers. These findings are important in the evaluation of service quality (Furrer, Liu, & Sudharshan, 2000). Also, National Forest Service officers or rangers often have some kind of power over their visitors that results from their expertise, professional skills, and/or equipment (e.g., the rangers in National Forest are usually equipped with firearms). They seemed to maintain a certain distance with the visitors. From these points, the culture which tended to endorse such power distance was likely to perceive higher service quality. Consequently, the perception of higher service quality resulted in more satisfaction (e.g., Oliver, 1980).

In this mediation effect, I also found that the more masculine culture tended to perceive high service quality. This finding seemed to contradict Hofstede's conclusion about culture's consequences. According to Hofstede (1984), a masculine culture tends to be tough, assertive, and ambitious. As a result, more masculine oriented people were likely to have higher expectations for their trip to the National Forest but perceived lower service quality. Furthermore, Hofstede (2001) argued that the more feminine oriented people tended to "cooperate" with the service providers, and tended to build a "friendly

atmosphere" with their service providers. Consequently, this cooperation led to the perception of high service quality and satisfaction.

Compared to the direct relationship between culture and perceived service quality, why did culture influence satisfaction indirectly? The dominant literature reported that compared to service quality, satisfaction was likely to involve more affective and emotional evaluation procedures, and was likely to involve more subjective judgment (e.g., Iacobucci, Grayson, & Ostrom, 1994; Oh, 1999). However, according to Hofstede (2001), higher masculinity also implies lower norms for emotional stability. Thus, the masculine culture tends to involve more cognitive and rational judgment and to be more objective about passing judgment. Combining the concept of service quality and satisfaction difference with Hofstede's findings, a masculine culture tends to be closer to the scope of the service quality concept than the satisfaction concept. These differences between service quality, satisfaction, and culture might account for the points why the path from culture to satisfaction was fully mediated by service quality rather than partially mediated. On the other hand, Wakefield and Blodgett (1999) found that customer reactions to the tangible physical environment (e.g., National Forest in this study) might be more emotional than cognitive, particularly when involving hedonic consumption. Based on the conclusion of Wakefield and Blodgett, satisfaction was more likely to be more prominent than perception of service quality in the context of National Forest recreation. This finding seemed to contradict the finding of full mediation of culture → service quality → satisfaction in this study.

For the management perspective, National Forest managers need to understand the diverse cultural background of visitors they serve, so as to customize their services to

an increasingly diverse clientele, since higher service quality tends to result in higher customer satisfaction.

Second, the path from culture to satisfaction that was also fully mediated by experience. Experience served as the mediator in the full mediation effect model. This finding implied that National Forest visitors tended to be satisfied with their visits regardless of different cultural backgrounds. However, visitors with different levels of experience did differ with the level of satisfaction. Such different level of experience actually came from the cultural difference. The results suggested that those visitors with lower power distance or lower masculine characteristics tended to visit Angels National Forest or other outdoor recreation areas more often. As a consequence, the more visits, the more satisfaction, though the relationship was relatively small (beta = .09).

The reason that lower masculine visitors tended to visit more often still remains unknown. However, this unknown might occur because less masculine visitors were likely to participate in different activities (e.g., sport club, environmental trips). According to Hofstede (2001), those people from more feminine and tender cultures are often less ego oriented and, thus, have less personal expectations about the trip. On the other hand, this study found that the more experience, the more satisfaction. This seemed contrary to previous studies (Li, Graefe, Burns, & Zinn, 2002) that concluded that with more experience visitors to Columbia River Gorge National Scenic Area tended to be more familiar with the setting, to build more specific expectations, to be more sensitive to the setting, as well as become less tolerant, and less satisfied.

