INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

Bell & Howell Information and Learning
300 North Zeeb Road, Ann Arbor, MI 48106-1346 USA
800-521-0600

UMI®
A MULTIDIMENSIONAL AND HIERARCHICAL MODEL OF SERVICE QUALITY IN THE PARTICIPANT SPORT INDUSTRY

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

Yong Jae Ko, M.A.

* * * * *

The Ohio State University
2000

Dissertation Committee:
Dr. Donna Pastore, Advisor
Dr. Packianathan Chelladurai
Dr. Ketra Armstrong

Approved by

Dana J. Pastore
Advisor
College of Education
ABSTRACT

In the current literature of sport management and marketing, there is a gap among scholars in conceptualizing service quality. To gain a better understanding of the construct, this study: (a) proposed and tested a conceptual model of sport consumers’ perceived service quality, (b) identified the causal relationship between service quality, satisfaction, and repurchase intention, and (c) tested the scale of service quality in participant sport (SSQPS) which was developed based on the conceptual model.

The proposed research model was based on the current conceptualization of service quality which suggested that service quality is a multidimensional, hierarchical construct (e.g., Brady & Cronin, 1999; Dabholkar, Thorpe, & Rentz, 1996). In the proposed model, service quality consisted of four generic dimensions (i.e., quality of program, interaction, outcome, and physical environment). Each of the dimensions was defined by several corresponding subdimensions: (a) program quality – range of program, operating time, and information, (b) interaction quality – client-employee interaction and inter-client interaction, (c) outcome quality – physical change, valence, and sociability, (d) environment quality – ambient condition, design, and equipment. In addition, the causal relationships between service quality, satisfaction, and purchase intention were included as a part of the model.

The research model was tested using the two-step approach of structural equation modeling where the structural model and measurement model were separately analyzed.
In particular, three second order factor models were separately tested to examine the hierarchical nature of the proposed model. The model was tested using AMOS 4.0.

The results support that each of the three structural models and a competing model fit the data. Therefore, it is concluded that the whole model was supported. In addition, the results of the study indicated that service quality and satisfaction were equally important variables for a sport consumer’s future purchase intention. A series of measurement model tests indicated that the SSQPS which was developed in this study was reliable and valid. To increase the generalizeability of the scale, further investigations need to be completed. This study advanced the knowledge base of service quality in the field of sport management, and provides implications for practitioners within the participant sport industry.
Dedicated to My Parents, Su Ar, Hyun
ACKNOWLEDGMENTS

I would like to thank my advisor, Dr. Donna Pastore, for her encouragement and guidance throughout the doctoral program. The years in my doctoral program were very successful and enjoyable due to her emotional and academic support. She served as both an advisor and mentor in academic and other general life as well. I would also like to thank the other members of my advisory committee, Dr. Packianathan Chelladurai and Dr. Ketra Armstrong. Dr. Chelladurai contributed significantly to this project by helping me to understand the process and theoretical foundations of the research. In addition, he has been another mentor and role model in academic and other general life as well. Dr. Armstrong helped me tremendously with synthesizing ideas and clarifying concepts. Her professional expertise and trust motivated me to pursue my professional goal.

Many others also deserve my gratitude. Among them, Master Pan Sun Chun, Master Seoung Bak Yang, Dr. Jin Bang Yang, Dr. Ken Min, and G. Master Jun Pyo Choi helped me to grow as a martial artist. Professors at Seoul National University taught and helped me to grow as a scholar and teacher. My colleagues, Hirotaka Matsuoka, Dan Funk, Corrine Daprano, Jeremy Jordan, and Carla Costa were always there for me when I needed them.

Finally, and most importantly, I would like to express gratitude to my family for their love and support. The sacrifices and supports of my parents and Su Ar, my wife
made me who I am. A special note of thanks is extended to my son, Daniel who gives me joy in my life. Without their emotional and financial support, this endeavor would not have been possible.
VITA

May 20, 1968 ....................................................... Born – Seoul, Korea

1990 ............................................................... B.S. Physical Education,
Seoul National University, Seoul, Korea

1988 - 1991 ............................................................. University Taekwondo Team Coach
Seoul National University, Seoul, Korea

1990 - 1991 .............................................................. Graduate Teaching Assistant,
Seoul National University, Seoul Korea

1995 - 1996 ............................................................. M.A. Health, Physical Education, and
Recreation (Sport Management)
The Ohio State University

1995 - 2000 ............................................................. University Taekwondo Team Coach
The Ohio State University

1997 - 2000 ............................................................. Graduate Teaching Associate,
The Ohio State University

PUBLICATIONS

Research Publication

Marketing and Management.” Conference Proceedings for 1999 The 3rd International
Taekwondo Symposium. Edmonton, Alberta, Canada, May 31, 1999

Organization: The case of the United States Taekwondo Union Members,” The Journal of
the International Council for Health, Physical Education, Sport, and Dance. 35 (1), 37-41.

FIELDS OF STUDY

Major Field: Education:
Physical Activities and Educational Services
Studies in Sport Management

Minor Field: Business Marketing
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Abstract</strong></td>
<td>ii</td>
</tr>
<tr>
<td><strong>Acknowledgements</strong></td>
<td>v</td>
</tr>
<tr>
<td><strong>Vita</strong></td>
<td>vii</td>
</tr>
<tr>
<td><strong>List of Tables</strong></td>
<td>xii</td>
</tr>
<tr>
<td><strong>List of Figures</strong></td>
<td>xiii</td>
</tr>
<tr>
<td><strong>Chapters:</strong></td>
<td></td>
</tr>
<tr>
<td>1. <strong>Introductions</strong></td>
<td>1</td>
</tr>
<tr>
<td>Statement of the Problem</td>
<td>4</td>
</tr>
<tr>
<td>Statement of the Purpose</td>
<td>17</td>
</tr>
<tr>
<td>Research Model and Hypotheses</td>
<td>17</td>
</tr>
<tr>
<td>Significance of the Study</td>
<td>32</td>
</tr>
<tr>
<td>Delimitations</td>
<td>33</td>
</tr>
<tr>
<td>Limitations</td>
<td>34</td>
</tr>
<tr>
<td>Definitions</td>
<td>35</td>
</tr>
<tr>
<td>Overview of the Chapters</td>
<td>36</td>
</tr>
<tr>
<td>2. <strong>Review of Literature</strong></td>
<td>38</td>
</tr>
<tr>
<td>Service Industry</td>
<td>39</td>
</tr>
<tr>
<td>The Nature of Service</td>
<td>42</td>
</tr>
<tr>
<td>Sport as a Service Product: Unique Features of Sport Services</td>
<td>49</td>
</tr>
<tr>
<td>Sport Services for Different Market Segments</td>
<td>53</td>
</tr>
<tr>
<td>Conceptualization of Service Quality</td>
<td>57</td>
</tr>
<tr>
<td>Definitions of Service Quality</td>
<td>58</td>
</tr>
<tr>
<td>Dimensions of Service Quality</td>
<td>63</td>
</tr>
<tr>
<td>Service Quality in the Sport Industry</td>
<td>76</td>
</tr>
<tr>
<td>Customer Satisfaction</td>
<td>84</td>
</tr>
<tr>
<td>The Causal Relationship between Service Quality, Satisfaction and Repurchase Intention</td>
<td>90</td>
</tr>
<tr>
<td>A Proposed Model of Service Quality and Research Hypotheses</td>
<td>94</td>
</tr>
</tbody>
</table>
D. Cover Letter, Categorization Form, and Comment Form
   Provided to the Panel of Experts ....................................................... 207
E. Cover Letter for Field Test ................................................................. 213
F. Cover Letter for Pilot Test ................................................................. 215
G. Cover Letter for Final Sample ......................................................... 217
H. Cover Letters for Staff and Leaders of Department of
   Recreational Sport ............................................................................ 219
I. Data Collection Procedures – Mall Intercept Survey Schedule ......... 218
J. Missing Data and Descriptive Statistics ........................................... 220

References ............................................................................................ 227
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Contrasts between Sport marketing and Traditional Marketing</td>
<td>52</td>
</tr>
<tr>
<td>2.</td>
<td>Demographic Characteristics of the Pilot Test Sample</td>
<td>114</td>
</tr>
<tr>
<td>3.</td>
<td>Reliability and Item-to-Total Correlations Analysis for the Pilot Test</td>
<td>116</td>
</tr>
<tr>
<td>4.</td>
<td>Demographic Characteristics of the Research Sample</td>
<td>150</td>
</tr>
<tr>
<td>5.</td>
<td>Measurement Model Analysis Results</td>
<td>153</td>
</tr>
<tr>
<td>6.</td>
<td>Reliabilities and Standardized Parameter Estimates for the SSQPS</td>
<td>156</td>
</tr>
<tr>
<td>7.</td>
<td>Covariance Matrix for 11 Subdimensions of Service Quality</td>
<td>161</td>
</tr>
<tr>
<td>8.</td>
<td>Standardized Correlation Matrix for Structural Model 1 - Subdimensions</td>
<td>162</td>
</tr>
<tr>
<td>9.</td>
<td>Standardized Correlation Matrix for Structural Model 1 - Items</td>
<td>163</td>
</tr>
<tr>
<td>10.</td>
<td>Standardized Correlation Matrix for Structural Model 2 - Items in Higher-order Factor Model</td>
<td>164</td>
</tr>
<tr>
<td>11.</td>
<td>Covariance Matrix for the Primary Dimensions of Service Quality</td>
<td>165</td>
</tr>
<tr>
<td>12.</td>
<td>Structural Equation Analysis Results</td>
<td>167</td>
</tr>
<tr>
<td>13.</td>
<td>Parameter Estimates for Structural Model 2</td>
<td>169</td>
</tr>
<tr>
<td>14.</td>
<td>Parameter Estimates for Structural Model 3</td>
<td>170</td>
</tr>
<tr>
<td>15.</td>
<td>Comparison of the Model Fits - Structural Model 1 and Two Competing Models</td>
<td>173</td>
</tr>
<tr>
<td>16.</td>
<td>Parameter Estimates for Structural Model 3 and Two Competing Models</td>
<td>173</td>
</tr>
</tbody>
</table>
## LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>The Proposed Research Model</td>
<td>22</td>
</tr>
<tr>
<td>2.</td>
<td>The Revised Research Model</td>
<td>120</td>
</tr>
<tr>
<td>3.</td>
<td>Measurement Model 1 – Subdimension Variables</td>
<td>132</td>
</tr>
<tr>
<td>4.</td>
<td>Measurement Model 1 – Satisfaction and Repurchase Intention</td>
<td>133</td>
</tr>
<tr>
<td>5.</td>
<td>Measurement Model 2 – Primary Dimensions</td>
<td>133</td>
</tr>
<tr>
<td>6.</td>
<td>Structural Model 1 – Subdimensions</td>
<td>137</td>
</tr>
<tr>
<td>7.</td>
<td>Structural Model 2 – The Second Order Factor Model</td>
<td>138</td>
</tr>
<tr>
<td>8.</td>
<td>Structural Model 3 – Causal Relationship</td>
<td>139</td>
</tr>
<tr>
<td>9.</td>
<td>Competing Model</td>
<td>172</td>
</tr>
</tbody>
</table>
CHAPTER 1

INTRODUCTION

As a society advances economically, matures culturally, and increases its knowledge base, the societal demands for quality service increase (Lakhe & Mohanty, 1995). Today, service industries dominate most industrialized Western economies, and the importance of service to the economy continues to increase (Gronroos, 1992; Lovelock, 1992). There is statistical evidence to support this trend. For example, from 1970 to 1993, the U.S. labor force employed in the service sector rose from 66% to 78% (Franklin, 1993). During the 1986-96 time period, 11.2 million (56%) of the 20.1 million employed in service-producing sector was concentrated in the services division. The service-producing sector has a projected increase of 17.6 million jobs, from 94.3 million in 1996 to 111.9 million by the year 2006. The projected 11.3 million increase within the service division will account for two-thirds of the projected employees in the service producing sector (Franklin, 1997).

Accordingly, the interest in 'service quality' has increased exponentially during the 1980s (Gronroos, 1990). Today, service quality has been recognized as one of the most important topics in the field of service marketing and management, and the word "quality" has become a part of the everyday vocabulary of management (Greising, 1994; Gronroos, 1990; Fisk, Brown, & Bitner, 1995). The increased interest of service quality
can best be described in the following definition of service management: “a total organizational approach that makes quality of service, as perceived by the customer, the number one deriving force for the operation of the business” (Albrecht, 1990; p.10).

Within the sport and recreation industry, however, service quality was not recognized as a major area of research until the late 1980s. Today, sport is a fast growing business. The estimated economic value of the sport industry was $63.1 billion business in 1988 (Comte & Stogel, 1990, cited by Pitts & Stotlar, 1996). This figure had increased to $213 billion in 1999 (Broughton, Lee, & Nethery, 1999). According to Broughton, et al., (1999), “Only a few American industries are bigger than sports....We are far more than twice the size of the auto industry....there’s no doubt that the sports business is an economic behemoth” (p.23).

As businesses become more competitive, and the focus of management and marketing is transferred from internal consequences of performance (i.e., productivity and profit) to an interest in the external consequences (i.e., consumer well-being) (Gronroos, 1992), customer satisfaction and service quality are important issues for both practitioners and academicians of the sport, fitness, and leisure industries. In order to improve an organization’s profitability and productivity, a sport organization must satisfy and retain loyal customers by providing consistently high-quality service. However, the lack of theoretical as well as empirical research on service quality within the sport industry results in a gap between researchers and practitioners.

In particular, there are gaps in the conceptualization of service quality within different segments of the sport industry. Mull, Bayless, Ross, and Jamieson (1997) provide a hierarchical categorization of the different segments within the sport industry,
which include educational sport, recreational sport, athletic sport, and professional sport. Their model is based on sport involvement as either direct participation (participant) or indirect participation (spectator). The above four sport segments can be broadly categorized into either spectator (i.e., athletic sport, & professional sport) or participant sport (i.e., educational sport, recreational sport) (Milne & McDonald, 1999). In this study, participant sport refers to the non-elite and recreational sport in which the customer not only presents but also actively participates in the service production and consumption process for the enhancement of health, fitness, and skill and for fun and enjoyment. Thus, many sport and physical activities, such as educational sport (i.e., physical education) in high schools and colleges, sport clubs and recreation sports in institutions of higher education, public and private recreational sport programs and facilities, and fitness services are included in this category. Due to a gap which exists in the literature, there is a need to develop a comprehensive conceptual model of service quality for the participant sport industry.

The management of service quality is concerned with three distinct aspects: designing the service product, designing the service environment, and delivering the service (Rust & Oliver, 1994). However, for the best conceptualization of service quality, researchers need to understand the meaning of service quality, the determinants of service quality, and measurement means (Lewis, 1994). In addition, the identification/prevention of the potential shortfalls in service quality is important for management. Although, the issue of quality now dominates the field of service marketing and management, researchers are divided on three issues, which include (a) how the service quality construct is conceptualized, (b) the factors which determine the
consumer's perception of service quality, and (c) the relationship between service quality and other marketing constructs such as satisfaction and purchase intention (Brady, 1997). The studies of service quality in the sport, fitness, and recreation industries, however, do not provide a model which focuses on generic dimensions which are applicable to various market segments within the participant sport industry.

Therefore, this research is conducted to provide a conceptual framework of perceived service quality for the participant sport industry with a specific focus on the participants' quality perceptions of the sport provided and other related services. The intent of the proposed conceptual model is to advance the knowledge base of sport consumers and to provide a comprehensive service quality model for the participant sport industry.

Statement of the Problem

Since its' emergence, the basic concept of service management and marketing has been changing. Two major changes of the concept are (a) a shift from an interest in internal consequences of performance (e.g., internal efficiency - productivity of labor and profits) to an interest in the external consequences (e.g., consumer well-being, consumer behavior research - customer satisfaction, loyalty), and (b) a shift from a focus on structure to a focus on process. Thus, marketers and managers now focus on the process of service production and consumption as it governs consumer behavior in the service industry where services are produced and consumed simultaneously by consumers (Gronroos, 1992).
The aforementioned change of interest in service marketing and management has motivated many scholars to research the issues of service quality. As a result, leading scholars have become confident in their argument that providing quality service is not only the most important factor for customer satisfaction (Anderson, Fornell, & Lehmann, 1994; Gronroos, 1990; Berry, Parasuraman, & Zeithaml, 1994; Oliver, 1997; Schneider & Bowen, 1995), but it is the principal criterion that measures the competitiveness of an service organization (Lengnick-Hall, 1996). Brady (1997) summarized the key outcomes of heightened levels of service quality as: (a) a higher than normal share of the market (Buzzell & Gale, 1987), (b) improved profitability relative to the competition (Anderson, Fornell, & Lehmann, 1994; Gronroos, 1990; Kearns & Nadler, 1992), (c) consumer loyalty (Parasuraman & Grewal, 2000; Zeithaml, Berry, & Parasuraman, 1996), (d) the realization of a competitive price premium (Gale, 1992; Zeithaml, Berry, Parasuraman, 1996), and (e) an increased probability of purchase (Zeithaml, Berry, & Parasuraman, 1996).

Sport organizations face a new era of global competition. Within the saturated market of sport industries, the success of a sport organization, regardless of its size and type, depends on the degree to which the organization can satisfy their customers with quality service. As management becomes more focused on customers and their satisfaction, the issue to provide quality service becomes important for sport organizations. In order to satisfy customers and keep loyal members, sport marketers must understand the needs and wants of their customer, and the customer’s perception of service performance.
In this context, to have a clearer understanding, the following questions may assist in gaining a competitive advantage: (a) What are the distinct characteristics of service products in the sport industry? (b) How is quality defined in the process of production and consumption of sport services? (c) What aspects of the sport services do customers evaluate to develop their perception of service quality? (d) How do we measure the overall level of service quality of a sport organization? (e) What are the relationships between service quality and the marketing variables of customer satisfaction and loyalty? and (f) How can sport organizations implement service quality improvement?

The aforementioned questions are important for both practitioners and researchers. Only when we understand the above questions and have answers for each question, can we expect an increase in customer satisfaction and loyalty, profitability, and long-term business success (Anderson, Fornell, & Lehmann, 1994).

To date, the study of service quality has been conducted in various business segments such as telephone services (Berry, Parasuraman, & Zeithaml, 1988; Bolton, & Drew, 1991), the banking service (Parasuraman, Zeithaml, & Berry, 1988; Cronin & Taylor, 1992; Mels, Boshoff, & Nel, 1997), retail stores (Dabholkar, Thorpe, & Rentz, 1996; Hurley & Estelami, 1998), business consulting (Turner, Aldhizer III, & Shank, 1999), and the health care industry (Babakus & Boller, 1992; Carman, 1990; McAlexander, Kaldenberg, & Koenig, 1994; Oswald, Turner, Snipes, & Butler, 1998).

However, there is not a consensus for determining the nature of service quality and understanding of its’ application among scholars. Therefore, service quality has been defined in a variety ways. For instance, Bitner and Hubbert (1994) defined service quality as “the consumer’s overall impression of the relative inferiority/superiority of the
organization and its services” (p.77). On the other hand, a more traditional definition for service quality is the comparison of consumer expectations with actual service performance (Gronroos, 1982; Lewis & Booms, 1983; Parasuraman, Zeithaml, & Berry, 1985; Zeithaml, Parasuraman, & Berry, 1990). For example, Zeithaml, Parasuraman, and Berry (1990), based on the disconfirmation paradigm, defined service quality as “the extent of discrepancy between customers’ expectations or desire and their perceptions” (p.19). Disconfirmation refers to the consumer’s comparison of the service performance to an expectation (Hunt, 1977). Disconfirmation scales include both positive and negative values. Negative disconfirmation refers to the negative discrepancy that occurs when performance is below standard, while positive disconfirmation occurs when performance is better than expected. When performance is equal to expectations, a confirmation of expectations exists.

Within the field of service marketing, there is a consensus that differences exist relative to how consumers develop their perceptions of service quality (Brady, 1997; Cronin & Taylor, 1992; Rust & Oliver, 1994). As described in above examples, service quality has been conceptualized in different ways based on the theoretical background of service quality. However, a comprehensive factor structure model has not been provided to date (Brady, 1997; Dabholkar, Thorpe, & Rentz, 1996). Hence, there is a need for an empirically supported model, which identifies the determinants of service quality, and an accurate measure of the construct (Brady, 1997).

Within the participant sport industry, there is a need to explore the concept of quality. So far, service quality has been studied in different sport industry settings such as professional sport (McDonald, Sutton, & Milne, 1995; Milne & McDonald, 1999;
Shilbury, 1994), fitness (Chang, 1998; Kim & Kim, 1995; Tawse & Keogh, 1998), and recreation and leisure (Crompton, MacKay, & Resenmaier, 1991; Howat, Absher, Crilley, & Milne, 1996; McKay & Crompton, 1988; Taylor, Sharland, Cronin, Jr., & Bullard, 1993; Wright, Duray, Goodale, 1992). In addition, many scholars have attempted to develop a conceptual framework of service quality for a particular sport industry segment. Their investigations are perceived to be important for the future development of a sport based service quality framework.

However, as many scholars apply the concept of service quality from business marketing to sport and recreation, there is a gap in the conceptualization of service quality among the scholars in the sport management and marketing. Thus, there is a noticeable gap between academic research and industry practice concerning service quality and customer satisfaction. To fill this void, sport management researchers need to investigate service quality in more depth. In particular, a comprehensive factor structure needs to be developed to better understand the production and consumption of sport services with which consumers develop their service quality perception.

McDonald, Sutton, and Milne (1995) developed the ‘TEAMQUAL’ by adapting the original SERVQUAL (Parasuraman et al., 1988) to measure perceived service quality in professional sport. SERVQUAL is an instrument, which measures customer’s quality perception about provided services. In this study, the original five dimensions (i.e., tangibles, reliability, responsiveness, assurance, and empathy) of SERVQUAL were adapted and 39 items were derived to measure the unique service areas of professional sport such as ticket ushers, concessionaires, and so forth. They found that the tangible dimension was most highly rated followed by the reliability dimension.
Wakefield, Blodgett, and Sloan (1996) also emphasized the importance of physical environment to attract spectators to professional sport events. The authors developed the ‘SPORTSCAPE’, which refers to important aspects of the physical surroundings to sport spectators. Wakefield, et al., (1996) assessed the relationship between spectators’ perceptions of stadium quality and repatronage intentions and their desire to stay at the stadium. Wakefield, et al., (1996) developed this concept from the elements of SERVICESCAPE. According to Bitner (1992), SERVICESCAPE refers to “the built environment (i.e., the manmade, physical surroundings as opposed to the natural or social environment)” (p.58). Wakefield, et al. (1996) incorporated three dimensions of Bitner’s (1992) SERVICESCAPE (i.e., ambient conditions, spatial layout and functionality, and signs, symbols, and artifacts) into their conceptual framework. More specifically, Wakefield, et al. (1996) focused on the fixed elements of SERVICESCAPE which included spatial layout and functionality, and signs, symbols, and artifacts (i.e., the architectural, landscape, and site design). In their model, such factors as stadium access, facility aesthetics, and scoreboard quality directly influences the enjoyment of game attending, while seating comfort and layout accessibility (i.e., space allocation and signage) indirectly influence pleasure mediated by perceived crowding. The data analysis revealed that the pleasure derived from the sportscape atmosphere strongly influenced spectators to stay and repatronize games at the facility. The above two studies are foundation studies for the analysis of spectators’ perception of service quality in the professional sport setting. More specifically, the studies support the importance of the physical environment in the process of service production and consumption.
In the recreation setting, Crompton, McKay, and Fesenmaier (1991) modified the original SERVQUAL instrument (Parasuraman et al., 1988), and developed an instrument called RECQUAL, which consisted of 25 items to measure the original five dimensions. However, the results suggested that the empathy dimension should be excluded in the context of public recreation services. In addition, their results indicated that only eleven of the twenty-two original items of SERVQUAL were found to be efficacious in public recreation services.

Wright, Duray, and Goodale (1992) also developed a 30-item measurement scale by adapting the items of SERVQUAL (Parasuraman et al., 1988) and RECQUAL (Crompton, et al., 1991). In this study, the gap model was utilized. A total of six focus groups were conducted to identify recreation center users' expectation of the ideal center and their perception of actual performance. In the gap model, service quality (SQ) scores were calculated by subtracting the mean expectation rating from the mean performance rating for each attribute (SQ = mean performance − mean expectation). Negative values represented poor quality perception, while positive scores indicated that the performance exceeded expectations. Among the 30 service attributes, 28 attributes were found to have had negative SQ with the largest service gaps being in maintenance functions. However, the authors did not attempt to extract meaningful dimensions of service quality represented by these 30 items.

Following the study of Wright, et al.'s (1992) gap model, Howat, Absher, Crilley, and Milne (1996) developed the Center for Environmental and Recreation Management (CERM-CSQ) to measure both expectations of clients and their quality perceptions of performance in recreation service. In this study, the initial 60 items were reduced to 15
attributes of sport and leisure centers. Factor analysis of the data yielded four dimensions: (a) Core Service – program information, start/finish on time, activity range, organization, facility comfort, value for money, and quality equipment, (b) Staff Quality – staff responsiveness, staff presentation, staff knowledge, and officials, (c) General Facility – safe parking, and facility cleanliness, and (d) Secondary Service – food and drink, and child minding. This study was the first attempt to produce a factor structure of service quality in the sport and recreation industry.

Based on a literature review and focus group interviews, Kim and Kim (1995) developed the Quality Excellence of Sport Centers (QUESC) to identify the kinds of services customers wanted, the level of service they desired, and the specific areas which required managerial attention in Korean sport centers. The model consists of 33 items, which measure 11 dimensions of service quality, that is, ambiance, employee attitude, reliability, information, programs offered, personal consideration, privileges, price, ease of mind, stimulation, and convenience. Although this study identified several important aspects of service quality, they did not produce a theory based factor structure. Thus, several dimensions are applicable only to a particular sport industry segment in a different cultural setting.

Chang (1998) developed a system based service quality model for the fitness industry, and developed the Scale of Quality in Fitness Services (SQFS). Chang’s (1998) model consisted of nine dimensions: (a) Input (three dimensions) – service climate, management commitment to service quality, and program, (b) Throughput (five dimensions) - contact with employees (interpersonal interaction), task interaction, contact with physical environment, contact with other clients, and service failure and recovery,
and (c) Output (one dimension) – purchase intention. Although the researcher provides a conceptual framework based on system theory, several questions were raised. First, a traditional dimension (i.e., outcome quality) was not included in this model. However, it is important to analyze what customers actually gain from a provided service, since this is directly related to their participative motives and goals, and needs and wants. Therefore, outcome quality needs to be evaluated through an examination of what customers gain from the provided service. Second, the Management Commitment to Service Quality in the input stage may be an appropriate dimension for the examination of the employee’s quality perception about an organization and its management (i.e., internal service quality), not the consumer’s level (cf., Parasuraman, Zeithaml, & Berry’s (1985) A Gap Model of Service Quality). Although this study identified theory based approach of service quality (i.e., system theory), the aforementioned areas may be incorporated into future studies. On the other hand, it should be noted that this study was the first attempt to provide a factor structure of service quality dimensions based on the existing theory (i.e., system theory) in sport management research.

Although many researchers investigated service quality in different industry segments, the majority of their studies either utilized the disconfirmation paradigm of service quality, which focuses on the difference score of the customer expectations and the actual performance perceptions (e.g., Howat, Absher, Crilley, & Milne, 1996; Wright, Duray, & Goodale, 1992), or they modified the original items and dimensions of SERVQUAL (e.g., Crompton, McKay, & Fesenmaier, 1991; McDonald, Sutton, and Milne, 1995; Wright, Duray, & Goodale, 1992). In some cases, the researchers generated specific attributes of sport services by using focus group interviews or
exploratory factor analysis (e.g., Howat, Absher, Crilley, & Milne, 1996; Kim & Kim, 1995). The above literature review proposes several major areas for further investigation. Service quality is a relatively new area of study within the field of sport management, and only a few service quality investigations have been completed which identify the perceptions of sport consumers. Thus, additional empirical research is necessary to provide a general consensus regarding the conceptualization of service quality.

In general, there are three areas which warrant further investigation in order to improve the service quality research. First, the basic concept of service quality needs clarification. Quality itself has many meanings. It can be an attribute of the product or service, of the work itself, and of the processes and systems surrounding the work (Spencer, 1994), or performance itself (Deighton, 1992; Katz & Green, 1997). In addition, the criteria which determine the level of quality varies: (a) quality as excellence, (b) quality as value, (c) quality as conformance to specifications, and (d) quality as meeting or exceeding customer’s expectations (Reeves & Bednar, 1994). This notion implies that the meaning of the quality can vary under different circumstances (Reeves & Bednar, 1994; Spencer, 1994). However, in many cases, it is the customer who determines the level of service quality and evaluates the service performance. This is true in the general participant sport setting, since sport consumers often have a certain level of expectation about the outcome of sport participation. Thus, it may be appropriate to define service quality based upon the consumer’s quality perception. In these cases, the customer’s overall impression about the service performance (i.e. customer’s quality perception) should be the main criteria of service quality. The
identification of important factors in the process of service production and consumption is the next step to be followed based upon the customer's perspectives. In addition, the concept of service quality should be clearly defined and differentiated from the concept of consumer satisfaction. So far, the concepts of consumer's quality perception and customer satisfaction have not been clearly defined (Bitner, Hubbert, 1994; Oliver, 1997). Only when we have a clear concept of these constructs, can we then identify the causal relationship between service quality and satisfaction and customer's future purchase intention. It is then, that we can provide practical solutions to increase customer satisfaction and loyalty to a sport organization.

Second, there should be a comprehensive conceptual framework of service quality for the participant sport industry which includes leisure and recreational sport, and fitness programs. More specifically, an industry specific model needs to be developed with commonly agreed upon global factors (or dimensions) of service quality for participant sport. In order to achieve this, it is necessary to carefully examine the specific characteristics of the sport services, the service delivery system, the types of customer involvement, and the purpose of the customer participation (Chelladurai, 1998; Cronin & Taylor, 1992; Deighton, 1992). Therefore, an industry-fit and generic model of service quality should be developed through a careful examination of the unique features of the sport services.

So far, empirical examinations of the sport, fitness, and recreation literature offer little to support a commonly agreed upon dimensions of service quality to date. More specifically, several investigations of service quality have focused on service quality at the attribute level (c.f., Howat, Absher, Crilley, & Milne, 1996; Kim & Kim, 1997), not
on a broader factor structure (Dabholkar, Thorpe, & Rentz, 1996). The researchers have
devolved various factors of service quality for different industry segments. For
example, Kim and Kim (1997) proposed 11 factors of fitness services. Although they
are recognized as important aspects to be evaluated in fitness service, the specific areas of
service may vary depending on situational variables such as location, culture, and target
customer. Therefore, the service quality framework with the attribute level needs to be
reorganized into broader concepts (i.e., a generic model).

The development of service quality at the dimension level, as opposed to the
attribute level, is necessary to suggest how specific attributes can be combined into
critical dimensions of service quality for participant sport (Dabholkar, Thorpe, & Rentz,
1996). The identification of an appropriate model of service quality provides us with a
clear understanding of customers' intangible quality perception and provides practical
implications for daily management.

Third, service quality has been approached in different ways. Thus, there are
various measurement methods for service quality to date. As discussed in the previous
section, service quality has been measured in different ways depending upon the
theoretical and conceptual background. This implies that to measure and evaluate
service quality is neither easy nor simple. Thus, to generate a valid and reliable
measurement tool, a comprehensive conceptual model of service quality is required.
Accurate measures of service quality are possible only when we have a clear concept of
sport service, service quality, and a comprehensive and industry specific factor structure.

So far, theoretical and methodological investigations of service quality suggest
that performance only tests should be conducted rather than the disconfirmation model of
service quality which determines the quality level based on the difference in scores between expected service quality and actual service performance (Babakus & Boller, 1992; Brown, Churchill, & Peter, 1993; Carmen, 1990; Cronin & Taylor, 1992). The validity of many existing approaches (e.g., disconfirmation model of service quality) is problematic (Hurley & Estelami, 1998). For example, several researchers have failed to support the dimension, generalizeability, and the efficacy of SERVQUAL when they apply SERVQUAL by using the disconfirmation paradigm (e.g., Carmen, 1990; Cronin & Taylor, 1992; Parasuraman, Zeithaml, & Berry, 1991). To use difference scores causes a number of problems in such areas as reliability, discriminant validity, spurious correlations, and variance restriction (Peter, Churchill, & Brown, 1993). More importantly, Cronin and Taylor (1992) argue that the disconfirmation paradigm is intended to be a measure of satisfaction and not of service quality. In sum, although the SERVQUAL scale is a popular measurement tool, several researches have indicated that the SERVQUAL based on the disconfirmation paradigm of perceived service quality (c.f. Gronroos 1984; Parasuraman, Zeithaml, & Berry, 1985, 1988) is questionable.

In addition, several current service quality researchers have employed exploratory factor analysis to develop a model and scale. However, it is confirmatory factor analysis (i.e., structural equation modeling) that helps develop a comprehensive factor structure model. Structural equation modeling is a “multivariate technique combining aspects of multiple regression and factor analysis to estimate a series of interrelated dependence relationship simultaneously” (Hair, Anderson, Tatham, & Black, 1998, p.583). The content validity of a conceptual model, which is one of the most important criteria in the scale development, can be empirically tested through the confirmatory factor analysis.
Thus, to synthesize the existing model and have a better conceptualization of service quality, structural equation modeling is an appropriate method. Additional investigations which utilize structural equation modeling are necessary.

Statement of the Purpose

The purpose of this study was to gain a better understanding of the factors, which determine consumers’ perceptions of service quality within the participant sport industry, and the causal relationships between service quality and two marketing variables (i.e., customer satisfaction and repurchase intention). More specifically, the study was conducted to: (a) provide a conceptual model of sport consumers’ perceived service quality, (b) test the proposed model of service quality, (c) identify the causal relationship between service quality and consumer satisfaction and repurchase intention, and (d) develop a valid and reliable scale to measure consumers’ perceived service quality. The intent of the proposed conceptual model is to advance the knowledge base of service quality in the field of sport management, and to provide implications for practitioners within the sport, fitness, and leisure industries.

A Proposed Model of Service Quality and Research Hypotheses:

Multidimensional and Hierarchical Model of Service Quality in Participant Sport

The previous review of the service quality literature suggested that researchers should develop the industry specific model (i.e., the participant sport industry) of service quality from the customer’s perspectives. Also, the model should be comprehensive enough to be generalized to other similar industry segments (e.g., fitness program,
recreational sport, and educational sport, etc.) within the participant sport industry. Therefore, it is suggested that the identification of a global factor model of service quality is needed (Brady, 1997, 1999; Dabholkar, Thorpe, & Rentz, 1996; McDougall & Levesque, 1994). In addition, there is a need to reinvestigate the relationship between service quality and other outcome variables of post consumption such as satisfaction and future purchase intention. Within the field of sport and recreation management, a lack of empirical research on this issue limits our understanding of the constructs and their potential application. In this section, the proposed model of service quality and the causal link between service quality, customer satisfaction, and repurchase intention are discussed in more detail along with the research hypotheses.

For the purpose of this study, a multidimensional and hierarchical model of service quality for participant sport was developed to provide a conceptual framework and appropriate measurement scale to determine the perception of sport participants toward service quality. The model in this study is based on Brady and Cronin’s (1999) and Dabholkar and his colleagues’ (1996) hierarchical models of service quality. It should be noted that Brady and Cronin’s work is the first attempt to combine the traditional approach of service quality (i.e., Tri-component model of service quality) with the recent multi-level conceptualization of service quality. Brady and Cronin’s (1999) model includes two unique approaches.

First, the primary dimensions in Brady and Cronin’s (1999) model of service quality are derived from McDougall and Levesque’s (1994) ‘Three Factor Model of Service Quality,’ and Rust and Oliver’s (1994) ‘Tri-Component Model of Service Quality.’ Rust and Oliver’s (1994) conceptual framework includes three distinct
elements: (a) service product, (b) service delivery, and (c) service environment. Similarly, McDougall and Levesque’s (1994) three factors model of service quality includes (a) service outcome, (b) service process, and (c) physical environment.

Gronroos’ (1984) and Bitner’s (1992) seminal conceptualizations of service quality influenced the above service quality conceptualizations. Gronroos’ (1984) model includes Technical Quality (i.e., outcome quality) and Functional Quality (i.e., quality of service delivery process). Technical Quality focuses on the issue of what consumers gain from service consumption, while Functional Quality focuses on the question of how the service delivered to customers. Bitner’s (1992) SERVICESCAPE which focuses on the physical environment in service delivery process is widely adopted as a factor of service quality.

The second unique aspect of Brady and Cronin’s (1999) model is the hierarchical and multi-level conceptualization of perceived service quality, which is adopted from Dabhokar, Thorpe, and Rentz’s (1996) multi-level conceptualization. The rationale for using the hierarchical factor structure is as follows. First, previous studies found high intercorrelations among items across several factors in SERVQUAL. In addition, some factors are conceptually broader than others in existing literature (e.g., physical surrounding vs. design of facility). This suggests that there is a higher order factor. Therefore, customers are expected to form evaluations of service quality both at the attribute (i.e., subdimension level) and at the integrated level (i.e., dimension level). Second, by using this approach, the literature’s multiple service quality conceptualizations can be consolidated into a single comprehensive, multidimensional conceptualization. Third, this approach allows for analysis at several levels of
abstraction: (a) analysis of the dimension level, (b) analysis of the particular service elements (i.e., subdimensions), and (c) an overall service quality analysis using the complete scale (Brady, 1997; Brady & Cronin, 1999; Dabholkar, et al., 1996).

