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AN ANALYSIS OF THE IMPACT OF SERVICE QUALITY ON SATISFACTION,
VALUE, AND FUTURE INTENTIONS WITHIN CAMPUS RECREATION USING
PERFORMANCE-BASED MEASURES

BY

MATTHEW OTT
BS, George Mason University, 2005

THESIS

Submitted to the University of New Hampshire
in Partial Fulfillment of
the Requirements for the Degree of

Master of Science

in

Recreation Management and Policy

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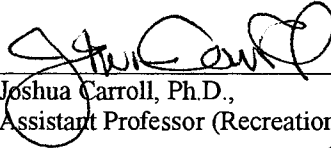
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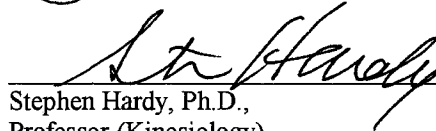
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Thesis Director, Robert Barcelona, Ph.D.
Associate Professor (Recreation Management and Policy)



Joshua Carroll, Ph.D.,
Assistant Professor (Recreation Management and Policy)



Stephen Hardy, Ph.D.,
Professor (Kinesiology)

May 23, 2008

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For what it is worth, I have always enjoyed writing. Honestly, I have. Yet for some reason, I really did not enter into this graduate program with a desire to write a thesis. However, with the encouragement and fervor of one person, my mind was quickly changed. Although “blood was shed” along the way, this person helped to minimize the bleeding. This person is my thesis chair, Dr. Robert Barcelona.

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ABSTRACT

AN ANALYSIS OF THE IMPACT OF SERVICE QUALITY ON SATISFACTION, VALUE, AND FUTURE INTENTIONS WITHIN CAMPUS RECREATION USING PERFORMANCE-BASED MEASURES

by

Matthew Ott

University of New Hampshire, September, 2008

The problem of the study was to examine the relationships between service quality, customer satisfaction, value and future intentions within campus recreation using only the performance section of the Centre for Environmental and Recreation Management-Customer Service Quality (CERM-CSQ) instrument (Howat, Absher, Crilley, & Miline, 1996) and additional questions consistent with the results of a study conducted by Murray and Howat (2002). A total of 248 usable surveys were collected from student users of campus recreation services at a university in the Northeastern region of the United States.

Results of the study indicated that of the three service quality dimensions measured (core, personnel, peripheral), core was the only dimension exhibiting a significant relationship between satisfaction and value. However, significant relationships were found between measurements of value and satisfaction, satisfaction and future intentions, and value and future intentions. These results display the need for further service quality research within campus recreation.

CHAPTER I

INTRODUCTION

Searching through the extensive volumes of marketing literature and empirical research, one can find a litany of different factors that affect and determine the success of a service organization. McCarthy (1960) established that the bedrock marketing principles of product, price, place, and promotion, otherwise known as the “four p’s” should comprise any organization’s marketing mix. Building on the principles set forth in the early marketing literature, researchers have found evidence that there are other factors that hold importance. For example, Lentell (2000) cites Booms and Bitner’s (1981) research and the three additions that they proposed should be added to any organization’s marketing mix:

1. Processes (service operations processes)
2. Participants (service personnel and customers)
3. Physical Evidence (the environment provided by the service outlet and any physical products the service involves). (p. 2)

The additions of these three factors to the marketing literature are in large part indicative of the new focus on the importance of organizational service quality.

In comparison to other widely recognized marketing fundamentals, research centered on the importance of organizational service quality has only started to take shape within the past 25 years. During this span, researchers have made excellent contributions to the literature, exploring the meaning of this intangible, yet important

idea. However, for all of the progress and additions to the research and literature, there is still great discrepancy over how service quality should be defined and furthermore, how it should be measured (Smith, 1995; Buttle, 1996). Questions have surfaced over the use of disconfirmation or attitudinal based models; the number of items and factors within models; and the proper methods of administration (Gronroos, 1984; Parasuraman, Zeithaml, & Berry, 1988; Carman, 1990; Babakus & Boller, 1992; Cronin & Taylor, 1994; Brady & Cronin, 2001). Researchers have been plagued with theoretical, methodological, and operational issues in creating both scales that can be used universally across disciplines and with scales designed to be used within a specific industry to measure service quality (Smith, 1995; Buttle, 1996). Thus continued research is necessary to help scholars and practitioners define and measure service quality.

Past research has been and will continue to be used to create and test models and scales designed to measure service quality in a variety of industries, including the sport and recreation industry. Consistent with the calls for continued research on service quality in other areas (Carman, 1990; Smith, 1995), it is vital for researchers to continue to create, evaluate, and refine definitions and instruments related to organizational service quality making them relevant and applicable to the sport and recreation industry.

The well-established need for continued research on service quality has justified the need for this study. By applying the ideas outlined in the service quality literature from the sport and recreation industry and beyond, this study aims to examine the relationships between the service quality items and factors that have been proposed in prior research to best define service quality and its relationship to other closely associated

outcome variables and determine their importance to campus recreation programs and facilities.

Statement of the Problem

The problem of the study is to examine the relationships between service quality, customer satisfaction, value and future intentions within campus recreation using only the performance section of the Centre for Environmental and Recreation Management-Customer Service Quality (CERM-CSQ) instrument (Howat, Absher, Crilley, & Miline, 1996) and additional questions consistent with the results of a study conducted by Murray and Howat (2002).

Purpose of the Study

The purpose for this study consists of several components. First, the study aims to determine how user's evaluations of service quality performance impacts outcomes that are essential to campus recreation managers, including: perceptions of value, user satisfaction and future intentions. This study aims to gain better understanding on user's perceptions of service quality performance within campus recreation by collecting data from a population of students at a large university located in the Northeastern section of the United States. This campus recreation program offers a wide range of facilities, programs and services making it comparable to other university programs.

This study will attempt to build on previous service quality research within the field of recreation by validating the use of a performance-based service quality instrument designed for use exclusively in campus recreation settings. This study will

examine the statistical significance and correlations between the items and factors of service quality comprising a modified version of the CERM-CSQ instrument, altered for use in a campus recreation setting. The CERM-CSQ instrument designed by Howat et al. (1996) has benefited from repeated use since its inception into the world of service quality research. This instrument was studied to a greater extent by Howat, Murray, and Crilley (1999) and then further elaborated on by Murray and Howat (2002). These researchers ultimately broadened the scope of the research by examining the relationships between service quality and satisfaction, value, future intentions, and loyalty. This study seeks to replicate their study, testing the relationships within their proposed model using only performance-based measures and in an untested environment.

Within the field of sports and recreation, sports managers would benefit in numerous ways. First, research exhibiting the positive properties of a concise, performance-based service quality instrument would rationalize the use of an industry specific instrument that is easy to use, yet still applicable. Second, the information about the relationships between service quality and other outcomes could be used to assist them in understanding their own customers, providing them with the rationale to make service adjustments. While all sectors of the sports and recreation industry will find this information useful and can use this performance-based instrument with their organization, campus recreation managers will find the study most beneficial. Given the lack of research within campus recreation, there are very few instruments available to use to evaluate your organization's performance and satisfaction from a user's perspective. This instrument could be beneficial not only from the standpoint of providing managers

with the rationale for service adjustments, but also to assist in justifying and acquiring public funding (Taylor, Canning, Brailsford, & Rokosz, 2003).

Within academia, this study could further justify the need for continued research on the impact of service quality within the sport and recreation industry. Results from this study may also provoke researchers to continue testing more administrative and respondent friendly performance-based service quality instruments, as well as testing more models examining the relationship between service quality and other outcome variables.

Need for the Study

With the high level of interaction between customers and service quality attributes, it seems only natural that studies would be conducted to measure the impact of service quality on a number of outcomes within recreation and leisure. Crompton and MacKay (1989) were some of the first researchers to measure service quality within the field. The researcher's goal was to examine the claims that all fields could use SERVQUAL to measure service quality (Parasuraman, Zeithaml, & Berry, 1988). Results of the study conducted by Crompton and MacKay (1989) were further elaborated on by Crompton, MacKay, & Fesenmaier (1991). The researchers determined that of the five service quality factors/dimensions proposed by Parasuraman et al. (1988), only four were applicable to recreation (assurance, reliability, responsiveness, and tangibles). These findings were consistent with previous studies within service quality research illustrating the need to modify questions and/or factors within instruments to make them more applicable to the industry where they were being used (Carman, 1990; Cronin &

Taylor, 1992). Studies measuring service qualities in recreation have continued to alter attributes and dimensions within their scales to make them more applicable to different subdivisions within recreation. The result has been an influx of new recreation focused service quality scales and instruments.

Examples of sport and industry specific scales designed to measure service quality are: Quality Excellence of Sports Centres (QUESC) designed by Kim and Kim (1995); the Centre for Environmental and Recreation Management-Customer Service Quality (CERM-CSQ) designed by Howat *et al.* (1996) and further used and refined by Howat *et al.* (1999) and Murray and Howat (2002); and the Scale of Service Quality in Recreational Sport (SSQRS), developed by Ko and Pastore (2005). These industry specific scales all consist of unique factors and items designed to measure service quality.

The CERM-CSQ scale created by Howat *et al.* (1996) has been one of the most widely researched and administered instruments within recreation based service quality research. According to Lentall (2000), the CERM-CSQ instrument has “the advantage of being the product of an extensive development process involving customers (p. 5).” The CERM-CSQ instrument consists of 17 industry specific items factored to represent three service quality factors: Core; Personnel; and Peripheral. Repeated use and testing of the instrument has exhibited its strong reliability, internal consistency, and overall sound psychometric properties (Howat *et al.*, 1999; Murray & Howat, 2002).

Consistent with research on the development of service quality scales and models designed to measure the construct within other industries, it is important that researchers in recreation continue to develop existing models and scales to better understand service quality and the impact that it has on other important outcomes for organizations.

Continued use and development of these instruments within a variety of under-researched areas within the sports and leisure industry, such as campus recreation, would ultimately prove to be beneficial for researchers and practitioners alike as we strive to gain a better understanding of what service quality is; how it can be measured; and how it impacts our organizations.

Delimitations

The scope of the study is delimited to:

1. A non-probability purposeful sample representing the base of core users of a campus recreation facility offering activities and services satisfactory to the scope of the research.
2. A random sample of recreation facility users participating in programs not comprising the facility's group of core users.
3. Responses to the instrument created to examine the customer's perceptions of service quality and its relationships between satisfaction, loyalty, and revisit intent.

Limitations

The study is limited by the following factors:

1. Selected subjects following the instructions provided in completing the survey and returning it within the time frame for this study.
2. The respondent's truthfulness in responding to the questions within the survey.
3. The ability of the respondents to comprehend the questions provided to them and providing appropriate responses.

4. Generalization that this facility is similar to other recreational ice facilities and/or recreation facilities.

Assumptions

The study is based upon the following assumptions:

1. The selected subjects were truthful in their responses and were able to comprehend the questions asked of them within the instrument.
2. The subjects accurately represented the core user group of the facility used in this study.
3. The modified (CERM-CSQ) instrument is designed to measure service quality within recreation and leisure, using industry specific items and factors.
4. The modifications to the CERM-CSQ instrument and use of performance-only measures are in keeping with the recommendations presented within the service quality literature.
5. The subjects who have been selected to participate, will be those who complete the instrument.

Research Questions

The following research questions will be examined:

1. Will there be a significant relationship ($p < .05$) between the characteristics of a campus recreation user (gender, classification/year in school, grade average, proximity to campus recreation, frequency of use) and their perceptions of the three dimensions of service quality?

2. Will there be a significant relationship ($p < .05$) between the three dimensions of service quality (core, personnel, peripheral) and a user's overall satisfaction with campus recreation?
3. Will there be a significant relationship ($p < .05$) between the three dimensions of service quality (core, personnel, peripheral) and a user's perception of value from the services and facilities provided by campus recreation?
4. Will there be a significant relationship ($p < .05$) between a campus recreation user's overall satisfaction with campus recreation and their future intentions?
5. Will there be a significant relationship ($p < .05$) between a campus recreation user's perceptions of value and their overall satisfaction?
6. Will there be a significant relationship ($p < .05$) between a campus recreation user's perceptions of value and their future intentions?

Definitions

The following defines the following terms as they relate to this study:

Campus Recreation. A conglomeration of all recreation facilities, programs, and services provided by colleges and universities to enrich the lives of their users, mainly students (Barcelona and Ross, 2002; Osman, Tian-Cole, and Vessell, 2006).

Demographic Data. Data collected on characteristics of users to assist managers in understanding their customers and/or tailor marketing strategy accordingly to best meet their needs (Cohen and Ramaswamy, 1998; Greenwell, Fink, & Pastore, 2002).

Future Intentions: The likelihood that a service user would recommend a service to others or continue to patronize a service provider (Howat, Murray, and Crilley, 1999; Murray and Howat, 2002).

Satisfaction. A judgment that reflects the degree to which one believes a service feature or experience evokes a positive feeling (Rust and Oliver, 1994; Zeithaml and Bitner, 2003).

Service Quality. A determination made by a service user, of the overall superiority or inferiority of the service components offered by an organization (Parasuraman, Zeithaml, and Berry, 1988; Bitner and Hubbert, 1994).

Value. A universal assessment made by the customer about the utility, or monetary worth, of the services and products offered by a service provider (Zeithaml, 1988; Murray and Howat, 2002).

CHAPTER II

REVIEW OF THE RELATED LITERATURE

Introduction to the Literature

Organizational service quality has been shown to affect customers in numerous ways. Upon engaging in acts of service, customers are affected both psychologically (Gronroos, 1984) and behaviorally (Zeithaml, Berry, & Parasuraman, 1996). Service quality affects customer satisfaction (Bolton and Drew, 1991; Boulding *et al.*, 1993), customer retention and positive word of mouth (Buttle, 1996). Ultimately, the impact of service quality and its role in shaping the customer's perceptions of the company directly impact the company's financial outcome with its relation to costs (Crosby, 1979) and the organization's ability to create and maintain consistent profit margins (Zeithaml et al., 1996; Buzzell & Gale, 1987; Zahorik & Rust, 1992; Rust & Zahorik, 1993).

The importance of service quality on a customer's perceptions of an organization and their future intentions can be crucial in determining the overall success of an organization. Thus, it has been essential for organizations to determine in concrete, measurable terms what service quality is and how it can be measured. Researchers studying service quality over the past twenty years have agreed that this is no easy task given the variance in definitions of this intangible between both customers and organizations.

Service Quality

Lewis and Booms (1983) provided a simple framework in describing service quality by determining that it could be measured by how well an organization's service matched their customer's overall expectations for the service they provided. Both Gronroos (1982, 1984) and Parasuraman, Zeithaml, and Berry (1985, 1988) built upon this framework creating their own variables for measuring service quality using customer's expectations. Brady and Cronin (2001) describe the Gronroos (1982, 1984) service quality model as the Nordic perspective and the Parasuraman *et al.* (1985, 1988) model as the American perspective. Both of these models use the disconfirmation model, comparing expectations to performance to measure service quality. This is consistent with marketing ideals outlined by Churchill (1979); Churchill and Surprenant (1982); Oliver (1977,1980).