Third, this study found the path from crowding to satisfaction was partially mediated by service quality. Perceived service quality served as a mediator variable

affecting satisfaction, which played both a direct role and an indirect role in this partial

mediation model. The finding was consistent with five-construct crowding structural

models. In this mediation effect, perceived crowding had significantly negative effects

on both perceived service quality and satisfaction. This result was consistent with the

dominant findings regarding the relationship between perceived crowding and

satisfaction (e.g., Shelby, 1980). Compared to the path from service quality to

satisfaction, the path from crowding to service quality, and the path from crowding to

satisfaction were relatively weakly related. This might help to explain that even with two

negative effects that influenced satisfaction, the satisfaction level of those National

Forest visitors remained high (the mean satisfaction level was 6.8 in a 9.0 point scale).

Fourth, this study found the path from service quality to behavioral intentions was

partially mediated by satisfaction. This finding was consistent across the four-construct,

as well as five-construct experience and crowding models. This result showed that

service quality and satisfaction almost had equal importance on behavioral intentions.

The partial mediation effect suggested that not only service quality, but also satisfaction

influenced behavioral intentions. These positive relationships have been heavily cited

and supported in several previous studies (e.g., Zeithaml et al., 1996). Obviously, service

quality and satisfaction constructs contributed to the behavioral intentions construct

independently. According to Taylor, and Baker (1994), service quality was more likely

to be the perspective of managers, since managers managed the services for customers.

Satisfaction was the evaluation of the customers, so satisfaction was more likely in the

domain of customers. Also, satisfaction is concerned about the short-term and the

specific transaction; on the other hand, service quality is more general, long–term,

enduring and global (Oliver, 1980). The results in this study supported the former

findings, and demonstrated that service quality and satisfaction were different constructs.

Finally, the study confirmed that high service quality and visitor satisfaction resulted in

repeat visitation and positive word-of-mouth (Parasuraman et al., 1996).

Among the four established mediation effects, two mediation effects, culture →

service quality → satisfaction, service quality → satisfaction → behavioral intentions,

were consistent across four structural models. In particular, the results indicated that

even the experience construct was replaced by the crowding construct, and the same

patterns of full and partial mediation effects were found in both the five-construct

experience and crowding structural models. Evidence also highlighted the role of

perceived service quality in the relationship between culture and satisfaction, and further

pointed out that service quality and satisfaction were different constructs that have

positive effects on behavioral intentions. In other words, the findings demonstrated the

importance of understanding cultural differences of perceived service quality.

Specifically, high service quality eventually resulted in high satisfaction, and both service

quality and satisfaction contributed to repeat visitation and positive word-of-mouth.

Different from four-construct and five-construct models, one additional path,

experience → crowding, was added to the six-construct model. This finding implied that

perceived crowding was unrelated to the level of experience. In other words, visitors

perceived similar level of crowding regardless of whether they were frequent or less

frequent visitors. This finding seemed to contradict to the bulk of the previously

empirical studies which supported the notion that the more experienced users were more

sensitive to higher use levels (e.g., Ditton, Fedler, & Graefe, 1983; Vaske, Donnely, &

Heberlein, 1980). On the other hand, Stankey (1980) found a similar relationship

between use level/crowding and experience, as did in this study. Furthermore, combining

the previous crowding findings with ethnic and cultural backgrounds in this study,

perceived crowding seemed not related to ethnic and cultural backgrounds, as well as the

experience level.

Total Effect of Six-Construct Combined Experience and Crowding Structural Model.

The results indicated that the total effects of all paths did not show major

differences from the direct effects in the model. Those direct effect relationships have

been discussed in the former mediation effects section; however, two important findings

will be discussed further.

First, because of the significant contribution of positive indirect effects from

culture to satisfaction, the total effect increased significantly. When analyzed, the

indirect effects between culture and satisfaction actually comprised two indirect effect

paths including culture → service quality → satisfaction, and culture → experience →

satisfaction. The latter indirect effect path did not have significant contribution to the

total effect; however, the first indirect effect path (culture → service quality →

satisfaction) contributed much more to the total effect (.112 = .28 x .40). It seemed that

the indirect effect path via experience did not greatly influence the total effects.