It should be noted that Brady and Cronin’s work is the first attempt to combine the traditional approach of service quality (i.e., tri-component model of service quality) with the recent multi-level conceptualization of service quality. Therefore, the current study integrates the work of the above conceptual models (Brady & Cronin, 1999; Dabholker, et al., 1996; Rust & Oliver, 1994) to develop a conceptual model for participant sport, which includes fitness, and recreational and educational sports. It is anticipated that the proposed model in this study is applicable to various industry segments within participant sport.

In the proposed model for this study, four dimensions, that is, program quality, interaction quality, outcome quality, and physical environment are included as primary dimensions. Each of these dimensions is defined by several corresponding subdimensions: (a) program quality – range of activity programs, operating time, and secondary services, (b) interaction quality – attitude, behavior, and expertise, (c) outcome quality – physical change, valence, social interaction, and (d) environment quality – ambient condition, design, and social factor. A discussion of the model and its’ subdimensions and research hypotheses are provided next.

Program Quality

Program quality is included as the first primary dimension. In their ‘Tri-Component Model of Service Quality,’ Rust and Oliver (1994) included service product
as the first dimension. The construct of service product refers to the consumer’s cumulative perception of the service and any additional features, which accompany the services (Rust & Oliver, 1994). Thus, program quality refers to the customer’s relative perception about the excellence of the program. In general, any service product is a consumer benefit package (CBP) combined with core and peripheral services or/and goods (Collier, 1994). From the CBP concept, the main service product of participant sport is program, which is a combination of core (e.g., Tennis instruction) and peripheral services (e.g., up-to-date class information).

Several empirical analyses have indicated that program is an important factor of service quality in the fitness and recreational sport industries. The core service of participant sport is the program through which members or customers experience sport service (Chelladurai, Scott, & Haywood-Farmer, 1987; Howat, Absher, Crilley, & Milne, 1996; Kim & Kim, 1995). For example, in the fitness industry, attractive programs should be available for customers in an appropriate facility and at a convenient time slot. Therefore, the concept of product quality in Rust and Oliver’s model should be included as a factor of service quality in the participant sport model.
Figure 1: The Proposed Research Model
However, the dimension of service product was not included in Brady and Cronin's (1999) hierarchical model and McDougall and Levesque's (1994) 'Three Factor Model of Service Quality.' Instead, the dimension labeled outcome quality was included in the previous two models. Brady and Cronin (1999) interpreted service product and outcome quality as the same concept, and thus included only outcome quality to determine what the consumer receives from the service provider as opposed to how it is received. In order to increase generalizeability, Brady and Cronin (1999) tested their model using four different industries, that is, amusement park, fast food restaurant, photo developing, and dry cleaning. However, it should be mentioned that the evaluation of the service product itself (e.g., fitness program within a university) and of the outcome of service consumption (e.g., physical change) are two different aspects in the consumption process of sport services. Therefore, it is necessary to separate program quality from outcome quality as one of consumers' evaluation criteria of service.

Program is a core service in participant sport. Therefore, program quality is an important dimension to be evaluated. For example, in the recreational sport setting, attractive programs should be available for a customer in a convenient time slot. In this study, the concept of product quality in Rust and Oliver's model is included as a factor of service quality for participant sport.

The program quality dimension is determined by the following three attributes (i.e., subdimension) in the current model: (a) range of activity programs (Chang, 1998; Howat, et al., 1996; Kim & Kim, 1995; Wright, et al., 1992), (b) operating time (Brady & Cronin, 1999; Howat, et al., 1996; Wright, et al., 1992), and (c) secondary services (e.g., equipment rental service, program information) (Howat, et. al., 1996). Howat, and his
colleagues' (1996) study supports the program factor and each of its subdimensions. Factor analysis in their study yielded four dimensions of service quality which included core service, secondary service, staff quality, and general facility. Core service included program information, start/finish on time, activity range, quality equipment, and so forth. Secondary service included food and drink and child minding. Kim and Kim's (1995) focus group interview and exploratory factor analysis further supported the importance of program quality in the participant sport model.

In this proposed conceptual framework, the range of activity programs refers to the variety of classes/programs offered to participants. Operating time refers to whether classes start and finish on time, and whether the operating hours are convenient to all customers. Secondary service refers to all other supplementary services which are combined with core programs to be provided as consumer benefit package. Secondary services can vary depending on the facility and organization. The above description leads to the first research hypothesis.

**Hypothesis 1:** The program quality directly contributes to consumers' service quality perception.

**Interaction Quality**

Interaction quality is included as the second primary dimension. Interaction quality represents the dyadic interplay between the customer and the employees or service personnel (Surprenant & Solomon, 1987).
In other words, interaction quality is the subjective perception of how the service is delivered and reflects the consumer's perception of the interactions, which take place during the service encounter. Functional Quality found in Gronroos's (1984) model is a similar concept to this dimension.

Within the business literature and recreational sport studies, the importance of staff quality is well supported. For example, Howat, et al.'s study (1996) revealed that staff responsiveness, staff presentation, and staff knowledge are all important elements for determining staff quality. In his model, Chang (1998) divided the concept of interaction into interpersonal interaction and task interaction. Hogan, Hogan, and Busch (1984) defined interpersonal interaction as "a set of attitudes and behavior that affects the quality of interaction..." (p.167). In contrast, task interaction focuses on the employee's actual performance in each of the tasks associated with the service (Chang, 1998). These two categories (i.e., interpersonal interaction and task interaction) are similarly explained by three of Brady and Cronin's (1999) subdimensions, which include employee's customer oriented personal attitude, behavior, and their expertise (i.e., knowledge and skills). The interpersonal interaction between the employees and customers in sport service can be best evaluated by using these aspects because they cover the most important aspects of service delivery in participant sport. In addition, Brady and Cronin (1999) used the above three subdimensions (i.e., attitude, behavior, and expertise) to explain the original SERVQUAL dimensions (i.e., reliability, responsiveness, tangibles, assurance, and empathy).

As human variables are important factors in the nature of service production and consumption, service personnel's attitude, expertise, and actual behavior directly
influence customer evaluation of the services, in turn, they determine the interaction quality. In the fitness and recreational sport, the importance of an employee’s attitude (Chang, 1998; Howat, et al., 1996; Kim & Kim, 1995; Wright, et al., 1992), expertise (Howat, et al., 1996; Wright, et al., 1992), and actual behavior are well documented. Therefore, Brady and Cronin’s subdimensions (i.e., employee’s behavior, attitude, and expertise) are included in the second primary dimension, interaction quality. This leads to the following hypothesis:

Hypothesis 2: Perceptions of interactions in the service delivery process directly contribute to service quality perceptions.

Outcome Quality

The third primary dimension is outcome quality. Outcome quality refers to the outcome of the service act and represents what the consumer receives from the service (Rust & Oliver, 1994; McDougall & Levesque, 1994). Gronroos (1984), for example, termed this dimension as ‘Technical Quality,’ and defined technical quality as “what the consumer receives as a result of this interaction with a service firm” (p.38). On the other hand, through an exploratory content analysis, Brady (1997) concluded that consumers evaluate the quality of the service outcome on (a) the waiting time associated with the delivery of the service, (b) the tangible evidence (i.e., physical attributes) of the service, and (c) the consumers’ perception of whether the outcome of the service is good or bad (i.e., valence).

However, these factors cannot be directly applied to the sport service because the nature of the sport service and consumer’s participative motives are different from those
of other industries (i.e., amusement park, fast food restaurant, photo developing shop, and dry cleaning service in Brady and Cronin’s study). Therefore, the participant motives in recreation sports and fitness programs should be considered when the customer’s quality perception is measured (Chelladurai, 1998), because benefits of the sport participation are different from those of other industries. In general, sport participant in recreational sport level seeks enjoyment (Chelladurai, 1998), thrill (Deighton, 1992), and social interaction (Milne & McDonald, 1999). Therefore, whether the outcome of the participation can fulfill the consumer’s motive or motivation is included as a third primary dimension.

In addition, physical change, valence (Brady, 1997), and social interaction (Milne & McDonald, 1999) are included as subdimensions which determine outcome quality. In the proposed model, however, tangible evidence is replaced by physical change because a post-consumption tangible evidence of sport service is physical change (e.g., increased fitness level & performance/skills) for most sport participants. Second, the social interaction refers to the social gratification of being with others who enjoy the same activity (Milne & McDonald, 1999). During the production and consumption of sport service, participants actively interact with service personnel as well as other patrons. Especially, in the recreational sport level, social factors such as family members, friends, and other people are important for sport participants. Therefore, social experience is one of the important outcomes of sport participation. Third, Brady (1997) included valence as one of the subdimensions of outcome quality to capture whether the consumer feel that the service outcome was good or bad, regardless of their evaluation of any other aspect of the service experience (Lutz, 1975; Mazis, Ahtola, & Klippel, 1975). In practice, the customer may have a positive perception of service
quality, yet the negative valence of the outcome ultimately leads to an unfavorable service experience (Brady, 1997). This leads to the third research hypothesis:

**Hypothesis 3: Perceptions of the outcome of service encounter directly contribute to service quality perceptions.**

**Physical Environment Quality**

Physical environment quality is included as the last dimension. Physical environment has been received as one of the most important aspects in the consumer's service quality perception and service evaluation (Baker, 1986; Bitner, 1992; Brady, 1997; Howat, et al., 1996; McDonald, Sutton, & Milne, 1995; McDougall & Levesque, 1994; Rust & Oliver, 1994; Wakefield, Blodgett, & Sloan, 1996; Wright, et al., 1992).

For example, Bitner (1992) argued that the physical environment in which service is performed has a significant impact on the consumer perceptions because the customer needs to be present in the service production. She developed “SERVICESCAPE” which refers to the built environment as opposed to the natural or social environment (Bitner, 1992). SERVICESCAPE includes three aspects of physical environment: (a) ambient conditions, (b) spatial layout and functionality, and (c) signs, symbols, and artifacts. The ambient conditions refer to the background characteristics of the environment such as temperature, lighting, noise, music, and scent. Spatial layout refers to “the ways in which machinery, equipment, and furnishings are arranged, the size and shape of those items and the spatial relationships among them” (Bitner, 1992, p.66). Although the author did not empirically analyze the model, Bitner’s (1992) study influenced service quality research in the field of service marketing and management.
In the sport setting, Wakefield, et al., (1996) developed 'SPORTSCAPE' by adapting the SERVICESCAPE. They analyzed the relationship between spectators’ perceptions of stadium quality and repatronage intentions and their desire to stay at the stadium. The empirical results supported the importance of the physical environment to the sport spectators. Although they developed a conceptual framework for spectator sport, the positive perception of the physical environment may be equally important in participant sport as well.

Baker (1986), on the other hand, categorized the physical environment into ambient factors, design factors, and social factors (Bitner, 1992; Brady, 1997). Ambient factors pertain to the “nonvisual” aspects of the service environment and related to such factors as temperature, scent, and music (Bitner, 1992). Design refers to the service facility’s layout or architecture including functional and aesthetic nature (e.g., Bitner, 1992). While, ambient conditions exist below the customer’s awareness level, design exists at the forefront of the customers’ awareness (Baker, 1986; Bitner, 1992; Brady, 1997). The ambient condition and design factors are similar to Bitner’s (1992) ambient conditions and spatial layout and functionality (Brady, 1997).

In addition to the physical surroundings, the importance of other patron’s influence is well documented in the literature (Baker, 1986; Brady, 1997; Chang, 1998; Lengnick-Hall, 1996; Lovelock, 1991; Zeithaml & Bitner, 1996). In service production and consumption, the role of the customer is not just consuming the provided service, but also actively participating throughout the whole process of service production and consumption (Lengnick-Hall, 1996). In the sport setting, the services (i.e., the process of production and consumption) are delivered not only to one customer, but more often to
other customers as well. Therefore, other patron’s behavior and attitude greatly influence the customer’s perception of service quality, especially in high contact sport services (e.g., martial arts classes in educational and recreational sport setting). Lovelock (1991) supported this statement in arguing, “a service facility where customers may interact with each other, people’s behavior has to be managed discreetly so that customers will act in ways that are consistent with the organization’s strategy” (p.15).

Therefore, the original three subdimensions (i.e., ambient condition, design, and social factor) from Baker’s (1986) study and Brady’s (1997) study are utilized for the analysis of the physical environment quality. The fourth hypothesis for the study includes:

*Hypothesis 4: Perceptions of the physical environment directly influence service quality perceptions.*

**Causal Relationship between Service Quality, Satisfaction, and Repurchase Intention**

An additional component of conceptual framework is to analyze the causal relationship between service quality, customer satisfaction, and repurchase intention (please refer to figure 1). So far, a number of researchers have completed path analysis of service quality, satisfaction, and purchase intention to investigate the causal relationships between them and to analyze the customer’s post consumption evaluation about the provided service (Anderson & Fornell, 1994; Anderson & Sullivan, 1993; Bitner, 1990; Bolton & Drew, 1991; Bolton & Drew, 1991; Brady, 1997; Cronin & Taylor, 1992; Dabholkar, 1995; McAlexander, Kaldenberg, & Koenig, 1994; Mohr & Bitner, 1995; Rust & Oliver, 1994).
The main issue of the path analysis focuses on whether perceptions of service quality are directly related to customer decision-making or whether the effect is mediated by the level of satisfaction associated with an organization's services (Brady, 1997).

However, the causal relationship among the three constructs is equivocal due to difficulties in conceptualizing each construct. In the business literature, when service quality is used to refer to a global, long-term attitude about a service, customer satisfaction is recognized as an antecedent of service quality. In contrast, when service quality is used to refer to specific information about the service, service quality is recognized as an antecedent of customer satisfaction (Zeithaml, 1988). Therefore, depending on how service quality construct is conceptualized, results of empirical analysis between service quality and satisfaction can be different. Thus, the difference between satisfaction and service quality needs to be clarified. It is important for researchers and practitioners to understand the causal relationship among the constructs because it may assist in the development of effective strategies aimed at consumer satisfaction judgment and consumer service quality attitudes (Cronin & Taylor, 1992).

Brady (1997) summarized the current literature on the causal relationship between service quality and customer satisfaction with the following three different approaches. First, satisfaction is recognized as an antecedent of perceived quality (Bitner, 1990; Bolton & Drew, 1991; Mohr & Bitner, 1995). Second, a number of scholars agreed that satisfaction is a consequence of service quality and in turn, customer satisfaction directly impacts purchase intentions (e.g., Anderson & Sullivan, 1993; Anderson & Fornell, 1994; Anderson, Fornell, & Lehmann, 1994; Cronin & Taylor, 1992; Taylor & Baker, 1994). Third, there is a non-recursive relationship between the two constructs (Dabholkar, 1995;
Although the second approach has relatively strong empirical support, a further investigation is necessary in the sport industry due to the lack of the empirical analysis in this area. Therefore, another set of hypotheses is included as follows.

**Hypothesis 5:** The perceptions of service quality directly influence the customer's level of satisfaction.

**Hypothesis 6:** Customer's level of satisfaction directly influence the customer's repurchase intentions.

**Hypothesis 7:** The perceptions of service quality indirectly influence the customer's repurchase intentions through a mediator variable of satisfaction.

**Significance of the Study**

Due to the increased competition of sport and the sophisticated consumer needs and wants, the provision of quality service has become the single most important requirement for a successful sport organization. It is further important to understand sport consumers' perception of the service quality and to identify the factors and dimensions which conceptualize service quality. Within the sport industry, so far, service quality has been studied in different sport industry settings such as professional sport, fitness, and recreation and leisure. Several researches have been completed for the development of a conceptual framework of service quality for a particular sport industry segment. However, as many scholars apply the concept of service quality from business marketing to sport industry, practitioners have a certain limitation in understanding the specific aspects of production and consumption of sport services with which consumers
develop their service quality perception. In addition, as service quality scholars in the sport industry tend to focus on specific attributes of sport services, rather than the global factor structures, there is currently not a generic model of service quality. Thus, there is a noticeable gap between academic research and industry practice concerning service quality. In addition, in the current literature, the relationships between service quality and customer satisfaction have not been clearly defined.

The results of this study may fill the conceptual gaps and provide a comprehensive conceptual framework of the perceived service quality for the participant sport industry. Also, this study may provide a reliable and valid measurement tool of service quality for practitioners and a sound conceptualization for academicians. For example, recreation sport and fitness managers can use the framework of this study to design their fitness and recreation services and to evaluate their service performance from the perspectives of their customers. As a result, managers can gain a competitive advantage within the competitive market environment by improving the level of service quality and customer satisfaction. In addition, an examination of the causal relationships between service quality, satisfaction, and repurchase intention may provide empirical evidence for the clarification of these concepts and provide practical implications for the practitioners. This study will provide a foundation and practical implications for both business success and customer satisfaction.

Delimitations

This study was designed as the first step in a series of studies on customers’ perceptions of service quality in the participant sport industry. It comprised an
investigation at a single institution, and there were two primary reasons for deciding to focus on only one school. First, the selected institution provides various types of recreational services to different market segments within the university community such as faculty, staff, students, and family members. The selected institution is one of the largest programs in the United States and may be considered to be a benchmark program for other university recreational sport programs. The institution is a large NCAA Division I-A university in the Mid-west.

Second, by limiting this study to a single institution, it allowed for the development of a relationship between the researcher and key members of the Department of Recreational Sport. The researcher consulted with the recreational sport personnel throughout the development of the study and utilized their assistance with the data collection process (Ridinger, 1998). In addition, the result may provide helpful information for the leaders of the recreational sport.

Third, service quality and customer satisfaction have received a great deal of attention due to their positive influence on customer repurchase intentions. However, there are many other constructs which also influence consumer purchase behavior. Therefore, it should be noted that the proposed model does not include all of the factors which influence consumer decision-making process. Such an effort is beyond the scope of the current study (Brady, 1997).

Limitations

While every effort was made to eliminate flaws in the research design, potential limitations of the study should be addressed. First, the service providers included in this
study represent only a small portion of the participant sport industry. Therefore, a limitation of this study is lack of generalizeability to other similar types of institutions and different industry segments of participant sport (e.g., public recreational sports programs, & private fitness services).

Second, survey research was employed in this study. Therefore, limitations attributed to survey research may influence the results due to potential problem area which include: (a) ensuring that the questions to be answered are clear and not misleading; and (b) encouraging respondents to answer questions thoughtfully and honestly (Fraenkel & Wallen, 1996).

Definition of Terms

The followings are important terms that will be used for this study and a definition is provided for each.

Customer Satisfaction

"the consumer’s fulfillment response. It is a judgment that a product or service feature, or the product or service itself, provided (or is providing) a pleasurable level of consumption related fulfillment, including levels of under- or overfulfillment” (Oliver, 1997, p.13).

Participant Sport

In this study, participant sport refers to the non-elite and recreational sport in which the customer not only presents but also actively participates in the service production and consumption process for the enhancement of health, fitness, and skill and for fun and enjoyment. Thus, many sport and physical activities, such as educational
Sport (i.e., physical education) in high schools and colleges, sport clubs and recreational sports in institutions of higher education, public and private recreational sport programs and facilities, and fitness services maybe included in this category. However, this study focuses only on the participants of recreational sports in a single institution.

**Perceived Service Quality**

"global judgment, or attitude, relating to the superiority of the service"

(Parasuraman, et.al., 1988, p. 16).

**Service**

"a production system where various inputs are processed, transformed and value-added to produce some outputs which have utility to the service seekers, not merely in an economic sense but from supporting the life of the human system in general, even may be for the sake of pleasure" (Lakhe and Mohanty. 1995, p.140).

**Service Quality**

"the consumer’s overall impression of the relative inferiority/superiority of the organization and its services" (Bitner & Hubbert, 1994, p.77).

**Overview of the Chapters**

Chapter 1 provides an introduction leading to the statement of the problem, the purpose of the study, the research model and hypotheses, and the significance of the study. This chapter also includes explanations of delimitations and limitations of the study, and definition of terms unique to the study. Chapter 2, the literature review, provides a review of the literature which is relevant to current research. Chapter 3 provides a detailed discussion of the methodology used to test the research hypotheses.
Specifically, the chapter includes descriptions of: (a) the research design, (b) scale development procedures, (c) selection of the sample, (d) data collection procedures, (e) the procedures used to test the reliability and validity of the data, and (f) the methods used to test the research hypotheses. Results of the data analysis are reported in Chapter 4 and a discussion of the results and future suggestions are included in Chapter 5.
CHAPTER 2

LITERATURE REVIEW

The importance of service quality in the sport industry requires additional research. So far, despite academic efforts on the topic of service quality, there is not a consensus in the conceptualization of service quality in the business literature as well as the sport industry. Therefore, the purpose of this study was to provide a conceptual framework of perceived service quality for participant sport, which included the services of recreational sport, and the development of a valid and reliable scale to measure the proposed model. In order to have a better understanding of the issues, this chapter provides a review of the current literature in the field of service management and marketing, and sport and recreation.

The issues addressed in this chapter are presented next. First, this chapter included a discussion of the concept of services in the sport industry followed by an examination of the nature of service. In addition, a discussion of the unique characteristics of sport services is also included. Second, this chapter discusses the basic concepts, dimensions, and various measurement methods of service quality through an examination of the service management and marketing literature as well as the sport literature. Third, the conceptual differences and causal relationships among service quality, customer satisfaction, and purchase intention are discussed. In addition, each
section in this chapter addresses practical implications and suggestions to improve the conceptualization and measurement of service quality. Lastly, the proposed model of service quality is discussed in more detail along with the research hypotheses.

Service Industry

As noted in the previous chapter, service industries have dominated most Western industrialized economies, and the importance of service to the economy has increased (Gronroos, 1992; Lovelock, 1992). There are several empirical studies which demonstrate the growth of the service sector. From 1970 to 1993, the U.S. labor force employed in the service sector rose from 66 percent to 78 percent (Franklin, 1993). The service-producing sector has a projected increase of 17.6 million jobs, from 94.3 million in 1996 to 111.9 million by 2006. During the 1986-96 timeframe, 11.2 million (56%) of the 20.1 million employed in the service-producing sector employment was concentrated in the services division. The projected 11.3 million increase within the service division will account for two-thirds of the projected employees in the service producing sector (Franklin, 1997).

The continued growth of the service industry is expected due to the following reasons: (a) movement to the information age, (b) a shift to an industrialized economy, (c) an aging population, (d) longer life expectancies, (e) increased leisure time, (f) higher per capita income, (g) changing social and cultural values, and (h) advances in product technology (Kurtz & Clow, 1998). In addition, Shugan (1994) proposes two alternative explanations for the current and future growth of the service industry: (a) national specialization and (b) international specification. First, within developed countries and
postindustrial societies, the need for the specialization of services has increased. Such factors as enhanced knowledge, innovations, and technological advances create complexity. In turn, this creates a demand for the services of specialists. Second, developed countries have a competitive advantage in the specialized areas of infrastructure, information, education, communication, and transportation. This international specification leads to the increased trade of services (Shugan, 1994).

The above factors explain the importance and need for the investigation of service as a field of study (i.e., service marketing and management). Gronroos (1990) defined service management with four elements and these are were: (a) to understand the utility of the value customers receive by consuming or using the offerings from the organization and how services alone or together with physical goods or other kinds of tangibles contribute to this utility. That is, to understand how the concept of total quality is perceived in customer relationships and how it changes over time, (b) to understand how the organization will be able to produce and deliver this utility or quality, (c) to understand how the organization should be developed and managed so that the intended utility or quality is achieved, and (d) make the organization function so that this utility or quality is achieved and the objectives of the parties involved are met.

Historically, it was not until the 1960s when consumer behavior emerged and service marketing became a major field within the marketing discipline (Fisk, Brown, & Bitner, 1995). Fisk, Brown, and Bitner (1995) explained the process of evolution and legitimized the field of service marketing. According to these authors, the field emerged in three stages: (a) Crawling Out (Pre-1980), (b) Scurrying About (1980-1985), and (c) Walking Erect (1986-present).
Due to the phenomenal growth of the service sector in modern society, the importance of service management and marketing is also expected to increase. Since its emergence, the basic concept of service management has continued to change. Two major changes of the concept include: (a) a shift from an interest in the internal consequences of performance (e.g., internal efficiency - productivity of labor and profits) to an interest in the external consequences (e.g., consumer behavior - customer satisfaction, loyalty), and (b) a shift from a focus on structure to a focus on process. Thus, marketers and managers now focus on the process of service production and consumption as it governs consumer behavior in the service industry where services are produced and consumed simultaneously with active participations of the consumers (Gronroos, 1992).

The change in the conceptual paradigm within service marketing and management has motivated many scholars to research the issues of service quality. As a result, the leading scholars have become confident in their argument that providing quality service is not only the most important factor for customer satisfaction (Gronroos, 1990; Berry, Parasuraman, & Zeithaml, 1994; Schneider & Bowen, 1995), but it is the principal criterion that measures the competitiveness of an service organization (Lengnick-Hall, 1996).

In consideration of the phenomenal development of the service industry, it is necessary to have a clear understanding of the nature of service (Gronroos, 1992). This clarification will help identify unique features of sport service and will provide an important background for future discussions of sport as a service product and quality issues in the sport industry.
The Nature of Service

Service, as a consumer product, has been defined in a variety of ways in the business literature. The features used to construct an adequate definition of service can be seen through an examination of the specific definitions proposed by the leading scholars. Service can be defined as:

"the business transactions that take place between a donor (service provider) and a receiver (customer) in order to produce an outcome that satisfies the customer" (Ramaswamy, 1996: p.3).

"deeds, processes, and performances" (Zeithaml & Bitner, 1996: p. 5)

"A service is an activity or series of activities of more or less intangible nature that normally, but not necessarily, take place in interactions between the customer and service employees and/or physical resources or goods and/or systems of the service provider, which are provided as solutions to customer problems" (Gronroos, 1990: p.27).

"Activities, benefits, or satisfactions which are offered for sale, or provided in connection with the sale of goods" (American Marketing Association, 1960: p.21).

Also, in a system-thinking paradigm, services are conceptualized as:

"a production system where various inputs are processed, transformed and value-added to produce some outputs which have utility to the service seekers, not merely in an economic sense but from supporting the life of the human system in general, even may be for the sake of pleasure" (Lakhe and Mohanty, 1995. p.140).

In the aforementioned definitions of service, there are several significant features to be pointed out for the better understanding of the concept. First, service is a performance which occurs through the interaction between customers and service
providers (Deighton, 1992; Gronroos, 1990; Ramaswamy, 1996; Sasser, Olsen, & Wyckoff, 1978; Zeithaml & Bitner, 1996). Second, all other physical sources and goods or systems can be an important medium for the service production and consumption (American Marketing Association, 1960; Collier, 1994; Gronroos, 1990). In most of the service delivery, a customer's presence is required. Therefore, the tangible physical surroundings and other tangible cues are important variables which determine the customers' level of quality perception in the intangible service delivery system. Third, consumers buy a service to solve their problems (Gronroos, 1990; Ramaswamy, 1996). In other words, the focus of the purchase is on the after-use benefits and outcome, not the service itself. In sum, a service, combined with goods products, is experienced and evaluated by customers who have particular goals and motivations for consuming the service.

In the business literature, there have been many efforts to clarify the service concept. An understanding of the unique characteristics of a service product and its delivery system is an important first step for the future analysis of service within a sport setting. In addition, it is the first step in the conceptualization of service quality. Current arguments on service can be divided into two positions. Each approach emphasizes different aspects of service. A number of scholars focus on the differences between the marketing strategies of service and goods while others emphasize the utility and total value the customer receives from the service. An analysis of the two approaches provides practical implications for the better understanding of sport service.

The first approach is constituted by making a distinction between service (intangible) and goods (tangible). In this point of view, it is suggested that the marketing
strategy in service should be differentiated from those of goods. Throughout its
developmental history, the paradigm of service marketing has been developed based upon
the belief that there are fundamental differences between goods and services (Bateson,
1977; Booms & Bitner, 1981; Lovelock, 1991; Parasuraman, Zeithaml, & Berry, 1985;
Shostak, 1977). Accordingly, the service marketing literature has focused on the
assumption that service possesses four unique characteristics. These characteristics were
identified by Parasuraman, Zeithaml, and Berry (1985), and Zeithaml and Bitner (1996)
and include:

(a) Intangible - Services cannot be inventoried, patented, readily displayed or
communicated. Pricing is difficult.

(b) Heterogeneous - Service delivery and customer satisfaction depend on
employee actions. Service quality depends on many uncontrollable factors.
There is no sure knowledge that the service delivered matches what was
planned and promoted.

(c) Simultaneous production and consumption - Customers participate in and
affect the transaction. Customers affect each other. Employees affect the
service outcome. Decentralization may be essential. Mass production is
difficult.

(d) Perishable - It is difficult to synchronize supply and demand with service.
Service cannot be returned or resold. (Zeithaml, Parasuraman, & Berry, 1985;
Zeithaml & Bitner, 1996).

The efforts to clarify the uniqueness of service have given a positive influence on
the development of service marketing and management. However, the approach of
goods/services differentiation has been criticized because it focuses on the product itself rather than on the customer (Wyckham, Fitzroy, & Mandry, 1975) and, in turn, hinders the development of effective marketing strategies. According to Wright (1995), "(the) historic focus on separating services from goods (in service marketing) may now be limiting our ability to develop comprehensive product marketing strategies.......(because) the emphasis on the goods/services dichotomy has led to an oversimplified assumption that services are relatively homogeneous and that the same marketing factors are important for most service offerings" (p.41). In the good/service differentiation paradigm, the differences between the various service sectors have been minimized or overlooked. However, the principles of service marketing may not be equally valid across all service industries (Swartz, Bowen, & Brown, 1992). For instance, the services in participant sport differ from those of spectator sport. While the core service of the spectator service is the game itself (entertainment), participant sport service is the instruction or programs which the customer experiences through active participation. In addition, the customers' purchase motivation in these segments is different (Milne & McDonald, 1999). Thus, marketing strategies for the two different industries cannot be the same.

Wright (1995) pointed out the limitations of the above paradigm by examining Parasuraman, et al.'s (1985) four characteristics of service. First, Wright (1995) indicated that when customers are seeking certain utilities from products, they may not necessarily care whether the core product is tangible or intangible. In the service sector, businesses rely more on technology and tangible equipment to meet the needs of the customers (e.g., newly equipped fitness facility). Therefore, the argument that service is
intangible is not meaningful from a practical perspective. Second, Wright (1995) emphasized that some franchise businesses emphasize standardization of operation (e.g., McDonald's restaurant). Also, in some cases, customers may expect equality or fairness in a service provision. In this situation, the variation needs to be minimized in order to produce maximum efficiency in the daily operation. For example, equipment-based (compared to people-based) service in the sport industry may need to use a standardized service operation. The equipment or facility rental office in a university recreation department may use this concept to prevent customer complaints as well as maximize efficiency. Therefore, many times, the heterogeneity of service can or should be managed for the effective and efficient operation. Third, Wright (1995) also mentioned that many services are not simultaneously produced and consumed. Within the service industry, three basic types of service production exist: (a) co-production, (b) isolated production, and (c) self-service (Riddle, 1986; cited by Wright, 1995). Only in the co-production service can the service provider and the customer work together to produce the service (e.g., tennis instruction). In a self-service production, a customer uses equipment and facility which were provided to produce the service (e.g., Health clubs equipment and laundry services). In this case, the facility managers can focus their management efforts on the ambient factors and physical layouts to increase customer satisfaction. Therefore, it is not appropriate to say that all services have inseparability of production and consumption. Lastly, Wright (1995) pointed out that services that are high in technology or equipment-based attributes could be standardized and stored as well (e.g., entertainment industry – movie films).
This indicates that not all services are perishable. The above example (i.e., equipment and facility rental services) can be applied to support this argument. Another perspective indicates that service is interpreted as activities, systems, or business transactions in which the tangible and intangible attributes are combined for the maximization of customer satisfaction (Gronroos, 1990; Lakhe & Mohanty, 1995; Ramaswamy, 1996).

The aforementioned changes in service management can influence the conceptualization of service. When organizations' focus on customer well-being (e.g., satisfaction, loyalty), this provides a rationale as to why organizations should focus on the overall service delivery process rather than the functional structure or service product itself (Gronroos, 1992). Thus, an expanded definition of service product emphasizes the mixture of tangible and intangible elements bundled by marketers to satisfy consumers' needs (i.e., Consumer Benefit Package) (Collier, 1994). More importantly, the emphasis in the service marketing literature has been focused on promoting the product benefits rather than the attributes of the product itself. Therefore, it becomes a highlighted need for the marketers to communicate the intangible benefits for tangible products and the tangible benefits for intangible products (Wright, 1995). This is true for a manufacturing company as well. For example, Chase and Gavin (1989) argued that even manufacturing factories need to evolve to embrace service as a competitive capability. This "flexible factory" is, in turn, broadening the concept of service to include the ability of providing product variety and capacity on demand. Therefore, the product is defined as "everything, both favorable and unfavorable, that one receive in an exchange. It is a complexity of tangible and intangible attributes, including functional, social, and psychological utilities or benefits" (Pride & Ferrell, 1991; p.240).
In the above explanation, service is viewed as not merely an antonym of tangible goods, but is conceptualized as a bundle of elements with intangibility serving as the core component (Shostack, 1977). Thus, this paradigm focuses on the end-users and their benefits. In addition, this paradigm suggests that we need to look at the commonalities between goods and services and explore the underlying characteristics of the total market offerings (Fern & Brown, 1984).

In sum, the above discussion suggested that we should understand the concept of service from a broad scope. Although the features of service should be distinguished from goods, it is suggested that the benefits of the service consumptions and the process with which consumers develop service perceptions should be a main focus for marketers. This is important for the future conceptualization of service quality. For example, Gronroos (1984) included outcome quality (i.e., Technical Quality - benefits) of service delivery as well as the process of service delivery (i.e., Functional Quality) in his service quality model. In general, services are process-dominated, a consumer judges service performance based on an accumulation of experiences, which ultimately represent reality to the individual. Therefore, a customer's subjective perception defines service success or failure, and in turn, it forms the quality perception of the provided service (Shostack, 1977). The consumer's perception of service performance, in turn will influence whether or not they purchase a product or service in the future.
An awareness of the unique characteristics of sport service is an important task for the better conceptualization of service quality. It is critical for the development of an industry fit service quality model and measurement tool. Eventually, this can provide practical implications for how we apply the concepts to the sport industry. Therefore, a discussion of service applied to the sport industry is presented next.

**Sport as a Service Product: Unique Features of Sport Services**

So far, a general discussion about the nature of service has been presented. As discussed in the previous section, it is important to have a basic understanding of the characteristics of service products for the future conceptualization of service quality and the practical application of service quality into the sport industry. There are several critical questions, which need to be raised and answered to conceptualize service quality in the sport industry as well as develop an industry fit model. These questions include: (a) what are the unique features of service products in the sport industry? (b) how can we define sport service? The identification of the unique features of sport services may also provide practical suggestions for both practitioners and academicians. Therefore, in this section, the types and unique features of service products as they apply to the sport industry are discussed.

There are some unique features of sport services to highlight. Milne and McDonald (1999) identified several unique features of sport services. First, sport differs from other forms of entertainment because it evokes high levels of emotional attachment (i.e., highly emotional involvement). Second, sport products are marketed to two distinct segments (i.e., spectator and participant). Spectators’ services (e.g., professional football
and college basketball) provide game attendants with different kinds of entertainment values (e.g., stress reduction, enjoyment, etc.) and benefits for social needs (e.g., community identity, commitment and identification to an organization). On the other hand, participant sport (e.g., services at commercial health clubs or university sport clubs) provides various sport experiences for the physical, mental, and social benefits of the participant. Third, as the needs of sport consumers are often varied and difficult to predict, the sport product is more elusive than most realize (i.e., an unpredictable experience). For instance, physical fitness, risk-taking, stress reduction, aggression, affiliation, social facilitation, self-esteem, competition, achievement, skill mastery, aesthetics, value development, and self-actualization, are all potential motivation factors for the sport participant and spectator (Milne & McDonald, 1999). Fourth, sport does not just create and strengthen relationships with individual consumers, rather, sport fosters a sense of community and helps build a collective identity (i.e., need for community) (Lever, 1983).

The aforementioned characteristics differentiate sport service from other general services. However, several traditional features of service can be applied to sport services. First, in many cases, sport participants simultaneously experience the production and consumption of the sport service (Shilbury, 1994; Sutton, 1998). Usually, the customer needs to be either physically present for a service to be provided or should provide information prior to the service delivery (e.g., fitness test). Therefore, sport services especially in participant sport, require a close relationship and a high level of involvement between the service provider and customers. In these relationships, the service offer is unstandardized, and both the customer and service provider must make
conscious efforts to interact to ensure that the appropriate service is delivered (Ennew & Binks, 1999). As active participation of the customer is required in the production of services, the customers’ perception of the quality of their own involvement is critical for continued participation in the particular activity (Chelladurai, 1998; Milne & McDonald, 1999). Second, because the most organizations in sport, fitness, and recreation industry produce only services (not goods), most of the sport service is intangible (Chelladurai, 1992; Sutton, 1998).