Gronroos' (1982, 1984) Nordic perspective of service quality defined service as an event where production and consumption exist and occur at the same time. He determined that ultimately the outcome of these transactions will lead to the customer's perceptions of the quality of service that they received (Gronroos, 1984). His research determined that there were two broad variables within service quality that affected customer perceptions and satisfaction. The first is technical quality, which he defines as the "what" measurement. This variable is the physical product that the customer receives from the transaction. The quality of this item greatly affects the customer's perception of the service that they received. The second variable is the functional quality, or the "how" measurement. The functional quality refers to the way in which the consumer receives the technical quality. To measure service quality, Gronroos (1984) created a six question

survey seeking to determine the importance of technical quality, functional quality and the company's perceived image through traditional marketing means (advertising, etc.) and external influence (word of mouth, etc.) in relation to perceived service quality. The study determined that functional quality influenced by marketing is extremely important and that organizations must deliver on promises made about service quality (Gronroos, 1984). Theoretically Gronroos' models (1982, 1984) provided an early definition for service quality and attempted to determine how it could be measured with two simplistic variables. It provided the theoretical framework for the American perspective. Parasuraman, Zeithaml, and Berry (1985) created the model and instrument that has shaped and directed the future of service quality research for the past twenty years (Smith, 1995; Carman, 1990).

Building on service quality research from the Nordic ideas proposed by Gronroos (1982, 1984), Parasuraman, Zeithaml, and Berry (1985) started to define additional variables that impact the expectations and perceptions of consumers in relation to service quality. In their early research, Parasuraman et al. (1985) identified ten overlapping dimensions that they determined could be used to define service quality from a customer's perspective. These ten dimensions were: tangibles, reliability, responsiveness, communication, credibility, security, competence, courtesy, understanding/knowing the customer, and access (Parasuraman et al., 1985). A scale was created using Churchill's (1979) recommendations on scale development amongst these ten dimensions.

The instrument was comprised of two sections. The first section measured the customer's expectations (E) of the services that would be provided by asking for the level

of service they expect from organizations that offer the same services. The second measured the customer's perceptions of the organization's performance (P) in providing service by asking for their perceptions about the specific organization. Each section contained 97 questions (194 total), with approximately 10 questions from each dimension, in each section, to be measured on a Likert Scale ranging from 1 – Strongly Disagree to 7-Strongly Agree. The researchers then measured quality (Q) by using gap analysis with $Q = P - E$ (Parasuraman *et al.*, 1985;1988). The result was an instrument that was designed to measure the customer's perceived service quality of an organization.

The instrument was tested amongst a variety of disciplines and fields, and the reliability of the scale and underlying dimensions were measured by analyzing the Cronbach's alpha values. Questions with low alpha values and low item to total correlations were ultimately dropped (Parasuraman et al., 1988). The result of the first sequence of statistical testing was a reduction in total questions from 97 to 54. These 54 questions were still to be representative of the ten proposed dimensions of service quality used in the original instrument (Parasuraman et al., 1985, 1988).

To further refine the instrument, Parasuraman et al. (1985, 1988) used factor analysis consistent with procedures outlined by Harman (1967) to examine the correlations between the ten dimensions. Five of the ten dimensions (tangibles, reliability, responsiveness, understanding/knowing customers and access) remained distinct (Parasuraman et al., 1988). The five remaining dimensions (communication, credibility, security, competence and courtesy) were separated into two new dimensions. The result was a reduction from ten dimensions of service quality to seven (Parasuraman et al., 1988).

Parasuraman et al. (1988) tested this new instrument once again amongst four different service oriented organizations. In their second round of statistical testing, following the same procedures as the first round, more refinements and subtractions were made. The result was the final instrument, which we now know as SERVQUAL.

SERVQUAL

SERVQUAL is a 22-question scale representing five dimensions, or factors, of service quality: tangibles, reliability, responsiveness, assurance, and empathy (Parasuraman et al., 1988). The following summarizes each of the five dimensions from SERVQUAL (Parasuraman et al., 1988:

Tangibles:	Physical facilities, equipment, and appearance of personnel
Reliability:	Ability to perform the promised service dependably and accurately
Responsiveness:	Willingness to help customers and provide prompt service
Assurance:	Knowledge and courtesy of employees and their ability to inspire trust and confidence
Empathy:	Caring, individualized attention the firm provides its customers

According to Parasuraman et al. (1988), this instrument was designed to be used by a variety of different service organizations with good reliability. The researchers contend that their 22-item scale and five service quality dimensions provide a basic template for service quality research (Parasuraman et al., 1988). Aside from its ability to

be used by a wide variety of organizational disciplines, the researchers have proposed numerous different applications for the SERVQUAL instrument.

Analysis of SERVQUAL

SERVQUAL's use of the disconfirmation paradigm and subsequently the use of difference or gap scores to conceptualize service quality have been criticized by numerous researchers (Babakus & Boller, 1992; Cronin & Taylor, 1992; 1994; Brown et al. 1993; Teas, 1993; Iacobucci et al. 1994, Smith, 1995, Buttle, 1996). Smith (1995) states that these researchers believe that the use of difference scores in service quality research should be avoided due to the problems with reliability, discriminant validity, spurious correlations and variance restriction.

One of its proposed inadequacies is that SERVQUAL is built on a satisfaction paradigm rather than an attitudinal paradigm (Bolton & Drew, 1991; Cronin & Taylor, 1992; Bakabus & Boller, 1992; Iacobucci et al., 1994). Bolton and Drew (1991) claim that the use of the disconfirmation paradigm in service research does not define a customer's perception of service quality. Cronin and Taylor (1992) agree, suggesting that a customer's perception of service quality is an attitude that can be determined by measuring performance perceptions alone.

Other researchers who have questioned the use of the disconfirmation paradigm have also questioned the utility of using gap or difference scores in operationalizing service quality and in many cases these two constructs are analogous (Cronin & Taylor, 1994). Psychometric issues in the form of reliability, discriminant validity and variance restriction have manifested themselves within gap analysis measures employed by

instruments such as SERVQUAL to measure service quality (Brown, Churchill, and Peter, 1993). The researchers contend that reliability issues exist in the certainty that items will be positively correlated in the difference score, given the fact that the two measurements determining the score came from the same respondent. These issues with the reliability ultimately lead to issues with the discriminant validity in gap analysis, because correlation levels between the components are always high. (Brown et al., 1993).

Researchers have questioned the ambiguity in the definition of the word “expectation” within the first component of the SERVQUAL scale. This lack of clear definition may result in leading respondents to create individualized interpretations of what they perceive the expectations portion of the SERVQUAL scale is measuring. Teas (1993) believes that respondents’ interpretation of expectations vary from person to person and can be easily misinterpreted which could lead to variance in the reported expectation scores. Using principles from the research provided by Teas (1993), Buttle (1996) outlines how these misinterpretations could materialize when respondents complete the expectations section of SERVQUAL. Buttle (1996) has determined the following mistakes may occur: respondents may confuse expectation with importance; they may predict the performance they are going to receive; they may determine what would be ideal; respond based on what they feel performance should be; determine expected performance in relation to cost; or the lowest tolerable level of performance. Customer’s responses on an expectation scale may also be affected by other conditions and previous experiences, rather than their expectations alone (Gronroos, 1993; Iacobucci et al., 1994; Genestre & Herbig, 1994). For example, if the person has received poor

service from another service provider, they may expect that all service providers within this industry provide poor service, leading to low expectation scores, or vice versa (Buttle, 1996). Lack of experience may also prohibit respondents from accurately assessing the expectations portion of the battery (Iacobucci et al., 1994). There are a great variety of variances within the expectations section of SERVQUAL that could greatly affect the quality of the data and the validity of the results.

While the ambiguity of the expectations section could lead to a variety of interpretations, research has shown that respondents generally choose a score consistent with relatively high expectations of service quality. This tendency could be a result of the respondent answering the expectation or performance questions under the influence of social norms, which dictate that service expectations should be high (Carman, 1990; Babakus & Inhofe, 1991). This was exhibited in the mean expectation scores reported by Parasuraman *et al.* (1988, 1991) in the testing of the SERVQUAL instrument. On the seven-point scale, most of the scores were above six, and the overall mean of the expectations portion was 6.22 (Buttle, 1996; Smith, 1995).

Variance restriction then becomes an issue, as expected service levels will almost always be higher than their perceived performance (Brown, Churchill, & Peter, 1993; Taylor & Cronin, 1994). When expectations scores greatly exceed the scores measuring the performance of service quality in the organization, negative gap scores will generally occur (Brown et al., 1993; Teas, 1993; Smith, 1995). These negative scores may be a result of response bias or a misinterpretation of the definition of the expectations scale. Such errors could mislead organizations into believing that they are not performing to the expectations of their customers, or other organizations within their industry.

To avoid such statistical dilemmas, researchers have proposed the shift from a confirmation model to an attitudinal model. In an attitudinal model, only measures of service performance are measured. By using performance scores alone to measure service quality, psychometric issues surrounding the use of the gap model (subtracting expectations from performance) are eliminated. At the forefront of attitudinal performance based research are Cronin and Taylor (1992).

There is extensive evidence in the literature to reinforce claims by Cronin and Taylor (1992) that organizations need only use perception scores alone in measuring service quality. Bakabus and Boller (1992) believe that difference scores do not provide organizations with more insight than perception scores alone would. Brown et al. (1993) found that the perceptions score alone performed as well as the difference score in regards to psychometric and statistical considerations with many of the criteria they studied.

The questions and criticisms surrounding SERVQUAL's ability to effectively measure service quality were not limited to conceptual and theoretical constructs. Many researchers also questioned the operational and methodological components of the instrument, specifically the claims that the instrument could be used interchangeably by an infinite number of service industries.

One of the most studied and ultimately contested claims made by Parasuraman et al. in regards to SERVQUAL involved the universal application of the instrument. Parasuraman et al. (1988) claimed that the SERVQUAL scale was a skeleton that could be used with little modification across different service disciplines. Most researchers have formed a consensus that the instrument must be altered in some form. Finn and

Lamb (1991), Carman(1990), and Brown et al. (1993) all agree that SERVQUAL questions should be altered (by changing the wording of the questions or adding/subtracting questions) to make it more applicable to the service that is being measured. The content and quantity of dimensions or factors to be measured in determining service quality may also vary greatly between industries.

The five dimensions of service quality presented by Parasuraman et al. (1988), has often been challenged. Bakabus and Boller (1992) found in their research that the number of factors measuring service quality varies greatly between industries, with some industries requiring just one or few factors and other requiring more complex multidimensional scales. For example, Carman (1990) found more that more dimensions of service quality were important across a variety of industries. On the other hand, Crompton and MacKay (1989) and Howat et al. (1996) found that within the recreation and leisure industries, fewer dimensions might prove useful.

There may even be the need to use different dimensions within the same industry. Teas (1993, 1994) determined that different organizations within the same discipline may experience an expectation ratings change between items and dimensions although they are within the same discipline.

While researchers have not been able to reach a consensus on the content or quantity of items and dimensions within service quality scales, they have been able to concur that they often vary between industries. Sometimes discrepancies even exist within the same industry. To ensure that scales measuring service quality are acceptable, Carman (1990) recommends that researchers and practitioners perform validity and

reliability checks on all items and factors before a full-scale implementation of the instrument are put into use.

Researchers have also questioned the use of both positively and negatively worded questions within service quality research (Carman, 1990; Babakus & Boller, 1992; Babakus & Mankins, 1992). While the method was originally instituted by Parasuraman et al., (1988) to decrease instances of response bias and was consistent with the research of Churchill (1979), researchers have found that the structure of the questions may confuse respondents. Babakus and Boller (1992) found that positive and negative questions were loaded differently and that their use within both sections of SERVQUAL ultimately had resulted in problems with data quality. This in turn, had a negative effect on the validity of the gap scores. Ultimately, Parasuraman, Zeithaml, and Berry (1994) revised the SERVQUAL instrument to eliminate the use of negative statements and instruments measuring service quality have ultimately followed suit (Buttle, 1996).

The recommended administration of the SERVQUAL instrument has also been a cause for concern. It is implied that Parasuraman et al. (1988) assumed that both the expectation and performance sections of the SERVQUAL instrument would be completed by the respondent at one data collection point (Smith, 1995). Researchers have found two problems in regards to these methods. The first is that respondents often lose interest in completing the instrument, or become confused when completing both the expectations and the performance sections, thus leading to unsatisfactory data (Bouman & van der Wiele, 1992; Buttle, 1996). Carman (1990) states that collecting expectations before the service experience, followed by the performance battery afterwards is

unrealistic and impractical for researchers. Gronroos' (1993) research added to the questions regarding the methodology and administration, stating that he did not see the utility in collecting both measures after the service encounter had occurred.

Researchers have proposed several different administrative actions to alleviate this methodological issue. Carman (1990) has recommended that the structure of the instrument be changed so that both the expectations and performance sections can be measured with one question. Carman (1990) provides this example:

“This visual appeal of XYZ’s facilities are (much better, better, about the same, worse, much worse) than I expected.” (p. 48)

Another option that has been proposed by numerous researchers regards the complete abandonment of the expectation section all together (Carman, 1990; Bolton & Drew, 1991; Babakus & Boller, 1992; Cronin & Taylor, 1992; Teas, 1993; Smith, 1995; Buttle, 1996). Given the empirical and conceptual challenges illustrated by researchers, this suggestion has led to the development of new scales that measure service quality by measuring only perceptions of service performance.

SERVPERF and Performance-Based Measurements of Service Quality

The numerous questions regarding SERVQUAL’s ability to effectively measure quality has exhibited the need for researchers to develop alternative methods of measuring the construct of service quality. One such measure that has emerged amidst these criticisms is SERVPERF. Consistent with the prior research and literature within the field of marketing and service quality (Churchill & Surprenant, 1982; Woodruff, Cadotte, & Jenkins, 1983), Cronin and Taylor (1992) have abandoned the

disconfirmation model used by Parasuraman, Zeithaml, and Berry (1985, 1988, 1994) and have adopted an attitudinal model to measure service quality. Their model, SERVPERF, borrows 21 of the 22 items of the original scale developed by Parasuraman et al. (1988) used within their SERVQUAL model. Dimensional statistical testing did not show good fit between the factors comprising SERVQUAL's five-factor RATER (Responsiveness, Assurance, Tangibles, Empathy, Reliability) scale and ultimately the researchers decided that only one dimension or factor was necessary to measure service quality. The SERVPERF instrument was tested against SERVQUAL in four industries. Statistical results showed that SERVQUAL exhibited good fit in two of the four industries, while SERVPERF exhibited excellent fit in all four categories (Cronin & Taylor, 1992).

In addition to amending the service quality measurements, the researchers added three questions designed to measure relationships between service quality, customer satisfaction, and future purchase intentions. Using only the SERVPERF instrument, their intent was to prove that service quality was an antecedent of satisfaction and that the two combined would impact future purchase intentions within all four industries that they studied. Statistical testing confirmed the connections between service quality and satisfaction as well as connections between customer satisfaction and purchase intentions within all four industries with statistical significance equal or greater to the .05 level. They did not find a statistically significant relationship between service quality and future purchase intentions.