Compared to service quality, experience seemed to be a weaker construct influencing

satisfaction in the model. Also, the finding again pointed out the important role of

perceived service quality as a mediator between culture and satisfaction, as discussed in

the former mediation effects section. Because of this indirect effect, the total effect of

culture to satisfaction (.103) increased significantly; however, it was still lower than the total effect of culture to service (.28).

Second, because of the significant contribution of the indirect effect of service quality to behavioral intentions (beta = .160), the total effect of service quality to behavioral intentions (beta = .45) became slightly higher than the total effect of satisfaction to behavioral intentions (beta = .40). The result might indicate that part of forest visitors' satisfaction actually came from the perception of service quality, since the path relating service quality to satisfaction was relatively strong (beta = .40). This implied that service quality eventually seemed to be a more important influence on behavioral intentions than satisfaction.

Since the concept of service quality tended toward service provider's interests (Iacobucci, Ostrom, & Grayson, 1995) and visitors' satisfaction resulted from how visitors perceived the service provided, managers need to understand what constituted service quality (e.g., what kinds of facilities, services, information, and experience) for their diverse visitors to customize their products and services in ways that will maximize visitor satisfaction. For example, National Forest officials and rangers need to be more courteous and friendly. They should also inform the visitors of more current and easy ways to find information, as well as provide more available and secure recreation opportunities for the convenience of the visiting public.

Conclusions

This study compared service quality/satisfaction and some related variables among ethnic groups, as well as proposed cross-cultural quality/satisfaction theoretical models in the National Forest recreation context. Apart from the previous customer

service and ethnic research, this study explored some unique points, which are detailed below:

1. Traditionally, ethnic research in the United States has focused on comparison between the dominant Anglo-American and minority groups. However, former studies mostly focused on the comparison between non-Hispanic White Americans and African Americans. Later, researchers in this field started to add Hispanic-Americans for comparison among ethnic groups. Very few studies have focused on a comparison among Anglo-Americans, Hispanic-Americans, and Asian-Americans.

2. Most of the former ethnic research has focused on studying the recreation activity patterns and preferences, as well as socio-demographic and trip differences among ethnic groups. Very few studies made an empirical comparison with regard to culture, service quality/satisfaction, and related variables among ethnic groups.

3. This study adopted Hofstede's four cultural dimensions that include power distance, individualism, masculinity, and uncertainty avoidance to measure cultural differences among ethnic groups. I tried to employ Hofstede's cultural dimensions approach to explain service quality/satisfaction differences among ethnic groups in a National Forest recreation context.

4. The study was based on the *theory of ethnicity* that suggested that differences in recreation behavior were a function of subcultural values. Moreover, this study used generations in the U.S. as an intervening variable (controlled the variation in the generations in U.S.) to find the real differences among ethnic groups.

5. Most ethnic studies were based on secondary data analysis, particularly on the topics of socio-demographic and trip profiles. In contrast, this study used an on-site survey for data collecting.

6. This study proposed a cross-cultural service quality/satisfaction theoretical model in the National Forest recreation context. While in the process of analyzing data, the model was split into four structural models. This study provided a starting point for the cross-cultural service quality/satisfaction model and suggested that further research is needed to refine the theoretical models.

7. Based on the cross-cultural service quality/satisfaction theoretical model, I used a mediation effect approach to explore and explain the causal relationships among different constructs (e.g., culture → service quality → satisfaction).

Overall, this study found that the socio-demographic and trip profiles were quite different among Anglo-Americans, Hispanic-American, and Asian-Americans. This implied that the National Forest recreational users were not a homogeneous population. Also, the findings indicated that there did exist cultural, service quality, satisfaction, as well as experiential differences among ethnic groups. Hispanic-Americans were more likely to endorse Hofstede's power distance dimension. In contrast, Asian-Americans seemed to perceive lower service quality and were less satisfied with their trips to the ANF. Also, not surprisingly, Anglo-Americans tended to be more experienced visitors to the ANF. On the other hand, perceived crowding seemed to be consistent across ethnic groups, culture, and level of experience. Finally, I demonstrated consistency between marketing-based models of culture, service quality, and satisfaction while extending these models to account for unique factors in the National Forest recreation context.