The unique elements of service provide challenges to practitioners and researchers in sport management. For example, due to the uniqueness of sport services, the marketing approach used in the sport industry may differ from the traditional marketing strategies utilized. Sutton (1998) provide a comparison between sport marketing and traditional marketing (see Table 1).
<table>
<thead>
<tr>
<th>Sport Marketing</th>
<th>Traditional Marketing (good product)</th>
</tr>
</thead>
<tbody>
<tr>
<td>In many case, sport organizations must simultaneously compete and cooperate (e.g., professional sport franchises’ revenue sharing)</td>
<td>The success of any entity may depend on defeating and eliminating the competition</td>
</tr>
<tr>
<td>Due to preponderance of information and the likelihood of personal experience and strong personal identification, sport consumers often consider themselves experts</td>
<td>Very few consumers consider themselves experts and instead rely on trained professionals for information and assistance</td>
</tr>
<tr>
<td>The sport product is invariably intangible, subjective, and heavily experiential. It is extremely difficult to ensure a high degree of consumer satisfaction</td>
<td>Mainstream marketing for good products is dealing with visible, sensible, and tangible products.</td>
</tr>
<tr>
<td>The basic sport product is simultaneously produced and consumed; there is no inventory</td>
<td>Mainstream product has an inventory and a shelf life</td>
</tr>
<tr>
<td>Sport is generally publicly consumed, and consumer satisfaction is invariably affected by social facilitation (function of interaction with other people)</td>
<td>While other people can enjoy the purchase of a car, the enjoyment or satisfaction of the purchaser does not depend upon it.</td>
</tr>
<tr>
<td>Sport product is inconsistent and unpredictable</td>
<td>Inconsistency and unpredictability are considered unacceptable (e.g., car)</td>
</tr>
<tr>
<td>The sport marketer has little or no control over the core product and often has limited control over the product extensions (e.g. sport game). The marketer must focus on extensions such as promotions, food, music, and entertainment-related options.</td>
<td>The marketer works with research and design to create the perceived perfect product</td>
</tr>
<tr>
<td>Sport is both a consumer product (e.g., end product for both spectators and participants) and an industrial product (e.g., marketing through sport – sponsorship and endorsements)</td>
<td>There is not such duality</td>
</tr>
<tr>
<td>Sport has an almost universal appeal and pervades all elements of life (all demographic segments, and sociocultural facets of everyday life such as motivations, needs, desires, and so on)</td>
<td></td>
</tr>
</tbody>
</table>


Table 1. Contrasts between Sport Marketing and Traditional Marketing
In sum, although sport service can be considered as a part of service products, it has several unique characteristics. Therefore, the marketing strategies for sport service may differ. Mullin (1985) stated, “almost every element of marketing requires significantly different approaches when the product being marketed is sport. Predictably, the critical differences lie in the unique aspects of the sports product, and the unusual market conditions facing sport marketers” (p.106). Thus, the identification of consumers’ quality perceptions of sport service is neither simple nor easy.

In this section, the unique features of sport services and marketing approaches are discussed and they are perceived to be major thrusts for the conceptualization of service quality in the sport industry.

Sport Services for Different Market Segments

Today, there are diverse market segments within the sport industry, which include professional sport, intercollegiate athletics, health and fitness, recreational sport, and facility management (Hums, Barr, & Gullion, 1999). Several scholars have proposed specific typologies of sport and recreation services (Chelladurai, 1992; Deighton, 1992; Mull, Bayless, Ross, & Jamieson, 1997). For example, Mull, Bayless, Ross, and Jamieson (1997) provided a hierarchical categorization of the different segments within the sport industry, which include educational sport, recreational sport, athletic sport, and professional sports. This model is based on sport involvement as direct participation (participant) or indirect participation (spectator) and the total number of sport participants in a particular market segment.
The above four different market segments (i.e., educational sport, recreational sport, athletic sport, and professional sports) can be broadly categorized into spectator sport (e.g., athletic sport, and professional sports) and participant sport (e.g., educational sport, recreational sport) (Milne & McDonald, 1999) or participant services and spectator services (Chelladurai, 1992).

Chelladurai (1992, 1998) proposed a classification of participant sport based on (a) the type and extent of the employee’s involvement, and (b) the client’s motives for participation in sport and physical activity. First, Chelladurai (1992) differentiated consumer services from human services based upon the type and extent of the employee’s involvement. Chelladurai (1992) indicated that consumer services are largely based on low-skilled and routine services (e.g., an equipment rental service in a fitness club), whereas human services are engaged in transforming the individual him/herself (e.g., instructors of sports and counselors of student athletes). Many sport and recreation organizations are involved in educating individuals “about the benefits of physical activity, and in changing their attitude toward physical activity and recreation programs. They provide opportunities for enhancing health, fitness, and skill and for overall fun and enjoyment” (Chelladurai, 1992, p.41). In Chelladurai’s (1992) second classification of participant sport, client’s motives for participation (i.e., the various perspectives on motives, attitudes, and goals for participation) are grouped into four classes: (a) Pursuit of pleasure - the cooperative effort to maximize the pleasure for all participants, (b) Pursuit of excellence – a process that implies intense preparation, enormous effort, dedication, and sacrifice, (c) Pursuit of skill, and (d) Competition. The meaning of the sport participation then divides sport services into either mass and elite
sport (based on the participants' obtained status) or competitive and recreational sport (based on the level of competition). Although most sport participants have the above participative motives, participative motives of mass and recreational sport are characterized by pleasure, enjoyment, and fun rather than competition (Chelladurai, 1998).

In another typology, Deighton (1992) viewed the consumption of sport services as performance experiences, and proposed a typology of consumer’s consumption based on different types of performances. The performance refers to a frame of perception, not an objective state. That is, in a service organization, the marketer produces and directs the performances for and with the consumers and manages the motives the consumers attribute to in their decision to perform. Thus, when consumers perceive an event as a performance, they can use it as a measure to judge quality and satisfaction. By integrating two taxonomies (i.e., observation vs. participation, and realism vs. fantasy), Deighton (1992) proposed four different motives of consumers: (a) skill performance, (b) show performance, (c) thrill performance, and (d) festive performance. Skill performance emphasizes the observation of consumers and event’s realism (e.g., boxing, tennis, golf, and other spectators sports). Show performance delivers entertainment to a passive observer who must be persuaded to accept a nonrealistic context for the action (e.g., pro wrestling, martial arts’ self-defense demonstration). Thrill performance refers to the active participation by the consumer in an activity (e.g., the participants sports such as aerobics and volleyball). Festive performance involves active consumer participation in a built context created by staging and costuming such as performance rituals (e.g., pageant, theme park). The purpose of the event is fantasy. The criterion for the
performance quality is defined differently for each of the four frames of motives. The performance failure can occur when a consumer perceives incompetence in the performance (e.g., Skill – the feat is not as difficult as claimed, or the attempt is unsuccessful; Show – boring, uninteresting, dull, or underrehearsed; Thrill – event is tame or unexciting; Festive – Audience remains detached or uninvolved). Deighton’s (1992) study provided an interesting typology which incorporated both spectator and participant sports based upon the customer’s participative motives.

From the aforementioned discussion, it can be said that each segment of the sport industry provides a different type of service to customers who have different motives (e.g., spectators vs. sport participants). Therefore, it is important that the purpose of sport participation be clearly articulated in order to optimize the service delivery system. This is because the purposes of the sport participation may explain the unique characteristics of sport services (Chelladurai, 1998). In this study, participant sport refers to a mass and recreational sport in which the customer not only presents but also actively participates in the service production and consumption process for the enhancement of health, fitness, and skill and for fun and enjoyment. Therefore, various sport and physical activities, such as educational sport (i.e., physical education) in high school and higher education, various sport clubs and recreation sports in college, public and private recreational sport, fitness services, can be included in this category. According to Shank (1999), a participant’s consumption behavior includes actions performed when searching for, participating in, and evaluating the sports activities that consumers feel will satisfy their needs.
In this section, the different types of sport services and participative motives of sport consumers were discussed, and the concept of participant sport was highlighted. This study examined participant sport in a college and university setting. The sport and physical activities which are offered through campus recreational and intramural departments were examined.

**Conceptualization of Service Quality**

Due to the distinct characteristics of service (e.g., intangibility, heterogeneity, simultaneous production and consumption, and perishability), there is confusion relative to how consumers develop perceptions of service quality (Cronin & Taylor, 1992; Rust & Oliver, 1994). Thus, researchers have developed various perspectives for the issues of (a) how service quality is conceptualized, (b) the factors which are salient determinants of consumer service quality perceptions, (c) measurement issues of service quality, and (d) the relationship between service quality, satisfaction, and purchase intentions (Brady, 1997). Similarly, Chelladurai and Chang (in press) examined the above problem areas and suggested that three areas be considered; (a) the targets of quality (i.e., the features of the product), (b) the standards of quality (i.e., specifications or customer expectations), and (c) the arbiters of quality (i.e., who would judge quality). The purpose of this study is to gain a better understanding of the factors which determine consumers' perceptions of service quality, and the causal relationships between service quality, and other marketing variables. Therefore, these issues of service quality are discussed next.
Definitions of Service Quality

This section includes the specific ways for defining service quality along with a discussion of the pros and cons of each approach. More specifically, the theoretical attempts to clarify the issue are reviewed as well as a discussion of the traditional and alternative approaches of service quality conceptualization.

So far, there has been a variety of ways for defining quality. In addition, different aspects of service have been conceptualized as dimensions of quality. This then implies that quality is a multidimensional or multifaceted construct. Therefore, "there is no universal, parsimonious, or all-encompassing definition or model of quality" (Reeves & Bednar, 1994, p.436). Reeves and Bednar (1994) summarized different definitions for quality as follows: (a) quality as excellence, (b) quality as value, (c) quality as conformance to specifications, and (d) quality as meeting or exceeding customer's expectations. Similarly, Chelladurai (1998) categorizes the various definitions of quality as: (a) satisfying or delighting the customer or satisfying or exceeding customer expectations (e.g., Goetsch, 1994; Spencer, 1994), (b) the features of a product or service that satisfy stated or implied needs (British Standards Institute, 1991), (c) conformance to clearly specified requirements (Crosby, 1985; Deming, 1986), and (d) fitness for use, which means that the product meets the customer's needs and is free of deficiencies (Juran, 1989). The dimensions of service quality are discussed in more detail in the next section.

In the modern marketing literature, the most common definition of quality focuses on the customer's perception of service excellence. Quality is defined by the customer (Berry, Parasuraman, & Zeithaml, 1988; Gronroos, 1984, 1990; Parasuraman, Zeithaml,
& Berry, 1985; Schneider & Bowen, 1995). From this perspective, quality reflects the customer's perception of service excellence (Parasuraman, Zeithaml, & Berry, 1990, 1998) or relative superiority of service performance (Bitner & Hubbert, 1994; Gronroos, 1982). Therefore, in the daily business, the best skill and incomparable effort to provide quality service make it possible to produce the finest and most admirable results (Tuchman, 1980).

In both the business and sport literature, the customer's perception of quality has been the major focus in studies completed on service quality. Hence, the meaning of service quality is defined based upon the consumer's quality perception. The fundamental assumption of this approach is that it is the customer who determines the level of service quality and evaluates the service performance. This is especially true in sports, since sport consumers often think they are the experts. Therefore, the customer's overall impression about the service performance (i.e. customer's quality perception) should be the main criteria for determining the level of service quality. Gronroos (1990), for instance, emphasized the importance of customer's perception in defining service quality and noted "what counts is quality as it is perceived by the customers" (p.37). This argument may explain the current trend of service management and marketing researches (i.e., customer orientation rather than product/or company's profit orientation). In this case, the perception of the customer is a matter of attitude. Therefore, service quality can be understood as an attitude (Cronin & Taylor, 1992; Parasuraman, Zeithaml, & Berry, 1988). The following current definitions of service quality reflect the above arguments.
Service quality is defined as:

"the consumer’s overall impression of the relative inferiority/superiority of the organization and its services" (Bitner & Hubbert, 1994, p.77).

"the degree and direction of discrepancy between customers’ service perceptions and expectations" (Parasuraman, Zeithaml, & Berry, 1985).

"the extent of discrepancy between customers’ expectations or desire and their perceptions" (Zeithaml, Parasuraman, & Berry, 1990, p.19).

However, the above definitions reveal that there has not been a consensus in defining service quality and its’ application among service quality researchers. For instance, Bitner and Hubbert’s (1994) definition of service quality differs from that of the traditional approach. The traditional approach for defining service quality emphasizes that service quality perception is a comparison of consumer expectations with actual performance (Gronroos, 1982; Lewis & Booms, 1983; Parasuraman, Zeithaml, & Berry, 1985: Zeithaml, Parasuraman, & Berry, 1990).

Several problems were identified especially in the last two traditional definitions. First, conformance to a specification either by customers or a company is appropriate only when the customer’s needs are easily identified by a specific standard (e.g., speed-valued fast-food restaurant and routine bank transactions). In the service production and consumption process, however, the variety of customers is perceived by generic attributes such as cultural, economic, religious backgrounds. The different customer’s backgrounds are classified in terms of pluralistic expectations about the service (Lakhe & Mohanty, 1995). Schneider and Bowen (1995) agreed with this notion in arguing,
"customers bring a complex and multidimensional set of expectations to the service encounter. Customers come with expectations for more than a smile and a handshake. Their expectations include conformance to at least ten service quality attributes (i.e., Parasuraman, et al.'s 10 dimensions – reliability, responsiveness, competence, access, courtesy, communication, credibility, security, understanding, and tangible)" (p.29.). This problem is more evident when we consider that all service cannot be treated in the same category (i.e., the problem of service/goods differentiation paradigm). Therefore, this may be an inappropriate way to define service quality for the service sectors in which a high degree of human contact is involved.

Second, the traditional approach does not provide a solution for the identification of the customer's expectation as a criterion which determines the level of service quality. Customer's demand changes often times in a dramatically changing environment (Reeves & Bednar, 1994). In addition, this definition has a basic assumption that good service is an expectation of the individual customer, which may be unknown or unstated, and may vary from customer to customer and also from time to time (Jessome, 1988; cited by Lakhe and Mohanty, 1995). In this case, managers and researchers need to include subjective factors that are critical to customers' judgments, and measure a customers' expectations (Reeves & Bednar, 1994). Therefore, to define quality by using the customer's expectations is the most complex way to define quality. In practice, using the difference scores (i.e., between expectation and perceived service quality) fails to provide a valid measurement method of service quality. Therefore, many scholars have suggested that using different scores in measurement of service quality is problematic. This issue is discussed in more detail in the following section.
Oliver (1997) distinguishes quality from satisfaction to clarify the concept of service quality. The difference between these constructs occur at the levels pertaining to (a) whether the concept requires experience with the product or service, (b) the dimensions consumers use to form quality versus satisfaction judgment, (c) the nature of the expectations or standards used for these judgment, (d) the degree of cognitive versus affective content, (e) the existence of other conceptual antecedents which might impact each of the concepts, and (f) the primary temporal focus. First, for the experience criterion, quality perceptions do not require exposure to consumption experience, but it can be externally or vicariously mediated, while satisfaction is purely experiential. Second, the dimensions underlying quality judgments are rather specific to the characteristics, which define quality for the product or service. In contrast, satisfaction dimensions are potentially overall attributes of the product or service. Third, in terms of expectations and standards, quality judgments standards are based on ideals or excellence perceptions, while satisfaction judgments include predictive expectations, needs, product category norms, and even expectations of service quality. Fourth, quality judgment is attribute-based, and primarily cognitive, while satisfaction is both a cognitive and affective response (Bitner & Hubbert, 1994; Oliver, 1994). Fifth, service quality has fewer conceptual antecedents (external cues such as price, reputation, and various communication sources), while satisfaction is known to be influenced by a number of cognitive and affective processes including equity, attribution, and emotion.
Sixth, in terms of temporal focus, quality is primarily long-term (overall or summary), satisfaction is primarily short-term (transaction or encounter specific). In other words, quality attaches to a product or service in a global sense whereas satisfaction is experience-specific.

From the above characteristics, several important concepts need to be pointed out to clarify the concept of service quality. First, the disconfirmation paradigm, which explains the comparison between the perceived service quality and prior expectation, are not appropriate in defining service quality. Rather, this paradigm is more appropriate to the satisfaction measure (Cronin & Taylor, 1992). Second, if service quality does not necessarily require the customer’s experience and consumption (e.g., Oliver, 1997), the disconfirmation paradigm does not provide any clue about the meaning of service quality. Third, it is easier to measure the level of perceived service quality if the quality judgment occurs primarily at the attribute-based cognitive level.

In summary, the aforementioned discussion provides direction for additional research on service quality. First, a customer’s quality perception has been the main focus of the service quality research. Second, a customer’s perception or overall impression, as a criterion, determines the level of service quality. Third, service is not a uniform concept (e.g., participant sport vs. spectator sport). In other words, a consumer’s perception of service quality can differ depending on the type of service. Thus, a comprehensive framework needs to be developed for the measurement of the customer’s quality perception. Fourth, service quality is a multidimensional or multifaceted construct. Fifth, service quality should be clearly differentiated from customer satisfaction.
Dimensions of Service Quality

Within the field of service marketing, there is a consensus that confusion exists relative to how consumers develop their perceptions of service quality (Brady, 1997; Cronin & Taylor, 1992; Rust & Oliver, 1994). As in the previous examples, depending on the theoretical background of service quality, definitions of service quality and conceptual models have been developed in different ways. In particular, a comprehensive factor structure model has not been provided to date (Brady, 1997; Dabholkar, Thorpe, & Rentz, 1996). Hence, there is a need for an empirically supported model, which identifies the determinants of service quality, and an accurate measure of the construct (Brady, 1997).

This section includes a discussion about the operationalization of service quality and the various approaches of service quality measurements. In particular, the traditional method of the disconfirmation paradigm and theoretical explorations of service quality measurement are analyzed. In addition, the identification of important factors (or dimensions) of service quality is discussed.

The traditional approach of service quality focuses on three basic assumptions. First, services differ from goods in that they are intangible, heterogeneous and are simultaneously produced and consumed. Second, service quality is a comparison between the expectations and the perceptions of the service performance (i.e., disconfirmation paradigm). Third, the customer's evaluation of quality involves both the service outcome and processes because services are simultaneously produced and consumed (Gronroos, 1984; Parasuraman, et al., 1985). These underlying themes have influenced service quality research to date.
Due to the dearth of investigations on service quality, Parasuraman, Zeithaml, and Berry (1985) developed the "Gap Model" to fill the void and provide a comprehensive conceptualization of perceived service quality. This research has thus become the most popular model in the service quality literature. This model is based on a series of five gaps. At the marketer's level, four key discrepancies explain how the service organization or a marketer can influence a customer's service quality perception. They are gaps between: (a) management perceptions of consumer's expectations and expected service, (b) management perceptions of consumer's expectations and the translation of perceptions into service quality specification, (c) translation of perceptions of service quality specification and service delivery, and (d) service delivery and external communications to consumers. The fifth gap can occur at the customer's level. This represents the difference between the customer's expected level of service and the actual service performance which forms the customer's overall perception of service quality (i.e., disconfirmation paradigm). In the disconfirmation paradigm, the perception of service quality is conceptualized as a comparison of the expected level of service and the actual service performance. The researchers identified ten dimensions which the customer uses to evaluate the service and develops perceived service quality. The factors include: access, communication, competence, courtesy, credibility, reliability, responsiveness, security, tangibles, and understanding. Therefore, if the customer's performance perceptions (based on the above ten dimensions) exceed the customer expectations, then the service provider provides quality service. The difference in scores determine the level of service quality:
This study contributed to the field of service management by proposing a comprehensive conceptual model of service quality and providing ten determinants of perceived service quality. The author put the major service quality issues together and pointed out the gaps which might affect the customers' evaluation of service quality. Some of the original dimensions of SERVQUAL are still used today in other service quality measurement tools.

Parasuraman, Zeithaml, and Berry (1988) empirically examined the above ten factors to develop a service quality measurement instrument, called “SERVQUAL,” which included 22 items. Initially, 97 items representing ten dimensions were reduced to 34 items representing seven dimensions through scale purification. In the second stage of scale purification, only 22 items were retained to represent five dimensions: Reliability, Responsiveness, Tangibles, Assurance, and Empathy. Reliability refers to the ability to perform the promised service dependently and accurately. Responsiveness reflects the willingness to help a customer and provide prompt service. Tangible refers to the appearance of the physical facilities, equipment, personnel and communication material. Empathy refers to caring, individualized attention the firm provides its customer.

The authors found that the scale exhibited sufficient reliability (coefficient alphas ranging from .87 - .90). The level of service quality in this scale was determined by the comparison between the difference in scores of the expectations portion of SERVQUAL
and the customer’s performance perceptions. However, the usefulness of the SERVQUAL scale as a measure of service quality has been challenged by a number of scholars (e.g., Babakus & Boller, 1992; Brown, Churchill, & Peter, 1993; Carmen, 1990; Cronin & Taylor, 1992; Dabholkar, Thorpe, & Rentz, 1996). In particular, the authors have questioned the inclusion of expectation as a portion of the service quality measurement scale (the difference in scores between the expected service quality and perceived service quality).

In order to improve the SERVQUAL scale and to verify its applicability, Parasuraman, Zeithaml, and Berry (1991) eliminated the negatively worded items and replaced two confusing items with non-redundant alternatives, and added importance weights to the measurement process. However, an empirical analysis failed to replicate the five-factor structure of the SERVQUAL scale. Also, the results could not support the empirical usefulness of the expectation items. By comparing the explained variance of SERVQUAL with only the performance items, they found that the explained variance of the performance-only measure significantly increased. Therefore, they recommended measuring service quality without the expectation measure.

Carmen (1990) reanalyzed the original 10 dimensions of the SERVQUAL scale to assess the scale’s dimensionality, generalizeability, and the efficacy of including expectations in the service quality measurement process. The data analysis revealed that SERVQUAL’s factor structure was inconsistent across different service industries and the expectation items failed to load on their performance counterparts. Therefore, Carmen (1990) concluded that it is not an appropriate approach to measure the psychometric value of service quality with SERVQUAL.
Also, supporting this conclusion was Cronin and Taylor (1992) who argued that the disconfirmation paradigm is intended to be a measure of satisfaction, not service quality. Therefore, Cronin and Taylor (1992) excluded the expectations measure and tested the performance only scale (SERVPERF), and found that the performance-only SERVPERF measure of service quality outperformed the disconfirmation-based SERVQUAL measure. They perceived that service quality is an attitude, which determines an individual's performance evaluation of the factors, which embodies a specific product offering. Cronin and Taylor (1992) also examined Parasuraman, Zeithaml, and Berry's approach (1991), which added the importance weights to the measurement process. The important weight reflects an individual's perception of the relative importance of each of the five dimensions. Respondents allocate a maximum of 100 points to each of the five dimensions. The relative assignment of points to each dimension reflects its significance in the formation of the individual's service quality perception. However, they found that the unweighted versions of the SERVQUAL and SERVPERF outperformed their importance-weighted counterparts. Babakus and Boller (1992) also reported that the expectations portion of the scale provided no additional information beyond that which was obtained from the performance perceptions alone. In addition, they confirmed Carmen (1990) and Cronin and Taylor's (1992) conclusions regarding the validity and inconsistent factor structure of SERVQUAL.

Zeithaml, Berry, and Parasuraman (1996) argued that customer service quality perceptions consist of the perceived service performance (SERVPERF) and the perception of how a problem which may arise during the encounter are resolved (i.e., service recovery). They suggest that the gap between performance and expectations
does not define a customer's service quality perception. Rather it moderates the relationship between performance and behavioral outcomes. The results reveal a positive relationship between perceptions of service quality and several behavioral outcomes (i.e., customer loyalty, reluctance to switch, willingness to pay, willingness to pay a premium, and increased probability of purchase).

Bolton and Drew (1991) developed a multistage model of the determinants of perceived service quality and service value based on the disconfirmation paradigm. This model describes how customers' expectations, perceptions of performance, and disconfirmation experiences affect their satisfaction or dissatisfaction with a service, which in turn affects their assessment of service quality and value. In this model, Bolton and Drew (1991) proposed that service quality consists of both performance perceptions and summary disconfirmation measures which are directed by the consumer's performance perceptions. The customers' perceptions of service quality are directly affected by disconfirmation and indirectly affected by expectation and actual performance via satisfaction or dissatisfaction. Their empirical analysis suggests that both performance and summary disconfirmation measures explain the overall service quality.

In sum, although the SERVQUAL scale is a popular measurement tool, different researchers revealed that the SERVQUAL which is based on the disconfirmation paradigm of perceived service quality is questionable (c.f. Gronroos 1984; Parasuraman, Zeithaml, & Berry, 1985, 1988). According to Peter, Churchill, JR, and Brown (1993), to use difference scores (i.e., disconfirmation paradigm) causes a number of problems in
such areas as reliability, discriminant validity, spurious correlations, and variance restriction. Therefore, they concluded that difference scores should not be used for consumer research, which includes service quality research.

So far, service quality investigations, which have used the disconfirmation paradigm and SERVQUAL have been reviewed. Several researchers, however, conceptualized service quality in different ways. For instance, Gronroos (1984) developed the initial model of perceived service quality based on the disconfirmation paradigm. Gronroos borrowed two different dimensions of performance from Swan and Comb (1976). The first dimension is instrumental performance (i.e., the consumer’s assessment of the product’s physical attributes), and Gronroos termed it the Technical Quality. The Technical Quality (or outcome quality) refers to the outcome of the service act and represents what the consumer receives from the service. The second dimension is expressive performance (the consumer’s subjective response to the intangible aspects of the product – i.e., style, image, and status associated with the product), and this was named Functional Quality. The Functional Quality refers to the subjective perception of how the service is delivered and reflects the consumer’s perception of the interactions, which take place during the service encounter. In this model, these two dimensions of service performance are compared to the customer’s expectations and eventually the customer has his/her own service quality perception. In sum, the core of service quality is the actual customer’s perception of the technical and functional performance quality compared to those which are expected. This study provided a model of perceived service quality and proposed the relevant dimensions to measure customer’s performance perceptions.
By adding another construct (i.e., physical environment), McDougall and Levesque (1994) proposed a conceptual model called the Three Factor Model of Service Quality. The three-factor model consists of service outcome, service process (c.f. Gronroos 1984), and physical environment (c.f. Bitner, 1992). The basic concepts of service outcome and service process are identical to those of the Technical Quality and Functional Quality in Gronroos’s (1984) conceptualization. To test the model, McDougall and Levesque (1994) conducted a confirmatory factor analysis by using the dimensions of the SERVQUAL scale. The results of the study supported their three-factor model of service quality. Therefore, they concluded that the three factors were considered to be important determinants for the consumer’s assessment of service quality.

The two constructs, service process and physical environment, in the above conceptual framework are identical to the dimensions of service delivery and service environment in the Rust and Oliver’s (1994) Tri-Component Model of Service Quality. Rust and Oliver (1994) developed a conceptual model of perceived quality in which three distinct elements are included: (a) service product, (b) service delivery, and (c) service environment. However, service product was not included in the McDougall and Levesque’s (1994) model.

In the above conceptual frameworks, each factor explains the important aspects of services. For instance, service product refers to the consumer’s cumulative perception of the service and any additional features, which accompany the services (Rust & Oliver, 1994). Service outcome refers to the outcome of the service act and represents what the consumer receives from the services (Gronroos, 1984; McDougall & Levesque, 1994). Service delivery or process (c.f., Functional Quality) refers to how the service is...
delivered on a specific occasion. Finally, service or physical environment includes the internal and external environment. Internal environment refers to the organizational culture and philosophy brought to service delivery by management, whereas external environment is the physical ambience of the service setting. All of the above factors assist to formulate the consumer's subjective evaluation of service.

As an alternative approach, Dabholkar, Thorpe, and Rentz (1996) proposed a hierarchical model of service quality in the retail industry. This model suggests that service quality is a multi-level and multi-dimensional construct. The levels include: (a) first level - consumers' overall perception of service quality, (b) second level - a dimension level which consists of five correlated, but distinct dimensions (physical aspects, reliability, personal interaction, problem solving, and policy), and the (c) third level - a sub-dimension level which recognizes the multifaceted nature of the service quality dimensions (i.e., physical aspects - appearance and convenience, reliability - promises and doing it right, personal interaction - inspiring confidence and courteous helpful, etc.). To validate the model, the authors utilized both qualitative and quantitative research methods. A total of 28 items (i.e., 17 items which were extracted from SERVQUAL and 11 items developed specifically for the retail setting) were included to test the performance only perception of the service provision. The results indicated an excellent fit (CFI.97-1.00) for each of the levels. The reliability and discriminant validity were analyzed. Also, the authors obtained several interesting results. First, the overall quality of service is directly affected by the perceptions of performance levels. Second, customers' personal characteristics are important in assessing value, but not quality. Third, interestingly, the results support the gap model.
Brady (1997) developed a conceptual model of perceived service quality by combining Dabholkar, Thorpe, and Rentz’s (1996) hierarchical service quality model and McDougall and Levesque’s (1994) Three Factor Model of Service Quality (i.e., Service Outcome, Service Process, and the Physical Environment). This hierarchical and multidimensional approach is believed to better explain the complexity of human perceptions than the conceptualizations currently offered in the literature (Dabholkar, Thorpe, & Rentz, 1996; Brady, 1997). The primary dimensions of the model are interaction quality, outcome quality, and physical environment quality. Each of the dimensions are defined by three corresponding subdimensions: (a) Interaction Quality – Attitude, Behavior, and Expertise, (b) Outcome Quality – Waiting Time, Tangibles, and Valence, (c) Physical Environment Quality – Ambient Conditions, Design, and Social Factors. The meaning of each dimension and subdimensions follow.

Interaction quality refers to the dyadic interaction between customer and service personnel (Surprenant & Solomon, 1987). Therefore, the main focus is on how the service is delivered (c.f., Technical Quality). It is believed that the customer evaluates the interaction based on attitude, behavior, and the expertise of the service personnel. Outcome quality refers to the consumer’s assessment of the service product and that is defined by the evaluation of what the consumer receives from the service provider. Waiting time is associated with the total waiting time in the delivery of the service. Tangibles reflect a tangible evidence (i.e., physical attributes) of the service. Valence refers to the customer’s perception of whether the outcome is good or bad. Physical environment quality refers to the physical surroundings. Ambient conditions refer to the customer’s perception of the atmosphere. Design refers to the customer’s perception of
the facility’s design and layout. The social factor refers to the customer’s perception of other customers. To increase the generalizeability of the results, the research sample was drawn from four service industries classified by the criteria of hedonic and utilitarian services, and human and physical good services. These industries were (a) amusement parks – hedonic, person-oriented, (b) photo developing industry – hedonic, physical good-oriented, (c) dry cleaning – utilitarian, physical good-oriented, and (d) fast food restaurant – utilitarian, person-oriented.

Structural equation analysis (using LISREL 8) was employed to test the model. The model was analyzed through a series of three steps. First, the model’s primary dimensions (i.e., interaction quality, outcome quality, and physical environment quality) were tested. Second, the nine subdimensions were tested in order to determine whether they could be considered sub-factors of the primary constructs. Third, the full model was tested as a means of investigating the relationships between service quality, satisfaction, and purchase intentions.

The results of the analyses suggest that the hierarchical model of service quality is sound in all four industries. The results suggest that the hierarchical conceptualization of service quality is supported by the data and the results can be generalized across service industries (Brady, 1997). This model is one of the most comprehensive conceptual frameworks to date. The reliability and validity tests indicate and support that the instrument is psychometrically sound.

The dimension of service product, however, was not included in Brady’s (1997) hierarchical model. Instead, outcome quality was included because Brady interpreted service product and outcome quality to be the same concept, and included only the
outcome quality to determine what the consumer receives from the service provider as opposed to how it is received. However, it is clear that to evaluate the service product itself (e.g., the fitness program within a University) and to evaluate the outcome of service consumption (e.g., physical change) are two different aspects in the process of production and consumption within sport services. Program quality is a core service in participant sport, and should be included as an important dimension to be evaluated. For instance, in the fitness industry, attractive programs should be available for the customer during a convenient time slot.

As an alternative approach, Johnson, Tsiros, and Lancioni (1995) utilized system theory to measure the perceived service quality. They argued that a measure of overall service quality should include judgments of all dimensions of the service: inputs, process, and outputs. In their model, input quality includes equipment, facility, and service providers (e.g., knowledge and skills, etc.). Process quality refers to the quality of interaction between the provider and consumer (i.e., how the service is produced). Output quality refers to a measure of what is produced as a result of providing the service including intangible benefits and tangible outputs (e.g., change in the consumer’s physical or mental state or change in some possession of the consumer’s). As an organization is an open system, the environment should be considered (e.g., social trends that affect consumers’ wants and needs). Johnson, Tsiros, and Lancioni (1995) conducted two empirical studies on full service restaurants, banking, and public transportation organizations to identify the components of each of the three quality dimensions (Input – five items, Process - seven items, and Output – eight) and to determine the extent to which the framework and measures could be generalized across
different service industries. Regression analysis reveals that the overall model was significant and explained 71% of the variation in overall service quality. A focus group interview also supports their system model of service quality. However, the input dimension had a relatively weak effect on the overall service quality. From the above dimensions, process, output quality, and environment quality are similar concepts to the aforementioned constructs in Rust and Oliver's (1994) model and McDougall and Levesque's (1994) "Three Factor Model of Service Quality."

In this section, the different approaches for measuring service quality were discussed. However, the above literature review reveals that there is not a consensus in the measurement of service quality constructs within service industries. The next section includes theoretical attempts at the conceptualization and application of service quality to the sport and leisure industries.

Service Quality in the Sport Industry

Within the sport and leisure industry, service quality was not recognized as a main research theme until the late 1980s. However, as the competition for sport organizations increases, the issues of customer satisfaction and service quality become more important for both practitioners and academicians in the sport and leisure industry. The satisfaction and retention of customers requires a firm's ability to provide consistently high-quality service (Milne & McDonald, 1999).

Service quality has been studied in different sport industry settings such as professional sport (McDonald, Sutton, & Milne, 1995; Milne & McDonald, 1999; Shilbury, 1994), fitness (Chang, 1998; Kim & Kim, 1995; Tawse & Keogh, 1998), and
recreation (Crompton, MacKay, & Resenmaier, 1991; Howat, Absher, Crilley, & Milne, 1996; McKay & Crompton, 1988; Wright, Duray, Goodale, 1992). Within the professional sport industry, McDonald, Sutton, and Milne (1995) developed the TEAMQUAL by adapting the original SERVQUAL (Parasuraman et al., 1988) to measure the perceived quality of the professional sport service. The original five dimensions (i.e., tangibles, reliability, responsiveness, assurance, and empathy) were adapted and 39 items were derived for the service quality assessment in professional sport. The adaptation included changes in the wording of the five dimensions of service quality as well as addition of subscales to measure the unique service areas of professional sport such as ticket ushers, concessionaires, and so forth. Principal factor analysis revealed that all five factors combined accounted for 61.6% of the variation in item scores and the modified instrument is both reliable and valid (McDonald, Sutton, & Milne, 1995). They concluded that the tangible dimension was the most highly rated followed by reliability.

Wakefield, Blodgett, and Sloan (1996) also emphasized the importance of physical environment in spectator sport, particularly in professional sport. The authors developed SPORTSCAPE to assess the relationship between spectators’ perceptions of stadium quality and repatronage intentions and their desire to stay at the stadium. Among the three dimensions of Bitner’s (1992) SERVICECAPE ((a) ambient conditions, (b) spatial layout and functionality, and (c) signs, symbols, and artifacts), Wakefield, Blodgett, and Sloan (1996) focused on the fixed elements of SERVICESCAPE as spatial layout and functionality, and signs, symbols, and artifacts (i.e., the architectural, landscape, and site design). The data analysis revealed that stadium access, facility
aesthetics, and scoreboard quality directly influenced the pleasure of game attendants, while seating comfort and layout accessibility (i.e., space allocation and signage) indirectly influenced pleasure mediated by perceived crowding. The affective response (i.e., pleasure), in turn, influences two behavioral responses (i.e., desire to stay and repatronage). LISREL validated the model with a goodness-of-fit index of .949. The researchers concluded that the pleasure derived from the SPORTSCAPE atmosphere strongly influenced the desire to stay and repatronize games at that facility. This study supports the importance of the physical environment in the production and consumption of sport service. In addition, although this study analyzed the spectators' perception of service quality in the professional sport setting, it provides practical applications for fitness and recreation managers.

In the fitness and recreational sport setting, several studies were conducted based on the disconfirmation paradigm or the original five dimensions from the SERVQUAL (Crompton, et al., 1991; Howat, 1996; Wright, et al., 1992). For instance, Crompton, et al., (1991) developed RECQUAL by modifying the original SERVQUAL instrument to five dimensions (Parasuraman et al., 1988). The instrument consisted of 25 items to measure the five dimensions. However, oblique factor analysis revealed that only four factors (assurance, reliability, responsiveness, and tangibles) were meaningful to the recreation services. The results suggested that the empathy dimension should be excluded from public recreation service. In addition, their results indicated substantial differences in items perceived to be useful for measuring service quality in public
recreation services from the previously developed instrument (i.e., SERVQUAL). Only eleven of the twenty-two original items of SERVQUAL were found to be efficacious in public recreation services.