With SERVPERF, Cronin and Taylor (1992) have provided researchers with another scale to measure organizational service quality. This scale addresses many of the

conceptual concerns raised with the SERVQUAL scale developed by Parasuraman et al. (1985; 1988; 1994). SERVQUAL's use of the attitudinal performance theory in exchange for the disconfirmation model used by Parasuraman et al. (1988) and SERVQUAL is the basis for its claims that the instrument is superior in terms of validity. Furthermore, the scale appears to be more complimentary to practitioners and respondents alike. By using only the performance-based battery, the methodological questions raised by the administration of SERVQUAL's two parts are all but eliminated. Moving to a one-stage administration is also more practical for service organizations in all industries. By consisting of only one section and 24 questions, the instrument is ultimately less cumbersome and confusing for respondents and should reduce respondent fatigue and response biases and/or errors.

The researchers (Cronin & Taylor, 1992; 1994) commend Parasuraman et al. (1985, 1988, 1994) on their contribution to the service quality literature. However, they ultimately claim that SERVQUAL and attitudinal-based service quality research is superior to the SERVQUAL and its use of the disconfirmation paradigm. Ultimately, Cronin and Taylor (1992) believe that much like the earlier versions of SERVQUAL, their model and instrument must be studied amongst numerous disciplines to determine its effectiveness. This has led to continued research on performance-based attitudinal models and adaptations of the SERVPERF instrument in other fields and industries.

In addition to creating new instruments, researchers started to examine the impact that service quality has on outcome variables that are extremely important to the vitality of any organization and/or business. While there have been countless combinations of variables that researchers have studied in conjunction with service quality, there has

certainly been a trend that has established regarding which variables are most significantly impacted. There have been many studies that have examined how service quality can affect or is affected by user satisfaction; perceptions of value; future intentions; and consumer demographics. In studying the relationships between these variables, researchers have provided managers and practitioners in all fields with rationale for making service adjustments to their organization.

Service Quality and Satisfaction

In examining the studies that have been conducted on the organizational impact of service quality, one can easily observe a trend in the research. From its inception into the marketing and business literature, it could be ascertained that the primary motivator in studying service quality was to measure satisfaction with an organization's services (Cronin & Taylor, 1992). The earliest of service quality instruments based on Oliver's (1980) disconfirmation model asked users for perceptions of satisfaction in relation to the service that they received. Many instruments (including SERVQUAL designed by Parasuraman et al. (1985)) asked users to rate their level of satisfaction on a range of service quality items or attributes. Crompton et al. (1991) determined that there was a great deal of confusion for sometime in the satisfaction and service quality literature, as researchers intended to measure satisfaction but actually measured service quality and vice versa.

As the research evolved and satisfaction and service quality were distinguished as distinct constructs, researchers began to examine their relationship to one another (Spreng & Mackoy, 1996; Tian-Cole, Crompton, & Wilson, 2002). Lee et al. (2007) provide the

best conceptualization of difference of these two constructs by stating: “satisfaction is a psychological outcome derived from the experience, whereas service quality is concerned with attributes of the service itself.” (p.404)

In recognizing the difference between these two ideas, there have been two predominant schools of thought as to how these variables interact with one another. The first is that service quality is an antecedent of customer satisfaction (Parasuraman et al., 1985, 1988; Cronin and Taylor, 1992). The second is that service quality is an outcome of customer satisfaction (Bitner, 1990; Bolton and Drew 1991a, b). Although the researchers have not been able to agree on how these constructs affect one another, they have determined that a relationship does in fact exist.

The question of how to measure satisfaction in service quality has also been up for debate. Researchers such as Taylor and Baker (1994), Zeithaml (1996), Greenwell et al. (2002); and Burns, Graefe, and Absher (2003) have all used multiple item scales to measure satisfaction. While there has been evidence that use of a multiple-item scale results in a more complete assessment of customer satisfaction, single-item scales have also tested favorably. Given the length of most service quality instruments, single-item satisfaction scales have been preferred by researchers to keep the total number of items on their instruments to a reasonable, easy to administer, number. Many studies have used single-item satisfaction scales to measure the relationship between satisfaction and service quality (Parasuraman et al., 1985; 1988; Crompton et al., 1991; Cronin & Taylor, 1992; 1994; Howat et al., 1999; McDougall & Levesque, 2000; Murray & Howat, 2002).

Much like the format of the quantitative service quality questions, these universal satisfaction items use a Likert scale to measure their overall satisfaction. The scales and nomenclature of these questions vary between studies.

Overall, it has been determined by many studies that there is a significant relationship between service quality and satisfaction (Parasuraman et al., 1985; 1988; Crompton et al., 1991; Cronin & Taylor, 1992; 1994; Howat et al., 1999; McDougall & Levesque, 2000; Murray & Howat; 2002). Tian-Cole, Crompton, & Wilson (2002) state that when consumers perceive the services that they receive to be of higher quality, their overall satisfaction will be greater. There have also been indications that satisfaction may impact user's future intentions and may lead to a more loyal customer (McDougall & Levesque, 2000; Murray & Howat, 2002).

Service Quality and Value

While not as indelibly linked in the literature as service quality and satisfaction, researchers have also studied the relationship between service quality and value. Often seen as an intermediary between service quality and satisfaction as customers may be more satisfied after receiving a service or engaging in a service interaction when it is perceived as a good value (Zeithaml, 1988; McDougall & Levesque, 2000; Murray & Howat, 2002). Perceived value in service quality may also impact a user's future intentions, especially if they are using value as the criteria for which they determine if they are going to re-use the service again (Zeithaml, 1988; McDougall & Levesque, 2000; Murray & Howat, 2002). Value has also been shown to be a determinant in the user's opinion of service quality itself (Lee, Petrick, & Crompton, 2007).

To measure value in service quality research, researchers have employed methods similar to that of their satisfaction methods. While multiple-item scales (such as Petrick's (2002) SERV-PERVAL) have been used to evaluate perceived value in service quality research. Most researchers prefer to use a single-item measured on a Likert scale, designed to globally measure value. McDougall and Levesque (2000), Murray and Howat (2002), and Lee, Petrick, and Crompton (2007) have all used similar questions that have asked users to rate the extent to which they believe that they have been given services that are great value.

In determining whether or not the quality of service that they have received is of good value, price, or the amount that was paid, is often a factor (Bolton and Drew, 1991). Using these parameters, there have been numerous studies that have illustrated that perceptions of value of the services that one receives will impact how satisfied that user is, as well as their future intent (Murray & Howat, 2002; Petrick, 2002; Lee et al., 2007). By examining the relationships between value, service quality, satisfaction and future intentions, researchers and service professionals can determine how to keep the customer and/or consumer satisfied (McDougall & Levesque, 2000).

Service Quality and Future Intentions

The nomenclature within the service quality literature to define this next dimension closely associated with service quality has varied greatly. It has been referred to as purchase intentions (Taylor & Baker, 1994; Jones & Suh, 2000), future intentions (McDougall & Levesque, 2000; Murray & Howat, 2002; Tsuki, Bennett, & Zhang, 2007), behavioral intentions (Alexandris, Dimitriadis, & Markata, 2002; Kouthouris &

Alexandris, 2005; Lee et al., 2007) and loyalty (Zeithaml, 1996; Reichheld, 2003; Yu, Chang, & Huang, 2006). While there is no exact definition that works for all of these terms, they are all measured by similar means and all seek to determine a similar outcome. The most serviceable amalgamation of a definition and/or criteria for measuring these constructs is the likelihood that after engaging in an organizations service the user would return to the facility again or would recommend the facility to others.

Much like service quality and the other constructs associated with it, the discrepancy between all of the methods that have been employed to measure it are exponential. There are numerous multi-dimensional constructs that have been created to determine measuring a service user's future behavior and/or their loyalty. Alexandris et al. (2002) used the user's intent to use word-of-mouth communications, their future purchase intentions, their sensitivity to price and their likelihood to complain about the service as the parameters to measure their behavioral intentions. Lee et al. (2007) used four questions to measure loyalty and two questions to measure price sensitivity to determine a user's future behavior. McDougall and Levesque (2000) asked questions relating to their reluctance to switch service providers, their likelihood to recommend the service, and the likelihood that they would come back.

While all of these measures certainly would have utility in measuring the user's next step after a service interaction, they are in large part redundant. Researchers have found that a single-items (on a Likert scale) that ask users to evaluate the likelihood that they would recommend the service to others is the most representative of their true feelings of the service. This universal measure will be the best indicator of their future

intentions and how loyal they are to the service provider (Murray and Howat, 2002; Reichheld, 2003; Tsuji, Bennett, and Zhang, 2007).

While there is great variability in how this construct is labeled, how it is defined and how it is measured; there is no denying that determining a service user's intentions are vitally important (Ziethaml, 1996). For the purpose of this study, this idea will be referred to as future intentions, as we are trying to determine the course of action the user will take next after engaging in a service experience (McDougall & Levesque, 2000; Murray & Howat, 2002; Tsuji et al., 2007). Perceptions of service quality and their overall satisfaction will determine their future intentions as exhibited in the results of these studies.

Service Quality and Demographic Data

The idea of collecting demographic data on customers is hardly a new practice in the business and/or marketing research world. Cohen and Ramaswamy (1998) date the introduction of market segmentation back to the 1950's when businesses used this data to better understand their customers and tailor marketing strategy to best meet their needs. Researchers studying service quality and its impact on satisfaction, future intentions and other variables, use demographic data for the same purpose. By studying service user's demographic (state-of-being variables) and psychographic (state of mind variables), characteristics, researchers studying service quality have been able to segment groups and determine if their expectations and perceptions differ (Greenwell, Fink, & Pastore, 2002). Age, gender, ethnicity, occupation, income, usage patterns, and distance are all commonly used demographic characteristics studied by service quality researchers of all

disciplines (Webster, 1989; Gagliano, 1994; Howat et al., 1999; Greenwell et al., 2002; Ko and Pastore, 2005). Kim and Kim (1998) list perceptions of service quality as a possible psychographic variable that researchers can examine when segmenting users. The possibilities for variables are infinite and can be determined by the researcher and/or organization based on their preference or perceived importance, as shown by the research in this area.

A study conducted by Webster (1989) examined the relationships between demographic characteristics (age, marital status, ethnicity, occupation, education, and income) and expectations of service quality in a variety of professional (physicians, attorneys, dentists) and non-professional services (banking, dry cleaning, auto services). The study found that amongst professional services all of the demographic characteristics studied significantly effected their expectations of quality and very few demographic characteristics were significant amongst the non-professional services. These findings could have been in large part due to the use of the first edition of SERVQUAL (Parasuraman et al., 1985). This version of the instrument was still in its infancy and at the time, was the still regarded as the standard in service quality research at the time of this study's publication (Webster, 1989). However, it may have been more applicable for the use with the professional services and not the non-professional services given its structure (Carman, 1990). Regardless of the potential issues with the instrument used in this study, its relative importance in the realm of service quality research is unquestioned as it laid the ground for future research regarding the potential relationships between demographics and service quality constructs.

In the past two decades since the inception of Webster's (1989) addition to the service quality/demographics literature, there have been many studies seeking to segment service users by demographics in relation to their expectations, perceptions and attitudes towards service quality. This trend has been especially prevalent in the fields of recreation, leisure and tourism. The following studies have examined the relationships between service quality and demographic segmentation in each field:

- Recreation and Fitness Centers/Stadiums: Kim and Kim (1998); Greenwell, Fink, and Pastore (2002); Afthinos, Theodorakis, and Nassis (2005)
- Parks and Recreation: Mowen and Confer (2003); Li, Absher, Graefe, and Hsu (2008)
- Tourism and travel: Juwaheer (2006)

There are many reasons why there has been such a proliferation in service quality and demographic related research in these fields, and for the most part, they are not unlike other fields. Research examining the difference between service users and their attitudes of service quality are vitally important to recreation, leisure and tourism given the exponential amount of interaction that users have with services and service related attributes in these fields. These researchers are constantly searching for new ways to meet the needs of their customers during service interactions (Kim and Kim, 1998, Greenwell et al., 2002). Researchers in all of these areas have found that these demographic variables such as age, gender, income or distance have affected perceptions of service quality and overall satisfaction with these services (Kim and Kim, 1998; Greenwell et al., 2002; Mowen and Confer, 2003; Afthinos et al., 2005; Juwaheer 2006; Li et al., 2008). By researching and analyzing these results, organizations and managers

can make service adjustments or market services to user groups in a manner that would be more conducive to their satisfaction and hopefully meet their extremely variable needs individually.

While most researchers collect demographic data in service quality research to examine trends and relationships between the two constructs, there are other important reasons for doing so. First and foremost, researchers collect demographic data to ensure that the sample that they are studying is representative of the entire population (Taylor & Baker, 1994; McDougall & Levesque, 2000). Another reason why researchers may choose to collect demographic data is to ensure that they are getting data from the type of respondents that they have specified in their study. For example, some service quality studies eliminate first time users to ensure that their responses are indicative of a range of service experiences. This way the respondent cannot be influenced by an anomalous experience that would result in a response bias (Murray & Howat, 2002). Another example exists in restrictions based on a demographic characteristic (such as age), when participants can be excluded from the study if they do not meet a certain criteria (Greenwell et al., 2002).

Service Quality Research within the Recreation and Sport Industry

It has been stated within the literature that service quality may be vital to the success of organizations within the recreation and sports industry (Ko & Pastore, 2005). Thus, the utility of an instrument to measure service quality and performance within the industry is self-evident. Founded by claims made by previous researchers, service quality researchers have continued to contribute to volumes of service quality research.

The literature has focused around the claims of prior researchers, especially in regards to the administration and development of instruments designed to measure service quality. This research has exhibited the need for modifications to instruments and has provided recommendations to make service quality instruments more applicable to practitioners within the field.

As illustrated within previous research, SERVQUAL has been deemed an inadequate instrument for many industries given the numerous theoretical and practical shortcomings defined by many researchers (Buttle, 1996; Babakus & Boller, 1992; Cronin & Taylor 1992, 1994; Brown et al. 1993; Teas, 1993; Iacobucci et al. 1994, Smith, 1995, Buttle, 1996). The recreation and sports industry is one of the fields where SERVQUAL has shown its inadequacies, ultimately resulting in the need for additional research (Crompton & Love, 1995; Kim & Kim, 1995). Thus, research focused around defining new industry specific service quality items, dimensions and factors has flourished. This has lead to a litany of studies offering refinements to old instruments and the introduction of new instruments designed to specifically measure service quality within the sports and recreation industry.

Under the large of umbrella of sports and leisure related service quality studies, results and findings have been consistent with that of non-industry specific service quality research. Researchers within sports and recreation are still trying to determine the content and quantity of the dimensions that encompass overall service quality experiences within the field. In creating new scales specific to the recreation, sports and leisure industry, researchers have created and defined unique service quality dimensions. While each instrument and scale is unique, with variances in the number of service

quality dimensions and factors that it seeks to measure, there has been some congruency and reoccurring themes within the industry research.