The findings also supported the *theory of ethnicity* that found distinct cultural differences among ethnic groups. Indeed, recreation behavior and subcultural factors were complex and could be understood only through consideration of multiple and possibly interrelated influences. Also, the ethnic groups within Anglo-Americans, Hispanic-Americans, as well as Asian-Americans were not simply one huge homogeneous group. As a heterogeneous group, these differences among ethnic groups manifested themselves in different recreation behaviors.

Implications

This study found that Hispanic-Americans and Asian-Americans tended to be less frequent and less experienced visitors, to be day-users, to travel shorter distance from home to the ANF, and, finally, Asian-Americans tended to perceive lower service quality and less satisfied with their trips to the ANF. My study offers many suggestions to management. Managers should insure equal opportunities to visit National Forests by promoting more metropolitan edge areas closer to the minority populations. Also, I would suggest that managers provide more day-user oriented facilities (e.g., picnic facilities, bike trails), more information via multiple language brochures (e.g., Spanish, Chinese versions), multiple languages on-site signs, and bilingual volunteers to build more ethnic-friendly ambience for the minority groups, particularly, for those areas that minorities tended to visit more frequently (e.g., Chantry Flat for Hispanic-Americans and Asian-Americans; Oak Picnic area for Hispanic-Americans). Moreover, because the minority groups tended to have less experience and perceive lower service quality, managers should emphasize more interpretive programs, as well as more efficient,

friendly, and effective communication in National Forests for the convenience of those minority groups.

On the other hand, Anglo-American visitors tended to be older, to be low power distance oriented, to have less children in the household, and, finally, tended to stay at campgrounds for their overnight trips. When marketing to this segment of ethnic groups, managers should focus on designing the recreation facilities to better meet their recreation-related values (e.g., improve the campground facilities as well as increase more non-intensive use purpose facilities); developing facilities for smaller group purposes; and, finally, developing programs with more interactions between Forest Service officials, rangers, and visitors.

Finally, in order to serve an increasingly diverse clientele, National Forest managers need to understand the diverse cultural background of visitors they serve, to focus on visitor-defined value (i.e., what they regard as important) facilities, to enable front-line employees and volunteers to meet and exceed visitors' expectations, as well as to achieve the maximum degree of service quality and visitor satisfaction. In other words, it is important for managers to customize their services to their diverse visitors, since higher service quality consequently results in higher customer satisfaction.

In the effort to achieve the maximum degree of quality and customer satisfaction, the following steps are suggested (Kraus & Curtis, 2000):

1. The need to refocus the organization on customer-defined values (i.e., what ethnic groups regarded as important);

2. To demand responsiveness from all levels of the organization, from top executives to front-line employees;

3. To enable front-line employees to meet and exceed ethnically diverse customers' expectations;

4. To create and maintain cross-organization as well as cross-cultural teamwork, to achieve maximum quality and achieve customer satisfaction;

5. To continuously diagnose and improve ethnic-oriented value-serving performance; and

6. To allow employee discretion within a well-defined set of parameters or guidelines.

Study Limitations and Further Research

1. Hofstede's cultural dimensions (1980, 1984, 1991, 2001) were used to measure work-related values and were based on the national culture differences. Further research should use other scales (e.g., develop from focus group and factor analysis) to measure ethnic cultural differences in a recreation and park context.

2. In the cross-cultural service quality/satisfaction models, this study employed crowding and experience concepts to measure a recreational factor. Further studies might include more factors (e.g., motivation, conflict) to better represent the recreation and park context, as well as to develop other implications for the models.

3. Theoretically, satisfaction has emotional components; however, this study used cognitive measure to operationalize satisfaction items. Further research should combine cognitive as well as emotional measure to represent the satisfaction concept.