Also, Wright, et al., (1992) developed a 30-items measurement scale by adapting the items from SERVQUAL (Parasuraman et al., 1988) and RECQUAL (Crompton, et al., 1991). A total of six focus groups were conducted with recreation center users. They asked the respondents what would be expected in an ideal center (expectations) and how much service was provided (perception of performance). Service quality (SQ) scores were calculated by subtracting the mean expectation rating from the mean performance rating for each attribute (SQ = mean performance – mean expectation). Negative values represented poor quality perception, while positive scores indicated that the performance exceeded expectations. Among the 30 service attributes, 28 attributes were found to have a negative SQ. The largest service gaps were for attributes related to maintenance functions. In addition, service gaps were found in basic customer relations (e.g., staff availability) and the operational features. However, the authors did not attempt to extract meaningful dimensions of service quality represented by these 30 items.

Following the study of Wright, et al.'s (1992) disconfirmation approach, Howat, et al., (1996) developed the Center for Environmental and Recreation Management (CERM-CSQ) to measure both expectations of clients and ratings of performance in recreation service. Initially, 60 items were reduced to 15 attributes of sport and leisure centers. Factor analysis yielded four dimensions: (a) Core Service – program information, start/finish on time, activity range, organization, facility comfort, value for
money, and quality equipment, (b) Staff Quality – staff responsiveness, staff presentation, staff knowledge, and officials, (c) General Facility – safe parking, and facility cleanliness, and (d) Secondary Service – food and drink, and child minding. Some of the factors and subdimensions in this study were included in Kim and Kim’s (1995) study (e.g., items related to employee attitude, programs, physical environment, and information).

Kim and Kim (1995) developed the Quality Excellence of Sport Centers (QUESC) survey based on literature reviews and focus group interviews. In addition, they utilized exploratory factor analysis to identify the kinds of services customers want, the level of service they desired, and the specific areas which required managerial attention in Korean sport centers. The model consists of 33 items, which measured 11 dimensions of service quality (i.e., ambiance, employee attitude, reliability, information, programs offered, personal consideration, privileges, price, ease of mind, stimulation, and convenience). Within the dimensions, cleanliness, security of personal goods, convenient schedules, convenient access to the facility, preparedness for emergency, and provision of safety education were found to be most desirable (Kim & Kim, 1995). Although this study provided several aspects of fitness service which were based on the customer’s service quality perception, they did not group the factors together (factor structure of service quality) as Howat, et al., (1996) did in their study. Among the 11 dimensions, some basic concepts (e.g., employee attitude, personal consideration, ease of mind) may reflect similar aspect of the service delivery system.
In addition, traditionally, price has not been included in service quality researches because this factor has been used for service value rather than service quality (Brady, 1997). There is another study which examined service quality in the fitness industry.

As in Johnson, Tsiros, and Lancioni’s (1995) study, Chang (1998) developed the Scale of Quality in Fitness Services (SQFS) based on the system thinking paradigm to measure service quality within the fitness industry. The instrument consists of nine dimensions of service quality: (a) Input (three dimensions) – service climate, management commitment to service quality, and program, (b) Throughput (five dimensions) - contact with employees (interpersonal interaction), task interaction, contact with physical environment, contact with other clients, and service failure and recovery, and (c) Output (one dimension) - service quality. Reliability and validity tests support that the instrument was psychometrically sound. In addition, confirmatory factor analysis supported the conceptual framework. The range of reliability for the scale was 0.37 - 83. The overall fit of the model proposed was described as “fair” to “good” (LISREL 8 program). Although the model provided a theoretical framework, several problems were identified. For example, the outcome quality was not included in this model. Rather, as an element of the output stage, a customer’s perception of service quality is included. The weak assessment of the outcome quality in Chang’s (1998) model and Kim and Kim’s (1995) framework is problematic. Sport experiences provide unique benefits and outcomes for the participants; therefore, the conceptual model of service quality should be expanded to fully understand what consumers receive from the sport service, and how they perceive the performance in both spectator and participant sport. Chelladurai’s (1998) global construct model provides an important background.
for further study. In addition, ‘management commitment to service quality’ in Chang’s (1998) model may be an appropriate dimension for the employee’s level (i.e., internal service quality), rather than consumer’s level (cf., Parasuraman, Zeithaml, & Berry’s (1985) A Gap model of Service Quality). The customer is not necessarily able to evaluate the decision-making of the organization level (back-line operations). Therefore, the inclusion of the management commitment to service quality may not be an appropriate to measure consumer’s service quality perception.

In this section, several existing conceptual models and different approaches of service quality measurement, particularly in the sport and recreation industry, were discussed. While the above studies generated an interest in service quality within the field of sport management, the majority of studies have been conducted based on the disconfirmation model or SERVQUAL scale, except in a few cases (i.e., Kim & Kim, 1995; Wright, et al., 1992). In addition, although many scholars within the sport field have attempted to develop a model of service quality, several conceptual gaps exist among the models.

The above literature review indicates that there are several suggestions for a better conceptualization of service quality and measurement tool for the sport industry. First, the empirical examinations of the sport, fitness, and recreation literature offer little to support a commonly agreed upon factor structure. Therefore, service quality researchers need to focus their attention on the commonality as well as the differences in the identification of factors, which determine service quality in sport services. More specifically, although researchers have focused on the development of an industry specific model, it is necessary to identify global factors (or dimensions) of service quality
within participant sports. Within the services of participant sport, whether it is a fitness center or university recreation department, each segment of the industry shares several common characteristics (e.g., core product – program, participant motives). The identification of a comprehensive conceptual framework of service quality may help us to better understand the customer’s intangible quality perception. In addition, it may reduce ambiguity which currently exists in the sport industry.

Second, a valid and reliable measurement instrument needs to be developed which is based on a comprehensive conceptual framework. An accurate measurement of service quality is possible only when we have a clear understanding of sport service, the constructs of service quality, and the target consumers. In the previously mentioned studies in fitness and recreation sport, the disconfirmation paradigm was used to measure the difference scores between expectations and perceptions of actual performance. However, as suggested in the previous section, the SERVQUAL or similar studies based on the disconfirmation paradigm of perceived service quality is problematic because to use the difference scores (i.e., disconfirmation paradigm) causes a number of problems in such areas as reliability, discriminant validity, spurious correlations, and variance restriction (Peter, et al., 1993). Therefore, a number of service quality researchers (e.g., Babakus & Boller, 1992; Brown, Churchill, & Peter, 1993; Carmen, 1990; Cronin & Taylor, 1992) suggested that performance only tests be conducted in service quality research within the participant sport.

In sum, the review of literature implies that the concept of quality is neither a uniform concept, nor an easy concept to conceptualize when the target is sport. Only when we build up our knowledge based on a sound theory and an appropriate empirical
analysis will the global construct and model of service quality for sport services be possible. Service quality in the field of sport is relatively new, so additional empirical research should be conducted to bring a consensus which conceptualizes service quality.

Customer Satisfaction

During and after the consumption of a service or product, consumers develop feelings of satisfaction or dissatisfaction (Mowen & Minor, 1998). In the business context, satisfaction is an important determinant of corporate long-term financial health as well as consumer well being (Anderson & Fornell, 1994; Oliver, 1997; Zeithaml, Berry & Parasuraman, 1996). For instance, Anderson, Fornell, and Lehmann (1994) provided empirical evidence of positive relationships between satisfaction and a number of desirable outcomes such as loyalty, price inelasticity, positive word of mouth, favorable image, and corporate profitability. It is postulated that satisfied customers are more likely: (a) to recommend the organization to others, which is the cheapest and most effective form of promotion, (b) to be loyal customers (e.g., five to seven times more expensive to attract a new customer than to keep an old one), and (c) to be better customers because they buy more, more often and are willing to pay higher prices (Crosby, 1993).

The importance of customer satisfaction within the sport industry was reported by Dortch (1996). Dortch (1996) examined the influences of players' strikes on the ballpark attendance and explained how dissatisfied customers make the business environment of major league baseball worse. When major league baseball players chose to strike in 1994 and 1995, the attendance at major league ballparks declined 26 percent
from 1993. According to the Gallup poll conducted for USA Today and CNN, 58% of baseball fans said they felt disgusted and 38% said that they felt angry. Factors such as winning rate, new or innovative stadium, and accessible, amiable, and sincere star players are all important factors determining the attendance rate (Dortch, 1996). However, the above example suggests that fan satisfaction may be the most important variable for the business success of a professional sport organization.

The definition of customer satisfaction varies and depends on its theoretical assumption. The followings are examples of several different definitions. Customer satisfaction was defined as:

"the summary psychological state resulting when the emotion surrounding disconfirmed expectations is coupled with the consumer’s prior feelings about the consumption experience" (Oliver, 1981, p.27).

"the consumer’s fulfillment response. It is a judgment that a product or service feature, or the product or service itself, provided (or is providing) a pleasurable level of consumption related fulfillment, including levels of under- or overfulfillment" (Oliver, 1997, p.13).

"the consumer’s response to the evaluation of the perceived discrepancy between prior expectations and the actual performance of the product as perceived after its consumption” (Tse & Wilton, 1988, p.204).

"a post-consumption evaluation that a chosen alternative at least meets or exceeds expectations” (Engel, Blackwell, & Miniard, 1995, p.273).
In the above definitions, four important characteristics of customer satisfaction are identified. First, satisfaction has been perceived to encompass an emotional reaction to disconfirmed expectations (Engel, et al., 1995; Oliver, 1981; Tse & Wilton, 1988). Second, satisfaction responds to both cognitive knowledge of the outcome of purchasing and the emotions that accompany this outcome and related events (Oliver, 1997). Third, the definition of satisfaction tends to be based on a comparison between expectations and performance (i.e., disconfirmation paradigm) (Bloemer & Kasper, 1995). Fourth, satisfaction requires actual consumer experience (Oliver, 1997).

A better understanding of customer satisfaction requires further examination of the different types and levels of satisfaction. First, several types of satisfaction have been identified. Oliver (1997) argued that transaction satisfaction (or encounter specific satisfaction - one transaction) should be differentiated from summary satisfaction (i.e., time accumulated). The first type of satisfaction requires only a single observation or transaction while the second type requires many samplings or occurrences of the same experience. Anderson and Fornell (1994) named these two types of satisfactions as transaction specific and brand specific satisfaction, respectively. Similarly, Bloemer and Kasper (1995) differentiated manifest satisfaction from latent satisfaction. Manifestation satisfaction indicates that customers compare expectations to performance, and that they are likely to be aware of the outcome of his/her evaluation and satisfaction. In contrast, latent satisfaction suggests that consumers who do not have previous experience or enough knowledge cannot compare expectations and performance due to the lack of motivation or ability to evaluate the brand choice, and they are not likely to be fully
aware of their satisfaction. In short, certain levels of experiences are required for both summary satisfaction and manifestation satisfaction, while transaction satisfaction and latent satisfaction require no or few experiences.

Second, consumer satisfaction has been measured in different ways. The traditional measurement methods of consumer satisfaction focus on the people’s overall evaluation of the product as well as their evaluations of the specific attributes. However, recently, satisfaction has been measured through the use of rating scales on which the respondents evaluate the performance of a service on various dimensions. Therefore, regression equations have been developed where the attribute questions are used to predict the overall satisfaction rating (Mowen & Minor, 1998). Researchers who use Likert and other rating scales view consumer satisfaction as an attitude (Taylor & Claxton, 1994). Consumers place different importance weights on the various attributes of a good or service, so some dimensions will have a greater impact on overall satisfaction than others. However, measuring consumer satisfaction is difficult due to several reasons. First, there are many attributes that may affect both perceived quality and satisfaction. In this case, multicollinearity can be a significant problem. Therefore, satisfaction should be clearly distinguished from other antecedent constructs such as service quality, expectations, or experienced utility and from consequences of satisfaction such as attitude, loyalty, and switching behavior (Anderson & Fornell, 1994; Oliver, 1997). Second, responses to current survey instruments may lead to highly skewed or nonnormal distributions (Anderson & Fornell, 1994). Thus, we should ask about dissatisfaction as well as satisfaction, because the majority of customers revealed high levels of satisfaction (Peterson & Wilson, 1992).
According to the above characteristics, consumer satisfaction is both an affective and cognitive reaction (i.e., evaluation) to the perceived discrepancy between performance and experience based on long term usage. Also, satisfaction results at the end of the consumer’s processing activities and not necessarily when the product and service outcomes are observed (e.g., Oliver, 1997). Recent studies have focused on the customers’ overall evaluation based on many transient experiences with a service over time (Anderson & Fornell, 1994). This means that consumers develop an attitude (i.e., stable like or dislike) toward a service with summary satisfaction not with transaction satisfaction. In other words, it is necessary to have repeated purchase and consumption for the consumers to have a rather stable attitude. The consumer attitude, in turn, is tied strongly to the consumer’s intention to repurchase the product or repatronize the service in the future.

Satisfaction researchers have focused on several theoretical assumptions: (a) expectancy disconfirmation model, (b) equity theory, (c) attribution theory, and (d) experientially based affective feeling (Mowen & Minor, 1998). Expectancy disconfirmation model and equity theory are discussed next because they are the most widely used paradigms in service quality and satisfaction research.

In the expectancy disconfirmation model, disconfirmation refers to the consumer’s comparison of the service performance to an expectation (Hunt, 1977). Disconfirmation scales include both positive and negative values. Whereas the negative disconfirmation refers to the negative discrepancy that occurs when performance is below standard, positive disconfirmation occurs when performance is better than expected. When performance is equal to expectations, a confirmation of expectations exists (i.e.,
performance equals expectations). There are two different types of measures. A subjective measure does not include any numeric comparison while an objective measure includes numeric comparisons in a product evaluation. In other words, the subjective interpretation becomes the most immediate antecedent of satisfaction. Therefore, the following cause and effect ordering is found: Objective disconfirmation $\rightarrow$ Subjective disconfirmation $\rightarrow$ Satisfaction. (Oliver, 1997). There are three stages in the confirmation model. First, the consumer develops expectations of how the brand should perform through communications from firms and other people. Second, the consumer compares their performance expectations to the actual product performance (e.g., perception of the product's quality). Third, then, the consumer experiences either emotional dissatisfaction (i.e., quality falls below their expectation) or emotional satisfaction (i.e., quality falls above their expectation). If performance is perceived equal to expectations, a consumer experiences expectancy confirmation. However, it should be mentioned that strong satisfaction is experienced only when the actual performance is markedly superior to expected performance (Oliver, 1980).

The equity theory has an assumption that customers analyze the exchanges between themselves and other parties to determine the extent to which those exchanges are equitable or fair (i.e., ratio of outcomes and inputs) (Adams, 1963). Therefore, equity can be defined as "a fairness, rightness, or deservingness comparison to other entities, whether real or imaginary, individual or collective, person or non-person" (Oliver, 1997, p.194). Fairness and justice are interchangeable terms (Sheppard, Lewicki, & Minton, 1992), and equity is categorized under distributive justice where equality and need are also included. Fairness is especially important for service products
that are intangible, and difficult to evaluate (Seiders & Berry, 1998). Satisfaction occurs when the ratios of outcomes and inputs for each party to the exchange are approximately equal. For consumers, inputs include information, effort, money, or time exerted to make an exchange possible. Outcomes are the benefits and liabilities received from the exchange (or level of goal achievement in their training) (Mowen & Minor, 1998). In the expectancy disconfirmation model, customer satisfaction/dissatisfaction results from the comparison of actual performance to expected performance. However, equity theory suggests that satisfaction also results from comparing one’s inputs and outcomes with those of others. Perceptions of fairness/equity had a greater impact on consumers’ overall satisfaction than perceptions that expectations were disconfirmed (Oliver & Swan, 1989). Therefore, equity is an independent variable for satisfaction which may result in intention to rebuy, complain, and both positive and negative word of mouth. To increase customer satisfaction, sport marketers need to ensure that customers recognize all of the inputs the company has added to the transaction.

The Causal Relationship between Service Quality, Satisfaction and Repurchase Intention

This section discusses the basic concepts of customer satisfaction, service quality, and repurchase intention which are the most important variables in consumer’s decision-making procedures. A comparison between service quality and satisfaction are discussed in more detail for a better understanding of the causal relationship between service quality, overall satisfaction, and purchase intention. In addition, several practical implications are provided.
During and after the consumption or experience of a service, a customer develops a service quality perception and a level of satisfaction. The basic analogy in current studies published in the business literature is that a satisfied customer tends to be highly committed to a service and eventually becomes a loyal customer. However, the causal relationship among the three constructs (i.e., service quality, satisfaction, and repurchase intention) is equivocal due to the difficulties in conceptualizing each construct. Thus, the ambiguity of distinction between satisfaction and service quality needs to be clarified. It is an important task for both researchers and practitioners to identify the causal relationship among the constructs because it helps develop effective strategies aimed at consumer satisfaction judgment and consumer service quality attitudes.

So far, a number of researchers have completed path analysis of service quality, satisfaction, and purchase intention to investigate the causal relationships between them and to analyze the customer's post consumption evaluation about provided service (Anderson & Fornell, 1994; Anderson & Sullivan, 1993; Bitner, 1990; Bolton & Drew, 1991; Bolton & Drew, 1991; Brady, 1997; Cronin & Taylor, 1992; Dabholkar, 1995; McAlexander, Kaldenberg, & Koenig, 1994; Mohr & Bitner, 1995; Rust & Oliver, 1994). The main issue of path analysis focuses on whether perceptions of service quality are directly related to customer decision-making or whether the effect is mediated by the level of satisfaction associated with an organization's services (Brady, 1997).

As discussed in the previous section, satisfaction is a different construct from service quality for the following several reasons (Oliver, 1997). First, quality perceptions do not require exposure to experiences, rather it can be externally or vicariously mediated, while satisfaction is purely experiential. Second, the dimensions
underlying quality judgments are rather specific to characteristics defining quality for a product or service. In contrast, satisfaction dimensions are potentially all attributes of product or service. Third, quality judgment standards are based on ideals or excellence perceptions, while satisfaction judgments include predictive expectations, needs, product category norms, and even expectations of service quality. For instance, Parasuraman, et al. (1990) distinguished satisfaction from service quality by proposing that service quality represents a comparison to excellence while satisfaction is a comparison to the predicted service. Fourth, quality judgment is attribute-based, and primarily cognitive, while satisfaction is both a cognitive and affective response (Bitner & Hubbert, 1994; Oliver, 1994). Fifth, service quality has fewer conceptual antecedents (external cues such as price, reputation, and various communication sources), while satisfaction is known to be influenced by a number of cognitive and affective processes including equity, attribution, and emotion. For example, the antecedents of satisfaction include perceived service quality, performance, or utility actually experienced and a comparison standard such as expectations (i.e., expectancy disconfirmation) (e.g., Brady, 1997; Cronin & Taylor, 1992; Anderson & Fornell, 1994; Anderson & Sullivan, 1993; Rust & Oliver, 1994). Sixth, quality is primarily long-term (overall or summary), while satisfaction is primarily short-term (transaction or encounter specific). It is because quality attaches to a product or service in a global sense whereas satisfaction is experience-specific. Cronin and Taylor (1994) also noted that service quality is a form of attitude representing a long-run overall evaluation, whereas satisfaction represents a more short term, transaction-specific measure (Cronin & Taylor, 1994). However, this distinction needs further analysis. In the business literature, when service quality is used to refer to a global, long-term attitude
about a service, customer satisfaction is recognized as an antecedent of service quality. In contrast, when service quality is used to refer to specific information about the service, service quality is recognized as an antecedent of customer satisfaction (Zeithaml, 1988). The different conceptualization approaches may produce different results in an empirical analysis. However, a number of empirical studies supported the second approach for identifying the causal link between service quality and satisfaction (e.g., Anderson & Sullivan, 1993; Anderson & Fornell, 1994; Anderson, Fornell, & Lehmann, 1994; Cronin & Taylor, 1992; Taylor & Baker, 1994). Last, satisfaction should be distinguished from the other consequences of satisfaction such as transaction-specific satisfaction consequences (e.g., complimenting, complaining, and word of mouth), and summary satisfaction consequences (e.g., attitude, customer loyalty, and switching behavior) (Oliver, 1997).

To identify the distinct characteristics of service quality and satisfaction and to identify the antecedent and consequences of satisfaction do not merely help clarify the basic concept of service quality and satisfaction, but rather help identify the causal link between them (Anderson & Fornell, 1994; Oliver, 1997). Brady (1997) summarized the current literature on the causal relationship. First, satisfaction is recognized as an antecedent of perceived quality (Bitner, 1990; Bolton & Drew, 1991; Mohr & Bitner, 1995). Second, a number of scholars agreed that satisfaction is a consequence of service quality and in turn, customer satisfaction directly impacts purchase intentions (e.g., Anderson & Sullivan, 1993; Anderson & Fornell, 1994; Anderson, Fornell, & Lehmann, 1994; Cronin & Taylor, 1992; Taylor & Baker, 1994). Third, there is a non-recursive relationship between the two constructs (Dabholkar, 1994; McAlexander, Kaldenberg, &
Koenig, 1994). Although the second approach has relatively strong empirical support, further analysis is necessary in the sport industry due to the lack of empirical analysis in this area.

In this section, the basic distinctions of customer satisfaction and service quality were discussed. Several different approaches for conceptualizing satisfaction and service quality were introduced. In addition, current issues of the causal relationships between service quality, customer satisfaction, and purchase intention were also discussed.

**A Proposed Model of Service Quality and Research Hypotheses**

The previous review of the service quality literature suggested that researchers should develop an industry specific model of service quality for participant sport from the customer's perspectives. Also, the model should be comprehensive enough to be generalized to similar industry segments (e.g., fitness industry, recreational sport, and educational sport, etc.). Therefore, it is suggested that the identification of a global factor model of service quality is needed (Brady, 1997, 1999; Dabholkar, Thorpe, & Rentz, 1996; McDougall & Levesque, 1994). In addition, there is a need to reinvestigate the relationship between service quality and other outcome variables of post consumption such as satisfaction, and future purchase intention. Within the field of sport and recreation management, a lack of empirical research on this issue limits our understanding of the constructs and their potential application. In this section, a proposed model of service quality and the causal link are discussed in more detail along with the research hypotheses.
For the purpose of this study, a multidimensional and hierarchical model of
service quality for participant sport was developed to provide a comprehensive
conceptual framework and appropriate measurement scale to determine the perception of
sport participants toward service quality. The model in the current study is based on
Brady and Cronin's (1999) hierarchical model of perceived service quality. It should be
noted that Brady and Cronin's work is the first attempt to combine the traditional
approach of service quality (i.e., tri-component model of service quality) with the recent
multi-level conceptualization of service quality. The model includes two unique
approaches.

First, the primary dimensions in Brady and Cronin's model of service quality are
derived from Gronroos' (1982) seminal conceptualization of service quality and studies
which indicate that the physical environment impacts service quality perceptions (e.g.,
McDougall & Levesque, 1994; Oliver, 1997; Rust & Oliver, 1994). These primary
dimensions also incorporate aspects of McDougall and Levesque's (1994) 'Three Factor
Model of Service Quality,' and Rust and Oliver's (1994) 'Tri-Component Model of
Service Quality.' Rust and Oliver's (1994) conceptual framework includes three distinct
elements: (a) service product, (b) service delivery, and (c) service environment.

Similarly, McDougall and Levesque's (1994) three-factor model of service quality
includes (a) service outcome, (b) service process, and (c) physical environment.

The second unique aspect of Brady and Cronin's (1999) model is that it includes a
basic idea for the hierarchical and multi-level conceptualization of perceived service
quality, which is adopted from Dabholkar, Thorpe, and Rentz's (1996) multi-level
conceptualization. The rationale for the hierarchical factor structure is as follows. First,
previous studies found high intercorrelations among items across factors in SERVQUAL. Also, some factors are conceptually broader than others in the existing literature. This suggests that there is a higher order factor. Therefore, customers are expected to form evaluations of service quality both at the attribute (i.e., subdimension level) and at the integrated level (i.e., dimension level). Second, by using this approach, the literature's multiple service quality conceptualizations can be consolidated into a single comprehensive, multidimensional conceptualization. Third, this approach allows for analysis at several levels of abstraction: (a) analysis of the factor level, (b) analysis of particular service elements (i.e., dimensions), and (c) overall service quality analysis using the complete scale. Fourth, the hierarchical approach helps to overcome the difficulties inherent in measures of perceived service quality (Brady, 1997; Brady & Cronin, 1999; Dabholkar, et al., 1996).

Therefore, the current study integrates the work of the above conceptual models for participant sport, which includes fitness, recreational, and educational sports. It is anticipated that the proposed model in this study is applicable to the various sport industry segments.

In the proposed model for this study, four factors, that is, program quality, interaction quality, outcome quality, and physical environment quality are included as primary dimensions. Each of these dimensions is defined by several corresponding subdimensions: (a) program quality – range of activity programs, operating time, and peripheral services, (b) interaction quality – attitude, behavior, and expertise, (c) outcome
quality – physical change, valence, social affiliation, and (d) environment quality – ambient condition, design, and social factor. A detailed explanation of the model and its subdimensions is provided next.

Program Quality

The service product refers to the consumer’s cumulative perception of the service and any additional features, which accompany the services (Rust & Oliver, 1994). Therefore, product quality refers to the customer’s relative perception about the excellence of service (or program in the participant sport). In general, any service product is a consumer benefit package (CBP) combined with core and peripheral services or/and goods (Collier, 1994). The main service product of participant sport is the program. A program in participant sport is a combination of core (e.g., Aerobics instruction) and peripheral services (e.g., equipment rental service).

Several empirical analyses suggested that program is an important factor of service quality in the fitness and recreational sport industries. The core service of participant sport is the program through which members or customers experience sport service (Chang, 1998; Chelladurai, Scott, & Haywood-Farmer, 1987; Howat, Absher, Crilley, & Milne, 1996; Kim & Kim, 1995). For example, in the fitness industry, attractive programs should be available for customers in an appropriate facility and at a convenient time slot. Therefore, the concept of product quality in Rust and Oliver’s model should be included as a factor of service quality in the participant sport model. Several attributes of the program determine the quality of the program.
The following three attributes are included as subdimensions in the current model: (a) range of activity programs (Chang, 1998; Howat, et al., 1996; Kim & Kim, 1995; Wright, et al., 1992), (b) operating time (Brady, 1997; Howat, et al., 1996; Wright, et al., 1992), and (c) secondary services (e.g., equipment rental service, program information) (Howat, et al., 1996). Howat, et al.'s (1996) study supports the program dimension and each of its subdimensions. Factor analysis in their study yielded four dimensions of service quality which included core service, secondary service, staff quality, and general facility. Core service included program information, start/finish on time, activity range, quality equipment, and so forth. Secondary service included food and drink and child minding. Kim and Kim's (1995) focus group interview and exploratory factor analysis further support the importance of program quality in the participant sport model.

In the proposed conceptual framework, the range of activity programs refers to the variety of classes offered to participants. Operating time refers to whether classes start and finish on time, and whether the operating hours are convenient to all customers. Secondary service refers to all other services except core programs. Secondary services can vary depending on the facility and organization. Therefore, based on the above empirical studies, the first hypotheses for the study are:

Hypothesis 1: The program quality directly contributes to consumers' service quality perception.

Interaction Quality

Interaction quality represents the dyadic interplay between the customer and the employees or service personnel (Surprenant & Solomon, 1987). In other words,
interaction quality is the subjective perception of how the service is delivered and reflects the consumer's perception of the interactions, which take place during the service encounter. Functional Quality in the Gronroos's (1984) model is a similar concept to this dimension.

Within recreational sport, the importance of staff quality is well reported. For example, Howat, et al.'s study (1996) revealed that staff responsiveness, staff presentation, and staff knowledge are all important elements for determining staff quality. Chang (1998), on the other hand, divided this concept into interpersonal interaction and task interaction. Chang used Hogan, Hogan, and Busch's (1984) definition of interpersonal interaction, which is defined as "a set of attitudes and behavior that affects the quality of interaction..." (p.167). Task interaction focuses on the employee's actual performance in each of the tasks associated with the service (Chang, 1998). Two categories (i.e., interpersonal interaction and task interaction) are also found in three of Brady's (1997) subdimensions, which include employee's customer oriented personal attitude, behavior, and their expertise. The interpersonal interaction between the employees and customers in sport service can be best evaluated by using these aspects because they cover the most important aspects of service delivery in participant sport. In addition, Brady (1997) used the above three subdimensions (i.e., attitude, behavior, and expertise) to explain the original SERVQUAL dimensions (i.e., reliability, responsiveness, tangibles, assurance, and empathy).

As human variables are important factors in the nature of service production and consumption within the sport industry, service personnel’s attitude, expertise, and actual behavior directly influences customer evaluation of the services, in turn, they determine
the interaction quality. In fitness and recreational sport, the importance of attitude (Chang, 1998; Howat, et al., 1996; Kim & Kim, 1995; Wright, et al., 1992), expertise (Howat, et al., 1996; Wright, et al., 1992), and actual behavior are well documented. Therefore, Brady's subdimensions (i.e., employee's behavior, attitude, and expertise) are included in the second primary dimension, interaction quality. Therefore, the next set of hypotheses for the study include:

Hypothesis 2: Perceptions of interactions in the service delivery process directly contribute to service quality perceptions.

**Outcome Quality**

Outcome quality refers to the outcome of the service act and represents what the consumer receives from the service (Gronroos, 1984; McDougall & Levesque, 1994; Rust & Oliver, 1994). Gronroos (1984), for example, termed this dimension 'Technical Quality.' and defined technical quality as "what the consumer receives as a result of his interaction with a service firm" (p.38). Through an exploratory content analysis, Brady (1997) concluded that consumers evaluate the quality of the service outcome on (a) the waiting time associated with the delivery of the service, (b) the tangible evidence (i.e., physical attributes) of the service, and (c) the consumers' perception of whether the outcome of the service is good or bad (i.e., valence).

However, Brady's factors cannot be directly applied to a sport service because the nature of a sport service is different from those industries in Brady's study (i.e., amusement park, fast food restaurant, photo developing shop, and dry cleaning service). In other words, the benefits of the consumption of a sport service are different from the
above industries. It is important to recognize participant motives in recreation sport and fitness programs when measuring the customer’s perception of quality. Consumer’s participative motives in sport services differ in the sport industry itself (Chelladurai, 1998; Milne & McDonald, 1999). Chelladurai (1998) suggested that the purpose of sport participation is different between mass sport and elite sport, which is based on the participants’ obtained status or between competitive sport and recreation sport which is based on the level of competition. The proposed model of service quality is developed to be applied to Chelladurai’s category of mass and recreation sport. Accordingly, pleasure (Chelladurai, 1998) and thrill (Deighton, 1992) are the main motives for participants. Therefore, whether the outcome of the participation can fulfill the consumer’s motive or motivation is included as a third primary dimension.

In sum, physical change, valence (Brady, 1997), and social experiences (Milne & McDonald, 1999) are included as factors determining the outcome quality. In the proposed model, tangible evidence (Brady, 1997; Zeithaml, 1981) is replaced by physical change because a post-consumption of tangible evidence within a sport service is the increased level of physical fitness for most sport participants. The social facilitation refers to the social gratification of being with others who enjoy the same activity (Milne & McDonald, 1999). During the production and consumption of sport service, the participants actively interact with service personnel as well as other patrons. The importance of the family members, friends, and other people in sport participation are well documented. Therefore, social experience is one of the most important outcomes of sport participation. Brady (1997) included valence as one of the subdimensions of outcome quality to capture whether the consumer felt the service outcome was good or
bad, regardless of their evaluation of any other aspect of the service experience (Lutz, 1975; Mazis, Ahtola, & Klippel, 1975). In practice, the customer may have a positive perception of service quality, yet the negative valence of the outcome ultimately leads to an unfavorable service experience (Brady, 1997). Therefore, the next set of hypotheses for the study include:

Hypothesis 3: Perceptions of the outcome of a service encounter directly contribute to service quality perceptions.

Physical Environment Quality

Physical environment has been received as one of the most important aspects in the consumer's service quality perception and service evaluation (Baker, 1986; Bitner, 1992; Brady, 1997; Howat, et al., 1996; McDonald, Sutton, & Milne, 1995; McDougall & Levesque, 1994; Rust & Oliver, 1994; Wakefield, Blodgett, & Sloan, 1996; Wright, et al., 1992). For example, Bitner (1992) argued that the physical environment in which service is performed has a significant impact on the consumer perceptions because the customer needs to be present in the service production. She developed “SERVICESCAPE” which refers to the built environment as opposed to the natural or social environment (Bitner, 1992). SERVICECAPE includes three aspects of physical environment: (a) ambient conditions, (b) spatial layout and functionality, and (c) signs, symbols, and artifacts. The ambient conditions refer to the background characteristics of the environment such as temperature, lighting, noise, music, and scent. Spatial layout refers to “the ways in which machinery, equipment, and furnishings are arranged, the size and shape of those items and the spatial relationships among them” (Bitner, 1992, p.66).
Although the author did not empirically analyze the model, Bitner’s (1992) study influenced service quality research in the field of service marketing and management.

In the sport setting, Wakefield, et al. (1996) developed ‘SPORTSCAPE’ by adapting the SERVICESCAPE. They analyzed the relationship between spectators’ perceptions of stadium quality and repatronage intentions and their desire to stay at the stadium. The empirical results supported the importance of the physical environment to the sport spectators. Although they developed a conceptual framework for spectator sport, the positive perception of the physical environment may be equally important in participant sport as well. Baker (1986), on the other hand, categorized the physical environment into ambient factors, design factors, and social factors (Bitner, 1992; Brady, 1997). Design refers to the service facility’s layout or architecture including functional and aesthetic nature (e.g., Bitner, 1992). While, ambient conditions exist below the customer’s awareness level, design exists at the forefront of the customers’ awareness (Baker, 1986; Bitner, 1992; Brady, 1997). The ambient condition and design factors are similar to Bitner’s (1992) ambient conditions and spatial layout and functionality (Brady, 1997).

In addition to the physical surroundings, the importance of other patron’s influence is well documented in the literature (Baker, 1986; Brady, 1997; Chang, 1998; Lengnick-Hall, 1996; Lovelock, 1991; Zeithaml & Bitner, 1996). In service production and consumption, the role of the customer is not just consuming the provided service, but also actively participating throughout the whole process of service production and consumption (Lengnick-Hall, 1996). In the sport setting, the service production and consumption are delivered not only to one customer, but to other customers as well.
Therefore, other patron's behavior and attitude greatly influence the customer's perception of service quality, especially in high contact sport services (e.g., educational sport setting). Lovelock (1991) supported this statement by indicating, "a service facility where customers may interact with each other, people's behavior has to be managed discreetly so that customers will act in ways that are consistent with the organization's strategy" (p.15).

Therefore, the original three subdimensions (i.e., ambient condition, design, and social factor) from Baker's (1986) study and Brady's (1997) study are utilized for the analysis of the physical environment quality. The fourth set of hypotheses for the study include:

Hypothesis 4: Perceptions of the physical environment directly influence service quality perceptions.

Causal link between service quality, satisfaction, and purchase intention

In the business literature, when service quality is used to refer to a global and long-term attitude about a service, customer satisfaction is recognized as an antecedent of service quality. In contrast, when service quality is used to refer to specific information about the service, service quality is recognized as an antecedent of customer satisfaction (Zeithaml, 1988). In addition, the different approaches of conceptualization and measurement may produce different results in empirical analysis. Therefore, although a number of researchers have completed path analysis of service quality, satisfaction, and purchase intention (Anderson & Fornell, 1994; Anderson & Sullivan, 1993; Bitner, 1990; Bolton & Drew, 1991; Bolton & Drew, 1991; Brady, 1997; Cronin & Taylor, 1992;
Dabholkar, 1995; McAlexander, Kaldenberg, & Koenig, 1994; Mohr & Bitner, 1995; Rodeheaver, Orthner, Howe, & Zimmerman, 1988; Rust & Oliver, 1994), the causal relationship among the three constructs is equivocal.

In the current literature, there are three different approaches to explain the causal relationship (Brady, 1997). First, satisfaction is recognized as an antecedent of perceived quality (Bitner, 1990; Bolton & Drew, 1991; Mohr & Bitner, 1995). Second, a number of scholars agreed that satisfaction is a consequence of service quality and in turn, customer satisfaction directly impacts purchase intentions (e.g., Anderson & Sullivan, 1993; Anderson & Fornell, 1994; Anderson, Fornell, & Lehmann, 1994; Cronin & Taylor, 1992; De Ruyter, Bloemer, & Peeters, 1997; Taylor & Baker, 1994). Third, there is a non-recursive relationship between the two constructs (Dabholkar, 1995; McAlexander, Kaldenberg, & Koenig, 1994). Although the second approach has relatively strong empirical support, a further investigation is necessary in the sport industry due to the lack of the empirical analysis in this research area.

The continuous conceptual and empirical analysis on this issue may solve the ambiguity of distinction between the above constructs and the causal link. This issue is important for both researchers and practitioners because it helps develop effective strategy aimed at consumer satisfaction judgment and consumer service quality attitudes (Cronin & Taylor, 1992). In addition, the investigation of the causal link in this study may provide empirically based knowledge to the field of sport marketing and management. Therefore, the fifth, sixth, and seventh hypotheses for the study include:

Hypothesis 5: The perceptions of the service quality directly influence the customer's level of satisfaction.
Hypothesis 6: Customer’s level of satisfaction directly influence the customer’s repurchase intentions.