There have been many studies measuring service quality in the sports industry that have used gap analysis, adhering to the theoretical framework provided by Parasuraman et al. (1988) to measure service quality in terms of differences between expectations and performance (Crompton & MacKay, 1989; Crompton, MacKay, & Fesenmaier, 1991; Kim & Kim, 1995; Howat et al., 1996; Howat et al., 1999; Murray & Howat, 2002; Burns et al., 2003). Crompton and MacKay (1989) and Crompton et al. (1991) measured service quality and satisfaction within recreation using a scale derivative of the dimensions and items outlined by the research of Parasuraman et al. (1988) and their SERVQUAL instrument. Results of this study disclosed by Crompton et al. (1991) determined that of the five service quality factors/dimensions proposed by Parasuraman et al. (1988), only four were applicable to recreation (assurance, reliability, responsiveness, and tangibles). Furthermore, only eleven of the twenty-two items used by SERVQUAL applied to the public recreation sector (Crompton et al., 1991). These findings were consistent with previous studies illustrating the need to change the questions and/or factors to make the study more applicable and to better serve the organization being measured (Carman, 1990; Cronin & Taylor, 1992). Using the results from their study, Crompton et al. (1991) ultimately modified the SERVQUAL dimensions and items to create one of the first instruments designed to specifically to measure service quality within recreation, which they named REQUAL.

Studies measuring service quality within recreation have continued to alter attributes and dimensions within their scales to make them more applicable to different

subdivisions within recreation. The result has been an influx of new recreation focused service quality scales and instruments. Another specialized scale designed to measure service quality within recreation was the Quality Excellence of Sports Centres (QUESC) created by Kim and Kim (1995). Designed to measure and improve service quality within sports and fitness facilities in South Korea, this instrument uses a two part, 33-question measure divided into 11-factors (ambience, employee attitude, reliability, information, programming, personal consideration, privileges, price, ease of mind, stimulation, and convenience) (Kim & Kim, 1995). Howat et al. (1996) created another scale to measure service quality in fitness facilities in Australia. The Centre for Environmental and Recreation Management-Customer Service Quality (CERM-CSQ) was designed to measure service quality in recreation centers with fifteen items across four dimensions (core services, staff quality, general facility, and secondary services). Both of these instruments consisted of a two-part scale to measure service quality using gap or difference scores between importance and performance. While the QUESC was vital to the research as it provided yet another option for recreation professionals to measure service quality, it has been as widely researched as the CERM-CSQ.

The CERM-CSQ has performed admirably in terms of its ability to collect reliable, practical data on users perceptions of service quality within a recreation setting. It has been used with regularity to measure service quality within the field of recreation over the last ten years and has gained respect within the field as it has exhibited its validity through repeated testing in a variety of different settings within recreation. Furthermore, the CERM-CSQ has drawn connections between service quality, customer satisfaction and customer's behavioral intentions. Studies conducted by Howat et al.,

1999; Lentall, 2000; and Murray and Howat, 2002 used CERM-CSQ to measure service quality in relation to these other important variables with great success.

Howat et al. (1999) used a variation of the CERM-CSQ instrument to determine the impact of service quality on customer satisfaction and user behavior intent within Australia. To measure service quality, the researchers used 19 recreation-specific items consistent with the research of Howat et al. (1996) and the CERM-CSQ. These items used a six-point Likert scale (from 1 = disagree to 6 = very strongly agree) and measured service quality across three service quality dimensions (personnel, core, peripheral). Acknowledging the debate between the use of disconfirmation and performance-only techniques within the service quality literature, the researchers decided to base this study on the research of Parasuraman et al. (1985) using gap analysis to measure service quality. Consistent with SERVQUAL, the researchers asked respondents to measure their expectations of the service quality and the center's performance on each of the 19 items.

To measure satisfaction, the researchers included a single item that asked users to rate their overall satisfaction with the facility on a seven-point Likert scale (1 = very dissatisfied to 7 = very satisfied). The researchers use the findings of Crompton et al. (1991), which found that a single item was acceptable to assess overall satisfaction, to justify the use of a global satisfaction measure.

Using a large sample of users from thirty public recreation centers across Australia, the researchers were able to collect 5,283 responses.

While the CERM-CSQ has illustrated its practicality and reliability as a method of collecting service quality data within recreation, researchers have continued to research

alternative. One of the most recent additions to the arsenal of instruments designed to measure service quality within the recreational sport industry is the Scale of Service Quality in Recreational Sport (SSQRS), developed by Ko and Pastore (2005). Building on service quality literature within the field and beyond (Brady & Cronin, 2001; Chang, 1998; Crompton et al., 1991; Howat et al., 1996; Kim & Kim, 1995; Parasuraman et al., 1988), the researchers designed a hierarchical model and scale designed to define and measure service quality specifically within recreation. The instrument consists of a performance-based scale (consistent with Cronin & Taylor, 1992) comprised of 49-items representing 11 sub-dimensions of service quality that can be further factored into four primary categories: program quality; interaction quality; outcome quality; and physical environment quality.

Using in-person convenience sampling at a major university campus recreation facility, the researchers collected 241 successfully completed questionnaires. In testing the items within their model, as well as the overall structure of the model, the researchers found empirical evidence that their four dimensions of service quality were statistically valid with measurements indicating good fit (Ko & Pastore, 2005). Factor analysis was used to test and confirm the validity of the psychometric properties of the SSQRS scale.

Building on the service quality literature within the recreation industry, the researchers believe that they have created a hierarchical framework and instrument to define and measure service quality with dimensions specific to the sport industry. While their statistical measures showed the appropriateness of their model and overall good fit, further testing of their model and instrument within additional segments of the sports

industry is required to truly determine its value as a sport-based service quality measurement.

Given the overall importance of service quality to the success of sports and recreation organizations, there have been major contributions to the service quality research specific to the field. Over the past twenty years, a number of unique recreation specific scales have emerged, all using different factor and dimension structures to define and measure service quality. While the uniqueness and variances within each of these scales has differentiated them from one another, there is a definite theme that has emerged specific to recreation. Specifically, there has been a focus on servicescapes, defined as the physical environment in which service delivery occurs (Bitner, 1992).

Within studies focusing on service quality in recreation, and more specifically recreation facilities, there has been an emphasis on the tangibles and physical resources within the literature. Studying the impact of tangibles within service quality research is by no means specific to sport and recreation industry. However, questions surrounding tangible resources tend to be more focused than the non-industry specific service quality scales. SERVQUAL (Parasuraman et al., 1988; 1991) and SERVPERF (Cronin & Taylor, 1992) seek to gain a broader sense of the respondent's perceptions of physical resources and surroundings. Service quality scales used within the recreation industry have expanded on the research regarding the impact of tangibles, or servicescapes, and are more specific in nature.

Much of this could be attributed to the vast amount of research within the field of recreation studying the impact of servicescapes on user's perceptions and satisfaction with their overall experience. Research within recreation has illustrated how perceived

service quality, perceived venue quality, intent to revisit, and perception of the core product and satisfaction can all be impacted by servicescapes (Greenwell, Fink & Pastore, 2002b; Wakefield & Blodgett, 1994). The QUESC instrument (Kim & Kim, 1995), the CERM-CSQ (Howat et al., 1996), and the SSQRS (Ko & Pastore, 2005) all contain industry specific items and dimensions seeking to measure how customer's perceptions of tangible resources within recreation facilities impact perceptions of the organizational service quality. For example, all three instruments ask respondent's to rate the facility's cleanliness and comfort (Kim & Kim, 1995; Howat et al., 1996; Ko & Pastore, 2005). Ko and Pastore (2005) consider the physical environment to be key in evaluating service quality. Using literature from numerous researchers, (Baker, 1986; Bitner, 1990, 1992; Brady, 1997; Howat et al., 1996; McDonald et al., 1995; McDougall & Levesque, 1994; Rust & Oliver, 1994; Wakefield, Blodgett, & Sloan, 1996; Wright et al., 1992), Ko and Pastore (2005) have justified the use of physical environment quality as one of four factors in their scale to measure service quality within the sport industry.

Given the overall importance of physical surroundings in shaping a recreation service customer's experience (Greenwell, Fink & Pastore, 2002a; Ko & Pastore, 2005; Wakefield & Blodgett, 1994; Wakefield, Blodgett, & Sloan, 1996), it most certainly requires a greater degree of focus than other non-industry specific scales can provide.

Campus Recreation Service Quality Research

While service quality literature in the field of recreation and leisure has flourished in the past decade, there are still some vital settings in the field that have been under-researched. One of these areas that deserve greater attention is campus recreation. Much

like the rest of the sports and recreation industry, campus recreation has evolved significantly over the course of the past twenty to thirty years as facilities and programs are constantly updated and improved to keep up with the exceptional demand across the country (Barcelona and Ross, 2002; Taylor, Canning, Brailsford, & Rokosz, 2003).

The demand for universities to improve campus recreation services and facilities is multifaceted. The facilities and services offered by campus recreation programs have become important recruiting tools used by universities to lure new students. Taylor et al. (2003) stresses the importance of showcasing these campus recreation programs and modern recreational facilities that cultivate exceptional out-of-class experiences during tours led by university admissions offices. Not only do campus recreation services attract new students to university campuses, but they also keep them satisfied once they get there. According to Downs (2003), participation in campus recreation participation seems to be a predictor of overall university satisfaction, personal wellness, and has led to higher retention rates and above average grades (Barcelona & Ross, 2003; Osman, Tian-Cole, & Vessell, 2006).

In the wake of this campus recreation expansion, research within the field has not kept up with growth. There are still many areas within campus recreation that require attention and new empirical research efforts, including the need for new evaluative tools to assist campus managers in measuring their service quality and user satisfaction and behavioral intent. While instruments have been developed and tested with positive results within the fields of commercial and public recreation, there have been very few studies to determine their relevance in the specialized discipline of campus recreation. Continued research in this area and development of a reliable service quality instrument

would provide campus recreation managers with the information they need to rationalize spending and make service adjustments to improve satisfaction amongst their core users (Taylor et al., 2003).

While the number of studies focusing on service quality within the field of sports and recreation exist, to this date, there have been two studies conducted specifically on the impact of service quality within campus recreation. The first, conducted by Pastore and Ko (2005, 2007) used the Scale of Service Quality in Recreational Sport (SSQRS), a scale they developed using previous recreation-based service quality literature. The researchers used this instrument to measure perceptions of service quality and overall user satisfaction with 241 campus recreation users at a Midwestern university. This study served to provide recreation managers with a method of measuring service quality and satisfaction by analyzing mean performance scores on 49 Likert scaled items (1 = strongly disagree to 7 = strongly agree). All of the service quality and satisfaction measurements were high, with the bulk of items scoring around 5. While their statistical measures showed the appropriateness of their model and overall good fit, further testing of their model and instrument within additional segments of the sports industry is required to truly determine its value as a sport-based service quality measurement.

While this instrument is quite comprehensive, consisting of numerous items, dimensions, and sub-dimensions measure service quality, it is almost comprehensive to a fault. The number of items purposed for use by Pastore and Ko result in a very lengthy instrument that may be impractical for use within the fast-paced setting of campus recreation. Also, given the infancy of this instrument, there has not been enough rigorous

testing done to determine how effective it is in any recreation setting, let alone campus recreation.

Another study conducted within campus recreation seeking to study the service quality was conducted by Osman et al.(2006). The researchers created their own instrument based on previous service quality research seeking to measure student's perceptions of: facility ambiance (eight items), operations quality (three items), and staff competency (six items), behavioral intentions (two items) and satisfaction (one universal item) (Osman et al., 2006). Using a convenience sample, the researchers collected 249 usable responses from a Midwestern university. Stepwise regression analysis was used to measure the influence of the service quality dimensions on satisfaction and the two behavioral items. Overall the researchers results reinforced the results of previous research that has indicated that service quality leads to satisfaction. However the results from the behavioral intent sections differed from the findings in previous research. Not all of service quality dimensions impacted the two items measuring behavioral intentions. Furthermore, satisfaction impacted only one of the behavioral intentions. The researchers rationalize these findings, noting that campus recreation programs and facilities are unique from other commercial or public recreation facilities. Given the uniqueness of campus recreation in regards to service quality research, the researchers note the need for additional studies to determine the impact of service quality on other variables, in addition to satisfaction and behavioral intent. New service quality research is proposed in the following areas associated with campus recreation: students intentions to re-use the facility; the impact of student fees; years left on campus; residency; and the availability of other recreation options (Osman et al., 2006).

This instrument is much shorter in length and consists of far fewer items than the instrument designed by Ko and Pastore (2005, 2007). For this reason, it appears that it would be less cumbersome for campus recreation managers to administer an evaluation using their methods and instrument. However much like the SSQRS, this instrument does not have the benefit of extensive testing that other service quality instruments (such as the CERM-CSQ) in the field of recreation have. This makes it difficult to determine its applicability and reliability as a means of measuring service quality within campus recreation.

Given the importance of campus recreation to students and universities alike, new methods of measuring the performance of the services offered must keep pace with the rapid advancements in this area of sports and recreation. While the studies that exist have proven to be beneficial in assisting campus recreation managers understand the impact of service quality, more specialized research is needed. As shown by the Osman et al. (2006) study, students perceive service quality, satisfaction and behavioral intent in a different manor than users in other areas of the field. Continued research on service quality in campus recreation will provide universities and service managers with the necessary tools to measure and make service adjustments that will benefit their users.

Summary

In reviewing the literature that encompasses all facets of service quality research, there is a litany of studies providing unique perspectives on the theoretical and practical importance of organizational service quality. Given the substantial impact that service quality has shown to have on many outcomes in relation to organizational success, there

have been numerous attempts to create scales and instruments to assist practitioners evaluate service quality within their industry and/or organization. The efforts of researchers from all fields to provide instruments that can be used universally across all fields, or specifically within their own, have been met with varying degrees of criticism and praise. Researchers have debated the theoretical, operational and methodological components that comprise these instruments, resulting in continued research and refinement. The lack of consensus amongst researchers on scale superiority has illustrated the need for continued research to help us further define service quality and determine how it impacts other outcomes, such as customer satisfaction, loyalty and revisit intent.

The unique nature of service quality research has led to the need for continued exploration. Given the variability in definitions of what service quality consists of and how it should be measured, continued research is needed to assist us in understanding both across and within specific disciplines. The recreation and sport industry is no exception. While the field has taken great strides to continually build on the meaning of service quality within the field and create new ways to measure it, new scales and models need to be tested to ensure that all niche areas can adequately measure such an elusive construct.

CHAPTER III

PROCEDURES

The problem of the study was to create a performance based model to determine the impact of service quality on customer satisfaction, value, and future intentions within campus recreation using only the performance section of the CERM-CSQ instrument (Howat et al., 1996) and additional questions consistent with the results of studies conducted by Murray & Howat (2002) and Osman, Tian-Cole, and Vessell (2006). Sub-problems for the study included the following:

1. Identifying the characteristics of users of university campus recreation facilities, programs and services by collecting demographic data including: gender, age, classification/year in school, proximity to the facility and frequency of use.
2. Determining if there was a relationship between campus recreation user demographic data and perceived service quality.
3. Determining if a campus recreation user's perceptions of value impacts their perceptions of the facility's service quality, satisfaction and future intentions.
4. Determining if underlying service quality dimensions reflected the three-factor model (core, personnel, and peripheral) proposed by previous research (Howat et al., 1999)
5. Determining if unique factor groups could be used to reliably predict the degree of performance within service quality groups as assessed by campus recreation facility users.

Steps for pursuing answers to the sub-problems in the study will consist of the following: (a) sample size and selection; (b) selection of the instrument; (c) administration of the instrument; (d) treatment of the data; (e) summary.