4. The study compared three ethnic groups, Anglo-Americans, Hispanic-Americans, and Asian-Americans. Further research should include African-Americans since they are the largest minority group in the U.S. Also, further research might focus on the comparison within the minority groups as well as within the specific ethnic group (e.g., compare Chinese-American, Korean-American, and Japanese-American within Asian-Americans).

5. This study adopted SEM analysis and used a mediation effect approach to explain the causal relationships between different concepts (constructs). Further studies might adopt other analysis (e.g., analyze the dimension-specific correlation relationship between cultural and service quality dimensions) that might produce different results and implications.

6. Traditionally, activity preferences and recreation patterns were major approaches for ethnic studies. Further research might combine the activity preferences and recreation patterns as well as service quality/satisfaction concepts to the ethnic research. Such research might produce data that further indicates how culture influences service quality/satisfaction.

7. This study only employed an on-site survey for data collecting to avoid disturbing the participants too long in the forest. The on-site survey questionnaire mainly focused on cultural and service quality factors. Further research might combine an on-site survey with a follow-up mail questionnaire survey that asked the respondents more questions to have more detailed items to represent the other concepts for further analysis (e.g., satisfaction).

8. This study found that the path from culture to satisfaction fully mediated by service quality consistently established in the four structural models. Further research might test this mediation affect across different contexts (e.g., in private sector context), as well as different models (e.g., adding motivation to represent recreation factors). This might help to verify the influence of culture to service quality and satisfaction.

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APPENDICES

APPENDIX A.

Survey Introduction Protocol

About This National Forest Customer Service Survey

This is a short survey designed to help us understand the recreation patterns and management preferences of National Forest visitors. I hope you will be willing to participate. You must be 18 years of age or older to participate. Completing a questionnaire takes about 10 minutes. Your participation is completely voluntary. You may skip any question you do not want to answer or stop answering questions at any time. All your answers will be kept confidential, and we will not record anything about your identity. By completing and returning a questionnaire, you have indicated your consent to participate in the survey. The survey is being conducted by Penn State University in cooperation with U.S. Forest Service. If you have questions about the survey, contact Dr. Harry Zinn at the address show below. If you have questions about your rights as a research participant, contact Penn State's Office for Regulatory Compliance at (814) 865-1775. Please feel free to keep this form for future reference.

Esta corta encuesta está diseñada para ayudarle a entender los modelos de recreación y preferencias de manejo que tienen los visitantes a los Bosques Nacionales. Espero que usted pueda participar. Usted debe tener 18 años o más para participar. Le tomará aproximadamente 10 minutos llenar este cuestionario. Su participación es completamente voluntaria. Usted puede evadir cualquier pregunta que no quiera contestar o dejar de contestar las preguntas en cualquier momento. Todas sus contestaciones se mantendrán confidenciales y no se tomará información alguna sobre su identidad. Al completar y enviar este cuestionario, usted estará dando su consentimiento para participar en la encuesta. Esta encuesta es conducida por la Universidad del Estado de Pennsylvania en cooperación con el Servicio Forestal de los Estados Unidos. Si usted tiene alguna pregunta sobre la encuesta, por favor escriba al Dr. Harry Zinn a la dirección que incluimos. Si tiene preguntas sobre sus derechos al participar en esta investigación, llame a la oficina de Acuerdos y Regulaciones al (814) 865-1775. Por favor, siéntase en libertad de guardar esta información para futura referencia.