Hypothesis 7: The perceptions of service quality indirectly influence the customer’s repurchase intentions through a mediator variable of satisfaction.
CHAPTER 3

METHODOLOGY

The purpose of this chapter is to identify the methodological procedures utilized to test the research hypotheses and the research model presented in chapter 1. Specifically, the methodology is described in relation to the following aspects of the study: 1) instrumentation and scale development, 2) the research sample and data collection procedures, and 3) the data analysis procedures used to test the research hypotheses and proposed model.

Scale Development Procedures

The following discussion refers to the development of the survey instrument (i.e., the Scale of Service Quality for Participant Sport (SSQPS)) to measure sport consumers’ perceptions of service quality in participant sport. The final version of the instrument can be found in Appendix A. Whereas the version used for the pilot test is presented in Appendix B. Given the paucity of comprehensive and psychometrically sound measures of perceived service quality within the participant sport industry, it was necessary to develop a new instrument to adequately measure this construct.

For the purpose of this study, a scale was developed utilizing four steps. Specifically, to measure sport consumers’ perceptions of service quality and the causal
link between the variables, a survey instrument was developed in four stages, which included (a) item generation, (b) item purification through a panel of experts and field test, (c) pretesting of the survey instrument through a pilot test, and (d) confirmation of the survey instrument through structural equation analysis with the final sample.

Item Generation

The proposed research model posits that service quality consists of four primary dimensions (i.e., program quality, interaction quality, outcome quality, and physical environment quality), and that each dimension is defined by three subdimensions. In addition, the proposed research model includes the causal relationships between service quality, satisfaction, and repurchase intention (see Figure 1). Therefore, there are three levels of variables, which need to be operationalized in this research model. First, there are twelve subdimensions which include multiple items to measure the specific aspects of the services in participant sport. Second, there are four primary dimensions in which multiple items were selected from the subdimensions to determine the generic model of service quality (i.e., four primary dimensions). In both levels, the items for the twelve subdimensions were developed and analyzed to determine the efficacy of the conceptual framework as a multi-level construct (Brady & Cronin, 1999). Third, customer satisfaction and purchase intention were included in the model to measure causal relationships. In each variable, there were multiple items which explained the constructs.

In this stage, as Churchill (1979) suggested, the researcher specified the constructs (i.e., service quality, customer satisfaction, and purchase intention) and developed an
initial sample of items for each construct through an extensive review of the service quality literature in the areas of sport management service marketing. The proposed research model and survey instrument were then developed based upon the literature review. Although existing scales (e.g., Brady, 1997; Chang, 1998; Crompton, et al., 1991; Howat et al., 1996; Kim & Kim, 1995; Parasuraman et al., 1988) were used as resources for the items, it should be noted that parts of the scales might not necessarily be appropriate for this study.

Therefore, multiple measures for each of the subdimensions of service quality were developed and modified from the items of existing scales. As DeVellis (1991) suggested, the initial number of items was about 50% larger than the final scale. By using multiple and redundant items, the content that is common to the items are summated across items while the irrelevant items are excluded. In confirmatory factor analysis, models which have factors with only two indicators (i.e., items) are more likely to be empirically underidentified than models with at least three indicators per factor. In addition, problems such as specification error and nonconvergence of iterative estimation are more likely to occur in models which only have two indicators per factor (Kline, 1998). Therefore, the researcher tried to include at least three indicators per factor in the initial item pool to obtain at least three indicators per factor for the final instrument.

When selecting and developing items, the researcher used criteria such as the length of the items, level of difficulty, relevance to the scale’s purpose, and clarity (DeVellis, 1991). The same method was utilized for the development of the items for customer satisfaction and repurchase intention. The format for the instrument was a seven-point Likert scale format ranging from (1) “Strongly Disagree” to (7) “Strongly
Agree.” Likert scaling is often used when developing an instrument which measures opinions, beliefs, and attitudes (DeVellis, 1991). Since this study examined the participants’ opinions toward the quality of service, a Likert Scale format was used.

The preliminary scale included a total of 77 items, which explained 12 subdimensions of service quality in participant sport – Range of Program, Operating Time, Secondary Service, Employee Attitude, Employee Behavior, Expertise, Physical Change, Valence, Sociability, Ambience Condition, Facility Design, and Social Factor.

Item Purification

The initial item pool needs to be purified in order to identify and eliminate those items which are either unreliable or that cross-load on other constructs (Churchill, 1979). For the purification of the instrument, the researcher began with an assessment of content and face validity through a panel of experts and field test. To establish face validity, the researcher simply asked the experts to indicate whether the instrument looks like it is measuring what it claims to be measuring (Gliem, 1996). Content validity refers to “a qualitative means of ensuring that indicators tap the meaning of a concept as defined by the analyst” (Bollen, 1989, p.186). In this study, to establish content validity, ten experts were selected because of their experience, expertise, and knowledge in the content area, and research methodology. These experts included three Sport Management professors, four Sport Management doctoral students, and three experts in the area of recreational sport (Appendix C). These individuals were provided with detailed information regarding the purpose of the study, specific directions, and definitions to assist them in making judgments. They were asked to rate each item as well as the instrument as a
whole for content, clarity, wording, format, thoroughness, ease of use, focus, and appropriateness. In addition, they were asked to identify which items fit under each of the subdimensions (Appendix D). Based on the feedback from the panel members, the instrument was revised. Items that were correctly identified by 75% of the experts were kept. Since this study was confirmatory in nature, the focus of establishing validity was on how well the individual subcategories within each dimension conformed to their proposed dimension as well as on the measurement of the individual categories within each dimension. The feedback from the panel of experts led to the rewording of several items to enhance clarity. Also, some items were transformed into two separate sentences to better reflect the nature of the subdimensions.

After the revisions were made, a field test was conducted by administering the revised version of the instrument to a representative group similar to the target population. This group included 10 undergraduate students who participated in recreational sport clubs at a large university in the Midwest. They were provided with detailed information regarding the purpose of the study, the specific directions and definitions to assist them in making judgments. The cover letter that accompanied this information is found in Appendix E. They were asked to rate each item on the instrument as well as the instrument as a whole for content, clarity, wording, format, thoroughness, ease of use, focus, time, and appropriateness. Although the results of the field test cannot be quantified, the researcher tried to ensure that the instrument included everything it should and did not include anything it should not (Litwin, 1995). Appropriate revisions were made to the instrument based on the feedback from the field test members. For example, four items, which started with "REC-Sport employees
understand that". were dropped due to an ambiguity of the meaning. As a result, the revised instrument included 66 items, which explained 12 subdimensions of service quality.

Scale Pretest

In this stage, a pilot test was employed to test the reliability of the instrument. The purpose of this process is to purge the scale of poor performing items which confound the relationships in the structural model. The internal consistency method was used to reduce the item pool. More specifically, Cronbach's alpha and item-to-total correlations were used as the criteria for item elimination. As Robinson, Shaver, and Wrightman (1991) suggested, items which have higher than .50 reliability coefficients were retained. Specifically, those items which exhibit low correlations with the other items in the scale are removed from the items pool.

Based upon the feedback from the panel of experts, the researcher made several changes to the subdimensions in the proposed model. One change involved the movement of the subdimensions social factor from the physical environment dimension to the interaction quality dimension. It should be noted that social factors in Baker's (1986) typology was included in the physical environment quality dimension. However, many of the panel members in the current study agreed that social factors fit better under interaction quality. Thus, the social factor was moved to the interaction quality dimension and renamed as inter-client interactions to better reflect the items in the subdimension.
Another change made was to add equipment quality as a subdimension under physical environment. This change was made because equipment is one of the aspects of the “built environment” in a service environment (Bitner, 1992). Therefore, equipment conceptually needs to be included in the model. For this change, two items asking about the equipment were moved from the subdimensions of secondary services, and 1 item was developed for the actual survey.

The last change made was to rename the subdimension secondary services to information. This was done to clarify the concept of subdimension. The original items in the subdimensions reflect ways in which information is disseminated.

The revised instrument was administered to a representative sample of the target population. The researcher employed a convenient sampling method and selected a total of 150 participants from the Department of Recreational Sport at the university in which the field test was employed (see Table 2). Permission from the Director of the Recreational Sport Department was secured prior to data collection. The participants in the pilot test were asked to complete the initial scale of the SSQPS. The cover letter given to the pilot test participants can be found in Appendix F. The researcher obtained a total of 135 useful cases.
<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>52</td>
<td>38.5</td>
</tr>
<tr>
<td>Female</td>
<td>82</td>
<td>60.7</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-22</td>
<td>67</td>
<td>49.6</td>
</tr>
<tr>
<td>23-30</td>
<td>41</td>
<td>30.4</td>
</tr>
<tr>
<td>31-40</td>
<td>13</td>
<td>9.6</td>
</tr>
<tr>
<td>41-50</td>
<td>8</td>
<td>5.9</td>
</tr>
<tr>
<td>51-60</td>
<td>4</td>
<td>3.0</td>
</tr>
<tr>
<td>Position</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faculty</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Staff</td>
<td>25</td>
<td>18.5</td>
</tr>
<tr>
<td>Student</td>
<td>103</td>
<td>76.3</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
<td>3.7</td>
</tr>
<tr>
<td>Ethnic Origin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian/White</td>
<td>92</td>
<td>68.1</td>
</tr>
<tr>
<td>African-American</td>
<td>7</td>
<td>5.2</td>
</tr>
<tr>
<td>Hispanic</td>
<td>3</td>
<td>3.7</td>
</tr>
<tr>
<td>Asian-American</td>
<td>14</td>
<td>10.4</td>
</tr>
<tr>
<td>Other</td>
<td>15</td>
<td>11.1</td>
</tr>
<tr>
<td>Classes/Programs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aerobics</td>
<td>67</td>
<td>49.6</td>
</tr>
<tr>
<td>Aquatics</td>
<td>1</td>
<td>.7</td>
</tr>
<tr>
<td>Sport Club</td>
<td>39</td>
<td>28.9</td>
</tr>
<tr>
<td>Intramural Sport</td>
<td>9</td>
<td>6.7</td>
</tr>
<tr>
<td>Informal-Recreation</td>
<td>11</td>
<td>8.1</td>
</tr>
</tbody>
</table>

Table 2: Demographic Characteristics of the Pilot Test Sample
The results of the analysis of the subdimension measures are presented in Table 3. Reliability estimates, item-to-total correlations, means, and standard deviations were calculated for each subdimension. The Cronbach's alphas were: .90 for range of program; .71 for operating time; .88 for information; .92 for employee attitude; .97 for employee behavior; .91 for employee expertise; .87 for inter-client interaction; .94 for physical Change; .88 for Valence; .91 for Sociability; .92 for Ambience Conditions; .94 for Design; .81 for Equipment; .94 for Satisfaction; and .90 for Repurchase Intention.

The values of item-to-total correlations ranged from .23 to .93. Specifically, the values of the items in the initial SSQPS, except two items (i.e., V2 and V7), were greater than .50 (see Table 3). Overall, the results of the reliability test indicate that the initial items in SSQPS were reliable.
<table>
<thead>
<tr>
<th>Scale Items</th>
<th>Items</th>
<th>Item-to-Total Correlation</th>
<th>Means</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Range of Program</strong></td>
<td>V1</td>
<td>.74</td>
<td>6.27</td>
<td>.97</td>
</tr>
<tr>
<td></td>
<td>V5</td>
<td>.86</td>
<td>6.08</td>
<td>1.03</td>
</tr>
<tr>
<td></td>
<td>V9</td>
<td>.81</td>
<td>6.10</td>
<td>1.04</td>
</tr>
<tr>
<td></td>
<td>V13</td>
<td>.64</td>
<td>5.97</td>
<td>1.06</td>
</tr>
<tr>
<td><strong>Operating Time</strong></td>
<td>V2</td>
<td>.23</td>
<td>5.95</td>
<td>1.27</td>
</tr>
<tr>
<td></td>
<td>V6</td>
<td>.58</td>
<td>5.58</td>
<td>1.33</td>
</tr>
<tr>
<td></td>
<td>V7</td>
<td>.34</td>
<td>5.72</td>
<td>1.42</td>
</tr>
<tr>
<td></td>
<td>V15</td>
<td>.60</td>
<td>5.34</td>
<td>1.43</td>
</tr>
<tr>
<td></td>
<td>V17</td>
<td>.61</td>
<td>5.58</td>
<td>1.40</td>
</tr>
<tr>
<td><strong>Information</strong></td>
<td>V4</td>
<td>.70</td>
<td>4.92</td>
<td>1.70</td>
</tr>
<tr>
<td></td>
<td>V8</td>
<td>.75</td>
<td>5.11</td>
<td>1.70</td>
</tr>
<tr>
<td></td>
<td>V10</td>
<td>.67</td>
<td>5.62</td>
<td>1.36</td>
</tr>
<tr>
<td></td>
<td>V14</td>
<td>.74</td>
<td>5.24</td>
<td>1.44</td>
</tr>
<tr>
<td></td>
<td>V16</td>
<td>.69</td>
<td>4.97</td>
<td>1.80</td>
</tr>
<tr>
<td><strong>Employee Attitude</strong></td>
<td>V18</td>
<td>.83</td>
<td>5.54</td>
<td>1.35</td>
</tr>
<tr>
<td></td>
<td>V20</td>
<td>.88</td>
<td>5.30</td>
<td>1.40</td>
</tr>
<tr>
<td></td>
<td>V21</td>
<td>.79</td>
<td>5.74</td>
<td>1.31</td>
</tr>
<tr>
<td></td>
<td>V26</td>
<td>.75</td>
<td>5.66</td>
<td>1.29</td>
</tr>
<tr>
<td><strong>Employee Behavior</strong></td>
<td>V22</td>
<td>.87</td>
<td>5.56</td>
<td>1.26</td>
</tr>
<tr>
<td></td>
<td>V23</td>
<td>.91</td>
<td>5.46</td>
<td>1.34</td>
</tr>
<tr>
<td></td>
<td>V24</td>
<td>.89</td>
<td>5.56</td>
<td>1.38</td>
</tr>
<tr>
<td></td>
<td>V25</td>
<td>.87</td>
<td>5.51</td>
<td>1.36</td>
</tr>
<tr>
<td></td>
<td>V28</td>
<td>.93</td>
<td>5.51</td>
<td>1.27</td>
</tr>
<tr>
<td></td>
<td>V29</td>
<td>.73</td>
<td>5.38</td>
<td>1.41</td>
</tr>
<tr>
<td></td>
<td>V30</td>
<td>.93</td>
<td>5.58</td>
<td>1.20</td>
</tr>
<tr>
<td></td>
<td>V31</td>
<td>.90</td>
<td>5.34</td>
<td>1.29</td>
</tr>
<tr>
<td></td>
<td>V32</td>
<td>.91</td>
<td>5.37</td>
<td>1.33</td>
</tr>
<tr>
<td><strong>Employee Expertise</strong></td>
<td>V19</td>
<td>.78</td>
<td>5.50</td>
<td>1.31</td>
</tr>
<tr>
<td></td>
<td>V27</td>
<td>.74</td>
<td>5.66</td>
<td>1.19</td>
</tr>
<tr>
<td></td>
<td>V33</td>
<td>.84</td>
<td>5.44</td>
<td>1.40</td>
</tr>
<tr>
<td></td>
<td>V34</td>
<td>.85</td>
<td>5.50</td>
<td>1.29</td>
</tr>
</tbody>
</table>

Table 3: Reliability and Item-to-Total Correlations Analysis for the Pilot Test (continued)
Table 3 (continued)

<table>
<thead>
<tr>
<th>Scale Items (n=135)</th>
<th>Items</th>
<th>Item-to-Total Correlation</th>
<th>Means</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inter-Client Interaction</td>
<td>V51</td>
<td>.71</td>
<td>4.95</td>
<td>1.37</td>
</tr>
<tr>
<td></td>
<td>V53</td>
<td>.78</td>
<td>5.05</td>
<td>1.37</td>
</tr>
<tr>
<td></td>
<td>V61</td>
<td>.72</td>
<td>4.81</td>
<td>1.34</td>
</tr>
<tr>
<td></td>
<td>V63</td>
<td>.57</td>
<td>4.79</td>
<td>1.54</td>
</tr>
<tr>
<td></td>
<td>V64</td>
<td>.68</td>
<td>5.19</td>
<td>1.45</td>
</tr>
<tr>
<td>Physical Change</td>
<td>V35</td>
<td>.82</td>
<td>6.07</td>
<td>1.12</td>
</tr>
<tr>
<td></td>
<td>V39</td>
<td>.87</td>
<td>6.03</td>
<td>1.11</td>
</tr>
<tr>
<td></td>
<td>V40</td>
<td>.89</td>
<td>6.03</td>
<td>1.13</td>
</tr>
<tr>
<td></td>
<td>V41</td>
<td>.84</td>
<td>6.00</td>
<td>1.12</td>
</tr>
<tr>
<td></td>
<td>V44</td>
<td>.73</td>
<td>5.79</td>
<td>1.20</td>
</tr>
<tr>
<td></td>
<td>V46</td>
<td>.77</td>
<td>5.72</td>
<td>1.21</td>
</tr>
<tr>
<td>Valence</td>
<td>V36</td>
<td>.75</td>
<td>6.09</td>
<td>.99</td>
</tr>
<tr>
<td></td>
<td>V37</td>
<td>.71</td>
<td>5.53</td>
<td>1.12</td>
</tr>
<tr>
<td></td>
<td>V42</td>
<td>.81</td>
<td>6.06</td>
<td>.95</td>
</tr>
<tr>
<td></td>
<td>V43</td>
<td>.72</td>
<td>6.06</td>
<td>1.01</td>
</tr>
<tr>
<td>Sociability</td>
<td>V38</td>
<td>.76</td>
<td>5.10</td>
<td>1.57</td>
</tr>
<tr>
<td></td>
<td>V45</td>
<td>.77</td>
<td>4.71</td>
<td>1.70</td>
</tr>
<tr>
<td></td>
<td>V47</td>
<td>.78</td>
<td>4.65</td>
<td>1.86</td>
</tr>
<tr>
<td></td>
<td>V48</td>
<td>.87</td>
<td>4.94</td>
<td>1.73</td>
</tr>
<tr>
<td>Ambient Conditions</td>
<td>V49</td>
<td>.73</td>
<td>3.88</td>
<td>1.68</td>
</tr>
<tr>
<td></td>
<td>V52</td>
<td>.64</td>
<td>4.88</td>
<td>1.40</td>
</tr>
<tr>
<td></td>
<td>V54</td>
<td>.78</td>
<td>3.87</td>
<td>1.76</td>
</tr>
<tr>
<td></td>
<td>V56</td>
<td>.79</td>
<td>4.32</td>
<td>1.64</td>
</tr>
<tr>
<td></td>
<td>V59</td>
<td>.86</td>
<td>3.98</td>
<td>1.67</td>
</tr>
<tr>
<td></td>
<td>V65</td>
<td>.79</td>
<td>4.67</td>
<td>1.56</td>
</tr>
<tr>
<td>Design</td>
<td>V50</td>
<td>.80</td>
<td>3.95</td>
<td>1.60</td>
</tr>
<tr>
<td></td>
<td>V55</td>
<td>.84</td>
<td>4.71</td>
<td>1.70</td>
</tr>
<tr>
<td></td>
<td>V57</td>
<td>.87</td>
<td>4.48</td>
<td>1.57</td>
</tr>
<tr>
<td></td>
<td>V58</td>
<td>.86</td>
<td>3.91</td>
<td>1.72</td>
</tr>
<tr>
<td></td>
<td>V60</td>
<td>.68</td>
<td>4.73</td>
<td>1.58</td>
</tr>
<tr>
<td></td>
<td>V62</td>
<td>.81</td>
<td>3.70</td>
<td>1.74</td>
</tr>
<tr>
<td></td>
<td>V66</td>
<td>.75</td>
<td>4.75</td>
<td>1.69</td>
</tr>
</tbody>
</table>
Table 3 (continued)

<table>
<thead>
<tr>
<th>Scale Items (n=135)</th>
<th>Items</th>
<th>Item-to-Total Correlation</th>
<th>Means</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment</td>
<td>V3</td>
<td>.70</td>
<td>4.92</td>
<td>1.70</td>
</tr>
<tr>
<td></td>
<td>V12</td>
<td>.75</td>
<td>5.11</td>
<td>1.70</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>V67</td>
<td>.83</td>
<td>5.83</td>
<td>1.22</td>
</tr>
<tr>
<td></td>
<td>V68</td>
<td>.72</td>
<td>5.69</td>
<td>1.23</td>
</tr>
<tr>
<td></td>
<td>V69</td>
<td>.92</td>
<td>6.03</td>
<td>1.09</td>
</tr>
<tr>
<td></td>
<td>V70</td>
<td>.86</td>
<td>6.14</td>
<td>1.07</td>
</tr>
<tr>
<td></td>
<td>V71</td>
<td>.88</td>
<td>6.08</td>
<td>1.07</td>
</tr>
<tr>
<td>Repurchase Intention</td>
<td>V72</td>
<td>.83</td>
<td>6.43</td>
<td>.93</td>
</tr>
<tr>
<td></td>
<td>V73</td>
<td>.87</td>
<td>6.42</td>
<td>.89</td>
</tr>
<tr>
<td></td>
<td>V74</td>
<td>.61</td>
<td>6.15</td>
<td>1.17</td>
</tr>
<tr>
<td></td>
<td>V75</td>
<td>.84</td>
<td>6.46</td>
<td>.84</td>
</tr>
</tbody>
</table>

A Revised Model

Based upon the results of the pilot test, a final set of changes to the subdimensions occurred. The three subdimensions of interaction quality (i.e., employee attitude, behavior, and expertise) were combined and merged into a subdimension called client-employee interaction. This change was made to reduce the number of items on the scale. The revised interaction quality dimension now consisted of two subdimensions, namely client-employee interaction and inter-client interaction.

A total of 18 items from initial item pool were dropped based upon the results of item-to-total correlation analysis. Items which had relatively low scores were dropped. In addition, several identical questions were deleted. As a result, the researcher produced a final instrument which had a total of 49 items which reflect eleven
subdimension of service quality – Range of Program (4), Operating Time (3), Program Information (5), Client-employee interaction (7), Inter-client interaction (4), Physical Change (5), Valence (4), Sociability (4), Ambience Condition (5), Facility Design (5), Equipment (3). One item was added to measure a subdimension of equipment quality because there were only two items for the equipment quality measurement in original scale. The preferred minimum number of indicators is three items for each construct (Hair, et. al., 1998; Kline, 1998).

The revised conceptual model is shown in Figure 2. The revised model includes 11 subdimensions which represent the four primary dimensions (i.e., program quality, interaction quality, outcome quality, and physical environment quality).
Figure 2
The Revised Research Model
Operational Definitions

In structural equation analysis, the operational definition describes "the procedures to follow to form measures of the latent variable(s) that represent a concept" (Bollen, 1989, p.181). The identification of the dependent and independent variable is the first step for the evaluation of the research model and for the investigation of service quality. Several levels of analyses are required to test the proposed research model. First, the revised research model produced 11 subdimensions to represent the four primary dimensions (i.e., program quality, interaction quality, outcome quality, and physical environment quality). Therefore, the four primary dimensions become independent variables for the eleven underlying factors in one level of analysis. Second, the global construct of service quality becomes an independent variable for the four primary dimensions (i.e., program quality, interaction quality, outcome quality, physical environment quality) in another level of analysis. Third, the outcome variables of service quality (i.e., customer satisfaction and repurchase intention) need to be defined to examine the causal relationship between service quality, satisfaction, and purchase intention. The proposed model posits that service quality indirectly influences repurchase intentions through the mediator variable, customer satisfaction.

This section includes the operational definitions for the 11 subdimensions and two outcome variables (i.e., customer satisfaction and repurchase intention) of service quality which are measured by the SSQPS. The 49 items identified through the previously mentioned scale purification procedures were used to define the subdimensions of service quality. The means of the items in each subdimension operationally defined the subdimension and primary dimension. As the proposed model is hierarchical in nature,
four primary dimensions were defined by the selected items from the above 11 subdimensions. Program Quality, the first primary dimension, was defined by three subdimensions (i.e., range of program, operating time, and information). The mean score for items 1, 3, 6, and 8 operationally defined for range of program. Operating time was operationally defined by the mean score for items 4, 10, and 12. Program information quality was operationally defined by the mean score of items 2, 5, 7, 9, and 11.

Interaction quality was defined by client-employee interaction and inter-client interaction. The mean scores of items 13, 15, 16, 18, 19, 20, and 21 operationally defined Client-employee interaction quality, which reflected customer's perceptions of employee's attitude, behavior, and expertise. Inter-client interaction quality was defined by the mean score of items 14, 17, 22, and 23.

Outcome quality was explained by physical change, valence, and sociability. Physical change is operationally defined by the mean score for items 24, 28, 29, 30, and 34. Three items (i.e., 24, 28, and 29) reflect the customer's overall fitness and physical ability, and two items reflect customers' improved skill performance. The mean score for 25, 26, 31, and 32 operationally defined the subdimension of valence. The third subdimension of sociability was operationally defined by the mean score for items 27, 33, 35, and 36.

The fourth primary dimension, physical environment quality, comprised ambience condition, facility design, and equipment. The operational definition for ambient condition (i.e., atmosphere) was the mean score of items 37, 39, 42, 44, and 47. The
mean score for items 38, 41, 43, 46, and 48 on the SSQPS operationally defined the facility design. Equipment quality was operationally defined by the mean score for items 40, 45, and the item newly developed (i.e., item 49).

The outcome variables of service quality comprised satisfaction and repurchase intention. Four items operationally defined customer satisfaction and repurchase intention respectively. Satisfaction was operationally defined by the mean score for items 50, 51, 54, and 55, while repurchase intention was operationally defined by the mean score for items 58, 59, 60, and 61.

Sampling procedures

For the actual survey, the researcher followed a five-step process of sampling in order to minimize potential sampling errors. The five steps included: (a) defining the target population, (b) determining the sampling frame, (c) selecting the sampling technique, (d) determining the sample size, and (e) executing the sampling process (Malhotra, 1996).

The first step identified the target population, which is “the collection of elements or objects that possess the information sought by the researcher and about which inferences are to be made” (Malhotra, 1996, p.360). The target population for this study was all participants and users of the services provided by the Department of Recreational Sports at a large university located in the Midwest region.

In the second step, the sampling frame needs to be prepared. The sampling frame refers to “a representation of the elements of the target population” (Malhotra, 1996, p.361). It consists of a list or set of directions for identifying the target population (e.g.,

In this study, as a mall intercept survey method was utilized for data collection, the researcher did not use any sampling frame.

After a target population was identified, the next step required the researcher to select an appropriate sampling method. Although several types of sampling techniques exist, the researcher used the convenient sampling method. This method was less time-consuming. In addition, this sampling procedure is used when a list of all members of population is not available, or when the random selection of individuals is inconvenient, as was the case for this study (Fraenkel & Wallen, 1996; Fink & Kosecoff, 1998). The Department of Recreational Sport provides various types of services and activities (i.e., Intramural sport, Buck-I-Robics, Sport Clubs, Adapted Recreational Sports (A.R.S.), and Family Recreation Instruction Program (FRIP)). In order to obtain data from a broad cross-section of service providers within the Department of Recreational Sport, the researcher tried to reach various participant segments in the above areas (e.g., Buck-I-Robics classes, Sport clubs, informal recreation facilities such as weight lifting room and exercise equipment room) at different time blocks. This way, the researcher could ensure that the sample represented the population. More specific information is provided in the data collection procedures.

Fourth, the researcher determined the sample size for this study. The sample size influences the estimation (i.e., calculation of fit measure and interpretation of structural equation modeling results) because it provides a basis for the estimation of sampling error (Bollen, 1989; Hair, et al., 1998). More specifically, several factors were suggested to be reviewed in determining sample size: (a) model misspecification (i.e., chance of
omission of relevant variables from the specified model), (b) model size (e.g., it is the
most appropriate to have a ratio of 10 respondents per each estimated parameter), (c)
departures from normality (the ratio of respondents to parameters needs to increase with a
generally accepted ratio of 15 respondents for each parameter), and (d) estimation
procedure (Maximum likelihood estimation (MLE) – minimum of 100 to 150) (Hair, et
al., 1998, Klein, 1998). As a rule of thumb, a total of 200 subjects (“Critical Sample
Size”) was recommended for the structural equation modeling analysis using maximum
likelihood estimation (MLE) (Hair, et al., 1998). However, the researcher decided 260
subjects for the actual survey to guarantee at least 200 usable cases. This number of
subjects is deemed to meet the above requirements for this study.

Data Collection Procedures

Prior to the data collection, a letter containing the purpose, importance, and
potential benefits of the study was sent to the director of the Department of Recreational
Sport to receive a letter of support and an approval for data collection (Appendix H). A
proposal of the study and the letter of support from the Department of Recreational Sport
were forwarded to The Ohio State University Human Subjects Review Committee.
Upon receiving permission (#00E0191) from the Human Subjects Review Committee,
the researcher started to collect data from a main facility of the university recreational
sport.

For the purpose of this study, cross-sectional survey research was used. The
finalized survey instrument (i.e., the SSQPS) was directly administered to the sample.
The method of direct administration has several advantages such as the high rate of
response, short data collection time, and low cost. In addition, direct administration allows a group administration where a group of people can be interviewed at a time and in the same place. The standardization of responses is easy because researchers can explain the purpose of the study and the methods of responding (Fraenkel & Wallen, 1996). The participants were asked to answer the questions with their cumulative experiences with the service provider in mind. In this study, the mall intercept method was used for the data collection. As one of the direct administrations methods, the mall intercept method has the benefit of lower costs, higher control, and time savings (Gates & Solomon, 1982). Since the population of the location is of main interest, this method was deemed to be the most appropriate method for this study.

In the data collection procedure, the researcher introduced the purpose of the study and explained the specific procedures and methods to participants to minimize non-response error. At this point, confidentiality of participation was assured to the subjects. The survey instrument included the following information: (a) the purpose of the study, (b) the importance of the study, (c) assurance of complete confidentiality, (d) directions on responding to each question, and (e) appreciation for the subject’s participation. To represent the overall population, the researcher collected data from several different areas (e.g., weight lifting room, swimming pool, basketball gym, fitness classes, and multi-purpose room) at several different times (Appendix I).

In the case of the group administration (e.g., fitness classes), the researcher gained assistance from the Department of Recreational staff. The researcher provided the selected staff with a packet, each containing a survey instrument, a cover letter explaining
the purpose of the study and directions for completing the questionnaire, and a pencil. The researcher requested the staff to announce the survey schedule to the actual sample (i.e., students in the selected classes/programs).

Data Analysis Procedures

The data received from the survey was analyzed using the software Statistical Package for the Social Sciences (SPSSPC+) 10.0 and Analysis of Moment Structure (AMOS 4.0. Arbuckle. 1998). Descriptive statistics were calculated for all items of the instrument (Appendix J). In addition, demographic characteristics of the sample were also determined. The researcher tested the efficacy of the proposed model by examining the model fit for the measurement and structural models. In this process, the researcher tested whether statistical analyses supported the proposed model. The focus of these analyses was on the conceptual model, the constructs, and the testing of the hypotheses to identify the meaning and the reason behind the correlation, not just the correlation itself (Henderson. 1999). The specific procedures of the data analysis are presented next.

To test the efficacy of the proposed model, the researcher employed structural equation modeling (SEM). Structural equation analysis includes investigations of both structural and measurement models. The structural model is the path model, which relates the independent to the dependent variables. Structural model analysis is an essential tool for the identification of the causal relationship between several constructs in which separate multiple regression equations are estimated simultaneously. The measurement model allows the researcher to use several variables for a single independent or dependent variable, and assesses the contribution of each scale item as
well as incorporate how well the scale measures the concept into the estimation of the relationship between the dependent and independent variables (Fassinger, 1986; Hair, et al., 1998).

For the purpose of this study, the structural model and measurement model were separately analyzed. The separate examination of the structural component of the model from the measurement component of the model allows for the inspection of measurement problems (i.e., psychometric inadequacy) separately from the inspection of structural problems (i.e., theory under investigation) (Bagozzi, 1983; Fassinger, 1987). This “two-step” approach makes possible a comprehensive confirmatory assessment of construct validity and reliability (Anderson & Gerbing, 1988; Bentler, 1978; Gerbing & Anderson, 1988; Hair, et. al., 1998). In particular, this approach is recommended for the research model that does not have a strong theoretical background (Hair, et. al., 1998).

In this study, the data analysis procedures using SEM included five specific steps including two measurement model tests and three structural model analyses. Due to the large number of variables, the analyses of the primary dimensions and subdimensions were performed separately (Brady & Cronin, 1999; Kohli, Jaworski, & Kumar, 1993). In the first step, the relationship between the eleven subdimension variables and their observable indicators (i.e., specific items) was analyzed through a measurement model test. The same method was applied to examine the relationship between satisfaction and purchase intention variables and their observable indicators (i.e., measurement model 1). Second, the relationship between the four primary dimensions and their observable indicators (i.e., specific items selected from the eleven subdimensions) was analyzed (i.e., measurement model 2). In this step, the researcher randomly selected items from the 11
subdimensions of interest. Third, a second order factor model, in which the four primary dimensions were modeled as second order factors to the eleven subdimensions (first order factors), was tested (i.e., structural model 1). Fourth, a second order factor model was tested to determine whether service quality could be viewed as a higher order factor to the model’s four primary dimensions (i.e., structural model 2). In this stage, the items selected in the second step (i.e., measurement model 2), which was previously mentioned, were used (Brady & Cronin, 1997; Dabholkar, et al., 1996). Lastly, the causal relationships between service quality, satisfaction, and repurchase intention was examined (i.e., structural model 3). The focus of this stage was not to examine the proposed multi-level conceptualization of service quality. Rather, the focus was on the investigation of the relationships between service quality, satisfaction, and purchase intention (Brady, 1997). The proposed relationships between the variables are translated into a series of structural equations for each dependent variable. The four primary dimensions of service quality and their selected indicators were utilized for the examination of the causal relationship.

**Measurement Models**

In the first chapter, conceptual definitions of terms (e.g., service quality, outcome quality, and interaction quality) were provided. In addition, the researcher discussed the specific methods utilized for item development and purification for each of the subdimensions in the previous section. Now, the structural relation between indicators and latent variables needs to be specified into the measurement model.
A measurement model "specifies a structural model connecting latent variables to one or more measures or observed variables" (Bollen, 1989, p.182). As stated earlier, the measurement model describes the relation between the measured variables or indicators (i.e., specific items) and latent variables (i.e., dimension or subdimensions). The results of the measurement model test determine how well the indicators capture their specified constructs. In this study, the researcher tested five separate sets of measurement models. More specifically, a measurement was developed and tested for each of the primary dimensions (i.e., program quality, interaction quality, outcome quality, and physical environment quality) and the two outcome variables (i.e., satisfaction and repurchase intention) to examine the full scale of SSQPS. Overall, the model fit of each measurement model, the specific indicator loadings for the 11 subdimensions of service quality, and satisfaction and repurchase intention were examined. A significance test (i.e., Critical Ratio) for each indicator loadings was also examined. This multi-stage approach is necessary because a large number of variables leads to an inability to obtain a convergent solution as well as difficulty in identifying poor performing items (Brady & Cronin, 1997; Kohli. et al., 1993).

The second step of the measurement model test examined the relationship between the four primary factors (i.e., program quality, interaction quality, outcome quality, and physical environment quality) and their observable indicators (see Figure5). This step is necessary for further structural model analyses. The researcher randomly selected items from each subdimension (Dabholkar, et al., 1996). For example, program quality is explained by three subdimensions (i.e., range of program, operating time, and information). Therefore, one item from each subdimension was randomly selected for
the analysis of program quality. Items for the other primary dimensions were selected as such. However, the researcher selected three items from the subdimension of Client Employee Interaction to capture information on employees' attitude, behavior, and expertise because these were included in the original model and are important aspects for the customers' quality perception of their interaction with employees.

The aforementioned method, which is called, partial disaggregation, allows researchers to "proceed with meaningful research by combining items into composites to reduce higher levels of random error and yet it retains all the advantages of structural equations, including accounting for measurement error, allowing for multiple, multidimensional variables, and testing for hierarchical factor structure" (Dabholkar, et al., 1996, p.9). Partial disaggregation is accomplished by randomly aggregating items that relate to a given construct to create two or three combined indicators for the primary dimensions of service quality instead of using several single-item indicators (Dabholkar, et al., 1996). In this study, the researcher selected the items through stratified random sampling techniques.

A confirmatory factor analysis allows the relations between latent and observed variables and provides a fit analysis between a model and data. Therefore, testing the measurement model should provide a method of final item purification for this study. The result of this process is a reduced set of reliable and unidimensional items with which the researcher conducted structural equation analyses and is presented next (Brady, 1997).
Figure 3: Measurement Model 1 - Subdimension Variables
Figure 4: Measurement Model 1 - Satisfaction and Repurchase Intention

Figure 5: Measurement Model 2 – Primary Dimensions
Structural Equation Models

The main focus of this stage was to test the proposed model of service quality and to investigate the causal relationship between service quality, satisfaction, and purchase intention. More specifically, the proposed model of service quality included a three-stage design (i.e., third-order factor model) where the construct is comprised of not only the direct primary dimensions, but also the eleven subdimensions which define service quality through the customers' perception of the four primary factors (Brady & Cronin, 1999; Dabholkar, et al., 1996).