Sample Size and Selection

The sample for this study was drawn from the core group of users of a university campus recreational facility located in the Northeastern region of the United States. This center serves as the hub for campus recreation activities and is a major traffic area for students making it an ideal collection site. Systematic sampling, using a mall-intercept technique was used to collect responses from users of various services and programs within the facility. In an attempt to reach users from all service areas of the facility, encompassing the entire scope of their user group and to limit response bias, responses were collected from a variety of different activities at different times of the day. The following collection schedule was employed over the course of ten days. On Monday, Wednesday, and Friday all users entering the facility between the hours of 6 a.m. and 9 a.m. were asked to complete a survey. During peak use hours, survey administrators set up a collection point outside of the weight room to collect responses between the hours of 5 p.m. and 7 p.m. On Tuesdays and Thursdays, users of the free ice skating session, intramural, and club sports, activities all occurring after 7 p.m., were asked to participate. Campus recreation users who declined to complete the survey when approached were documented as non-respondents. This method of collection was consistent with previous in-person service quality research conducted within the field of recreation within

recreation centers (Kim & Kim, 1995; Howat et al., 1996; Murray & Howat, 2002; Ko & Pastore, 2005; Osman et al., 2006).

Response Rate

The sample for this study consisted of the users of campus recreation programs during a ten-day period. To measure response rate, students who were selected to participate in the study and declined were labeled as non-respondents and were tracked by the survey administrator. In total, 340 campus recreation users were asked to participate in this study. Of these users, a total of 80 declined to participate resulting in a total of 260 completed surveys and a response rate of 76.5 percent. A total of 11 surveys were filled out by staff, faculty, or non-student users and were eliminated from the study per the methodology of previous studies (Osman et al., 2006). There was one first-time user who was also excluded from the sample consistent with the recommendations provided by Murray and Howat (2002). The total number of the student users for this study was 248. This total number of participants was consistent with the recommendations and total number of respondents of similar service quality studies conducted within recreation facilities. The study conducted by Murray and Howat (2002) had 218 usable responses, Ko and Pastore (2005; 2007) had 241 usable responses, and Osman et al. (2006) had 249 useable responses.

Selection and Refinement of the Instrument

While there are many different instruments within the field of sport and recreation designed to measure organizational service quality, including some that had been used specifically within campus recreation, it was determined that there was no instrument that fully encompassed the complete scope of the proposed study. A modified version of the (CERM-CSQ) instrument developed and used by Howat et al.(1996), Howat et al. (1999), and Murray and Howat (2002) was determined to be the most appropriate instrument for this study. This instrument was selected over other collection tools (Ko and Pastore, 2005; 2007; Osman et al., 2006) for a couple of reasons. First, it is one of the only instruments within the field of recreation and leisure used to measure service quality on multiple occasions using statistically and methodologically sound procedures. It has the benefit of undergoing rigorous testing to test the practical and statistical properties that other instruments have not. Next, this instrument has also been used to measure the impact of service quality customer satisfaction, value and future intentions, mirroring the intent of this study (Murray & Howat, 2002).

A pilot study was conducted in the fall of 2007 using participants of a recreational facility offering similar programs and services as the site selected for use in this study. A total of 26 respondents completed an instrument modeled after the refined SERVQUAL instrument proposed by Parasuraman et al. (1994). Results from this pilot study exhibited many of the problems outlined within the literature review section. Qualitative data from the respondents showed that the expectations and performance sections caused confusion and the length of the instrument caused some of them to lose focus midway through completion. Others reported that they did not understand how the questions were

applicable to their recreation experience and thus could not complete the question.

Results from this pilot and reexamination of the literature, ultimately contributed to the instrument that will be used by this study.

The instrument used for this study was composed of two parts. Within part one, there were eight questions to collect demographic data (gender, age, classification in college, course load, grade average, transfer, and proximity), one question to gauge perceptions of value, and two questions to determine the users frequency of use. The second part consisted of sixteen questions designed to measure service quality perceptions, one question to measure future intentions, one question to measure overall satisfaction and one question to determine the user's satisfaction with their overall university experience.

The four categories that would be analyzed in this study (gender, classification/year in school, proximity to campus recreation, and frequency of use) were selected based on their use in service quality studies within the field of recreation and leisure (Howat et al., 1999; Murray and Howat, 2002; Ko and Pastore, 2005, 2007; Osman et al., 2006). Additional demographic questions were added as a concession to the management of the research site, and would be used internally to assist them in gaining a perspective of their users. To make the demographic questions applicable to the university students that would be completing this instrument, questions were used from the College Student Experiences Questionnaire (CSEQ) (Pace and Kuh, 1998). The CSEQ is widely recognized as the standard for collecting information on university students and has been used in other studies relating to campus recreation (Barcelona and Ross, 2002).

Based on the recommendations of Osman et al. (2006), suggesting that perceived value be studied in relation to service quality within campus recreation studies a value item was added to the instrument. The question was based on the universal value question included in the Murray and Howat (2002) study (the center provided good value for the money), which studied perceptions of value in public recreation. Since the fee structure within campus recreation differs from that of public recreation, the structure of the question was altered to make it applicable to this study. At the university where this study was conducted, the fees that students pay to use campus recreation services are built into a mandatory fee to cover all university services. This fee is charged at the time of class registration once a semester. A percentage of this fee is used to fund campus recreation services. The portion of the total dollar amount paid by the student each semester that goes to campus recreation was listed for the student to see. Students were then asked to rate on a six-point Likert scale with anchors at 1 (strongly disagree) and 6 (very strongly agree) the extent to which they agreed that campus recreation provided value for this fee.

There were two questions in this study aimed at identifying the frequency at which students use the services offered by campus recreation. The first was a universal question asking them to choose the option that best describes the amount of times that they use campus recreation facilities and services in an average week (first time, once, two to three, four to five, six or more). The next question sought to determine which services and programs students' use and how often they use them. The options were discussed with campus recreation management who selected nine options, based on what they perceived to be of importance to users. The options were: weight room, indoor

track, basketball and multi-purpose courts, racquetball courts, personal training, classes/lessons, club sports, and intramural sports. Students were asked to select the option that most appropriately described their use of this service or program (very frequently, frequently, sometimes, rarely, never). While there are no studies within service quality research focusing on frequency of use, this section was added to expand upon the literature existing within the field.

The service quality section was in large part designed after the CERM-CSQ instrument created by Howat et al. (1996), refined by Howat et al. (1999), and further tested by Lentall (2000) and Murray and Howat (2002). According to Lentall (2000), the CERM instrument has “the advantage of being the product of an extensive development process involving customers (p. 5).”

The original CERM-CSQ instrument consisted of 19 items designed to measure service quality. These items were ultimately factored to represent the three service quality factors: Core; Personnel; and Peripheral. Participants were asked to select the extent to which they agree with the statement relating to the service quality of campus recreation. Each question was based on the six-point Likert scale used by the Howat et al. (1999) and Murray and Howat (2002) study. This study omitted the “don’t know” option provided by the previous studies, to force respondents into a choice given that all of the options were applicable to campus recreation users. For this study, 16 of the 19 items from the CERM-CSQ were used. The items from this study were based on the research and recommendations of Murray and Howat (2002), who studied service quality using the CERM-CSQ. There were three questions that were eliminated, condensed or moved from the CERM-CSQ to create the instrument used in this study. The first change

involved removing an item measuring child-care services given that it was not applicable within this campus recreation setting. The second modification removed the universal value question out of the service quality section and isolated it as its own category. This item was moved so that it could be restructured for use within campus recreation, with provide students with a greater explanation of the fees they pay to use campus recreation services and facilities. The last change involved condensing two questions regarding the equipment provided into one question. This was consistent with the research and recommendations of Howat et al. (1999) and Murray and Howat (2002). Additional changes to the instrument involved altering the wording and structure of all of the questions. The questions were altered to make them as applicable as possible to the scope of the research within campus recreation. These alterations to existing instruments are standard and have been recommended by previous research (Carman, 1990).

The other major modification to this instrument for the purposes of this study is the elimination of the expectations section. The original CERM-CSQ instrument designed by Howat et al. (1996) and used by Howat et al. (1999) and Murray and Howat (2002), collected data in two sets (expectations=E and performance=P) seeking to measure gap scores between the two measures to determine service quality ($P-E=SQ$). The decision to use only the performance based portion of CERM-CSQ instrument was largely based on criticisms outlined within the literature regarding the use of the disconfirmation model within service quality research (Carman, 1990; Bolton & Drew, 1991; Babakus & Boller, 1992; Cronin & Taylor, 1992; Teas, 1993; Crompton & Love, 1995; Smith, 1995; Buttle, 1996). These researchers believe that using the disconfirmation model which measures gap scores to measure service quality has shown

significant empirical, conceptual, and methodological challenges and have identified the utility of using only performance-based measures.

Within the recreation and leisure literature focused around service quality, there are also examples of researchers deviating from the disconfirmation model (Kim & Kim, 1995; Ko & Pastore, 2005; 2007; Osman et al., 2006). According to Lentell (2000), the modification of service quality scales using the disconfirmation model may be necessary within leisure research. Furthermore, service quality research by Crompton and Love (1995), determined that measures of performance best predicted overall quality perceptions at festivals. The recommendations and findings from researchers in all areas of service quality research justified the use of only the performance section of the CERM-CSQ instrument to measure service quality in this study.

The question measuring satisfaction asked the respondents to measure their overall satisfaction with their experiences at the recreation facility on a seven point Likert scale (1 = Very dissatisfied to 7 = Very satisfied). This was a replication of the question used by Murray and Howat (2002), who justified the formulation and inclusion of this question by indicating its consistency with other satisfaction research (McCollough, Berry, and Yadav, 2000; Petrick et al., 1999; and Ganesh, Arnold, and Reynolds, 2000).

The question measuring the user's future intentions asked them to indicate how likely they are to recommend the facilities and services of campus recreation to others using a five point Likert scale (1 = Not at all likely to 5 = Extremely likely). This was also a replication of the question used by Murray and Howat (2002) to measure the same construct. There are numerous other service quality studies both in recreation and

beyond, which have used a similar universal item to measure future intentions (Reichheld, 2003; Tsuki et al., 2007).

Administration of the Instrument

The administration of this instrument was based on the previously mentioned protocol. Upon agreeing to participate in the study, users were given a cover letter detailing the nature of the project, the foreseeable risks associated with participation, and a consent statement indicating that participation is voluntary and can be stopped at any time (see Appendix B). Participants were then given instructions on how to fill out the survey and were asked to return the survey to the administrator upon completion. This method of collection is consistent with previous in-person service quality research conducted within the field of recreation (Kim & Kim, 1995; Howat et al., 1996; Howat et al., 1999; Murray and Howat, 2002; Ko & Pastore, 2005).

Treatment of the Data

At the end of the collection process, the data were analyzed using the Statistical Package for the Social Sciences (SPSS 15.0). Descriptive statistics were analyzed identifying the frequencies, valid percentages, mean scores, standard deviations and median scores of all items. Factor analysis was used to test the underlying dimensions of the 16 items used to measure service quality. Internal consistency was examined using Cronbach's coefficient alpha estimates for the factors.

Similar studies measuring service quality within recreation and leisure (Murray & Howat, 2002; Ko & Pastore, 2005) have yielded 218, 241 successfully completed

surveys. Ko and Pastore (2005) determined that a total of 200 subjects were necessary to examine the relationships between groups. The relationships and correlations between service quality and demographic variables, value, and satisfaction were studied using stepwise regressions. Relationships between value, satisfaction and future intention will be determined using simple regression analysis.

All research components were conducted in the offices of the Department of Recreation Management & Policy in Hewitt Hall at the University of New Hampshire. Data was stored in a locked file cabinet in the principal investigator's office and on a password protected laptop computer. Only the principal investigator (Matthew Ott), his advisor, and his thesis faculty committee were allowed access to the data collected in this study. The published results were made available to the research site (University of New Hampshire Campus Recreation), as well as any interested participants.

Summary

This chapter outlined the methods and data analysis for this study. This narrative described the selection and the modification of the Howat et al. (1999) CERM-CSQ instrument for the use of examining the relationships between service quality and satisfaction, value, and future intentions of campus recreation users. This additional entry into the annals of recreation-based service quality literature should assist those in campus recreation seeking methods to evaluate their performance on service quality and make the appropriate service adjustments to best serve their constituency of student users.

CHAPTER IV

DATA ANALYSIS

The purpose of this study was to use a modified version of the Center for Environmental and Recreation Management-Customer Service Quality instrument to test the relationships between service quality, user satisfaction, perceptions of value and future intentions of student users of a campus recreation facility. This focus of this study was centered on the following research questions:

1. Will there be a significant relationship ($p < 0.05$) between the characteristics of a campus recreation user (gender, classification/year in school, grade average, proximity to campus recreation, frequency of use) and their perceptions of the three dimensions of service quality?
2. Will there be a significant relationship ($p < 0.05$) between the three dimensions of service quality (core, personnel, peripheral) and a user's overall satisfaction with campus recreation?
3. Will there be a significant relationship ($p < 0.05$) between the three dimensions of service quality (core, personnel, peripheral) and a user's perception of value from the services and facilities provided by campus recreation?
4. Will there be a significant relationship ($p < 0.05$) between a campus recreation user's overall satisfaction with campus recreation and their future intentions?
5. Will there be a significant relationship ($p < 0.05$) between a campus recreation user's perceptions of value and their overall satisfaction?

6. Will there be a significant relationship ($p < 0.05$) between a campus recreation user's perceptions of value and their future intentions?

In order to address the sub-problems associated with this study, this chapter will address the following:

1. A description of the of the demographic data student users surveyed in this study, including their gender, classification/year in school, proximity to campus recreation and frequency of use.
2. A description of campus recreation user's perceptions of value of the service offered by campus recreation.
3. A factor analysis pertaining to the dimensions of service quality perceptions.
4. Stepwise regression and simple regression analysis of the relationships with the three dimensions of service quality (core, personnel, and peripheral), user characteristics from demographic data, overall satisfaction, perceptions of value, and users' future intentions.

Demographic Data

Demographic data was collected in this study for two key reasons. The first was to try to gain a perspective of the characteristics of campus recreation users within this study. The second reason was to determine whether or not relationships existed between these characteristic variables and campus recreation users' perceptions of service quality. Data were collected to measure gender, classification or year in school, proximity to campus recreation, and frequency of use of the services and facilities offered by campus

recreation. The following contains tables for all of the demographic data of the student users of campus recreation services collected in coordination with this study.

Gender

The participants of this study were almost equally distributed between the two gender categories with 126 males (51 %) and 121 females (49 %), shown in Table 1. This distribution of gender is slightly different than that of other service quality studies conducted within campus recreation. Other studies have indicated that campus recreation programs had a higher percentage of female users overall, with Osman et al. (2006) reporting 105 male respondents (42%) and 144 female (58%) respondents; and Ko and Pastore (2005, 2007) reporting 110 male respondents (45.6 %) and 129 (53.5 %) respondents. The reason for this equality in gender response could be a result of the systematic sampling process employed. The survey was administered at a wide variety of programs, classes and activities; as well as within the lobby areas of the fitness center. The other studies mentioned employed convenience sampling, which may have impacted their gender equality. The steps taken by this study to ensure that all users were represented, may have resulted in these balanced results.