這是一份短的問卷，旨在幫助了解國家森林遊客之遊憩類型與經營偏好，我希望您能願意參與。您必須是 18 歲以上才能回答問卷。完成這份問卷約需 10 分鐘，您的參與完全是出於自願的。您可以跳過任何您不想回答的問題或隨時停止回答問題。所有您的回答將完全保密，並且不會紀錄您的任何特徵。在您完成這份問卷之時，您已經表示您願意參與研究。這份問卷是由 Penn State University 與 U. S. Forest Service 聯合設計。如果您有任何問題關於這份問卷，請聯絡 Dr. Harry Zinn，住址、電話如下。如果您的問題是關於研究參與者的權利，請聯絡 Penn State's office for Regulatory Compliance，電話是 (814) 865-1775。您也可以保留這頁說明作為以後參考用。

이 설문조사는 National Forest 레크리에이션 방문객들의 양식과 경영에 관한 기호를 이해하려는 목적으로 실시되는 것이므로, 여러분의 참여를 바랍니다. 이 설문조사에 참여하기 위해서는 18 세 이상이어야 하며, 설문지를 완성하는데는 약 10 분이 소요됩니다. 여러분의 참여는 자발적이며 철저한 익명성을 전제로 합니다. 여러분의 이름을 기입하실 필요는 없으며, 여러분의 응답은 다른 응답자들의 것과 함께 일괄처리될 것입니다. 여러분이 설문지를 작성하므로써 이연구에 참여하는 것에 동의함을 나타내는 것입니다. 의문사항이 있으시면 질문하시거나 설문에 답하기 곤란한 경우에는 응답하지 않으셔도 됩니다만, 여러분의 응답 하나하나가 저의 연구에 소중한 자료가 되오니 빠짐없이 성실히 답변해주시면 감사하겠습니다. 이 설문조사는 U.S. Forest Service 와의 협약에 의하여 Penn State University 에 의해 실시되는 것입니다. 만약 이 설문조사에 대해 궁금한 점이 있으시면 아래주소의 Dr. Harry Zinn 앞으로 연락해 주시기 바랍니다. 또한 설문조사의 참여자로서 권한에 관해 의문사항이 있으시면 Penn State's Office for Regulatory Compliance (전화번호: 814-865-1775) 로 연락해 주십시요. 이 종이는 설문조사후 참조용으로서 여러분이 간직하셔도 됩니다.

For more information about this questionnaire contact:	
Dr. Harry Zinn, Project Director	
The Pennsylvania State University	Phone: (814) 863-7849
201 Mateer Building	
University Park, PA 16802-1307	E-mail: hzinn@psu.edu

APPENDIX B.

On-Site Survey Questionnaire

NATIONAL FOREST CUSTOMER SERVICE SURVEY
ON-SITE VISITOR SURVRY 2002-2003

USDA FOREST SERVICE &
THE PENNSYLVANIA STATE UNIVERSITY

Angeles National Forest _____   San Bernardino National Forest _____   No: _____
Site name: _____   Date: _____

1. Is this your first visit to This place? _____ Yes _____ No
    [If no], a. In what year did you make your first visit to this place? _____ year
           b. Including this trip, about how many times have you visited This place in the last 12 months? _____ times
           c. In a typical year, how many days do you visit This place? _____ days
           d. About how many times have you visited Other outdoor recreation areas in the last 12 months? _____ times
           e. In a typical year, how many days do you visit Other outdoor recreation areas? _____ days

2. Is your visit today a day trip _____ or an overnight visit _____? [check one]
        a. In total, how many days (or hours) will this trip be? ____ days ____ hours (if day trip)
        b. [If overnight visit], will you be staying at _____ campground _____ resort or other [Please specify]
        _____

3. Which of the following best describes the composition of your group? [check one]
    _____ Alone _____ Family _____ Friends _____ Family & friends
    _____ Other [Please specify] _____

4. About how far from here do you live? _____ (miles)   What is your home ZIP code _____

Section B: We would like to have your opinions on the following service issues related to this place, please circle one number for each statement that best reflects how you feel.