The proposed hierarchical model of service quality was tested in three stages: (a) a test of the second-order factor to test subdimensions, (b) a test of the second-order factor to test the relationships between service quality and the four primary dimensions, and (c) a test of the causal relationship. The test of second-order models is useful when the subcomponents are distinct, but contain a significant amount of shared variance (Bagozzi & Heatherton, 1994). Therefore, consumers' perceptions of service quality can be analyzed at three levels of abstraction while still allowing for the same strict assessment of construct validity as the first-order model (Shemwell & Yavas, 1999).

The first step in testing the third-order factor model is to examine whether the four primary dimensions can be viewed as second-order factors to the 11 subdimensions. It is necessary to determine whether the 11 subdimensions can explain their primary dimensions of interest (Figure 6). More specifically, the researcher determined whether multiple latent variables fit a set of measures in order to test (a) the unidimensionality of the measures within the latent variables and (b) determine the discriminant validity of the measures across the latent variables. In this case, only two measures per latent variable
are required because there are more than two latent variables in the specified model (Bagozzi, Yi, & Nassen, 1999; Kline, 1998). The reason is that a model with more parameters than observations is too complex for an empirical analysis (i.e., identification problem) (Kline, 1998). The original indicators for each subdimension were randomly combined into two composite indicators (Dabholkar, et al., 1996). Eleven items among thirteen items which were randomly selected for the second measurement model (i.e., the relationship between the four primary dimensions and 13 indicators) were combined with newly selected 11 indicators. Therefore, among the 49 items which reflect the 11 subdimensions in the SSQPS, a total of 22 items were utilized to test the first second-order factor model (Structural model 1).

In the second step, the researcher examined the second-order factor model to determine whether service quality can be viewed as a higher order factor to the model's primary dimensions (Dabholkar, et al., 1996). The indicators used in this analysis were thirteen disaggregated items which were examined in the second measurement model test. The purpose of the analysis in this stage is to determine whether service quality is a higher order factor to the four dimensions, and whether the items reflect the four primary dimensions instead of their own subdimensions. The specified model in this study meets this requirement which suggests that at least three first-order latent variables are needed for a single second-order latent variable (Bagozzi, et al., 1999) (Structural model 2) (Figure 7).

The last step required the researcher to examine the causal relationships between service quality, satisfaction, and repurchase intention. The main issue of the path analysis in this stage focuses on whether perceptions of service quality are directly
related to customers' repurchase intention or whether the effect is mediated by the level of satisfaction associated with an organization's services. When service quality is used to refer to specific information about the provided services, service quality is recognized as an antecedent of customer satisfaction (Zeithaml, 1988). Therefore, the proposed model hypothesizes that satisfaction is a consequence of service quality and in turn, customer satisfaction directly impacts purchase intentions (Structural model 3) (Figure 8).

The above three separate analyses may reveal whether the proposed hierarchical structure is supported in part or whole (Dabholkar, et al., 1996). If the data is statistically significant in the first and second structural models, then the evidence indicates that the full model of service quality in participant sport is valid.
Figure 6: Structural Model 1 - Subdimensions
Figure 7: Structural Model 2 - The Second Order Factor Model
Figure 8: Structural Model 3 – Causal Relationships
Reliability and Validity

In addition to the model test, the researcher examined the reliability and validity of the measures. The reliability was tested by calculating Cronbach's Alphas and item-to-total correlations. Reliable items are highly inter-correlated and, therefore, denote that they measure a common latent construct (Hair, et al., 1998). As Nunnally (1978) suggested, the constructs' Cronbach's Alphas greater than .70, were deemed to be reliable. Also, items which have reliability coefficients greater than .50 were considered to be reliable.

In addition to the reliability test, the construct validity of the scale was measured through confirmatory factor analysis (CFA). The collected data were analyzed using a 95% confidence interval. Construct validity is inferred by providing evidence of both convergent and discriminant validity. Convergent validity assesses the degree to which a measure correlates highly with other measures designed to measure the same construct (Churchill, 1979). In contrast, discriminant validity assesses the degree to which conceptually similar concepts are distinct (Hair, et al., 1998).

No single method provides a definitive test of construct validity (Kline, 1998). Therefore, several methods were employed to establish construct validity of the SSQPS. Convergent validity can be evaluated by examining the parameter estimates and their corresponding t-values (Anderson & Gerbing, 1988; Shemwell & Yavas, 1999). As an AMOS output presents Critical Ratios (C.R.) rather than the t-values, C.R. will be used for the evaluation of convergent validity. Normally, validity is expressed as a correlation coefficient, or r-value, between two sets of data. To be statistically significant, factor loadings should be greater than .35 with a sample size of 250 when using the .05
significance level. However, as factor loadings have substantially larger standard errors than typical correlations, they should be evaluated with conservative guidelines (Hair, et al., 1998). Therefore, a score of 0.70 or higher is considered valid for convergent validity (Litwin, 1995). In addition, further evidence of convergent validity is established by examining C.R. A critical ratio (C.R.) is obtained by dividing the covariance estimate by its standard error. Using a significance level of .05, any critical ratio greater than 1.96 in magnitude for a two-tail test would be statistically significant (Arbuckle & Wothke, 1998).

There is another necessary condition that must be met for convergent validity in second-order models. The relationship between the endogenous latent variables (i.e., program quality, interaction quality, outcome quality, and physical environment quality) and the exogenous overall variable (i.e., service quality) must be significant (Anderson & Gerbing, 1988).

There are three steps to establish construct validity (Henderson, 1999). First, a construct needs to be clearly defined from the literature or related research. Second, hypotheses need to be developed from the theory involving the construct, and the hypotheses should specify the construct’s believed association with the selected variables. Third, the hypotheses need to be empirically tested. The procedures are analogous to those of the measurement model development which were previously described. The analysis of the measurement model produces indicator loadings for the subdimensions which determine the construct validity of the scale whereas the analysis of the second structural model produces factor loading of the four primary factors to service quality.
Discriminant validity is a measure of the degree to which conceptually similar concepts are distinct (Hair, et al., 1998). There are several means of examination to determine discriminant validity. First, discriminant validity is established when covariances and two standard errors add to less than 1.00 (Dabholkar, et al., 1996). Second, the estimated correlations between the factors or dimensions should not be excessively high (e.g., >.85) (Kline, 1998). Third, the various items which measure each single construct should correlate highly among themselves. In addition, the correlations among these items should be higher than their correlations with the items intended to measure the other constructs (Campbell & Fiske, 1959). To examine discriminant validity of the SSQPS, the researcher analyzed the covariance and correlation matrix of the AMOS output of the first stage structural equation model (i.e., structural model 1 - subdimensions).

It should be noted that traditional validity measures approaches (i.e., convergent-discriminant validity) in exploratory factor analysis and other multivariate data analyses have a limitation in that they rely on correlations (i.e., observed variables) rather than structural coefficients (i.e., structural linkages) to test validity. In these approaches, although a specific item may truly measure a variable, the correlation measures of validity can be small (Bollen, 1989). Therefore, Bollen (1998) defines validity of a measure of a variable as the magnitude of the direct structural relation between the measure and the variable. It is assumed that the measures should reflect the theoretical variable of interest and the selection of valid measures is psychometrically sound (Fassinger, 1987).
Analysis of Fit

The relative strength of the effect was tested through several fit indices. The fit of the measurement and structural model analyses was assessed through the fit indices obtained from the output of the AMOS 4.0 analysis. The purpose of the criterion is to determine the degree to which the hypothesized relationships are identical to the observed data (Kline, 1998; Maruyama, 1998). The method of maximum likelihood was specified for estimating the structural equation model. There are three different types of indexes (i.e., absolute indexes, relative indexes, and adjusted indexes). Specific indexes used for this study include: (a) absolute index (e.g., Chi-square/df, Root Mean Residual (RMR), Goodness of Fit Index (GFI), and Root Mean Square Error of Approximation (RMSEA)), (b) Relative or Incremental Index (e.g., Tucker-Lewis Index (TLI), Comparative Fit Index (CFI), and Adjusted Goodness-of-Fit Index (AGFI)), and (c) adjusted index (e.g., Parsimonious Fit Index (PGFI) and Parsimonious Normed Fit Index (PNFI)) (Hair, et al., 1998; Kline, 1998; Maruyama, 1998).

According to Tanaka (1993), “relative fit indices are defined with respect to a specific model that serves as an anchor for subsequent model comparisons; absolute fit indices do not employ such a comparison anchor” (p.16). In other words, an absolute fit index directly assesses how well an a priori model reproduces the sample data, whereas relative or incremental indices measure the proportionate improvement in fit by comparing a target model with a null model (Bentler & Bonnett, 1980). Normed versus nonnormed indices is another dimension of the fit indices. Fit indices that are normed are constructed to lie between the approximate range of 0 and 1. In contrast, nonnormed fit indices do not necessarily lie in this range (Tanaka, 1993).
The specific fit indexes used in this study are presented next.

1. Absolute Indexes:

   a. Chi-square statistics ($\chi^2$/df) (CMIN/DF in AMOS output)—although there is no clear-cut guideline, the ratio of values of $\chi^2$ and degree of freedom less than 3 was considered to be good fit or acceptable fit (Carmines & McIver, 1981; Kline, 1998). A $\chi^2$/df ratio less than 2.0 indicates an excellent model fit (Hayduk, 1996). The use of chi-square is appropriate for sample sizes between 100 and 200. As sample size increases (over 200), a significant difference is found for the proposed model. In contrast, when sample size decrease (below 100), chi-square test show acceptable fit, even when the model relationship is not statistically significant (Hair, et al., 1998). The sample-size-dependent fit indices are affected by sample size, either directly or indirectly (Tanaka, 1993).

   b. Root Mean Square Residual (RMR) – the RMR is the average of the residuals between the observed and predicted matrices (Hair, et al., 1998). As the RMR of zero indicates a perfect fit, the smaller the RMR is, the better (Arbuckle & Wothke, 1998)

   c. Goodness of Fit (GFI) – this index indicates the degree to which the overall model predicts the observed correlation matrix. It is analogous to a squared multiple correlation in that it represents the proportion of the observed covariances explained by the model-implied covariances.
The GFI has an absolute interpretation because it concerns only the proposed research model (Kline, 1998). The value of this index ranges from 0 (poor fit) to 1 (perfect fit). Higher values indicate better fit, but greater than .90 is desirable (Hair, et al., 1998; Kline, 1998).

d. Root Mean Square Error of Approximation (RMSEA) — the RMSEA is the discrepancy (the average of the residuals between the observed and estimated matrices) per degree of freedom. RMSEA is recommended with relatively larger sample as the discrepancy is measured in terms of the population, not just the sample. According to Browne and Cudeck (1993) indicate that values of 0.08 or less for the RMSEA provide evidence for reasonable fits and values less than or equal to about 0.10 may be satisfactory for exploratory research.

2. Relative index:

a. Tucker-Lewis Index (TLI) — “the TLI combines a measure of parsimony into a comparative index between the proposed and null models” (Hair, et al., 1998, p.657). The range for TLI lies between 0 and 1. A value of .90 or greater is recommended (Hair, et al., 1998).

b. Comparative Fit Index (CFI) — the CFI is a relative comparison of the researcher’s proposed model to the null model (i.e., independence model) which is a measure ranging from 0 (not fit at all) to 1.0 (perfect fit). The value of .80 indicates that the relative overall fit of the
re searcher's model is 80% better than that of the null model. A recommended value is .90 or greater (Bentler & Bonnet, 1980; Kline, 1998).

For a more thorough description of the goodness-of-fit indices, please refer to the article written by Mulaik, and his colleagues (1989). The more criteria the proposed model satisfies, the better is its fit (Kline, 1998). When the proposed models satisfy the above criteria, descriptors of "good" and "adequate" were used (Kline, 1998).

Missing Data

The missing data process influences any statistical results. Therefore, researchers must identify how much of the data are missing and whether the pattern of missing data is random or systematic, and must identify an appropriate approach for dealing with missing data (Hair, et al., 1998; Kline, 1998). Although there is no clear guideline, 5% or 10% missing data on a particular variable is not large (Cohen & Cohen, 1983).

The researcher examined the raw data to identify the aforementioned problems. Although missing data were identified in 42 items among 61 items, they were negligible (less than 4%). For example, only six items (i.e., V2, V5, V9, V18, V27, and V57) have a little more than 2% of missing data. A systematic pattern of missing data throughout the data set was not identified (Appendix J). The missing values were replaced with the mean value of the variable based on all valid responses (Hair, et al., 1998).
CHAPTER 4

RESULTS

This chapter contains the results of the study. The quantitative data were collected using the revised version of the Scale of Service Quality in Participant Sport (SSQPS), which contained three sections (i.e., 49 measures for service quality, 8 measures for satisfaction and repurchase intention, and 9 measures for demographics). Among the 261 returned cases, only 241 usable cases were included in the data analysis procedures. The other 20 cases were incomplete. Based upon the previous analysis procedures, the results of the study are presented in three sections. First, the data were analyzed to examine the descriptive statistics. This included the demographic characteristics of the sample, mean scores, and standard deviations, and normality of the data (i.e., skewness & kurtosis). In this stage, the researcher examined missing data and treated them with the mean substitution approach for the further structural equation analysis. Second, multiple confirmatory factor analysis procedures were conducted for the assessment of the reliability and validity of the SSQPS. Finally, the results of the three-stage structural equation analyses were presented followed by hypotheses testing.
Demographic Characteristics of the Research Sample

A sample of 261 university recreational sport participants was asked to provide data. Missing data reduced the sample to a total of 241 cases. By gender, 46% of the sample was male and 54% were female. A majority of respondents were in age between 18-22 (46%) and 23-30 (35%). The majority group of the respondent was a university student. Table 4 provides an overview of respondents’ demographic characteristics. Twenty-eight respondents chose not to provide complete demographic information (i.e., missing values - 2 in gender and position at the university respectively, 8 in age and ethnic background respectively, 4 in education, 28 in income, 2 in position at the university).

The Results of Descriptive Statistics

Service quality in a selected university recreational sport department was evaluated by using the mean score for each of the 11 subdimensions. They represent the participants’ overall impressions about the services provided by the Department of Recreational Sport.

The mean scores for the subdimensions of program quality were 5.44 (range of program), 4.79 (operating time), and 4.98 (information). The mean scores for the client-employee interaction and inter-client interaction were 5.08 and 5.05 respectively. The mean scores for the subdimensions of outcome quality were 5.49 (physical change), 5.59 (valence), and 4.48 (sociability). Lastly, the mean scores for the subdimensions of physical environment quality were 3.91 (ambient condition), 4.09 (design), and 4.55 (equipment). The figures indicated that overall ratings of service quality were
reasonably high. Specifically, customers have relatively high quality perceptions for program, interaction, and outcome. However, they have relatively lower quality perception about the physical environment of the recreational sport facility. Managerial implications for the Department of Recreational Sport will be discussed in more detail in Chapter 5.
<table>
<thead>
<tr>
<th>Demographic Variables</th>
<th>Survey Participants n=261</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 – 17</td>
<td>5</td>
<td>2.1%</td>
</tr>
<tr>
<td>18 – 22</td>
<td>110</td>
<td>45.6%</td>
</tr>
<tr>
<td>23 – 30</td>
<td>84</td>
<td>34.9%</td>
</tr>
<tr>
<td>31 – 40</td>
<td>22</td>
<td>9.1%</td>
</tr>
<tr>
<td>41 – 50</td>
<td>7</td>
<td>2.0%</td>
</tr>
<tr>
<td>51 – 60</td>
<td>4</td>
<td>1.7%</td>
</tr>
<tr>
<td>≥ 61</td>
<td>1</td>
<td>.4%</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>110</td>
<td>45.6%</td>
</tr>
<tr>
<td>Female</td>
<td>129</td>
<td>53.5%</td>
</tr>
<tr>
<td>Ethnic Background</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian/White</td>
<td>133</td>
<td>55.2%</td>
</tr>
<tr>
<td>African-American</td>
<td>20</td>
<td>20%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>12</td>
<td>5%</td>
</tr>
<tr>
<td>Asian-American</td>
<td>51</td>
<td>21.2%</td>
</tr>
<tr>
<td>Native American</td>
<td>1</td>
<td>.4%</td>
</tr>
<tr>
<td>Other (i.e., Non-residents)</td>
<td>16</td>
<td>6.6%</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than a High School Graduate</td>
<td>2</td>
<td>.8%</td>
</tr>
<tr>
<td>High School Graduate</td>
<td>22</td>
<td>9.1%</td>
</tr>
<tr>
<td>Some College</td>
<td>104</td>
<td>43.2%</td>
</tr>
<tr>
<td>A 4-year College Degree</td>
<td>42</td>
<td>17.4%</td>
</tr>
<tr>
<td>Graduate School</td>
<td>67</td>
<td>27.8%</td>
</tr>
<tr>
<td>Income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$19,900 or less</td>
<td>114</td>
<td>47.3%</td>
</tr>
<tr>
<td>$20,000 - $39,999</td>
<td>43</td>
<td>17.8%</td>
</tr>
<tr>
<td>$40,000 - $59,999</td>
<td>19</td>
<td>7.9%</td>
</tr>
<tr>
<td>$60,000 - $79,999</td>
<td>12</td>
<td>5.0%</td>
</tr>
<tr>
<td>$80,000 - $99,999</td>
<td>13</td>
<td>5.4%</td>
</tr>
<tr>
<td>$100,000 or more</td>
<td>12</td>
<td>5.0%</td>
</tr>
<tr>
<td>Position at the University</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faculty</td>
<td>5</td>
<td>2.1%</td>
</tr>
<tr>
<td>Staff</td>
<td>27</td>
<td>11.2%</td>
</tr>
<tr>
<td>Student</td>
<td>198</td>
<td>82.2%</td>
</tr>
<tr>
<td>Family and others</td>
<td>9</td>
<td>3.7%</td>
</tr>
</tbody>
</table>

Table 4: Demographic Characteristics of the Research Sample
Assessment of the Scale

The measures of the SSQPS were assessed using a series of measurement model tests. The purpose of the measurement model is to determine how well the indicators capture their specified constructs. Four separate measurement models were separately tested for the 11 subdimensions of service quality. In addition, a measurement model for satisfaction and repurchase intention was tested followed by the measurement model test for the four primary dimensions. The fit of the measurement models is examined by using chi-square statistic and a series of fit indices (i.e., RMR, RMSEA, GFI, TLI, and CFI).

The reliability and construct validity of the scale items were established by using Cronbach’s Alpha, item-to-total correlations, and standardized and unstandardized regression weights. In particular, convergent validity was established through the significance of the critical ratio at the 0.05 level corresponding to the relationships between the measures and their constructs. The researcher examined the covariances and correlations of constructs to establish discriminant validity (Dabholkar, et al., 1996; Kline, 1998).

Fit of Measurement Models

The purpose of testing the measurement model is to describe the relation between the measured specific indicators and construct of interest. The results of the measurement model test determine how well the indicators capture their specified constructs (Bollen, 1989).
The results of the analyses supported that the overall fit of the measurement models was found to be adequate. Specifically, throughout all measurement model tests, the chi-square value was not significant compared to the degree of freedom (i.e., subdimensions of program quality, $\chi^2/df = 2.21$; subdimensions of interaction quality, $\chi^2/df = 2.76$; subdimensions of outcome quality, $\chi^2/df = 2.80$; subdimensions of physical environment quality, $\chi^2/df = 3.10$; satisfaction and repurchase Intention, $\chi^2/df = 4.89$; four primary dimensions, $\chi^2/df = 2.11$). The Chi-square/df ratios were lower than or close to the suggested threshold (i.e., less than 3.0) (Carmines & McIver, 1981; Kline, 1998). This indicates that the results did not reject the null hypothesis and suggest that the data represents the proposed models.

Although the root mean square residual (RMR) estimate was relatively high (i.e. range: .063 - .154), the root mean square error of approximation (RMSEA) values were lower than 1 in all measurement model tests except measurement model for satisfaction and repurchase intention. Specifically, the RMSEA of the measurement models for program quality, interaction quality, outcome quality and overall primary dimensions were lower than or close to .8, which is the recommended threshold for model fit (Browne & Cudeck, 1993). This indicates that measurement models were approaching a close fit and reasonably accepted. In addition, all other indices (i.e., GFI, TLI, and CFI estimates) were greater than the recommended .90 threshold throughout the fit analysis for all measurement models. The results of the analysis can be found in Table 5.
<table>
<thead>
<tr>
<th>Measurement Model (N=241)</th>
<th>CMIN</th>
<th>DF</th>
<th>CMIN/DF</th>
<th>RMR</th>
<th>RMSEA</th>
<th>GFI</th>
<th>TLI</th>
<th>CFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range of Program, Operating Time, and Information (12 Items)</td>
<td>106.05</td>
<td>48</td>
<td>2.21</td>
<td>.093</td>
<td>.071</td>
<td>.93</td>
<td>.95</td>
<td>.95</td>
</tr>
<tr>
<td>Client-Employee Interaction, Inter Client Interaction (11 Items)</td>
<td>118.63</td>
<td>43</td>
<td>2.76</td>
<td>.063</td>
<td>.086</td>
<td>.92</td>
<td>.96</td>
<td>.97</td>
</tr>
<tr>
<td>Physical Change, Valence, and Sociability (13 Items)</td>
<td>170.68</td>
<td>61</td>
<td>2.80</td>
<td>.126</td>
<td>.087</td>
<td>.91</td>
<td>.95</td>
<td>.96</td>
</tr>
<tr>
<td>Ambient Condition, Design, and Equipment (13 Items)</td>
<td>187.81</td>
<td>60</td>
<td>3.10</td>
<td>.107</td>
<td>.094</td>
<td>.90</td>
<td>.95</td>
<td>.96</td>
</tr>
<tr>
<td>Four Primary Dimensions of Service Quality (13 Items)</td>
<td>119.99</td>
<td>57</td>
<td>2.11</td>
<td>.119</td>
<td>.068</td>
<td>.93</td>
<td>.95</td>
<td>.97</td>
</tr>
<tr>
<td>Satisfaction and Repurchase Intention</td>
<td>73.48</td>
<td>15</td>
<td>4.89</td>
<td>.154</td>
<td>.127</td>
<td>.93</td>
<td>.94</td>
<td>.97</td>
</tr>
</tbody>
</table>

Table 5: Measurement Model Analysis Results
Reliability and Validity

As in the pretest of the SSQPS, Cronbach's (1951) coefficient alpha and item-to-total correlations were calculated to examine the reliability of the SSQPS. Cronbach's coefficient alpha estimates for the 11 subdimensions of service quality and two outcome variables (i.e., satisfaction and repurchase intention) were between the ranges of .73 and .94. These estimates were greater than the .70 minimum that has been suggested by Nunnally and Bernstein (1994).

The item-to-total correlation estimates for a total of 57 items of the SSQPS (i.e., 49 items for the 11 subdimensions of service quality and 8 items for satisfaction and repurchase intention) were between .50 and .89. More specifically, except for item 4 ($r = .58$) and item 40 ($r = .50$), all items had estimates greater than .60 (see Table 6). These estimates were greater than the .50 that has been suggested by Robinson, Shaver, and Wrightsman (1991). Therefore, the evidence indicated that reliability was found throughout the scale measures.

To establish construct validity, the researcher examined: (a) the relationship between the indicators and common underlying factors, (b) the critical ratio (C.R.) in each item (c) the relationship between the endogenous latent variables (i.e., program quality, interaction quality, outcome quality, and physical environment quality) and the exogenous overall variable (i.e., service quality) in the second order factor model, and (d) the covariance and correlation of all possible pairs of the 11 subdimensions and four primary dimensions of service quality.

An examination of the indicators' high loadings on their respective constructs provides evidence of convergent validity for each of the measurement models. More
specifically, except for one item (i.e., V9 = .55), the standardized regression weights for all items were greater than the conservative threshold of 0.70 (Litwin, 1995). All indicator loadings ranged between 0.70 and 0.94 (see Table 6).

The critical ratios obtained from the unstandardized regression weights provided additional evidence of the convergent validity of the research variables. The critical ratios for all indicators ranged from 7.97 to 26.08 and each of them was significant at the .05 level. In addition, the indicators' critical ratio for range of program, client-employee interaction, inter-client interaction, physical change, valence, sociability, ambient condition, design, equipment, satisfaction, and repurchase intention were greater than 11.27.

As Anderson and Gerbing (1998) suggested, the convergent validity in the second-order model was examined. The results of the second order factor model (see Figure 6) in the second stage of the structural model analysis support that there are strong relationships between the four endogenous latent variables and exogenous overall variable (i.e., service quality). Specifically, the standardized regression weights for the relationships between program quality, interaction quality, outcome quality, and physical environment quality and the higher order factor (i.e., service quality) were 0.94, 0.85, 0.88, and 0.61 respectively. The estimates indicate that first-order factors were equally important as indicators of a second-order factor. Thus, convergent validity for the four primary dimensions was evidenced.

Therefore, the data suggested that strong evidence of convergent validity for the SSQPS exists throughout the measures of overall service quality, satisfaction and repurchase intention in the proposed model.
<table>
<thead>
<tr>
<th>Constructs (n=241)</th>
<th>Items</th>
<th>Item-to-Total Correlation</th>
<th>Means</th>
<th>Standard Error</th>
<th>Indicator Loadings (MLE)</th>
<th>Critical Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range of Program</td>
<td>V1(^a)</td>
<td>.74</td>
<td>5.61</td>
<td>-</td>
<td>.79</td>
<td>-</td>
</tr>
<tr>
<td>((\alpha = .86))</td>
<td>V3</td>
<td>.73</td>
<td>5.45</td>
<td>.08</td>
<td>.83</td>
<td>14.03*</td>
</tr>
<tr>
<td></td>
<td>V6</td>
<td>.74</td>
<td>5.47</td>
<td>.09</td>
<td>.83</td>
<td>13.06*</td>
</tr>
<tr>
<td></td>
<td>V8</td>
<td>.64</td>
<td>5.24</td>
<td>.10</td>
<td>.71</td>
<td>11.27*</td>
</tr>
<tr>
<td>Operating Time</td>
<td>V4(^a)</td>
<td>.58</td>
<td>4.71</td>
<td>-</td>
<td>.71</td>
<td>-</td>
</tr>
<tr>
<td>((\alpha = .81))</td>
<td>V10</td>
<td>.75</td>
<td>4.76</td>
<td>.11</td>
<td>.81</td>
<td>9.65*</td>
</tr>
<tr>
<td></td>
<td>V12</td>
<td>.64</td>
<td>4.90</td>
<td>.11</td>
<td>.87</td>
<td>9.87*</td>
</tr>
<tr>
<td>Information</td>
<td>V2(^a)</td>
<td>.60</td>
<td>4.69</td>
<td>-</td>
<td>.73</td>
<td>-</td>
</tr>
<tr>
<td>((\alpha = .83))</td>
<td>V5</td>
<td>.64</td>
<td>4.98</td>
<td>.10</td>
<td>.71</td>
<td>10.28*</td>
</tr>
<tr>
<td></td>
<td>V7</td>
<td>.60</td>
<td>5.10</td>
<td>.09</td>
<td>.70</td>
<td>10.10*</td>
</tr>
<tr>
<td></td>
<td>V9</td>
<td>.54</td>
<td>4.89</td>
<td>.09</td>
<td>.55</td>
<td>7.97*</td>
</tr>
<tr>
<td></td>
<td>V11</td>
<td>.74</td>
<td>5.24</td>
<td>.09</td>
<td>.74</td>
<td>11.04*</td>
</tr>
<tr>
<td>Client-Employee Interaction</td>
<td>V13(^a)</td>
<td>.76</td>
<td>5.04</td>
<td>-</td>
<td>.81</td>
<td>-</td>
</tr>
<tr>
<td>((\alpha = .94))</td>
<td>V15</td>
<td>.81</td>
<td>5.18</td>
<td>.07</td>
<td>.81</td>
<td>14.54*</td>
</tr>
<tr>
<td></td>
<td>V16</td>
<td>.78</td>
<td>5.21</td>
<td>.06</td>
<td>.78</td>
<td>13.97*</td>
</tr>
<tr>
<td></td>
<td>V18</td>
<td>.81</td>
<td>4.93</td>
<td>.06</td>
<td>.84</td>
<td>15.43*</td>
</tr>
<tr>
<td></td>
<td>V19</td>
<td>.86</td>
<td>5.22</td>
<td>.06</td>
<td>.89</td>
<td>16.83*</td>
</tr>
<tr>
<td></td>
<td>V20</td>
<td>.83</td>
<td>5.03</td>
<td>.06</td>
<td>.85</td>
<td>15.82*</td>
</tr>
<tr>
<td></td>
<td>V21</td>
<td>.81</td>
<td>4.95</td>
<td>.06</td>
<td>.85</td>
<td>15.66*</td>
</tr>
<tr>
<td>Inter-Client Interaction</td>
<td>V14(^a)</td>
<td>.68</td>
<td>5.03</td>
<td>-</td>
<td>.79</td>
<td>-</td>
</tr>
<tr>
<td>((\alpha = .86))</td>
<td>V17</td>
<td>.72</td>
<td>4.94</td>
<td>.08</td>
<td>.76</td>
<td>12.69*</td>
</tr>
<tr>
<td></td>
<td>V22</td>
<td>.76</td>
<td>5.10</td>
<td>.08</td>
<td>.84</td>
<td>14.49*</td>
</tr>
<tr>
<td></td>
<td>V23</td>
<td>.69</td>
<td>5.11</td>
<td>.08</td>
<td>.74</td>
<td>12.34*</td>
</tr>
</tbody>
</table>

Note. \(^a\) 1 is fixed at 1.0; Indicator loading - standardized regression weight, critical ratio - unstandardized regression weight.
* \(p<.05\)

Table 6: Reliabilities and Standardized Parameter Estimates for the SSQPS (continued)
Table 6 (continued)

<table>
<thead>
<tr>
<th>Constructs (n=241)</th>
<th>Items</th>
<th>Item-to-Total Correlation</th>
<th>Means</th>
<th>Standard Error</th>
<th>Indicator Loadings (MLE)</th>
<th>Critical Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Change</td>
<td>V28</td>
<td>.82</td>
<td>5.55</td>
<td>.08</td>
<td>.86</td>
<td>14.95*</td>
</tr>
<tr>
<td></td>
<td>V29</td>
<td>.82</td>
<td>5.55</td>
<td>.08</td>
<td>.85</td>
<td>14.77*</td>
</tr>
<tr>
<td></td>
<td>V30</td>
<td>.81</td>
<td>5.39</td>
<td>.08</td>
<td>.84</td>
<td>14.53*</td>
</tr>
<tr>
<td></td>
<td>V34</td>
<td>.75</td>
<td>5.34</td>
<td>.07</td>
<td>.80</td>
<td>13.58*</td>
</tr>
<tr>
<td>Valence</td>
<td>V25</td>
<td>.79</td>
<td>5.67</td>
<td>-</td>
<td>.81</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>V26</td>
<td>.80</td>
<td>5.35</td>
<td>.07</td>
<td>.86</td>
<td>15.75*</td>
</tr>
<tr>
<td></td>
<td>V31</td>
<td>.82</td>
<td>5.71</td>
<td>.06</td>
<td>.87</td>
<td>15.99*</td>
</tr>
<tr>
<td></td>
<td>V32</td>
<td>.82</td>
<td>5.61</td>
<td>.06</td>
<td>.88</td>
<td>16.44*</td>
</tr>
<tr>
<td>Sociability</td>
<td>V27</td>
<td>.67</td>
<td>4.79</td>
<td>-</td>
<td>.73</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>V33</td>
<td>.71</td>
<td>4.34</td>
<td>.09</td>
<td>.76</td>
<td>11.48*</td>
</tr>
<tr>
<td></td>
<td>V35</td>
<td>.80</td>
<td>4.26</td>
<td>.09</td>
<td>.86</td>
<td>12.97*</td>
</tr>
<tr>
<td></td>
<td>V36</td>
<td>.82</td>
<td>4.51</td>
<td>.08</td>
<td>.89</td>
<td>13.31*</td>
</tr>
<tr>
<td>Ambient Condition</td>
<td>V37</td>
<td>.74</td>
<td>3.63</td>
<td>-</td>
<td>.71</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>V39</td>
<td>.78</td>
<td>3.61</td>
<td>.07</td>
<td>.77</td>
<td>16.32*</td>
</tr>
<tr>
<td></td>
<td>V42</td>
<td>.68</td>
<td>4.46</td>
<td>.09</td>
<td>.76</td>
<td>11.49*</td>
</tr>
<tr>
<td></td>
<td>V44</td>
<td>.87</td>
<td>3.81</td>
<td>.09</td>
<td>.94</td>
<td>14.17*</td>
</tr>
<tr>
<td></td>
<td>V47</td>
<td>.82</td>
<td>4.06</td>
<td>.09</td>
<td>.90</td>
<td>13.54*</td>
</tr>
<tr>
<td>Design</td>
<td>V38</td>
<td>.85</td>
<td>3.66</td>
<td>-</td>
<td>.88</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>V41</td>
<td>.75</td>
<td>4.50</td>
<td>.05</td>
<td>.77</td>
<td>15.49*</td>
</tr>
<tr>
<td></td>
<td>V43</td>
<td>.89</td>
<td>3.80</td>
<td>.05</td>
<td>.94</td>
<td>23.32*</td>
</tr>
<tr>
<td></td>
<td>V46</td>
<td>.81</td>
<td>3.78</td>
<td>.05</td>
<td>.89</td>
<td>19.80*</td>
</tr>
<tr>
<td></td>
<td>V48</td>
<td>.75</td>
<td>4.73</td>
<td>.05</td>
<td>.78</td>
<td>15.78*</td>
</tr>
<tr>
<td>Equipment</td>
<td>V40</td>
<td>.50</td>
<td>4.54</td>
<td>-</td>
<td>.86</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>V45</td>
<td>.65</td>
<td>4.42</td>
<td>.05</td>
<td>.91</td>
<td>19.13*</td>
</tr>
<tr>
<td></td>
<td>V49</td>
<td>.67</td>
<td>4.70</td>
<td>.05</td>
<td>.84</td>
<td>16.69*</td>
</tr>
</tbody>
</table>

Note: * 1 is fixed at 1.0; Indicator loading - standardized regression weight, critical ratio - unstandardized regression weight.

*p<.05

157
Table 6 (continued)

<table>
<thead>
<tr>
<th>Constructs (n=241)</th>
<th>Items</th>
<th>Item-to-Total Correlation</th>
<th>Means</th>
<th>Standard Error</th>
<th>Indicator Loadings (MLE)</th>
<th>Critical Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfaction (α = .91)</td>
<td>V50</td>
<td>.81</td>
<td>5.40</td>
<td>-</td>
<td>.85</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>V51</td>
<td>.82</td>
<td>5.38</td>
<td>.08</td>
<td>.96</td>
<td>16.11*</td>
</tr>
<tr>
<td></td>
<td>V54</td>
<td>.76</td>
<td>5.30</td>
<td>.08</td>
<td>.79</td>
<td>11.41*</td>
</tr>
<tr>
<td></td>
<td>V55</td>
<td>.77</td>
<td>5.32</td>
<td>.08</td>
<td>.82</td>
<td>11.90*</td>
</tr>
<tr>
<td>Repurchase Intention (α = .91)</td>
<td>V58</td>
<td>.84</td>
<td>5.97</td>
<td>-</td>
<td>.94</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>V59</td>
<td>.88</td>
<td>6.01</td>
<td>.04</td>
<td>.93</td>
<td>26.08*</td>
</tr>
<tr>
<td></td>
<td>V60</td>
<td>.66</td>
<td>5.70</td>
<td>.06</td>
<td>.73</td>
<td>12.59*</td>
</tr>
<tr>
<td></td>
<td>V61</td>
<td>.84</td>
<td>5.95</td>
<td>.04</td>
<td>.87</td>
<td>21.56*</td>
</tr>
</tbody>
</table>

Note: *1 is fixed at 1.0; Indicator loading - standardized regression weight, critical ratio - unstandardized regression weight.
* p<.05

Discriminant validity is a measure of the degree to which conceptually similar concepts are distinct (Hair, et al., 1998). To determine the discriminant validity of the SSQPS, the researcher analyzed the covariance and correlation matrix of the AMOS output for the first and second structural equation models (i.e., structural model for subdimensions and higher-order-factor). The covariance estimates of the pairs for three subdimensions of physical environment quality and two subdimensions of interaction quality were greater than 1. More specifically, the covariance estimates for the pairs of equipment and design, equipment and ambient condition, design and ambient condition, and client-employee interaction and inter-client interaction were 1.83, 1.58, 2.02, and 1.22 respectively. All other covariance values ranged from 0.44 to 0.98. They are less than the recommended value of 1.00 (Dabholkar, et al., 1996). Not surprisingly, similar
results were found in the standardized correlation matrix. For example, the correlation estimates for the pairs of equipment and design, equipment and ambient condition, design and ambient condition, and two subdimensions of interaction quality were 0.85, 0.88, 1.02, and 0.89 respectively. In addition, a high correlation (r=0.94) was found in the relationship between physical change and valence in outcome quality. All other correlation estimates ranged from 0.31 to 0.77. They are less than the recommended value (r <.85) (Kline, 1998). The covariance and standardized correlation matrix were found in Tables 7 and 8.