Table 1

Gender – Student Campus Recreation Users

Gender	Frequency	Valid Percent
Male	126	51.0
Female	121	49.0
Total	247	100.00

Classification/Year in School

Table 2 illustrates the division of student users based on their year or classification in school. Of the 248 users participating in this study there were 63 freshman/first year (25.6 percent); 71 sophomore (28.6 percent); 46 juniors (18.7 percent); 56 seniors (22.8 percent); 10 graduate/other (4.0 percent); and two non-respondents. A benchmarking study conducted by the university's campus recreation program in 2008 to examine characteristics of their users, was extremely similar across categories. The 631 students participating in the university's study were classified in the following groups: 168 freshman/first year (26.6 percent); 200 sophomore (31.7 percent); 119 juniors (18.7 percent); 143 seniors (22.7 percent) and 2 graduate/continuing education (.2 percent). In comparing the results of these studies, it is apparent that this sample is representative of the overall population of campus recreation users at this facility.

The results from this study were similar to those of other service quality studies performed within campus recreation. Osman et al. (2006) reported that their respondents were classified in the following groups: 40 freshmen (16.1 percent); 54 sophomores (21.7 percent); 56 juniors (22.5 percent); 54 seniors (21.7 percent); and 45 graduate students (18.1 percent). Ko and Pastore (2005, 2007) who studied all users of campus recreation services did not use class year to identify users, but used age. Of all of the users (student and non-student) of the campus recreation facilities they studied, 46 percent were between the ages of 18 and 22 and 35 percent of the users were between the ages of 23-30.

Table 2

Classification/Year in School – Student Campus Recreation Users

Age	Frequency	Valid Percent
Freshman/first year	63	25.6
Sophomore	71	28.6
Junior	46	18.7
Senior	56	22.8
Graduate	7	2.8
Other	3	1.2
Total	246	100.0

Proximity to Campus Recreation

Respondents were asked to provide information on their place of residence. As expected, the vast majority of student campus recreation users involved in this study reported that they lived on-campus. 165 of 246 respondents from this study (67.1 percent) specified on-campus housing as their domicile. This is a consistent trend within campus recreation. A study by Barcelona and Ross (2002) showed that students that live on-campus have a significantly higher rate of participation and on-campus student also use campus recreation services with more frequency. The results of a benchmarking study performed by campus recreation at this university also confirmed these results. The data from their study indicated that 71.7 percent of their users live on-campus. Table 3 shows the full break down of housing options selected by respondents.

Table 3

Proximity to Campus Recreation – Student Campus Recreation Users

Proximity to Campus Recreation	Frequency	Valid Percent
Dormitory or other campus housing	165	67.1
Residence (house, apartment, etc.) within walking distance of university	52	21.1
Residence (house, apartment, etc.) within driving distance of university	27	11.0
Fraternity or sorority house	2	.8
Total	246	100.0

Note. Did not respond = 2

Frequency of Use

Respondents were asked to indicate how often they used the facilities and services offered by campus recreation on average within a single week. The results showed that respondents used campus recreation on a regular basis. The majority of respondents (47.5 percent) reported that they use campus recreation facilities and services 4-5 times a week, with an additional 20.4 percent of users reporting their use at 6 or more times a week. Table 4 gives a complete distribution of the frequency of use within the sample.

Table 4

Frequency of Use: Per Week

Frequency of Use: Per Week	Frequency	Valid Percent
1 time	12	5.0
2 – 3 times	65	27.1
4 – 5 times	114	47.5
6 or more times	49	20.4
Total	240	100.0

Overall Satisfaction, Perceptions of Value, and Future Intentions

The next section provides descriptions of the items measuring overall satisfaction, perceptions of value and future intentions within this study.

Overall Satisfaction

Overall satisfaction was measured with a single-item, consistent with previous research measuring service quality and overall satisfaction (Murray and Howat, 2002; Osman et al., 2006). Respondents were asked to rate their overall satisfaction with the facilities and services offered by campus recreation on a scale from 1 (Very dissatisfied) to 7 (Very satisfied). As shown by Table 5, the mean satisfaction score was 5.56, indicating that users were satisfied with their overall experience with campus recreation.

Table 5

Mean Overall Satisfaction Scores

Overall Satisfaction	Mean	SD
Overall satisfaction with services and facilities	5.56	1.126

Perceptions of Value

Table 6 shows the mean scores and standard deviations of the universal value question included in this study. Students were provided with the dollar amount that they paid, as part of their total university services, and then were asked to rate on a six-point Likert scale with anchors at 1 (strongly disagree) and 6 (very strongly agree) the extent to which they agreed that campus recreation provided value for this fee. The mean score of this item was 4.22.

Table 6

Mean Perceptions of Value Scores

Perceptions of Value	Mean	SD
Perceptions of value in campus recreation	4.22	1.281

Future Intentions

A single item asking users to rate the likelihood that they would recommend campus recreation to others was used in order to determine the user's future intentions and/or how loyal a user they are. The item was scaled from 1 (Not at all likely) to 5 (Extremely likely) and illustrated high levels of recommendation. Overall, the future

intentions score was somewhat high with the mean score of this question at 4.35 as shown in Table 7.

Table 7

Future Intentions Scores

Future Intentions	Mean	SD
Likelihood that you would recommend campus recreation services and facilities to others	4.35	.793

Service Quality

The following section addresses the items and factors that comprise of the service quality portion of this study, as well as the relationships between service quality and other variables. Means scores for service quality items are provided, as are the methods of used to determine if the underlying dimensions reflected the three-factor model proposed by previous research.

Mean Scores of Service Quality Items

The data in Table 8 shows the mean scores and standard deviations of the items used to measure the student users' perceptions of service quality within campus recreation. The respondents were asked to rate campus recreation on a six-point Likert scale (1 = Strongly Disagree to 6 = Very Strongly Agree). The means scores of these items are skewed high, indicating that this user group perceives the service quality at this institution to be very good.

The original instrument used in this study had a total of 16 items, however it was determined post data collection that one of the items was not applicable to campus recreation and may be problematic. The item used to measure food and beverage services, was determined to be inapplicable to this study given the lack of dedicated food and beverage services at this campus recreation facility. This item was the only to have a score lower than 4.5 (4.05). This item also proved to be problematic when factor analyzed, loading within the incorrect dimension of service quality proposed by previous research (Murray and Howat, 2002). For these reasons, this item was removed from the study.

In examining the means of the remaining items, 8 of the 15 have means of 5 or higher. These results are consistent with other studies measuring service quality at recreation facilities of all kinds, illustrating that most users have high perceptions of service quality (Murray and Howat, 2002; Osman et al., 2006).

Table 8

Service Quality Mean Scores and Standard Deviations

Service quality attributes	Mean	SD
Broad range of activities available	5.22	0.88
Staff presentation	5.11	0.91
How well the facilities and services are organized and run	5.11	0.95
Facility cleanliness	5.07	0.86
Facility maintenance	5.04	0.97
Coach/Instructor competency and knowledge	5.02	0.92

(Table 8 Continues)

(Table 8 Continued)

Walking and parking safety and security	5.02	1.06
Up-to-date information available	5.00	0.96
Comfort of physical setting	4.97	1.04
Staff competency and knowledge	4.95	0.95
Staff responsiveness	4.92	1.06
Programs start and finish on time	4.91	1.02
Staff friendliness	4.87	1.10
Equipment quality and maintenance	4.60	1.21
Referees/Officials competency and knowledge	4.59	1.20

Service Quality: Factor Analysis

The service quality items were factor analyzed to investigate the underlying dimensions of the 16 items scale and to reduce data to reflect a three-factor scale proposed by previous research (Howat et al., 1999). Using the SPSS FACTOR function, factor analysis was performed on the 16 items specified to measure service quality in campus recreation. Principle axis factoring with a Varimax rotation procedure was used.

The result of the factor analysis was three latent variables. To determine the validity in dimension of the scale, the following steps were employed. First, Eigenvalues of the extracted factors were examined. The first three factors exhibited Eigenvalues close to the 1.00 threshold (Personnel = 6.45; Peripheral = 1.68; Core; .99), reinforcing

the results of a three-factor solution. Analysis of the scree-plot confirmed this, revealing that the number of factors was most likely three (see Figure 1).

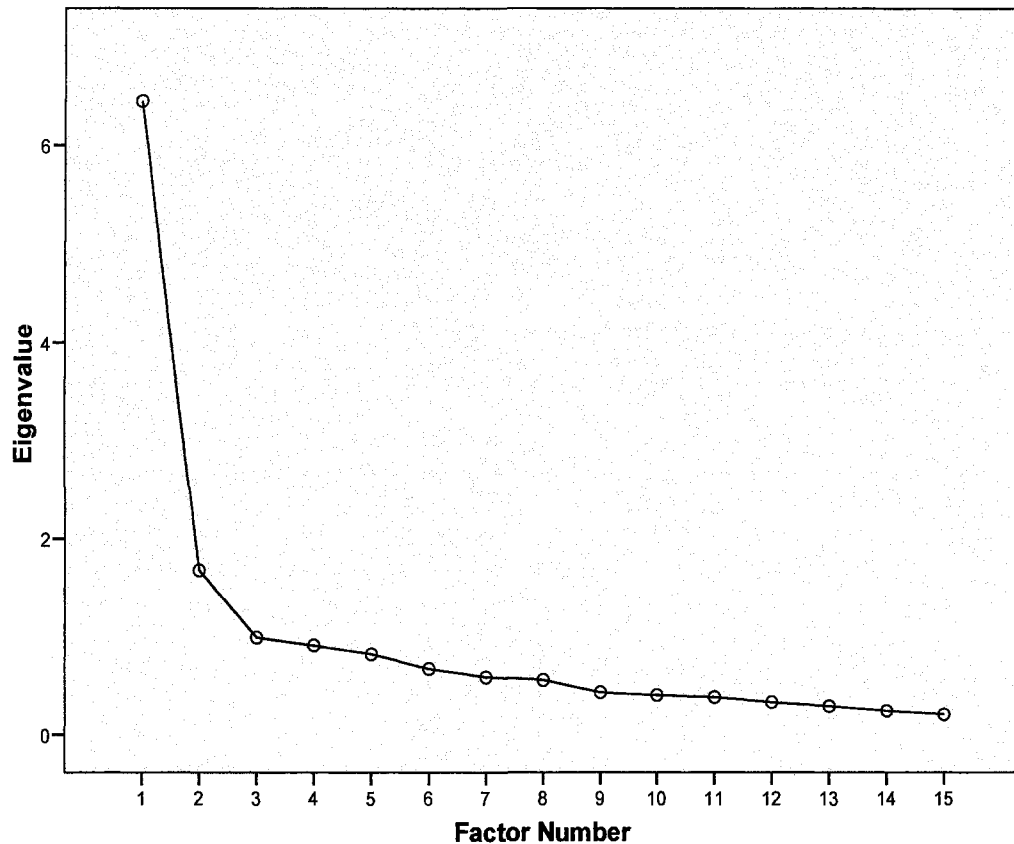


Figure 1. Scree Plot of Eigenvalues - Service Quality Items

The item groupings within factors were then compared to the research of Murray and Howat (2002). The factor analysis results of this study mirrored the results of their study, with each of the factors loading into three identical groups. Based on the similarities, the labels used by Murray and Howat (2002) to identify the three factors were then adopted for this study. Each group was labeled based on the themes of the items that comprised them. Murray and Howat (2002) used the following labels for the factor groups: core (items loading on the principal service functions); personnel (items

loading on functions related to staff); and peripheral (items loading on secondary services). Tables 9 through 11 exhibit the groups in which items were factored.

Table 9

Factor 1: Core Service Quality

Core service quality attributes	Factor Loadings
Facility maintenance	0.77
Facility cleanliness	0.54
Equipment quality and maintenance	0.53
Comfort of physical setting	0.42

Table 10

Factor 2: Personnel Service Quality

Personnel service quality attributes	Factor Loadings
Staff responsiveness	0.81
Staff friendliness	0.76
Staff competency and knowledge	0.75
Staff presentation	0.74
Coach/Instructor competency and knowledge	0.53
Referees/Officials competency and knowledge	0.45

Table 11

Factor 3: Peripheral Service Quality

Peripheral service quality attributes	Factor Loadings
Broad range of activities available	0.71
How well the facilities and services are organized and run	0.70
Up-to-date information available	0.57
Programs start and finish on time	0.48
Walking and parking safety and security	0.39

Reliability of Service Quality Factor Groups

To determine the internal consistency of the underlying dimensions reflected within the three-factor model, reliability tests were performed. Each group of items was isolated in groups as indicated by the factor analysis and was tested using SPSS 15.0. To determine the internal consistency of each dimension, Cronbach's alpha coefficient scores were used. As shown in Table 12, the Cronbach's alpha coefficients of each dimension were higher than 0.70 (Core = 0.78; Personnel = 0.86; Peripheral = 0.76) and were therefore all accepted. This follows the recommendations set forth by previous studies within campus recreation service quality research (Ko and Pastore, 2005; 2007; Osman et al., 2006).

Table 12

Reliability of Service Quality Factor Groups

Service Quality Factor	α
Personnel Service Quality	0.86
Core Service Quality	0.78
Peripheral Service Quality	0.76

Relationships Between Demographics and Service Quality

Relationships between each of the four demographic items (gender, classification in school, proximity to campus recreation, and frequency of use) and the three dimensions of service quality (core, personnel, and peripheral) were measured. To perform this measure, each of the service quality items from each dimension was computed into a grand mean creating a single variable for each of the three service quality variables. A stepwise regression analysis for each of the service quality dimension was then employed with the service quality dimension as the dependent variable and the demographic items as the independent variables. The variables showing no significant relationship were automatically dropped from the model.

Of the four demographic items analyzed, only proximity to campus recreation was found to be significant ($F = 6.96, p < 0.01$) within core service quality. Proximity to campus recreation was also found to be significant within peripheral service quality ($F = 7.01, p = 0.01$). Gender was the only demographic item found to be significant within personnel service quality ($F = 6.33, p = 0.01$). Aside from the fact that only one of the

four items was a significant predictor of service quality, the R^2 and overall percentages of the variance for each of these models is modest. Table 13 shows the results and models summaries for each of the service quality groups.

Table 13

Results of Stepwise Regression Analysis: Demographic Variables and Service Quality Variables

Demographic variable	Beta	<i>t</i>	<i>p</i>
Model Predicting Core Service Quality Perceptions			
Proximity to campus recreation	-0.17	0.86	0.01
Model summary: $F = 6.96, p = .01, R^2 = .03$, Adjusted $R^2 = .02$			
Model Predicting Personnel Service Quality Perceptions			
Gender	0.16	1.21	0.01
Model summary: $F = 6.33, p = .01, R^2 = 0.03$, Adjusted $R^2 = 0.02$			
Model Predicting Peripheral Service Quality Perceptions			
Proximity to campus recreation	-0.17	-2.65	0.01
Model summary: $F = 7.01, p = 0.01, R^2 = 0.03$, Adjusted $R^2 = 0.02$			

Relationships Between Service Quality and Satisfaction

To measure the relationships between the users perceptions of the three dimensions of service quality and overall user satisfaction, a stepwise regression analysis was used. This time satisfaction was used as the dependent variable and the three service quality dimensions were used as the independent variables.