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. I have access to the place(s) I like to visit.	1	2	3	4	5
2. Facilities are accessible to all visitors.	1	2	3	4	5
3. Trails are clearly marked and signed.	1	2	3	4	5
4. Trails are clean and well maintained.	1	2	3	4	5
5. There are enough campgrounds.	1	2	3	4	5
6. There is enough parking space.	1	2	3	4	5
7. Facilities are convenient.	1	2	3	4	5
8. Facilities are well maintained.	1	2	3	4	5
9. I feel safe and secure here.	1	2	3	4	5
10. Rules and regulations are enforced.	1	2	3	4	5
11.Fees are reasonable.	1	2	3	4	5
12. Forest Service staff make me feel welcome.	1	2	3	4	5
13. Forest Service staff are available.	1	2	3	4	5
14. Forest Service staff are willing to answer questions.	1	2	3	4	5
15. I am treated courteously.	1	2	3	4	5
16. I have the opportunity to make comments/provide feedback to Forest Service.	1	2	3	4	5
17. Comprehensive information about recreation opportunities is available.	1	2	3	4	5
18. Information about recreation opportunities is easy to find.	1	2	3	4	5
19. Accurate and current information about the area is available.	1	2	3	4	5
20. Information about the natural history of the area is easy to find.	1	2	3	4	5
21. Prices are fair.	1	2	3	4	5
22. Information about safety and emergency is easy to find.	1	2	3	4	5

Section C: We are interested in what you think about the number of people using this area today. Please rate the following items on a scale of 1 to 9, where 1 means that you feel not at all crowded and 9 means that you felt extremely crowded.

1. During your visit to this place, how crowded do other people make you feel?
  NOT AT ALL CROWDED   EXTREMELY CROWDED
    1   2   3   4   5   6   7   8   9
2. How crowded do you feel at the service facilities or areas provided here.
  NOT AT ALL CROWDED   EXTREMELY CROWDED
    1   2   3   4   5   6   7   8   9
3. Overall, how crowded do you feel during your trip to this place?
  NOT AT ALL CROWDED   EXTREMELY CROWDED
    1   2   3   4   5   6   7   8   9

Section D: We would like to know how satisfied you are with your visit to this place. On a scale of 1-9, with 9 being most satisfied, how satisfied are you with this trip to this place?

1. Overall, how satisfied are you with this trip to this place?

NOT AT ALL SATISFIED						EXTREMELY SATISFIED		
1	2	3	4	5	6	7	8	9

2. To what extent does this outdoor recreation trip meet your expectations?

FELL SHORT OF MY EXPECTATIONS						EXCEEDED MY EXPECTATIONS		
1	2	3	4	5	6	7	8	9

3. Compared to other trip experiences to outdoor recreation areas, how would you rate your satisfaction?

LEAST SATISFIED						MOST SATISFIED		
1	2	3	4	5	6	7	8	9

Section E: We would like to have your opinions on the following values. Your answers will help us understand groups of people who share similar recreation preferences. Please circle one number for each statement that best reflects how you feel.

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. Inequalities among people are both expected and desired.	1	2	3	4	5
2. Less powerful people should be dependent on the more powerful.	1	2	3	4	5
3. Inequalities among people should be minimized.	1	2	3	4	5
4. There should be, and there is to some extent, interdependencies between less and more powerful people.	1	2	3	4	5
5. Everyone grows up to look after him/herself and his/her immediate family only.	1	2	3	4	5
6. People are identified independently of the groups they belong to.	1	2	3	4	5
7. An extended family member should be protected by other member in exchange for loyalty.	1	2	3	4	5
8. People are identified by their position in the social networks to which they belong.	1	2	3	4	5
9. Money and material things are important.	1	2	3	4	5
10. Men are supposed to be assertive, ambitious, and tough.	1	2	3	4	5
11. Dominant values in society are the caring for others and preservation.	1	2	3	4	5
12. Both men and woman are allowed to be tender and to be concerned with relationships.	1	2	3	4	5
13. High stress and subjective feeling of anxiety are frequent among people.	1	2	3	4	5
14. Fear of ambiguous situations and of unfamiliar risks is normal.	1	2	3	4	5
15. Uncertainty is a normal feature of life and each day is accepted as it comes.	1	2	3	4	5
16. Emotions should not be shown.	1	2	3	4	5

Section F: Please look at the following statements about the place you are visiting today. Please indicate your level of agreement with each of the statements listed below.