Another method to establish discriminant validity is to examine the correlation matrix for each item. Table 9 provides correlation matrix among specific items which were randomly selected. As noted earlier, to establish discriminant validity, the various items measuring each single construct should show high correlation among themselves, and the correlations among these items were higher than their correlations with the items intended to measure other constructs (Campbell & Fiske, 1959). The correlation matrix meets the aforementioned criteria. Overall, in the subdimension level, except for several occasions, discriminant validity in the SSQPS and subdimensions is evidenced. In the item level, the correlation matrix provides evidence for discriminant validity of SSQPS.

The covariances and correlations of the four dimensions of service quality support that discriminant validity is found in the SSQPS. Specifically, the covariance estimates for the 6 pairs ranged from 0.54 to 0.88. (i.e., program quality and interaction quality = 0.88, program quality and outcome quality = 0.86, program quality and physical
environment quality = 0.56, outcome quality and interaction quality = 0.77, outcome quality and physical environment quality = 0.54, and interaction quality and physical environment quality 0.57 (see Table 10 and 11).

In summary, the analyses of the measurement models well represent the data and suggests that the scales used in the study adequately capture the latent variables. Specifically, the fit indices for all six measurement models adequately meet or exceed the criteria established for good model fit. There was statistical evidence for reliability and construct validity in the SSQPS. Specifically, the standardized correlation estimates and critical ratios for all indicators are significant throughout the SSQPS items. This suggests that the convergent validity for the SSQPS was established. The analysis of the Cronbach's Alphas and item-to-total correlation estimates suggests that all items in the SSQPS are reliable. The standardized correlation and covariance matrixes were examined to establish the discriminant validity of the constructs in the measurement models. Although the values of several pairs between the subdimensions are relatively higher than the suggested criteria, the results support that there is statistical evidence for discriminant validity in the measures of the SSQPS. This will be discussed in more detail in the chapter 5. Overall, the measures developed for the purposes of this study are psychometrically sound.
<table>
<thead>
<tr>
<th></th>
<th>E1</th>
<th>E2</th>
<th>E3</th>
<th>O1</th>
<th>O2</th>
<th>O3</th>
<th>I1</th>
<th>I2</th>
<th>P1</th>
<th>P2</th>
<th>P3</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1</td>
<td>1.956</td>
<td>1.832</td>
<td>1.577</td>
<td>0.580</td>
<td>0.720</td>
<td>0.492</td>
<td>0.767</td>
<td>0.748</td>
<td>0.586</td>
<td>0.579</td>
<td>0.440</td>
</tr>
<tr>
<td>E2</td>
<td>1.832</td>
<td>2.377</td>
<td>2.021</td>
<td>0.743</td>
<td>0.922</td>
<td>0.630</td>
<td>0.983</td>
<td>0.958</td>
<td>0.751</td>
<td>0.742</td>
<td>0.564</td>
</tr>
<tr>
<td>E3</td>
<td>1.577</td>
<td>2.021</td>
<td>1.633</td>
<td>0.640</td>
<td>0.794</td>
<td>0.542</td>
<td>0.846</td>
<td>0.825</td>
<td>0.646</td>
<td>0.638</td>
<td>0.485</td>
</tr>
<tr>
<td>O1</td>
<td>0.580</td>
<td>0.743</td>
<td>0.640</td>
<td>0.942</td>
<td>1.008</td>
<td>0.689</td>
<td>0.780</td>
<td>0.760</td>
<td>0.681</td>
<td>0.673</td>
<td>0.511</td>
</tr>
<tr>
<td>O2</td>
<td>0.720</td>
<td>0.922</td>
<td>0.794</td>
<td>1.008</td>
<td>1.206</td>
<td>0.854</td>
<td>0.967</td>
<td>0.943</td>
<td>0.845</td>
<td>0.834</td>
<td>0.634</td>
</tr>
<tr>
<td>O3</td>
<td>0.492</td>
<td>0.630</td>
<td>0.542</td>
<td>0.689</td>
<td>0.854</td>
<td>1.260</td>
<td>0.661</td>
<td>0.644</td>
<td>0.577</td>
<td>0.570</td>
<td>0.433</td>
</tr>
<tr>
<td>I1</td>
<td>0.767</td>
<td>0.983</td>
<td>0.846</td>
<td>0.780</td>
<td>0.967</td>
<td>0.661</td>
<td>1.358</td>
<td>1.217</td>
<td>0.872</td>
<td>0.862</td>
<td>0.655</td>
</tr>
<tr>
<td>I2</td>
<td>0.748</td>
<td>0.958</td>
<td>0.825</td>
<td>0.760</td>
<td>0.943</td>
<td>0.644</td>
<td>1.217</td>
<td>1.371</td>
<td>0.850</td>
<td>0.840</td>
<td>0.638</td>
</tr>
<tr>
<td>P1</td>
<td>0.586</td>
<td>0.751</td>
<td>0.646</td>
<td>0.681</td>
<td>0.845</td>
<td>0.577</td>
<td>0.872</td>
<td>0.850</td>
<td>0.990</td>
<td>0.768</td>
<td>0.583</td>
</tr>
<tr>
<td>P2</td>
<td>0.579</td>
<td>0.742</td>
<td>0.638</td>
<td>0.673</td>
<td>0.834</td>
<td>0.570</td>
<td>0.862</td>
<td>0.840</td>
<td>0.768</td>
<td>1.304</td>
<td>0.576</td>
</tr>
<tr>
<td>P3</td>
<td>0.440</td>
<td>0.564</td>
<td>0.485</td>
<td>0.511</td>
<td>0.634</td>
<td>0.433</td>
<td>0.655</td>
<td>0.638</td>
<td>0.583</td>
<td>0.576</td>
<td>0.649</td>
</tr>
</tbody>
</table>


Table 7: Covariance Matrix for 11 Subdimensions of Service Quality
<table>
<thead>
<tr>
<th></th>
<th>E1</th>
<th>E2</th>
<th>E3</th>
<th>O1</th>
<th>O2</th>
<th>O3</th>
<th>I1</th>
<th>I2</th>
<th>P1</th>
<th>P2</th>
<th>P3</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1</td>
<td>1.000</td>
<td>0.850</td>
<td>0.883</td>
<td>0.427</td>
<td>0.468</td>
<td>0.313</td>
<td>0.471</td>
<td>0.457</td>
<td>0.421</td>
<td>0.363</td>
<td>0.391</td>
</tr>
<tr>
<td>E2</td>
<td>0.850</td>
<td>1.000</td>
<td>1.025</td>
<td>0.497</td>
<td>0.544</td>
<td>0.364</td>
<td>0.547</td>
<td>0.531</td>
<td>0.489</td>
<td>0.421</td>
<td>0.454</td>
</tr>
<tr>
<td>E3</td>
<td>0.883</td>
<td>1.025</td>
<td>1.000</td>
<td>0.516</td>
<td>0.565</td>
<td>0.378</td>
<td>0.568</td>
<td>0.551</td>
<td>0.508</td>
<td>0.438</td>
<td>0.471</td>
</tr>
<tr>
<td>O1</td>
<td>0.427</td>
<td>0.497</td>
<td>0.516</td>
<td>1.000</td>
<td>0.945</td>
<td>0.632</td>
<td>0.689</td>
<td>0.669</td>
<td>0.705</td>
<td>0.607</td>
<td>0.654</td>
</tr>
<tr>
<td>O2</td>
<td>0.468</td>
<td>0.544</td>
<td>0.565</td>
<td>0.945</td>
<td>1.000</td>
<td>0.693</td>
<td>0.755</td>
<td>0.733</td>
<td>0.773</td>
<td>0.665</td>
<td>0.717</td>
</tr>
<tr>
<td>O3</td>
<td>0.313</td>
<td>0.364</td>
<td>0.378</td>
<td>0.632</td>
<td>0.693</td>
<td>1.000</td>
<td>0.505</td>
<td>0.490</td>
<td>0.517</td>
<td>0.445</td>
<td>0.479</td>
</tr>
<tr>
<td>I1</td>
<td>0.471</td>
<td>0.547</td>
<td>0.568</td>
<td>0.689</td>
<td>0.755</td>
<td>0.505</td>
<td>1.000</td>
<td>0.892</td>
<td>0.752</td>
<td>0.647</td>
<td>0.697</td>
</tr>
<tr>
<td>I2</td>
<td>0.457</td>
<td>0.531</td>
<td>0.551</td>
<td>0.669</td>
<td>0.733</td>
<td>0.490</td>
<td>0.892</td>
<td>1.000</td>
<td>0.730</td>
<td>0.628</td>
<td>0.677</td>
</tr>
<tr>
<td>P1</td>
<td>0.421</td>
<td>0.489</td>
<td>0.508</td>
<td>0.705</td>
<td>0.773</td>
<td>0.517</td>
<td>0.752</td>
<td>0.730</td>
<td>1.000</td>
<td>0.676</td>
<td>0.728</td>
</tr>
<tr>
<td>P2</td>
<td>0.363</td>
<td>0.421</td>
<td>0.438</td>
<td>0.607</td>
<td>0.665</td>
<td>0.445</td>
<td>0.647</td>
<td>0.628</td>
<td>0.676</td>
<td>1.000</td>
<td>0.627</td>
</tr>
<tr>
<td>P3</td>
<td>0.391</td>
<td>0.454</td>
<td>0.471</td>
<td>0.654</td>
<td>0.717</td>
<td>0.479</td>
<td>0.697</td>
<td>0.677</td>
<td>0.728</td>
<td>0.627</td>
<td>1.000</td>
</tr>
</tbody>
</table>

*a* E1=Equipment, E2=Design, E3=Ambient Condition, O1=Physical Change, O2=Valence, O3=Sociability, I1=Inter-Client Interaction, I2=Client-Employee Interaction, P1=Information, P2=Operating Time, P3=Range of Program.

Table 8: Standardized Correlation Matrix for Structural Model 1
Table 9: Standardized Correlation Matrix for Structural Model 1 (i.e., 22 items)

<table>
<thead>
<tr>
<th></th>
<th>V45</th>
<th>V49</th>
<th>V46</th>
<th>V38</th>
<th>V47</th>
<th>V42</th>
<th>V30</th>
<th>V24</th>
<th>V26</th>
<th>V32</th>
<th>V27</th>
<th>V36</th>
<th>V22</th>
<th>V23</th>
<th>V19</th>
<th>V15</th>
<th>V11</th>
<th>V7</th>
<th>V10</th>
<th>V4</th>
<th>V6</th>
<th>V1</th>
</tr>
</thead>
<tbody>
<tr>
<td>E3V47</td>
<td>.716</td>
<td>.652</td>
<td>.833</td>
<td>.772</td>
<td>1.000</td>
<td>.671</td>
<td>.379</td>
<td>.345</td>
<td>.432</td>
<td>.440</td>
<td>.293</td>
<td>.242</td>
<td>.420</td>
<td>.397</td>
<td>.422</td>
<td>.400</td>
<td>.386</td>
<td>.326</td>
<td>.34</td>
<td>.27</td>
<td>.356</td>
<td>.311</td>
</tr>
<tr>
<td>E3V42</td>
<td>.613</td>
<td>.624</td>
<td>.619</td>
<td>.660</td>
<td>.671</td>
<td>1.000</td>
<td>.324</td>
<td>.296</td>
<td>.370</td>
<td>.377</td>
<td>.250</td>
<td>.207</td>
<td>.359</td>
<td>.340</td>
<td>.361</td>
<td>.343</td>
<td>.331</td>
<td>.279</td>
<td>.29</td>
<td>.23</td>
<td>.305</td>
<td>.266</td>
</tr>
<tr>
<td>O1V30</td>
<td>.325</td>
<td>.296</td>
<td>.378</td>
<td>.350</td>
<td>.379</td>
<td>.324</td>
<td>1.000</td>
<td>.628</td>
<td>.678</td>
<td>.690</td>
<td>.458</td>
<td>.379</td>
<td>.477</td>
<td>.451</td>
<td>.480</td>
<td>.455</td>
<td>.502</td>
<td>.423</td>
<td>.44</td>
<td>.35</td>
<td>.463</td>
<td>.414</td>
</tr>
<tr>
<td>O1V24</td>
<td>.296</td>
<td>.270</td>
<td>.344</td>
<td>.319</td>
<td>.345</td>
<td>.296</td>
<td>.628</td>
<td>1.000</td>
<td>.618</td>
<td>.629</td>
<td>.418</td>
<td>.346</td>
<td>.435</td>
<td>.411</td>
<td>.437</td>
<td>.415</td>
<td>.457</td>
<td>.386</td>
<td>.40</td>
<td>.32</td>
<td>.422</td>
<td>.368</td>
</tr>
<tr>
<td>O2V26</td>
<td>.371</td>
<td>.338</td>
<td>.431</td>
<td>.399</td>
<td>.432</td>
<td>.370</td>
<td>.678</td>
<td>.618</td>
<td>1.000</td>
<td>.760</td>
<td>.523</td>
<td>.433</td>
<td>.545</td>
<td>.515</td>
<td>.548</td>
<td>.519</td>
<td>.573</td>
<td>.483</td>
<td>.50</td>
<td>.40</td>
<td>.528</td>
<td>.461</td>
</tr>
<tr>
<td>O2V32</td>
<td>.378</td>
<td>.344</td>
<td>.439</td>
<td>.407</td>
<td>.440</td>
<td>.377</td>
<td>.690</td>
<td>.629</td>
<td>.760</td>
<td>1.000</td>
<td>.533</td>
<td>.441</td>
<td>.555</td>
<td>.524</td>
<td>.558</td>
<td>.529</td>
<td>.583</td>
<td>.492</td>
<td>.51</td>
<td>.41</td>
<td>.538</td>
<td>.470</td>
</tr>
<tr>
<td>O3V27</td>
<td>.251</td>
<td>.228</td>
<td>.292</td>
<td>.270</td>
<td>.293</td>
<td>.250</td>
<td>.458</td>
<td>.418</td>
<td>.523</td>
<td>.533</td>
<td>1.000</td>
<td>.632</td>
<td>.458</td>
<td>.348</td>
<td>.370</td>
<td>.351</td>
<td>.387</td>
<td>.327</td>
<td>.34</td>
<td>.27</td>
<td>.357</td>
<td>.312</td>
</tr>
<tr>
<td>O3V36</td>
<td>.207</td>
<td>.189</td>
<td>.241</td>
<td>.223</td>
<td>.242</td>
<td>.207</td>
<td>.379</td>
<td>.346</td>
<td>.433</td>
<td>.441</td>
<td>.632</td>
<td>1.000</td>
<td>.305</td>
<td>.288</td>
<td>.306</td>
<td>.291</td>
<td>.320</td>
<td>.270</td>
<td>.28</td>
<td>.22</td>
<td>.295</td>
<td>.258</td>
</tr>
<tr>
<td>I1V22</td>
<td>.360</td>
<td>.328</td>
<td>.419</td>
<td>.388</td>
<td>.420</td>
<td>.359</td>
<td>.477</td>
<td>.435</td>
<td>.545</td>
<td>.555</td>
<td>.458</td>
<td>.305</td>
<td>1.000</td>
<td>.658</td>
<td>.644</td>
<td>.610</td>
<td>.538</td>
<td>.454</td>
<td>.47</td>
<td>.38</td>
<td>.496</td>
<td>.434</td>
</tr>
<tr>
<td>I2V15</td>
<td>.343</td>
<td>.313</td>
<td>.399</td>
<td>.370</td>
<td>.400</td>
<td>.343</td>
<td>.455</td>
<td>.415</td>
<td>.519</td>
<td>.529</td>
<td>.351</td>
<td>.291</td>
<td>.610</td>
<td>.577</td>
<td>.709</td>
<td>1.000</td>
<td>.513</td>
<td>.433</td>
<td>.45</td>
<td>.36</td>
<td>.473</td>
<td>.413</td>
</tr>
<tr>
<td>P1V11</td>
<td>.331</td>
<td>.301</td>
<td>.385</td>
<td>.357</td>
<td>.386</td>
<td>.331</td>
<td>.502</td>
<td>.457</td>
<td>.573</td>
<td>.583</td>
<td>.387</td>
<td>.320</td>
<td>.538</td>
<td>.509</td>
<td>.541</td>
<td>.513</td>
<td>1.000</td>
<td>.621</td>
<td>.50</td>
<td>.40</td>
<td>.533</td>
<td>.465</td>
</tr>
<tr>
<td>P1V7</td>
<td>.279</td>
<td>.254</td>
<td>.325</td>
<td>.301</td>
<td>.326</td>
<td>.279</td>
<td>.423</td>
<td>.386</td>
<td>.483</td>
<td>.492</td>
<td>.327</td>
<td>.270</td>
<td>.454</td>
<td>.429</td>
<td>.456</td>
<td>.433</td>
<td>.621</td>
<td>1.000</td>
<td>.42</td>
<td>.34</td>
<td>.449</td>
<td>.392</td>
</tr>
<tr>
<td>P3V6</td>
<td>.305</td>
<td>.278</td>
<td>.355</td>
<td>.329</td>
<td>.356</td>
<td>.305</td>
<td>.463</td>
<td>.422</td>
<td>.528</td>
<td>.538</td>
<td>.357</td>
<td>.295</td>
<td>.496</td>
<td>.469</td>
<td>.499</td>
<td>.473</td>
<td>.533</td>
<td>.449</td>
<td>.46</td>
<td>.37</td>
<td>1.000</td>
<td>.635</td>
</tr>
<tr>
<td>P3V1</td>
<td>.267</td>
<td>.243</td>
<td>.310</td>
<td>.287</td>
<td>.311</td>
<td>.266</td>
<td>.404</td>
<td>.368</td>
<td>.461</td>
<td>.470</td>
<td>.312</td>
<td>.258</td>
<td>.434</td>
<td>.410</td>
<td>.436</td>
<td>.413</td>
<td>.465</td>
<td>.392</td>
<td>.40</td>
<td>.32</td>
<td>.635</td>
<td>1.000</td>
</tr>
</tbody>
</table>

* E1=Equipment, E2=Design, E3=Ambient Condition, O1=Physical Change, O2=Valence, O3=Sociability, I1=Inter-Client Interaction, I2=Client-Employee Interaction, P1=Information, P2=Operating Time, P3=Range of Program.
<table>
<thead>
<tr>
<th></th>
<th>V49</th>
<th>V47</th>
<th>V46</th>
<th>V30</th>
<th>V27</th>
<th>V26</th>
<th>V15</th>
<th>V20</th>
<th>V19</th>
<th>V7</th>
<th>V10</th>
<th>V6</th>
</tr>
</thead>
<tbody>
<tr>
<td>E. (V49)</td>
<td>1.000</td>
<td>.668</td>
<td>.640</td>
<td>.288</td>
<td>.241</td>
<td>.332</td>
<td>.289</td>
<td>.299</td>
<td>.327</td>
<td>.315</td>
<td>.273</td>
<td>.268</td>
</tr>
<tr>
<td>E. (V47)</td>
<td>.668</td>
<td>1.000</td>
<td>.839</td>
<td>.378</td>
<td>.315</td>
<td>.435</td>
<td>.379</td>
<td>.392</td>
<td>.428</td>
<td>.413</td>
<td>.357</td>
<td>.352</td>
</tr>
<tr>
<td>E. (V46)</td>
<td>.640</td>
<td>.839</td>
<td>1.000</td>
<td>.362</td>
<td>.302</td>
<td>.417</td>
<td>.364</td>
<td>.376</td>
<td>.411</td>
<td>.396</td>
<td>.343</td>
<td>.337</td>
</tr>
<tr>
<td>O. (V27)</td>
<td>.241</td>
<td>.315</td>
<td>.302</td>
<td>.471</td>
<td>1.000</td>
<td>.541</td>
<td>.481</td>
<td>.378</td>
<td>.413</td>
<td>.398</td>
<td>.344</td>
<td>.339</td>
</tr>
<tr>
<td>O. (V26)</td>
<td>.332</td>
<td>.435</td>
<td>.417</td>
<td>.649</td>
<td>.541</td>
<td>1.000</td>
<td>.504</td>
<td>.521</td>
<td>.569</td>
<td>.549</td>
<td>.475</td>
<td>.467</td>
</tr>
<tr>
<td>I. (V22)</td>
<td>.289</td>
<td>.379</td>
<td>.364</td>
<td>.438</td>
<td>.481</td>
<td>.504</td>
<td>1.000</td>
<td>.648</td>
<td>.708</td>
<td>.683</td>
<td>.414</td>
<td>.408</td>
</tr>
<tr>
<td>I. (V15)</td>
<td>.299</td>
<td>.392</td>
<td>.376</td>
<td>.453</td>
<td>.378</td>
<td>.521</td>
<td>.648</td>
<td>1.000</td>
<td>.645</td>
<td>.706</td>
<td>.428</td>
<td>.422</td>
</tr>
<tr>
<td>I. (V20)</td>
<td>.327</td>
<td>.428</td>
<td>.411</td>
<td>.495</td>
<td>.413</td>
<td>.569</td>
<td>.708</td>
<td>.645</td>
<td>1.000</td>
<td>.771</td>
<td>.468</td>
<td>.461</td>
</tr>
<tr>
<td>I. (V19)</td>
<td>.315</td>
<td>.413</td>
<td>.396</td>
<td>.477</td>
<td>.398</td>
<td>.549</td>
<td>.683</td>
<td>.706</td>
<td>.771</td>
<td>1.000</td>
<td>.451</td>
<td>.444</td>
</tr>
<tr>
<td>P. (V7)</td>
<td>.273</td>
<td>.357</td>
<td>.343</td>
<td>.413</td>
<td>.344</td>
<td>.475</td>
<td>.414</td>
<td>.428</td>
<td>.468</td>
<td>.451</td>
<td>1.000</td>
<td>.432</td>
</tr>
<tr>
<td>P. (V10)</td>
<td>.268</td>
<td>.352</td>
<td>.337</td>
<td>.406</td>
<td>.339</td>
<td>.467</td>
<td>.408</td>
<td>.422</td>
<td>.461</td>
<td>.444</td>
<td>.432</td>
<td>1.000</td>
</tr>
<tr>
<td>P. (V6)</td>
<td>.293</td>
<td>.384</td>
<td>.368</td>
<td>.444</td>
<td>.370</td>
<td>.510</td>
<td>.446</td>
<td>.461</td>
<td>.503</td>
<td>.485</td>
<td>.472</td>
<td>.465</td>
</tr>
</tbody>
</table>

*E = Physical Environment Quality, O = Outcome Quality, I = Interaction Quality, P = Program Quality.

Table 10: Standardized Correlation Matrix for Structural Model 2 - Items in Higher-order Factor Model
Table 11: Covariance Matrix for the Primary Dimensions of Service Quality

<table>
<thead>
<tr>
<th>Relationship</th>
<th>Covariances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Quality ← Outcome Quality</td>
<td>.86</td>
</tr>
<tr>
<td>Program Quality ← Interaction Quality</td>
<td>.88</td>
</tr>
<tr>
<td>Program Quality ← Environment Quality</td>
<td>.56</td>
</tr>
<tr>
<td>Outcome Quality ← Interaction Quality</td>
<td>.77</td>
</tr>
<tr>
<td>Outcome Quality ← Environment Quality</td>
<td>.54</td>
</tr>
<tr>
<td>Interaction Quality ← Environment Quality</td>
<td>.57</td>
</tr>
</tbody>
</table>

Fit of Structural Models

The proposed model of service quality included a three-stage design (i.e., third-order factor model) in which the construct is comprised of not only the direct primary dimensions, but also the eleven subdimensions which define service quality through the customers’ perception of the four primary factors (Brady & Cronin, 1999; Dabholkar, et al., 1996). Therefore, the proposed hierarchical model of service quality was tested in three stages: (a) a test of the second-order factor to test subdimensions (structural model 1). (b) a test of the second-order factor to examine the relationships between service quality and four primary dimensions (structural model 2), and (c) a test of the causal relationship between service quality, satisfaction, and repurchase intention (structural model 3).

The results of the analyses supported that the fit of the three structural models was found to be “good.” The Chi-square/df ratios for all three stage structural models were lower than the suggested criterion ($\chi^2/df <3$). Specifically, the ratios of $\chi^2/df$ for structural model 1, 2, and 3 were 1.74, 2.08, and 2.53 respectively.
The RMR estimate was relatively high in all three structural models (model 1 = .140, model 2 = .121, and model 3 = .170). However, the values of the RMSEA for structural model 1, 2, and 3 were lower than or equal to the threshold of acceptable fit (RMSEA<.08) (Model 1 = .055; Model 2 = .067; Model 3 = .080). This indicates that all three structural models have acceptable fit (Browne & Cudeck, 1993).

Additional fit indices (i.e., GFI, TLI, and CFI) suggest that the proposed three separate models represents a good fit to the data. Specifically, the GFI estimate were greater or close to the recommended .90 threshold (GFI = .89 (structural model 1), .93 (structural model 2), and .85 (structural model 3)). The TLI, and CFI estimates in all three structural models were greater than the recommended .90 threshold. The CFI estimate for model 1, 2, and 3 were .96, .97, and .93 respectively. The TLI estimates for model 1, 2, and 3 were .95, .95, and .92 respectively. The results of the analysis can be found in Table 12.

The analyses for the three separate models indicate that the proposed hierarchical structure is supported in part and whole. In particular, the statistically significant evidence in the data analysis in all three levels indicates that the full model of service quality in participant sport is valid (Dabholkar, et al., 1996).
### Hypothesis Testing

The relationships between the four primary dimensions and overall service quality perception, and causal relationships between service quality, satisfaction, and repurchase intention are presented next.

#### Hypotheses testing for four primary dimensions

The analysis results of the second order factor model (structural model 2) support that there are positive and significant relationships between the four endogenous latent variables (i.e., the four primary dimensions) and exogenous overall variable (i.e., service quality) (see Table 13). Specifically, the standardized regression weights for the relationships between program quality, interaction quality, outcome quality, and physical environment quality and the higher order factor (i.e., service quality) are 0.94, 0.84, 0.88, and 0.61 respectively.

<table>
<thead>
<tr>
<th>Structural Model (N=241)</th>
<th>CMIN</th>
<th>DF</th>
<th>CMIN/DF</th>
<th>RMR</th>
<th>RMSEA</th>
<th>GFI</th>
<th>TLI</th>
<th>CFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1 Model</td>
<td>328.13</td>
<td>189</td>
<td>1.74</td>
<td>.14</td>
<td>.055</td>
<td>.89</td>
<td>.95</td>
<td>.96</td>
</tr>
<tr>
<td>Stage 2 Model</td>
<td>123.00</td>
<td>59</td>
<td>2.08</td>
<td>.12</td>
<td>.067</td>
<td>.93</td>
<td>.95</td>
<td>.97</td>
</tr>
<tr>
<td>Stage 3 Model</td>
<td>455.11</td>
<td>180</td>
<td>2.53</td>
<td>.17</td>
<td>.080</td>
<td>.85</td>
<td>.92</td>
<td>.93</td>
</tr>
</tbody>
</table>

Table 12: Structural Equation Analysis Results
Hypothesis 1 states that the program quality directly contributes to consumers’ service quality perception. Hypothesis 1 is accepted as the strong positive relationship between program quality and overall quality perception was found.

Hypothesis 2 states that perceptions of personal interactions with the service provider and other clients directly contribute to service quality perceptions. Hypothesis 2 is confirmed as the strong relationship was identified. Specifically, the critical ratio corresponding to the relationship was 9.50 (p<0.05).

Hypothesis 3 suggests that perceptions of the outcome of a service encounter directly contribute to service quality perceptions. The positive and significant relationship was identified. The critical ratio corresponding to the relationship was 9.72 (p<0.05).

Hypothesis 4 states that customers’ perceptions of the physical environment directly influence overall service quality perceptions. Hypothesis 4 is confirmed as a significant and positive relationship was identified. The critical ratio from the unstandardized regression weights was 7.67 (p<0.05).

In summary, all four hypotheses were accepted because the four primary dimensions of service quality were positively and significantly correlated with their higher order factor, service quality. The estimates and critical ratios in the standardized and unstandardized regression weights support that each of the four research hypotheses are confirmed.
Hypothesized Relationship    Parameter Estimates    S.E    C.R.
---    ---    ---    ---
Program Quality ← S.Q    .94    -    -
Interaction Quality ← S.Q    .84    .13    9.50*
Outcome Quality ← S.Q    .88    .13    9.72*
Environment Quality ← S.Q    .61    .16    7.67*

Note. a 1 is fixed at 1.0; Parameter estimates - standardized regression weight, critical ratio - unstandardized regression weight. * p<.05

Table 13: Parameter Estimates for Structural Model 2

Hypothesis testing for causal relationship

The analysis results of the full model (structural model 3) support that there are positive and significant relationships amongst and between service quality, satisfaction, and repurchase intention (see Table 14).

Hypothesis 5 suggests that the perceptions of service quality directly influence the customer's level of satisfaction. Hypothesis 5 is confirmed as the significant positive relationship between service quality and satisfaction was identified. Specifically, standardized regression estimate was 0.84 with critical ratio 8.67 (p<0.05).

Hypothesis 6 suggests that customer's level of satisfaction directly influences the customer's repurchase intention. The relationship between satisfaction and purchase intention is supported by data. Standardized parameter estimate was .32 with critical ratio 2.42 (p<0.05).

Hypothesis 7 states that the perceptions of service quality indirectly influence the customer’s repurchase intentions through the mediator variable of satisfaction.
However, the data indicates that customer's service quality perception is significantly and positively related to repurchase intention. Standardized parameter estimate was .31 with critical ratio 2.40 (p<0.05). Therefore, the proposed hypothesis is rejected. In order to further examine the causal link, a competing model was separately examined in the next section.

In summary, hypotheses 5, and 6 were accepted through the analysis of structural model 3. The confirmation of the hypotheses indicates that there are significant and positive relationships between service quality, satisfaction, and repurchase intention. The results of data analyses suggest that both service quality and satisfaction are identified as significant determinants of repurchase intention. The estimates and critical ratios in standardized and unstandardized regression weights support that research hypotheses 5 and 6 were confirmed, whereas hypothesis 7 was rejected.

<table>
<thead>
<tr>
<th>Path</th>
<th>Parameter Estimate</th>
<th>S.E.</th>
<th>C.R.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfaction ← Service Q</td>
<td>.84</td>
<td>.12</td>
<td>8.67 *</td>
</tr>
<tr>
<td>Repurchase Intention ← Satisfaction</td>
<td>.31</td>
<td>.14</td>
<td>2.40 *</td>
</tr>
<tr>
<td>Repurchase Intention ← Service Q</td>
<td>.32</td>
<td>.19</td>
<td>2.42 *</td>
</tr>
</tbody>
</table>

Note. Parameter estimates - standardized regression weight, critical ratio - unstandardized regression weight.

*p<.05

Table 14: Parameter Estimates for Structural Model 3
A Competing Model

The main focus of structural model 3 was to investigate the causal relationship between service quality, satisfaction, and repurchase intention. An alternative model was separately tested to compare the model fit and estimates of the causal links between the structural model 3 and the competing model. Currently, there are three different positions viewing the causal relationships between service quality, customer satisfaction, and repurchase intention. First, a number of scholars agreed that satisfaction is a consequence of service quality and in turn, customer satisfaction directly impacts purchase intentions (e.g., Anderson & Sullivan, 1993; Anderson & Fornell, 1994; Anderson, Fornell, & Lehmann, 1994; Cronin & Taylor, 1992; De Ruyter, Bloemer, & Peeters, 1997; Taylor & Baker, 1994). Second, satisfaction is recognized as an antecedent of perceived quality (Bitner, 1990; Bolton & Drew, 1991; Mohr & Bitner, 1995). Thus, customers’ quality perceptions directly influence their repurchase intention. Third, there is a non-recursive relationship between the two constructs (Dabholkar, 1995; McAlexander, Kaldenberg, & Koenig, 1994).

The competing model is based on the assumption that satisfaction is antecedent to service quality (see Figure 9).
The fit measures indicated that there was no significant difference between the structural model 3 and the competing model (see Table 15). First, structural model 3 had the chi-square value of 455.11 while the competing model had 454.83. Second, other goodness of fit indices showed a similar fit between the two models (RMSEA = .080; GFI = .85; TLI = .92; CFI = .93). The data suggests that neither service quality nor satisfaction is an antecedent of the other. Rather, the relationship between them is non-recursive. This was also supported by the comparison of the parameter estimates in Table 16. In both models, the indirect effect was not significantly low. Therefore, it can be concluded that the third position was supported by data. This indicates that both service quality and satisfaction deserve equal attention for the development of management strategy (McAlexander, Kaldenberg, & Koenig, 1994).
Table 15: Comparison of the Model Fits - Structural Model 3 and the Competing Model

<table>
<thead>
<tr>
<th>Path (Model)</th>
<th>Parameter Estimate</th>
<th>S.E.</th>
<th>C.R.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Path (Structural Model 3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfaction ← Service Q</td>
<td>.85</td>
<td>.12</td>
<td>8.88*</td>
</tr>
<tr>
<td>Repurchase Intention ← Satisfaction</td>
<td>.59</td>
<td>.78</td>
<td>8.50*</td>
</tr>
<tr>
<td>Repurchase Intention ← Service Q</td>
<td>(.51)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Path (Competing Model)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfaction ← Service Q</td>
<td>.86</td>
<td>.08</td>
<td>8.93*</td>
</tr>
<tr>
<td>Repurchase Intention ← Satisfaction</td>
<td>(.53)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Repurchase Intention ← Service Q</td>
<td>.61</td>
<td>.11</td>
<td>7.85*</td>
</tr>
</tbody>
</table>

Note. The values in parenthesis ( ) indicate indirect effect. Parameter estimates - standardized regression weight, critical ratio - unstandardized regression weight. * p<.05

Table 16: Parameter Estimates for Structural Model 3 and the Competing Model
CHAPTER 5

DISCUSSION

This chapter provides a discussion of the results reported in Chapter 4. The discussion is divided into four sections. First, the conceptual model of service quality developed in this study is briefly reviewed. Second, the results of the study are explained and summarized. The third section discusses the contributions of the research to the field of sport management and the participant sport industry. Finally, the limitations of the study are discussed followed by recommendations for future research.

Overview of the Conceptual Framework

The purpose of this study was to gain a better understanding of the factors, which determine consumers’ perceptions of service quality within the participant sport industry, and the causal relationships between service quality and two marketing variables (i.e., customer satisfaction and repurchase intention). Currently, there is a lack of a commonly agreed upon generic model which is applicable to all segments of the participant sport industry. The existing models and scales which measure service quality cannot be generalized to the different market segments of the participant sport industry because they focus on a specific aspect of service for a particular segment (e.g., fitness program).
To solve the problem, a multidimensional and hierarchical model was developed and tested through several structural equation analyses. The proposed conceptual framework can be characterized and differentiated from existing models in that the current model includes four generic dimensions (i.e., program quality, interaction quality, outcome quality, and physical environment quality) which can be applied to various market segments of the participant sport industry. In addition, the current model included eleven subdimensions which reflect specific aspects of a service delivery process in the participant sport industry. In this approach, multiple service quality conceptualizations were consolidated into a single generic model. Therefore, the hierarchical factor structure of the proposed model may fill the gaps which exist in the conceptualization of service quality in the participant sport industry. Also, the model allows for the analyses of service quality at several levels of abstraction. This provides a more flexible method of service quality application to various types of sport organizations than other existing models.

In addition to the generic factor model of service quality, customer satisfaction and repurchase intention were included as a part of the conceptual model. They have been recognized as equally important variables in marketing practices. The procedures of analyzing and dealing with service quality, customer satisfaction, and repurchase intention may provide an important tool for business success in the sport industry.

Discussion of the Results

The proposed model was examined through a two-stage analysis method which included both the measurement and structural model analyses. The tests of the
measurement model established the validity and reliability of the items of the SSQPS. The three structural models analyses were conducted to verify the proposed conceptual model.

The next section includes a summary and discussion of the results. More specifically, the results of the three structural model tests are discussed followed by the research hypotheses. The causal relationship between service quality, satisfaction, and repurchase intention is also discussed based upon the results of the third structural model and competing model analyses. The validity and reliability of the SSQPS are discussed based upon the results of the reliability tests and measurement model tests. Finally, the results of descriptive statistics were discussed for the future improvement of service quality within the Department of Recreational Sport in the selected university.

Structural Models

The results presented in Table 12 indicate a reasonable fit of the models and suggest that the three structural models were supported by the data. Specifically, the Chi-square/df ratios for all three stage structural models were lower than the suggested criterion ($\chi^2$/df <3) (Kline, 1998). In addition, the RMSEA for the three structural models were lower than the threshold of a reasonable fit (RMSEA<.08) (Browne & Cudeck. 1993). In addition, several fit indices (i.e., GFI, TLI, and CFI) were greater or close to the recommended .90 threshold.

In summary, the proposed model represents a good fit to the data. The analyses for the three structural models indicate that the proposed hierarchical structure is supported in part and whole. In particular, the statistically significant evidence from the
data analysis of all three levels indicates that the full model of service quality in participant sport is valid (Dabholkar, et al., 1996). Therefore, it is reasonable to say that sport consumers assess service quality based on the four primary dimensions and their eleven subdimensions.

The proposed four hypotheses suggested that there are significant and positive relationships between the four generic dimensions and service quality. The analysis of the second structural model (see Figure 7) confirmed the hypotheses and suggested that in the participant sport industry the construct of service quality consists of four generic dimensions. Specifically, the parameter estimates and critical ratios provide further evidence of the significant and positive relationships between the four generic dimensions and service quality.