Of the three service quality dimensions, only core service quality was found to have a significant relationship with overall satisfaction scores, thus the other two were dropped from the analysis. The relationship between these two variables however, was of greater significance ($F = 141.63, p < 0.001$) than that of the demographics and service quality scores. The R^2 and overall percentages of the variance for this model was acceptable, explaining approximately 37 percent of the variance in the user's overall satisfaction. This finding differs from that of previous research in other industries, indicating that all of the service quality dimensions should impact overall satisfaction. However, this is very interesting and could be extremely important information for campus recreation managers to have. What these results indicate is that campus recreation users' levels of satisfaction are solely driven by the quality of the core services, or simply put, the tangibles or facilities. This could be a significant finding that could help campus recreation managers make service adjustments to suit the needs of their users. And more importantly, justify the need for funding to maintain and possibly increase the amount of recreation equipment, as well as rationalize spending on facility upkeep, expansion and new development. Table 14 shows the results and models summary for service quality and satisfaction.

Table 14

Results of Stepwise Regression Analysis: Service Quality and Overall Satisfaction

Service Quality Dimension	Beta	<i>t</i>	<i>p</i>
Model Predicting Overall Satisfaction			
Core Service Quality	0.60	11.90	0.001
Model summary: $F = 141.63, p = .001, R^2 = 0.37, \text{ Adjusted } R^2 = 0.37$			

Relationships Between Service Quality and Value

A stepwise regression analysis was used to determine the relationships between the users' perceptions of value and the three dimensions of service quality. Value was used as the dependent variable and the three service quality dimensions were used as the independent variables. Of the three service quality dimensions, only core service quality was found to have a significant relationship with value scores and the other two dimensions were dropped from the analysis. The relationship between these two variables (value and core service quality) was significant ($F = 34.32, p < 0.001$) and can be seen in Table 15. The variance explained in the user's perceptions of value were indicated by the R^2 (0.12).

Table 15

Results of Stepwise Regression Analysis: Service Quality Dimensions and Value

Service Quality Dimension	Beta	<i>t</i>	<i>p</i>
Model Predicting Value			
Core Service Quality	0.35	5.86	0.001
Model summary: $F = 34.32, p = 0.001, R^2 = 0.12$, Adjusted $R^2 = 0.12$			

Relationships Between Satisfaction, Value and Future Intentions

In addition to examining the relationships that existed between service quality and demographic data, overall satisfaction and value; this study also examined the relationships that existed between overall satisfaction, value and future intentions.

Results from regression analysis examining the relationships between each of these groups are outlined in this section.

Relationship Between Value and Overall Satisfaction

The relationship between perceived value and overall satisfaction was also performed using a regression analysis with satisfaction acting as the dependent variable and value as the independent variable. As illustrated by Table 16, a significant relationship was found between perceptions of value and overall satisfaction ($F = 57.82$, $p = 0.001$). While a significant relationship existed, the percentage (19 percent) of variance of value predicting satisfaction was not quite as high as with service quality.

Table 16

Results of Regression Analysis: Value and Overall Satisfaction

	Beta	<i>t</i>	<i>p</i>
Model Predicting Overall Satisfaction			
Value	0.44	7.60	0.001
Model summary: $F = 57.82$, $p = 0.001$, $R^2 = 0.19$, Adjusted $R^2 = 0.19$			

Relationships Between Satisfaction and Future Intentions

To examine the relationship between overall satisfaction and future intentions of campus recreation users, a regression analysis was used. The results of this analysis showed that users may be extremely likely to recommend campus recreation to others if

they are satisfied and vice versa. This significant relationship ($F = 260.13, p = 0.001$) explained 51 percent of the variance in the user's intention to recommend the facility. Of all of the relationships tested, the relationship between satisfaction and the user's future intentions was the most significant, as shown in Table 17.

Table 17

Results of Regression Analysis: Overall Satisfaction and Future Intentions

Independent Variable	Beta	<i>t</i>	<i>p</i>
Model Predicting Future Intentions			
Overall Satisfaction	0.72	16.13	0.001
Model summary: $F = 260.13, p = .001, R^2 = 0.51$, Adjusted $R^2 = 0.51$			

Relationship Between Value and Future Intentions

Table 18 illustrates that the relationship between campus recreation users' perceptions of value and their future intentions was also found to be significant. A regression analysis was used to examine the relationship between these two variables. The users' perceptions of value could explain 19% of the variance in users' future intentions.

Table 18

Results of Regression Analysis: Value and Future Intentions

Independent Variable	Beta	<i>t</i>	<i>p</i>
Model Predicting Future Intentions			
Value	.433	7.54	0.001
Model summary: $F = 56.81, p = 0.001, R^2 = 0.19$, Adjusted $R^2 = 0.18$			

Summary

This chapter discussed the results of this study by addressing the following items:

(a) an analysis of the response rate of this study; (b) a description of the characteristics of campus recreation users described through demographic data (gender, classification/year in school, proximity to campus recreation, and frequency of use); (c) description of the characteristics of campus recreation users' perceptions of service quality, overall satisfaction, as well as their future intentions; (d) a test of reliability and a factor analysis of the service quality items to ensure proper dimensions; (e) analysis of the relationships between user demographic characteristics, perceptions of service quality, perceptions of value, overall satisfaction with campus recreation, and their future intentions.

CHAPTER V

SUMMARY, DISCUSSION OF FINDINGS, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

Summary

The problem of this study was to examine the relationships between perceptions of service quality, overall satisfaction, value and future intentions of campus recreation participants using only the performance section of the Centre for Environmental and Recreation Management-Customer Service Quality (CERM-CSQ) instrument (Howat et al., 1999) and additional questions consistent with the findings of Murray and Howat (2002) within public recreation. The findings of this study were then compared to other service quality research conducted within campus recreation to determine the strength of the relationships and their importance to this niche field within recreation and leisure studies.

The CERM-CSQ instrument was administered to the core user group (students) of campus recreation services at a large university located in the Northeastern region of the United States. These users were asked to provide demographic information in the form of their gender, classification/year in school, proximity to campus recreation, and their frequency of use. They were also asked to provide their perceptions of service quality, value, overall satisfaction and their future intentions. A method of systematic sampling, using a mall-intercept technique was used to collect data. Responses were collected over a ten-day period at different times of day and at different activities and locations within

the primary campus recreation facility to ensure all user groups were accounted for. These methods were consistent with other service quality research conducted within recreation facilities (Kim & Kim, 1995; Howat et al., 1999; Murray and Howat, 2002; Ko & Pastore, 2005; 2007; Osman et al.; 2006).

A total of 340 campus recreation users were asked to participate in this study. Of these users, a total of 80 declined to partake in the study, resulting in a total of 260 responses and a response rate of 76.5 percent. Using data reduction techniques recommended by previous research (Murray and Howat, 2002; Osman et al., 2006), an additional 11 responses were eliminated from the study and there were a total of 249 usable surveys used in data analysis. The total response and response rate within this study was equal to or better than other service quality studies conducted within both public and campus recreation facilities (Kim & Kim, 1995; Murray and Howat, 2002; Ko & Pastore, 2005; 2007; Osman et al.; 2006).

In order to determine the acceptability of the factor structure and dimensions proposed by Murray and Howat (2002) within campus recreation, reliabilities and factor analysis were run using SPSS 15.0. Factor analysis using principle axis factoring with a Varimax rotation procedure to factor items. These procedures allowed the researcher to test the reliability of the performance-based instrument and to better understand the relationships between the items measuring service quality and test the groups proposed by previous research. Testing the reliability of a concise performance-based instrument designed to measure campus recreation users' perceptions of service quality could be extremely beneficial for managers to assess their organization's performance, plan for service adjustments, or to rationalize funding.

research (Howat et al., 1999; Murray and Howat, 2002), that the item be placed in core service quality. This is the dimension that makes the most theoretical and practical sense for this item. There were four other items loading in two dimensions (programs on time, parking and walkway safety and security, facility maintenance, and facility cleanliness). However, these items loaded higher within the dimensions proposed by previous research and were factored as such.

To ensure that the items were factored properly within the proposed dimensions, reliability testing of the remaining 15 items was employed. Within the proposed service quality dimensions created by the factor analysis, the Cronbach's alpha coefficients for all of the groups were higher than the .70 threshold (Core = 0.78, Personnel = 0.86, Peripheral = 0.76) used in previous research (Ko and Pastore, 2005; 2007; Osman et al., 2006).

The results of the factor analysis and tests of reliability statistically show the strength of the CERM-CSQ as an instrument to measure service quality within recreational settings, as it provided statistical evidence of a three-factor model for measuring service quality within recreational facilities. While the factor structure and reliabilities were statistically acceptable, they may need to be modified and/or adjusted before they become the industry standard for campus recreation. For the most part, the items loaded within the dimensions specified by the previous research (Howat et al., 1999; Murray and Howat, 2002). However, there were certainly some exceptions and items that loaded in multiple dimensions. The item of food and beverage services was specifically not applicable for users of this campus recreation facility, given the lack of these services. The other items that loaded in multiple dimensions also may not be

applicable within campus recreation or even to a specific user given their involvement with this organization. For example, users may not be able to assess the timeliness of program start and end times, if they have not used such programs and/or services. These items may need to be removed or rephrased so that users can assess their performance in a more appropriate manner. Overall, the factor loadings for the items were all relatively high with very little overlap, and the three factors all exhibited scores of adequate reliability.

Upon determining the appropriateness of the three service quality dimensions, the 15 items were condensed into three latent variables: core service quality; personnel service quality; peripheral service quality. These three variables were then used to examine their relationship with characteristics of the campus recreation users. Stepwise regression analysis of each service quality variable and the demographic data (gender, classification/year in school, proximity to campus recreation, frequency of use) indicated very few statistically significant relationships. Significant relationships existed between: proximity to campus recreation and core service quality; proximity to campus recreation and peripheral service quality; and gender and personnel service quality.

While these results may not show statistical significance, they show a great deal of practical significance. Due to the great degree of choice within the marketplace of recreation and leisure activities, public and private recreation organizations and facilities must plan and make numerous service adjustments. First, they must entice users from a diverse population with varying needs. Then after bringing them in, they must make further adjustments to continue to meet their needs, hoping to retain their patronage. Campus recreation is substantially different in this regard. Due to the lack of choice on

university campuses in regards to organized recreation and leisure options, campus recreation departments may be afforded the luxury of not having to endure such rigorous planning to bring in new users. These users may perceive campus recreation as their only recreation option, making them less influenced by choice, thus lowering their expectations of the services offered. The regression analysis results may reinforce this idea.

The mean scores of performance for all of the items encompassing the core and peripheral categories were lower for all off-campus campus recreation users. The results indicated that proximity to campus recreation predicted service quality perceptions of core and peripheral service quality items. It can be inferred that users who live off-campus have a greater variety of recreation and leisure options at their disposal and must go to greater lengths in order to use campus recreation given their proximity. These users may have a different standard than on-campus users in relation to their perceptions of service quality and are therefore more critical of the core and peripheral services offered by campus recreation. Campus recreation managers may have to employ new strategies to appeal to these off-campus users, providing them with service that is on par with options they would find in public and/or private recreation services.

The other descriptive characteristic that proved to be statistically significant was gender in rating the performance of personnel service quality. In analyzing the mean scores of the service quality items, female users had higher performance scores in each of the personnel categories, with significantly higher performance scores on the questions pertaining to instructor and official service quality. This may be due to the quantity of interactions that females had with each of these groups. Information provided by the university on the characteristics of their campus recreation users showed that males

participated in club and intramural sports slightly more frequently than females, while more females engaged in activities with instructors (i.e. lessons or group classes). This may have affected the way that each of the genders rated these service quality items.

After examining the relationships between the service quality groups and the demographic characteristics, stepwise regression was used to examine the impact of the three service quality dimensions on overall satisfaction and value. Much like the results from the regression analysis examining the relationships between service quality and demographics, there was only one group that exhibited a significant relationship in each category. These results are interesting in that they may show how campus recreation differs from other recreation entities. Core service was significant at the 0.001 level for both overall satisfaction and perceptions of value, with the other service quality categories were not statistically significant. Previous research by Murray and Howat (2002) showed significant relationships between all service quality categories (core and relational, a combination of peripheral and personnel) and satisfaction and value within public recreation. Osman et al. (2006) who conducted a similar study within campus recreation found significant relationships between all of their service quality dimensions (ambiance, operations, staff) and satisfaction, however did not measure value. While the study exhibited similarities, the difference in their service quality dimensions and the items comprising these dimensions, led to different relationships.

The relationships exhibited in this study could once again be the result of the amount of perceived choice that campus recreation users' have and how it impacts their overall perceptions of service quality. Campus recreation users may only focus on the core elements of a recreational facility, as this is of utmost importance to them. They

may not be concerned with extraneous factors associated with their recreation experience, such as employee friendliness or appearance, or activities and classes. As long as their needs in relation to the core services of a campus recreation facility are met, they are satisfied and perceptions of value are greater. Users of other public or private recreation entities may be more discerning of the service items comprising the personnel and peripheral dimensions. Therefore, as in with the Murray and Howat (2002) study, there are more statistically significant relationships between these variables and satisfaction and perceptions of value. Simply put, campus recreation users or students, may not value anything other than the tangible elements that encompass their service experience. If these needs are met, they are more satisfied and perceive that the services they have been provided have value.

These results could be extremely important to campus recreation managers in planning for and making service adjustments to appease the foundation of their user group. If in fact, students are only concerned with the core service quality attributes, campus recreation managers could plan accordingly, making service and resource adjustments to meet these needs. By emphasizing the virtues of core service quality and its impact on user satisfaction and perceptions of value, managers could provide universities with the rationale for funding to improve the facilities and services that comprise the core service quality dimension within campus recreation.

The relationships between value and satisfaction, satisfaction and future intentions, and value and future intentions were measured to encompass the full range of impact that service quality perceptions may have on outcomes that are important to campus recreation managers. The results of the test of correlations between these items

to examine the relationships were consistent with those of Murray and Howat (2002) for which the inclusion of these variables in this study was founded. There were significant relationships between each of these variable groups ($p < 0.00$). These results, while not surprising and practically self-evident, still hold value to campus recreation managers.

While value was included in this study because of its use within the Murray and Howat (2002) study, it was also included based on the recommendations of Osman et al. (2006) who stated a need in future literature for studies examining value's role in campus recreation-based service quality research. Studying the impact of value in campus recreation differs from public or private recreations whose services are fee based, given that you must pay an up front fee to use the service. Campus recreation users may not consider the monetary value of the services that they are receiving because they are usually bundled with a broad range of fees collected by the university in conjunction with the registration of academic classes. For this reason, many users are completely unaware as to what they are paying, since it is not implicitly stated. However, when they are told what they are paying, as shown by the results of this study, it effects their overall satisfaction and their future intentions just as it does in other recreation fields. This could be extremely useful information for campus recreation managers to have and use, but in a different respect than in public or private recreation where this information is used predominantly for pricing purposes. In campus recreation, this information can be used to assess campus recreation performance in relation to the resources that they have as assessed by their users. In most cases, where recreation fees are generally low in comparison to other fees collected at universities, imparting this information on student

users may improve their perceived performance of service quality. This may lead to more satisfied users.