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I would recommend this place to people who seek my advice.	1	2	3	4	5
2. I would tell other people positive things about this place.	1	2	3	4	5
3. I would recommend this place to my friends.	1	2	3	4	5
4. My next recreation trip will most likely be this place.	1	2	3	4	5
5. I would visit this place again.	1	2	3	4	5
6. I consider myself to be a loyal visitor of this place.	1	2	3	4	5
7. If I had to take a trip over again, I would visit other place.	1	2	3	4	5
8. I try to visit this place because it is the best choice for me.	1	2	3	4	5
9. To me, this place is the same as other places.	1	2	3	4	5

Section G: Please tell us a few things about your background and the background of others in your family. *Remember, all this information is strictly confidential and is never linked with your name.*

1. What is your gender?   Female _____   Male _____

    What is your age? _____

    What is your marital status?

    _____ Married _____ Single   _____ Divorced   _____ Widowed

    How many children (21 or under) live in your household? _____

    What cultural group do you most closely identify with?

_____ African American	_____ Filipino American
_____ American Indian	_____ Hispanic American
_____ Anglo American	_____ Korean American
_____ Central American	_____ Mexican American
_____ Chinese American	_____ Vietnamese American
_____ Taiwanese American	_____ Other (please specify)

    What language do you speak at home?

    _____ English   _____ Spanish   Other _____

    What language do you read most of time?

    _____ English   _____ Spanish   Other _____

    a. What country were you born in? _____

    b. If you were born outside the U.S., how many years have you lived in the U.S.? _____ years.

    c. If you were born in U.S., which of the following best describes your family history? (Check one.)

    _____   In my family, I'm part of the 1st generation born in the U.S.
    _____   In my family, I'm part of the 2nd generation born in the U.S.
    _____   In my family, I'm part of the 3rd generation born in the U.S.
    _____   In my family, 4 generations or more have been born in the U.S.
    _____   Other (please explain) _____

    Please indicate your current employment status:

    _____ Employed outside the home   Occupation: _____
    _____ Full-time homemaker
    _____ Retired → Previous occupation: _____
    _____ Student → _____ full time _____ part time
    _____ Not currently employed`

    What is the highest level of education you completed?

_____	Did not complete high school	_____	College degree
_____	High school diploma/GED	_____	Some graduate work
_____	Attended technical or business school	_____	Graduate degree
_____	Some college		

    What was your total household income (before taxes) in 2000?

____ $Less than $20,000	____ $20,000 - $34,999	____ $35,000 - $49,999
____ $50,000 - $64,999	____ $65,000 - $79,999	____ $80,000 or more

Vita

The author was born in Changhwa, Taiwan, in 1963. In 1982, the author was admitted to National Chung-Hsing University, Department of Forestry, in Taiwan, and earned a Bachelor degree of Science in 1986, with an emphasis in Forest Recreation. In 1989, the author entered Purdue University, Department of Forestry and Natural Resource, worked as a research assistant under the instruction of Dr. Douglas Knudson, with an emphasis in Outdoor Recreation. In 1991, the author earned a Master degree of Science from Purdue University and started to work as a specialist for the Taiwan Tourism Administration. In 1998, the author was admitted to Penn State University, Leisure Studies program, worked as a research assistant under the instruction of Dr, Harry Zinn, Dr. Alan Graefe, Dr. Deborah Kerstetter, Dr. Karthik Namasivayam, and Dr. Sara Parks, and taken Hotel, Restaurant, and Institutional Management as minor. In 2003, the author earned a Ph.D. degree from Penn State University.

The author's research interests include: cross-cultural comparison of service quality and satisfaction in National Forest recreation, cross-regional comparison of outdoor recreation patterns of older hunters, level and type of use on state forest visitors, YMCA customer service, experience use history and specialization in park and recreation context, state park resource management, and National Visitor Use Monitoring (NVUM) in National Forest. The author could be reached via cxl345@psu.edu, or cxl345@yahoo.com.