Conclusions

Based on the research questions guiding this study, the following conclusions are suggested:

1. Significant relationships ($p < 0.05$) existed between core service quality and proximity to campus recreation, peripheral service quality and proximity to campus recreation, and personnel service quality and gender.
2. There was a significant relationship ($p < 0.05$) between core service quality and overall satisfaction.
3. There was a significant relationship ($p < 0.05$) between core service quality and value.
4. There was a significant relationship ($p < 0.05$) between campus recreation users' overall satisfaction and their future intentions.
5. There was a significant relationship ($p < 0.05$) between campus recreation users' overall satisfaction and their future intentions.
6. There was a significant relationship ($p < 0.05$) between campus recreation users' perceptions of value and their future intentions.

Implications

1. The findings of this study in large part reinforce the service quality literature within recreation and beyond. Much like other instruments used to evaluate service quality performance, the CERM-CSQ is in no way perfect and is not an instrument that is

ready for use as a template without alterations. As a means of purely rating the mean scores of service quality performance of campus recreation services and facilities it succeeded in providing information that was easy for managers to interpret. One could clearly establish from mean scores how well an organization was performing without having to perform any statistical procedures. In that regard, this instrument may be attractive to campus recreation practitioners seeking a quick assessment of their service quality performance.

2. The dimensions used to measure service quality were based on studies within public recreation and may not have fully encompassed the service needs of campus recreation users. For this reason, the relationships established between service quality and demographic data and overall satisfaction in this study, while practically important, may not have truly been indicative of the relationships of services at this institution due to the instrument's limitations. This provides recreation managers with the rationale to make modifications to existing instruments within service quality research to make them more applicable to their organization and their users. In academia, rationale for further development and testing of an instrument focused on the service quality aspects that are important to campus recreation users has been established. The development of new instruments would assist managers in understanding their users' needs and perceptions, as well as the relationships that these perceptions have on important outcome variables such as overall satisfaction.

3. The demographic data examined in this study showed that off-campus students may have different perceptions of service quality than students that live on-campus. While the reasons for this were not established within this study, it could be inferred that

the abundance of choice that off-campus students have that on-campus students may not have, could be the predominant reason for the difference in perceptions of service quality between these two user groups. This research exhibits the possibility that recreation managers may have to make service adjustments if they are determined to satisfy all user groups comprising the full realm of their clientele. This study also has shown the need for further research on the importance of choice in the marketplace in regards to perceptions of service quality.

4. This study may have provided some insight into the inherent differences between the different sectors of recreation-based service quality research. Differences were established in regards to the importance of service quality attributes amongst campus recreation users in comparison to public or private users. The importance of certain service quality dimensions and their relationships to other variables may differ within campus recreation. Based on the results of this study, one could ascertain that core service quality is of utmost importance to campus recreation users, with peripheral and personnel service quality lagging in comparison. There is a possibility that campus recreation users place importance on different items, or are only concerned with the tangible items that they are provided within campus recreation, when assessing service quality. Or there is the possibility that once again, choice may play a factor in how campus recreation users view service quality. What could be taken from this information is that at all costs, recreation managers must preserve the core.

5. The introduction of value to the discussion on service quality within campus recreation provided some interesting results. Given that value is inherently different within campus recreation in comparison to its counterparts within other sectors of the

industry, it was important to determine how it impacted campus recreation user's perceptions of satisfaction and future intentions. The results were similar to studies conducted within other recreation services and value was found to have a significant relationship on the user's overall satisfaction and also their future intentions. This could provide practitioners and scholars with the rationale to not only include studies linking value to service quality within campus recreation, but also to build on the literature examining its impact.

6. This study was also able to reinforce previous findings that overall satisfaction and value can impact the future intentions of a recreation user, with both exhibiting significant relationships. This could prove to be important to campus recreation managers, as it could provide a means for growing their core user group and more students may benefit from campus recreation as proposed from previous research.

Recommendations

Based on the findings of this study, the following recommendations have been made for future research in this area:

1. Further research is necessary to assist campus recreation managers in determining what items and dimensions are most appropriate for use within campus recreation service quality research. Research on the needs and expectations of campus recreation users would assist researchers and practitioners in creating dimensions that would be best suited for assessing organizational performance. Furthermore, it would allow more accurate results comparing the dimensions of service quality to each other and to other variables that are important to campus recreation managers.

2. Upon focusing in on the service quality items and dimensions that comprise service quality research within campus recreation, a new means of measuring these ideas would be extremely beneficial. Currently, scales and instruments designed to collect service quality data are either not focused on the needs of campus recreation or are not administratively friendly, relying on too many items to assess performance and/or adhering to methods making them difficult to use within in the field. The development of a new campus recreation specific service quality instrument that provides insight into organizational performance while still being administratively friendly could help to increase the amount of service quality research conducted within the field.

3. Due to the nature of service quality research, it is impossible to create a universal instrument for use in any area of recreation. Even within campus recreation where there are similarities from organization to organization and all located on a college or university campus, not all campus recreation departments are the same. There is great variability in the services offered, as well as the facilities that are being used. Therefore, it is imperative that further research examine and outline the changes and alterations that campus recreation managers can make to existing instruments in order to examine service quality within their organization.

4. This study attempted to examine the relationships between a user's demographic characteristics and their perceptions of service quality, with varied results. More research in this area is necessary to assist us in understanding campus recreation users. There is the possibility that in addition to the five demographic variables used in this study, there are other groups that could be examined. Ethnicity, major in school, and employment status are just a few of the possible areas that researchers could examine. There is also

the chance that the population of users from this university has perceptions of service quality that differs greatly from others. Perhaps research within a campus recreation setting with greater diversity would provide different results.

5. This study provided justification for research examining the difference in the perceptions of service quality between on-campus and off-campus users. In addition to whether or not they live on or off campus, proximity in distance as well as other recreation options may provide a clearer picture as to the differences between performance scores within these groups.

6. Studies examining the impact of perceptions of choice within the marketplace in relation to not only how off-campus users view service quality, but also on-campus users may prove to be beneficial for managers of campus recreation programs. This study only focused on the frequency of use within campus recreation. Future research could collect data on the frequency of use of other recreation options. A Likert-scale question asking users to rate the degree to which they believe that have a choice in using the facility may provide some insight into how choice affects perceptions of service quality within recreation.

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To test the relationships between items, regression analysis was used. To test the relationship between multiple items and a single item, a stepwise regression technique was employed. Both of these procedures were used to test the statistical significance between items as proposed by previous research (Murray and Howat, 2002; Osman et al., 2007). Research of this nature could show what campus recreation users find most important and how it affects their overall satisfaction and behavioral and/or future intentions.

Discussion of Findings

The factor analysis and test of reliability for the two and three factor models both indicated that 2 of the 16 service quality items were troublesome (food and beverage and overall comfort of the facility). Overall, the first factor analysis exhibited a factor model differing from previous research with low reliabilities for each of the two factors it proposed (Murray and Howat, 2002). It was determined that the food and beverage item be removed from this study as it was deemed to be inapplicable due to the lack of such services offered at this facility.

Upon removing this item, the new factor analysis of the remaining 15 items resulted in three latent variables (core, personnel, peripheral) that were consistent with previous research conducted by the instrument's creators (Howat et al., 1999). Of the 15 items tested, 14 had factor loadings above 0.40, with walking path and parking safety and security loading in two dimensions (0.39 in peripheral). The overall comfort item that was loading in the incorrect dimension in the original factor analysis, was now loading in two dimensions (peripheral = 0.52 and core = 0.42). It was determined based on previous

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APPENDICIES

APPENDIX A: INSTRUMENT

User Attitudes and Satisfaction of UNH Campus Recreation

The University of New Hampshire is asking for your assistance in helping to provide information regarding user attitudes and satisfactions about UNH Campus Recreation facilities. We seek to determine what services and physical considerations lead to positive recreation experiences here at UNH. The information that you provide will assist us in better understanding who uses recreation facilities. It will also give us insight on how to better serve you and the general recreation population.

This survey is completely voluntary and at any point in time you may withdraw yourself from the survey without consequence. All information will be kept confidential and your answers cannot be traced back to you. This survey should take approximately 10 minutes. Please answer all questions to the best of your ability and if you have any questions please feel free to ask. Some questions require specific instructions, but for all others please check the box that most appropriately represents your answer. Thank you for taking the time to complete this survey and we appreciate your help.

PART I:

1. **Gender:** Male Female
2. **Age:** 19 or younger 20-23 24-29 30-39 40 or older
3. **Are you a student at the University of New Hampshire?**
 Yes (Please answer questions 4-9) No (Please skip to question 10)
4. **What is your classification in college?**
 Freshman/first year Sophomore Junior Senior Graduate Other
5. **How many credits are you taking this term?**
 Full-time (12 or more credits) Part-time (11 or fewer credits)
6. **What have most of your grades been up to now at this institution?**
 A A-, B+ B B-, C+ C, C-, or lower
7. **Did you begin college here or did you transfer here from another institution?**
 Started here Transferred from another institution
8. **Where do you now live during the school year?**
 Dormitory or other campus housing
 Residence (house, apartment, etc.) within walking distance of UNH
 Residence (house, apartment, etc.) within driving distance of UNH
 Fraternity or sorority house

9. Students, each semester each student pays \$264 in fees that are used by UNH Campus Recreation. To what extent do you agree with this statement:

The services and facilities offered by UNH Campus Recreation provide excellent value for my money (\$264).

Strongly disagree			Very strongly agree		
1	2	3	4	5	6

10. Non-students, based on what you pay to use services and facilities provided by UNH Campus Recreation, to what extent do you agree with this statement:

Services and facilities offered by UNH Campus Recreation provide excellent value for my money.

Strongly disagree			Very strongly agree		
1	2	3	4	5	6

11. In an average week, how often do you use the services and facilities provided by UNH Campus Recreation?

- First time user
- 1 times or fewer per week
- 2 – 3 times per week
- 4 – 5 times per week
- 6 times or more per week

12. Please indicate how often you have used or participated in the following in the past year:

	Very Frequently	Frequently	Sometimes	Rarely	Never
Hamel Center weight room	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hamel Center indoor track	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hamel Center basketball/ multi-purpose courts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Racquetball courts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Climbing wall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Personal Training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Classes or Lessons	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Club sports	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intramural sports	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PART II: The following set of statements relate to your feelings about CAMPUS RECREATION. For each statement, please show the extent to which you agree with the statement. Circling a 6 means that you very strongly agree that the CAMPUS RECREATION has that feature, and circling a 1 means that you strongly disagree.

PLEASE RESPOND TO ALL OF THE QUESTIONS USING THE FOLLOWING SCALE:						
Strongly Disagree						Very Strongly Agree
1	2	3	4	5	6	
1. The parking areas and walkways surrounding CAMPUS RECREATION facilities are safe and secure.	1	2	3	4	5	6
2. CAMPUS RECREATION'S facilities are clean.	1	2	3	4	5	6
3. Up-to-date information is available on CAMPUS RECREATION'S programs and services.	1	2	3	4	5	6
4. Programs offered by CAMPUS RECREATION start and finish on time.	1	2	3	4	5	6
5. CAMPUS RECREATION offers a broad range of activities.	1	2	3	4	5	6
6. CAMPUS RECREATION is well organized and well run.	1	2	3	4	5	6
7. The physical setting provided by CAMPUS RECREATION is comfortable.	1	2	3	4	5	6
8. The equipment provided by CAMPUS RECREATION is up-to-date and well-maintained.	1	2	3	4	5	6
9. CAMPUS RECREATION offers adequate food and beverage services.	1	2	3	4	5	6
10. You can count on employees of CAMPUS RECREATION to be friendly.	1	2	3	4	5	6
11. Employees of CAMPUS RECREATION are responsive to customer's problems and requests.	1	2	3	4	5	6
12. Employees of CAMPUS RECREATION are well-dressed and neat.	1	2	3	4	5	6
13. Employees of CAMPUS RECREATION are competent and knowledgeable about their jobs.	1	2	3	4	5	6
14. Coaches and Instructors of classes provided by CAMPUS RECREATION are competent and knowledgeable about their jobs.	1	2	3	4	5	6
15. CAMPUS RECREATION Intramural and Club Sport Referees and Officials are competent and knowledgeable about their jobs.	1	2	3	4	5	6
16. CAMPUS RECREATION'S facilities are well maintained	1	2	3	4	5	6

17. Please indicate the likelihood that you would recommend the services and facilities offered by UNH Campus Recreation to others.

Not at all likely					Extremely likely
1	2	3	4	5	

18. Please rate your overall satisfaction with services and facilities offered by UNH Campus Recreation.

Very dissatisfied					Very satisfied
1	2	3	4	5	6
			7		

19. If you could start your over again, would you go to UNH again?

- Yes, definitely
 Probably yes
 Probably no
 No, definitely

APPENDIX B: COVER LETTER

Month Day, 2008

Dear UNH Campus Recreation User:

The Department of Recreation Management and Policy at the University of New Hampshire, in partnership with UNH Campus Recreation, is asking for your participation in a study designed to measure users' attitudes and satisfaction with the services and facilities provided by UNH campus recreation. Your participation and input is vital, as it will provide us with information on how we can improve your recreation experiences here at UNH.

You should know that there are no foreseeable risks associated with your participation in this survey which should take you approximately 10 minutes to complete. Participation is completely voluntary. We want to assure you that the data collected during the course of this study will be kept confidential. No reference will be made in oral or written reports which could link any individual to the study.

Use of human subjects in this study has been approved by the Institutional Review Board for the Protection of Human Subjects at the University of New Hampshire. As such, if you feel you have not been treated according to the descriptions in this letter, or that your rights as a participant in this study have not been honored during the course of this project, you may contact Julie Simpson, Regulatory Compliance Manager at (603) 862-2003.

Upon completing your survey, please give it back to the survey administrator. Thank you very much for your time.

Best regards,

Denny Byrne
Director, Campus Recreation
University of New Hampshire

Matt Ott
Graduate Student
University of New Hampshire

APPENDIX C: IRB APPROVAL

University of New Hampshire

Research Conduct and Compliance Services, Office of Sponsored Research
Service Building, 51 College Road, Durham, NH 03824-3585
Fax: 603-862-3564

06-Jun-2007

Ott, Matthew
RMP, Hewitt Hall, Rm 108
3205 Arrowhead Circle, Apt. A
Fairfax, VA 22030

IRB #: 4016

Study: The Impact of Servicescapes and Service Quality on Customer Satisfaction and Loyalty in Commercial Sports and Recreation Settings

Approval Date: 04-Jun-2007


The Institutional Review Board for the Protection of Human Subjects in Research (IRB) has reviewed and approved the protocol for your study as Exempt as described in Title 45, Code of Federal Regulations (CFR), Part 46, Subsection 101(b). Approval is granted to conduct your study as described in your protocol.

Researchers who conduct studies involving human subjects have responsibilities as outlined in the attached document, *Responsibilities of Directors of Research Studies Involving Human Subjects*. (This document is also available at <http://www.unh.edu/osr/compliance/irb.html>.) Please read this document carefully before commencing your work involving human subjects.

Upon completion of your study, please complete the enclosed pink Exempt Study Final Report form and return it to this office along with a report of your findings.

If you have questions or concerns about your study or this approval, please feel free to contact me at 603-862-2003 or Julie.simpson@unh.edu. Please refer to the IRB # above in all correspondence related to this study. The IRB wishes you success with your research.

For the IRB,


Julie F. Simpson
Manager

cc: File
Barcelona, Robert