The next hypotheses deal with the causal relationship between service quality, satisfaction, and repurchase intention. Although, there are differing arguments in the current literature, the analysis results of the third structural model (see Figure 8) and a competing model (see Figure 9) suggested that both service quality and satisfaction have a non-recursive association. In particular, the statistically significant and positive relationship between service quality and satisfaction suggested that quality service increases the level of the customer's satisfaction. At the same time, the satisfied customer may highly evaluate the quality of the provided services. This suggests that practitioners may wish to focus their attention on both service quality improvement in daily management and the increase of customer satisfaction. This, in return, may increase the possibility of customer membership renewal. Therefore, it is concluded that service quality and satisfaction are equally important variables for the sport consumers'
future purchase intention. Overall, the results suggested that service quality, customer satisfaction, and purchase intentions are significantly related and that they may influence the business success of sport organizations.

Reliability and Validity of the SSQPS

The researcher employed a panel of experts, and a pilot and field test to establish the reliability and validity of the initial SSQPS. From these procedures, the researcher modified the conceptual model based upon feedback received from the panel members. Next, confirmatory factor analysis and reliability tests were employed for the final purification of the SSQPS.

Table 6 suggests that the SSQPS is a reliable and valid scale. Specifically, the items in the sub-scales were found to be internally consistent. The reliability coefficients were greater than the recommended .70 throughout the scale in both the pilot test and final survey data. The values of the item-to-total correlations were significantly high for all the items in the SSQPS. Confirmatory factor analysis provided evidence of adequate construct validity. The goodness of fit indices and chi-square values indicated that the eleven subdimensions reasonably fit to their four generic dimensions. In addition, high indicator loadings provide further evidence of the convergent validity of the SSQPS. Critical ratios revealed that all loadings were statistically significant. The evidence of convergent validity was also found at the four primary dimension level. The four loadings of the generic dimensions of service quality were statistically significant. Although several subdimensions may have a low level of discriminant validity, the
The results of the descriptive statistics provide specific ideas and managerial implications for improving the department's service quality. More specifically, the leaders can evaluate their daily operation and identify specific areas to be improved in the management of the Department of Recreational Sport.

The mean scores for subdimensions of program quality were 5.44 (range of program), 4.79 (operating time), and 4.98 (information). The results suggest that the leaders of the organization need to focus their attention on the operating time and information delivery system. For example, the marketing department in the Department of Recreational Sport may be encouraged to utilize more aggressive advertisements and effective information delivery systems for the university community. This is particularly important because it may reduce the time an individual spends searching for department event and program information. In addition, the results suggest that the managers may consider reviewing the times in which the facility is available for customers and the times when the programs and classes are offered.

The mean scores for the client-employee interaction and inter-client interaction were 5.08 and 5.05 respectively. The figures indicate that the current employees display
a proper attitude toward their customers and expertise in their jobs. Also, the employees
seemed to react to the customers' questions and problems promptly. Lastly, the
customers positively evaluated the interaction with other clients and perceived that the
other participants behave in an appropriate manner.

The mean scores for the subdimensions of outcome quality were 5.49 (physical
change), 5.59 (valence), and 4.48 (sociability). This indicates that the recreational sport
services help participants to accomplish their goals and objectives of participation. The
employees also meet the customers’ needs and wants. However, the results suggest that
managers need to focus their attention on the area of sociability. They should provide
more opportunities for the participants to meet other people. For example, managers
may utilize special promotions for the current members when they participate in
programs with their friends and family members. Also, they can prepare special events
for social gatherings.

Lastly, the mean scores for the subdimensions of physical environment quality
were 3.91 (ambient condition), 4.09 (design), and 4.55 (equipment). The results indicate
that customers have relatively low quality perceptions about the physical environment of
the recreational sport facility. Leaders of the organization may need to provide a better
workout environment for the customers. Minor and major renovations of the facility
were recommended to improve the design and atmosphere of the facility.

The mean scores for the satisfaction and repurchase intention were 5.35 and 5.84
respectively. These figures indicate that the level of customer satisfaction is relatively
high among university recreational sport users. In addition, customers have behavioral intentions to use the facility and programs in future. This implies that sport participants in the university recreational sport department will repatronize.

In sum, the figures indicated that overall ratings of service quality were reasonably high. Specifically, customers have relatively high quality perceptions for subdimensions within the primary dimensions of program, interaction, and outcome. In addition, the customers are satisfied with the recreational sport services and have strong behavioral intentions to repatronize the services of the organization. The aforementioned information may provide a foundation to improve the quality of the organization.

Contributions to the Field of Sport Management and the Participant Sport Industry

In the current literature, quality improvement in the service industry is identified as a key strategy for firms to make themselves profitable in the marketplace (Babakus & Boller, 1992; Cronin & Taylor, 1992; Parasuraman, Zeithaml, & Berry, 1988). However, there is a conceptual gap among scholars in conceptualizing service quality. In addition, there is considerable discrepancy among the existing scales in terms of what to measure and how to measure service quality. This study was conducted to fill the conceptual gap which exists in the current literature and to provide a valid and reliable means for measuring service quality in the participant sport industry.

The main contribution of the study to the field of sport management and marketing can be twofold. First, the proposed conceptual model of service quality can contribute to the field of sport management by proposing an integrated model of service
quality. The proposed hierarchical model includes generic dimensions of service quality which may fill the conceptual gaps in service quality research in sport management. More specifically, the program quality, interaction quality, outcome quality, and physical environment quality dimensions are generic factors which capture the general contents of a service delivery system for the participant sport industry. Several specific aspects (e.g., range of program) in each of the generic dimensions reflect the industry specific characteristics which determine the level of service quality in sport organizations. Therefore, this framework provides a conceptual background for further analysis of service quality in other participant sport industries.

Second, the analytic procedures (i.e., confirmatory factor analysis and structural equation modeling) employed in this study provide an alternative background for scale development and model testing. More specifically, the use of confirmatory factor analysis allows the researcher to conduct service quality research based on theoretical and conceptual bases. In addition, a third order factor structure allows the researcher to identify generic dimensions and multilevels of abstraction of service quality. Another example of the usefulness of structural equation analysis can be found in the investigation of the causal link between service quality, satisfaction, and repurchase intention. Although the data did not confirm hypothesis 7, the researcher could identify the importance of service quality and satisfaction for the consumer's future behavioral intention. Overall, the scale development procedures and analytical techniques employed in this study may provide additional information for the future investigations on the topic of service quality within the participant sport industry.
There are several managerial implications for practitioners in managerial positions. First, the proposed conceptual model was developed for various organizations within the participant sport industry. The four generic dimensions of service quality in the proposed hierarchical model are common facets of service delivery systems in sport organizations. Therefore, practitioners can use the basic concepts (i.e., dimension level) in formulating their management strategies. For example, managers in a university recreational sport can evaluate the process and outcome of their recreational sport services with relatively broad criteria to meet the needs of their customers. The results of the evaluation can be used as a background for allocating the annual budget and other management resources (e.g., human resources). In addition, the specific aspects included in the subdimensions can be used for framing daily management tactics. For example, the managers can modify their daily operation to improve the service delivery process by using the specific subdimensions of the model. Overall, the model provides strategic concepts to management professionals for the performance evaluation and improvement of the daily operation of their sport organizations.

Second, the SSQPS developed in this study can provide practitioners with a reliable and valid analytical tool for the measurement of customers' quality perceptions of provided service in participant sport industry. Specifically, the scale can be used for the performance evaluation within sport organizations from the customer's viewpoint. This allows practitioners to identify the areas which need to be improved for better service from the customer's perspectives. There are several advantages of using the SSQPS. From the practical perspective, depending on the type and size of the sport organizations, different level of analyses are possible. For example, service quality can
be evaluated at three different levels: (a) the overall level using the full scale in an additive fashion (i.e., overall quality), (b) the dimension level using the items within given subdimensions in an additive fashion, and (c) the subdimension level using the full scale (Dabholkar, et al., 1996). Depending on time and budget constraints, practitioners can use different levels of analyses to determine service quality. A relatively large sport organization may use the full scale to measure customers' perceptions of the specific facets of the service delivery process. Managers in relatively small sport organizations can save time and minimize the cost of measurement by using the dimensional level of the SSQPS (i.e., program quality, interaction quality, outcome quality, and physical environment quality). The SSQPS can also be adapted to specific circumstances depending on the types of sport service (e.g., self-service programs, professional services). For example, in group or individual instruction, the customers' evaluations of employees or interactions play an important role for the customers' overall quality perception. In contrast, for the self-service programs (e.g., facility rental), the program quality and physical environment quality can be emphasized to measure customers' quality perception. Therefore, the developed measurement scale allows practitioners to apply the concept of service quality in a flexible manner.

Third, based upon the feedback from customers, practitioners can reframe their management strategies and tactics to redesign service delivery system. The efforts may increase customer satisfaction, in return, this heightens the level of quality perception. As noted in the result section, both service quality and satisfaction can increase the
customer's behavioral intention for future participation. The aforementioned series of quality improvements may provide an opportunity for sport leaders to stay competitive in a current saturated market environment.

The Limitations of the Study and Recommendations for Future Research

Several limitations of this study need to be discussed. First, if the proposed model is to be generalized to other participant sport industries (e.g., fitness services), further research is necessary from different customer groups in different types of sports (e.g., team vs. individual) and sport organizations. For this purpose, a cross-validation technique needs to be employed to further establish the validity and improve the generalizeability of the SSQPS. In particular, although the results of the analyses support the SSQPS as a valid scale, it should be noted that construct validity is not established through a single study, but rather through several additional studies (Kline, 1998). Therefore, further investigations of service quality need to be conducted using different populations within the participant sport industry.

Second, although the researcher attempted to cover all aspects of the service quality dimension for the participant sport industry, there may be some other aspects that have been omitted from the proposed conceptual framework. In addition, further research is necessary to incorporate the different aspects of sport services which emerge from new trends in the sport industry.

Finally, this study is limited to the issues of service quality, satisfaction, and repurchase intention. Although they are important variables which explain the sport consumer decision-making process, other factors (e.g., loyalty, value, price, and
profitability of sport organizations) can be explored with the above three variables. For example, the investigation of the relationship between market share and profitability of a sport organization and the quality perception of sport consumers may provide practical implications for practitioners in the participant sport industry. Additional research can help us better understand the sport consumer’s decision-making process as well as improve organizational effectiveness in the participant sport industry.
APPENDIX A

Scale of Service Quality in Participant Sport (SSQPS)

Final Survey
June 10, 2000

Dear participants:

We are conducting a study which examines service quality within the participant sport industry. Specifically, we are interested in comparing various subgroups on how they perceive university recreational sport services. For the examination of the customers' quality perceptions, a model has been developed. The model will serve as a framework for examining customers' service quality perceptions.

It would be greatly appreciated if you would simply complete the enclosed questionnaires. Your participation is entirely voluntary. You may refuse to answer any questions and may withdraw from completing the questionnaire at any time. You may be assured of complete confidentiality. The questionnaire will NOT be made available to any other university personnel.

Do NOT include your name or identification number on survey instrument. Individual responses will not be identified or reported. Any discussion of results will be based on group data. It is estimated that the questionnaire will take approximately 10-15 minutes to complete. Upon completion, return the questionnaire to the person who asked you to fill them out.

Feel free to contact either of us if you have any questions or concerns. Thank you.

Sincerely,

Yong Jae Ko
Ph.D. Candidate
Ko.30@osu.edu
(614) 688-9671

Donna L. Pastore
Associate Professor
Pastore.3@osu.edu
(614) 292-0954
Instructions:
The statements below concern your perception of the recreational sport (REC-SPORTS) department at The Ohio State University. Please note the subject of the questions, which is listed in bold print at the top of each section. Then choose the response (a number from 1 to 7) that best reflects your level of agreement with the following statements. There are no right or wrong answers. Your honesty will be deeply appreciated.

Program

The following items relate to your perception of the quality of REC-SPORTS' program. Please choose the number which best reflects your level of agreement with the following statements.

1. _____ REC-SPORT has various classes/programs.
2. _____ REC-SPORT personnel are easy to contact by email.
3. _____ REC-SPORT offers a wide range of classes/programs.
4. _____ The operating hours of REC-SPORT are convenient.
5. _____ REC-SPORT is easy to contact through a website.
6. _____ REC-SPORT offers popular classes/programs.
7. _____ Up-to-date information is available on REC-SPORT activities and events.
8. _____ The classes/programs offered by REC-SPORT are attractive to me.
9. _____ REC-SPORT is easy to contact by phone.
10. _____ Class/program times are convenient.
11. _____ Overall, information about REC-SPORT is easy to obtain.
12. _____ REC-SPORT offers classes/programs at several different times.
Interaction (Client-Employee/Inter-Client Interaction)

The following questions relate to your perception of the interactions you have had with REC SPORTS personnel. Employee refers to instructors of classes, monitors and managers of facilities, front desk personnel, event officials, and program administrators. Please choose the number which best reflects your level of agreement with the following statements.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>

1. _____ REC-SPORT's employees seem very knowledgeable about their jobs.
2. _____ REC-SPORT's other participants have a positive impact on my perception of REC-SPORT's services.
3. _____ You can count on the employees at REC-SPORT to be friendly.
4. _____ REC-SPORT employees are willing to help individuals who participate in classes/programs.
5. _____ I am generally impressed with the other patrons of REC-SPORT.
6. _____ The employees at REC-SPORT take action when problems occur.
7. _____ REC-SPORT's employees are competent.
8. _____ REC-SPORT employees handle participants' problems promptly and satisfactorily.
9. _____ REC-SPORT employees recognize and deal effectively with the special needs of each participant.
10. _____ I find that REC-SPORT's other participants consistently leave me with a good impression of its service.
11. _____ REC-SPORT participants follow rules and regulations.
Outcome

The following questions relate to your perception of the outcome of your experience at REC SPORTS. How would you rate your experience (i.e., what you received in the transaction)? Please choose the number which best reflects your level of agreement with the following statements.

1. _____ I feel that my physical ability level has increased after having used REC-SPORT's classes/programs.
2. _____ I feel good about what I get from REC-SPORT.
3. _____ When I leave REC-SPORT, I always feel that I got what I wanted.
4. _____ REC-SPORT has provided me many opportunities for social interaction.
5. _____ REC-SPORT's classes/programs helped me to improve my physical abilities.
6. _____ I feel that my physical fitness level has increased after having used REC-SPORT's classes/programs.
7. _____ I feel that my skill level has increased after participating REC-SPORT's classes/programs.
8. _____ I usually have a good feeling when I leave REC-SPORT.
9. _____ I would evaluate the outcome of REC-SPORT's classes/programs favorably.
10. _____ I feel a sense of family among REC-SPORT participants.
11. _____ The activities that I have participated in REC-SPORT have improved my skill performance.
12. _____ I made many friends through participating in REC-SPORT's classes/programs.
13. _____ I really enjoyed the social interaction in REC-SPORT's classes/programs.
Physical Environment

The following questions relate to your perception of REC-SPORT's physical surroundings. Please choose the number which best reflects your level of agreement with the following statements.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>

1. _____ REC-SPORT’s ambience (e.g., temperature, lighting, noise, & scent) is excellent.
2. _____ REC-SPORT’s facility is well designed.
3. _____ REC-SPORT’s ambience (e.g., temperature, lighting, noise, & scent) is what I’m looking for in a University recreational sport setting.
4. _____ The equipment (e.g., exercise equipment or racquets) provided by REC-SPORT is up-to-date.
5. _____ REC-SPORT’s facility layout serves my purposes/needs.
6. _____ The facility is clean and well maintained.
7. _____ I am impressed with the design of REC-SPORT’s facility.
8. _____ I am consistently impressed with the facility’s atmosphere.
9. _____ A variety of up-to-date exercise equipment is available at the school.
10. _____ The facility is aesthetically attractive.
11. _____ I really enjoy REC-SPORT’s atmosphere.
12. _____ The facility is safe and comfortable.
13. _____ The equipment provided by REC-SPORT is in good usable condition.
Satisfaction and Repurchase Intention

The following questions concern your level of satisfaction with the service received at OSU REC-SPORT. Please choose the response (a number from 1 to 7) which best reflects your level of agreement with the following satisfaction questions.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th></th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. _____ I am satisfied with my decision to use REC-SPORT services (i.e., classes/programs).
2. _____ I am happy about my decision to utilize REC-SPORT services.
3. _____ I believe I did the right thing when I decided to participate in REC-SPORT's classes/programs.
4. _____ Overall, I am satisfied with my decision to participate in REC-SPORT's classes/programs.

Repurchase Intentions

The following questions concern your intended behavior. What is the probability that you will engage in certain behaviors after experiencing REC-SPORT? Please choose the number which best reflects your level of agreement with the following statements.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th></th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. _____ I will probably visit REC-SPORT again.
2. _____ I will continue to use REC-SPORT services.
3. _____ If I had to do it again, I would participate in any of REC-SPORT's classes and/or programs.
4. _____ If someone asked me, I would say that it is likely that I'll visit REC-SPORT again.
Demographic Information

1. My gender is (1) Male (2) Female

2. My ethnic background is: (1) Caucasian/White (4) Asian-American
   (2) African-American (5) Native American
   (3) Hispanic (6) other, please specify: ______________

3. My position at OSU: (1) Faculty (2) Staff (3) Student
   (4) Other: __ Family ___ Spouse ___ Significant other ___ Friend

4. The highest level of education you have completed is: __________
   (1) Less than a high school graduate (4) A 4 year college degree
   (2) High school graduate (5) Some graduate school
   (3) Some College (6) A graduate degree

5. My annual household income is: __________
   (1) $19,999 or less (3) $40,000 - $59,000 (5) $80,000 - $99,000
   (2) $20,000 - $39,000 (4) $60,000 - $79,000 (6) $100,000 or more

6. I am: ____________ years of age.

7. How long have you been using REC-SPORT's services (i.e., classes/programs)?
   _____ Years _____ Months

8. How often do you participate in organized classes/sessions offered by REC-SPORT?
   _____ Seldom _____ 4-5 times/week
   _____ Once a week _____ Almost everyday
   _____ 2-3 times/week

9. Which activity do you most often participate in (Check all that apply).
   _____ Buck-I-Robics _____ Aquatics _____ Sport Club
   _____ Intramural Sport
   _____ Informal Recreation: _____ (a) Weight Room, (b) Track, (c) Pool
      (d) Basketball, (e) Squash, (f) Table Tennis

A. Please describe any problems that you have encountered with REC-SPORT services, and provide your suggestions for improving REC-SPORT services. (Please use back page)

***************** THANK YOU *****************
APPENDIX B

Scale of Service Quality in Participant Sport (SSQPS)

Pilot Survey
A Survey of Service Quality
- OSU Recreational Sport (REC-SPORT) -
May 16, 2000

Dear participants:

We are conducting a study which examines service quality within participant sport industry. Specifically, we are interested in comparing various subgroups on how they perceive university recreational sport services. For the examination of the customers' quality perceptions, a model has been developed. The model will serve as a framework for examining customers' service quality perceptions.

Your assistance is requested in helping to establish reliability for this study by simply completing the enclosed questionnaires. Your participation is entirely voluntary. You may refuse to answer any questions and may withdraw from completing the questionnaire at any time. You may be assured of complete confidentiality. The questionnaire will NOT be made available to other university personnel. Do NOT include your name or identification number on survey instrument. Individual responses will not be identified or reported. Any discussion of results will be based on group data. It is estimated that the questionnaire will take approximately 10-15 minutes to complete. Upon completion, return the questionnaire to the person who asked you to fill them out.

Feel free to contact either of us if you have any questions for concerns. Thank you.

Sincerely,

Yong Jae Ko  
Ph.D. Candidate  
Ko.30@osu.edu  
(614) 688-9671

Donna L. Pastore  
Associate Professor  
Pastore.3@osu.edu  
(614) 292-0954
Instructions:
The statements below concern your perception of the recreational sport (REC-SPORTS) department at The Ohio State University. Please note the subject of the questions, which is listed in bold print at the top of each section. Then choose the response (a number from 1 to 7) that best reflects your level of agreement with the following statements. If the items are not applicable, please select “NA” (Not Applicable). There are no right or wrong answers. Your honesty will be deeply appreciated.

Program Quality

The following items relate to your perception of the quality of REC SPORTS. Please choose the number which best reflects your level of agreement with the following statements.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>

1. _____ REC-SPORT has various classes/programs.
2. _____ Classes/programs of REC-SPORT are seldom canceled.
3. _____ The equipment (e.g., exercise equipment or racquets) provided by REC-SPORT is up-to-date.
4. _____ REC-SPORT personnel are easy to contact by email.
5. _____ REC-SPORT offers a wide range of classes/programs.
6. _____ The operating hours of REC-SPORT are convenient.
7. _____ REC-SPORT classes/programs always start and finish on time.
8. _____ REC-SPORT is easy to contact through a website.
9. _____ REC-SPORT offers popular classes/programs.
10. _____ Up-to-date information is available on REC-SPORT activities and events.
11. _____ The shower and locker rooms provided by REC-SPORT are clean and sanitary.
12. _____ The equipment provided by REC-SPORT is in good usable condition.
13. _____ The classes/programs offered by REC-SPORT are attractive to me.
14. _____ REC-SPORT is easy to contact by phone.
15. _____ Class/program times are convenient.
16. _____ I can register for REC-SPORT classes/programs on-line.
17. _____ REC-SPORT offers classes/programs at several different times.
Interaction Quality (Client-Employee Interaction)

The following questions relate to your perception of the interactions you have had with REC SPORTS personnel. Employee refers to instructors of classes, monitors and managers of facilities, front desk personnel, event officials, and program administrators. Please choose the number which best reflects your level of agreement with the following statements.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>

1. _____ I like the demeanor of the employees at REC-SPORT.
2. _____ REC-SPORT's employees seem very knowledgeable about their jobs.
3. _____ You can count on the employees at REC-SPORT to be friendly.
4. _____ REC-SPORT employees are willing to help individuals who participate in classes/programs.
5. _____ I appreciate the actions which REC-SPORT employees take to address my needs.
6. _____ REC-SPORT's employees respond quickly to my needs.
7. _____ The employees at REC-SPORT take action when problems occur.
8. _____ The behavior of REC-SPORT's employees indicates that they understand my needs.
9. _____ REC-SPORT's employees are willing to help me.
10. _____ REC-SPORT's employees are competent.
11. _____ REC-SPORT's employees demonstrate that they understand my needs.
12. _____ REC-SPORT's employees provide individual attention to Class/Program participants.
13. _____ REC-SPORT employees handle participants' problems promptly and satisfactorily.
14. _____ REC-SPORT employees recognize and deal effectively with the special needs of each participant.
15. _____ I can count on REC-SPORT's employees taking actions to address my needs.
16. _____ You can count on REC-SPORT employees knowing their jobs.
17. _____ REC-SPORT employees are able to answer my questions.
Outcome Quality

The following questions relate to your perception of the outcome of your experience at REC SPORTS. How would you rate your experience (i.e., what you received in the transaction)? Please choose the number which best reflects your level of agreement with the following statements.

| Strongly Disagree | | Strongly Agree |
|-------------------|------------------------|
| 1 2 3 4 5 6 7      | |                     |

1. _____ I feel that my physical ability level has increased after having used REC-SPORT's classes/programs.
2. _____ I feel good about what I get from REC-SPORT.
3. _____ When I leave REC-SPORT, I always feel that I got what I wanted.
4. _____ REC-SPORT has provided me many opportunities for social interaction.
5. _____ REC-SPORT’s classes/programs helped me to improve my physical abilities.
6. _____ I feel that my physical fitness level has increased after having used REC-SPORT’s classes/programs.
7. _____ I feel that my skill level has increased after participating REC-SPORT’s classes/programs.
8. _____ I usually have a good feeling when I leave REC-SPORT.
9. _____ I would evaluate the outcome of REC-SPORT's classes/programs favorably.
10. _____ I like REC-SPORT's classes/programs because they have helped me develop a healthy lifestyle.
11. _____ I feel a sense of family among REC-SPORT participants.
12. _____ The activities that I have participated in REC-SPORT have improved my skill performance
13. _____ I made many friends through participating in REC-SPORT’s classes/programs.
14. _____ I really enjoyed the social interaction in REC-SPORT’s classes/programs.
Physical Environment Quality

The following questions relate to your perception of REC-SPORT's physical surroundings. Please choose the number which best reflects your level of agreement with the following statements.

1. _____ REC-SPORT's ambience (e.g., temperature, lighting, noise, & scent) is excellent.
2. _____ REC-SPORT's facility is well designed.
3. _____ REC-SPORT's other participants have a positive impact on my perception of REC SPORT'S services.
4. _____ At REC-SPORT, you can rely on there being a pleasant atmosphere.
5. _____ I am generally impressed with the other patrons of REC-SPORT.
6. _____ REC-SPORT's ambience (e.g., temperature, lighting, noise, & scent) is what I'm looking for in a University recreational sport setting.
7. _____ REC-SPORT's facility layout serves my purposes.
8. _____ The facility is clean and well maintained.
9. _____ REC-SPORT's facility layout really addresses my needs.
10. _____ I am impressed with the design of REC-SPORT's facility.
11. _____ I am consistently impressed with the facility’s atmosphere.
12. _____ The facility is convenient for users.
13. _____ I find that REC-SPORT's other participants consistently leave me with a good impression of its service.
14. _____ The facility is aesthetically attractive.
15. _____ Other participants do not affect REC-SPORTS' ability to provide me with good service.
16. _____ REC-SPORT participants follow rules and regulations.
17. _____ I really enjoy REC-SPORT's atmosphere.
18. _____ The facility is safe and comfortable.
Satisfaction

The following questions concern your level of satisfaction with the service received at OSU REC-SPORT. Please choose the response (a number from 1 to 7) which best reflects your level of agreement with the following satisfaction questions.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>

1. _____ I am satisfied with my decision to use REC-SPORT services (i.e., classes/programs).
2. _____ My service encounters with REC-SPORT have been good experiences.
3. _____ I am happy about my decision to utilize REC-SPORT services.
4. _____ I believe I did the right thing when I decided to participate in REC-SPORT's classes/programs.
5. _____ Overall, I am satisfied with my decision to participate in REC-SPORT's classes/programs.

Purchase Intentions

The following questions concern your intended behavior. What is the probability that you will engage in certain behaviors after experiencing REC-SPORT? Please choose the number which best reflects your level of agreement with the following statements.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>

1. _____ I will probably visit REC-SPORT again.
2. _____ I will continue to use REC-SPORT services.
3. _____ If I had to do it again, I would participate in any of REC-SPORT's classes and/or programs.
4. _____ If someone asked me, I would say that it is likely that I'll visit REC-SPORT again.
5. _____ I would switch to another program, if there was one near my residence.
Demographic Information

1. My gender is (1) Male (2) Female

2. My ethnic background is: (1) Caucasian/White (4) Asian-American
   (2) African-American (5) Native American
   (3) Hispanic (6) other, please specify: ___________

3. My position at OSU: (1) Faculty
   (2) Staff
   (3) Student
   (4) Other: ___ Family ___ Spouse ___ Significant other ___ Friend

4. The highest level of education you have completed is:
   (1) Less than a high school graduate (4) A 4 year college degree
   (2) High school graduate (5) Some graduate school
   (3) Some College (6) A graduate degree

5. My annual household income is:
   (1) $19,999 or less (3) $40,000 - $59,000 (5) $80,000 - $99,000
   (2) $20,000 - $39,000 (4) $60,000 - $79,000 (6) $100,000 or more

6. I am: ___________ years of age.

7. How long have you been using REC-SPORT's services (i.e., classes/programs)?
   _____ Years _____ Months

8. How often do you participate in organized classes/sessions offered by REC-SPORT?
   _____ Seldom _____ 4-5 times/week
   _____ Once a week _____ Almost everyday
   _____ 2-3 times/week

9. What classes/programs are they?
   _____ Buck-I-Robics _____ Intramural Sport _____ Informal Recreation
   _____ Aquatics _____ Sport Club

A. Please describe any problems that you have encountered with REC-SPORT services, and/or classes/programs.

B. Please provide your suggestions for improving REC-SPORT services, and/or classes/programs. (Please use back page if necessary)
APPENDIX C

Panel of Experts
ADVISORY COMMITTEE

Dr. Donna Pastore
Associate Professor
Sport Management
The Ohio State University
Columbus, OH

Dr. P. Chelladurai
Professor
Sport Management
The Ohio State University
Columbus, OH

Dr. Ketra Armstrong
Assistant Professor
Sport Management
The Ohio State University
Columbus, OH

PANEL OF EXPERTS

Dr. Donna Pastore
Associate Professor
Sport Management
The Ohio State University
Columbus, OH

Dr. P. Chelladurai
Professor
Sport Management
The Ohio State University
Columbus, OH

Dr. Ketra Armstrong
Assistant Professor
Sport Management
The Ohio State University
Columbus, OH

Corrine Daprano
Sport Management Ph.D. Candidate
The Ohio State University
Columbus, OH

Hirotaka Matsuoka
Sport Management Ph.D. Candidate
The Ohio State University
Columbus, OH

Hyung Il Kwon
Sport Management Ph.D. Candidate
The Ohio State University
Columbus, OH

Rob Morris
Sport Management Doctoral student
The Ohio State University
Columbus, OH
APPENDIX D

Cover Letter, Categorization Form, and Comment Form
Provided to the Panel of Experts
May 9, 2000

Dear Dr. John N. Singer:

We are conducting a study on service quality in the participant sport. Specifically, we are interested in the development of a generic model and survey instrument to measure customers’ perceptions of service quality and their satisfaction level in various segments of participant sport including recreational sport and fitness services. A model has been posited for this study which serves as a framework for exploring service quality with a focus on generic dimensions and specific aspects of sport service. A better understanding of the quality issue in this particular industry may be of interest to managers, directors, and other personnel of recreational sport and fitness industry.

The purpose of this study are: (a) to provide a conceptual model of sport consumers’ perceived service quality, (b) to test the proposed model of service quality, (c) to identify the causal relationship between service quality and consumer satisfaction and repurchase intention, and (d) to develop a valid and reliable survey instrument to measure consumers’ perceived service quality. In the proposed model, four primary dimensions, that is, program quality, interaction quality, outcome quality, and physical environment quality are included. Each of these dimensions is defined by three corresponding subdimensions: (a) program quality – range of activity programs, operating time, and secondary services, (b) interaction quality – attitude, behavior, and expertise of service provider, (c) outcome quality – physical change, valence, and social experience, and (d) physical environment quality – ambient condition, design, and social factor. In addition, the conceptual model tests the causal relationship between service quality, customer satisfaction, and purchase intention.

Your expertise is requested in helping to establish face and content validity of the Scale of Service Quality in Participant Sport (SSQPS) which is the instrument that will be used to measure customers’ perception of service quality. Enclosed you will find a draft of the survey, a depiction of the model, a categorization and comment form. Please provide comments and suggestions regarding content, wording, format, clarity, focus, ease of use, and appropriateness of individual items as well as for the instrument as a whole. It would be greatly appreciated if they could be returned by May 15, 2000. Thank you for your assistance.

Sincerely,

Yong Jae Ko
Ph.D. Candidate
Ko.30@osu.edu
(614) 688-9671

Donna L. Pastore
Associate Professor
Pastore.3@osu.edu
(614) 292-0954
SURVEY of SERVICE QUALITY in PARTICIPANT SPORT  
(CATEGORIZATION FORM)

Please place the item number of each statement on Part I of the survey under the most appropriate category below. If it is unclear which category a certain item corresponds to, please note that at the end.

Part I. Service Quality Dimensions:

A. Program Quality - Customer’s relative perception about the excellence of the program.

1. Range of Program - The variety of classes/programs offered to participants.

2. Operating Time - Whether classes/programs start and finish on time, and whether the operating hours are convenient to customers.

3. Secondary Service - All other supplementary services which are combined with Core programs to be provided as consumer benefit package.

B. Interaction Quality (Client-Employee Interaction) - Customer’s subjective perception of how the service is delivered and reflects the consumer’s perception of the interactions, which take place during the service encounter of the program.

1. Attitude – Employees’ attitude toward customers (e.g., empathy)

2. Behavior – Employees’ behavior toward customers (e.g., problem solving)

3. Expertise – Employees’ knowledge and experiences
C. **Outcome Quality** - Outcome of the service act and represents what the consumer receives from the service

1. **Physical Change** - Increased fitness level, and performance/skill improvement.

2. **Valence** - Whether the service outcome was good or bad, regardless of their evaluation of any other aspect of the service experience.

3. **Social Interaction (Sociability)** - Gratification of being with others who enjoy the same activities (e.g., friends, family members, and other people).

D. **Physical Environment Quality** - The condition of the facility and other physical environment in which service is delivered to the customer.

1. **Ambient condition** - Background characteristics of the environment such as temperature, lighting, noise, music, and scent.

2. **Design** - Service facility’s layout or architecture including functional and aesthetic nature.

3. **Social factor (Inter-Client Interaction)** - Other members’ attitude and behavior which influence the customer’s perception of service quality.
SURVEY of SERVICE QUALITY in PARTICIPANT SPORT
(COMMENT FORM)

Please read the enclosed survey and respond to the following statements in the space provided. Feel free to also write directly on the instrument. Any suggestions for improvement will be appreciated.

1. Does the classification scheme make sense?

2. Are there any dimensions of quality in recreational sport that should be added or deleted? If so, please explain.

3. Are there other items that may fit into a particular dimension?

4. Do any of the items reflect more than one dimension? And are any of the items repetitive?

5. Is the phrasing and terminology clear and easy to understand?
6. Are the directions easy to follow?

7. Is the survey attractive and neat?

8. (a) Is the survey too long to be comfortably completed in one setting?

(b) Approximately how long would it take you to complete it?

9. Is there any important background information that may be missing?

10. Please include any other comments relevant to the improvement of this survey.
APPENDIX E

Cover Letter for Field Test
May, 2000

Dear

We are conducting a study which examines service quality within the participant sport industry. Specifically, we are interested in the development of a generic model and survey instrument to measure customers' perceptions of service quality and their satisfaction level in various segments of participant sport, which includes recreational sport and fitness services. A model has been posited for this study which serves as a framework for exploring service quality with a focus on generic dimensions and specific aspects of sport service. A better understanding of the quality issue in this particular industry may be of interest to managers, directors, and other personnel in the recreational sport and fitness industries.

The purposes of this study are: (a) to provide a conceptual model of sport consumers' perceived service quality, (b) to test the proposed model of service quality, (c) to identify the causal relationship between service quality and consumer satisfaction and repurchase intention, and (d) to develop a valid and reliable survey instrument to measure consumers' perceived service quality. In the proposed model, four primary dimensions, that is, program quality, interaction quality, outcome quality, and physical environment quality are included. Each of these dimensions is defined by three corresponding subdimensions: (a) program quality - range of activity programs, operating time, and secondary services, (b) interaction quality - attitude, behavior, and expertise of service provider, (c) outcome quality - physical change, valence, and social experience, and (d) physical environment quality - ambient condition, design, and social factor. In addition, the conceptual model tests the causal relationship between service quality, customer satisfaction, loyalty, and purchase intention.

Your assistance is requested in helping to establish face and content validity of this survey. The purpose of this exercise is NOT to fill out the survey, but rather to examine the items. Category headings have been included for your convenience; they will not appear on the final survey. Also, the items will not be grouped on the final survey; they will be randomly distributed. Please provide comments and suggestions directly on the survey regarding the content, wording, format, clarity, focus, ease of use, and the appropriateness of the individual items as well as the instrument as a whole. Please return the survey to Ko's mail box (Larkins 344) by Monday, May 22nd. Thank you.

Sincerely,

Yong Jae Ko
Ph.D. Candidate
Ko.30@osu.edu
(614) 688-9671

Donna L. Pastore
Associate Professor
Pastore.3@osu.edu
(614) 292-0954
May 16, 2000

Dear participants:

We are conducting a study which examines service quality within participant sport industry. Specifically, we are interested in comparing various subgroups on how they perceive university recreational sport services. For the examination of the customers’ quality perceptions, a model has been developed. The model will serve as a framework for examining customers’ service quality perceptions.

Your assistance is requested in helping to establish reliability for this study by simply completing the enclosed questionnaires. Your participation is entirely voluntary. You may refuse to answer any questions and may withdraw from completing the questionnaire at any time. You may be assured of complete confidentiality. The questionnaire will NOT be made available to other university personnel. Do NOT include your name or identification number on survey instrument. Individual responses will not be identified or reported. Any discussion of results will be based on group data. It is estimated that the questionnaire will take approximately 10-15 minutes to complete. Upon completion, return the questionnaire to the person who asked you to fill them out.

Feel free to contact either of us if you have any questions for concerns. Thank you.

Sincerely,

Yong Jae Ko
Ph.D. Candidate
Ko.30@osu.edu
(614) 688-9671

Donna L. Pastore
Associate Professor
Pastore.3@osu.edu
(614) 292-0954
APPENDIX G

Cover Letter for Final Sample
June 10, 2000

Dear participants:

We are conducting a study which examines service quality within the participant sport industry. Specifically, we are interested in comparing various subgroups on how they perceive university recreational sport services. For the examination of the customers’ quality perceptions, a model has been developed. The model will serve as a framework for examining customers’ service quality perceptions.

It would be greatly appreciated if you would simply complete the enclosed questionnaires. Your participation is entirely voluntary. You may refuse to answer any questions and may withdraw from completing the questionnaire at any time. You may be assured of complete confidentiality. The questionnaire will NOT be made available to any other university personnel.

Do NOT include your name or identification number on survey instrument. Individual responses will not be identified or reported. Any discussion of results will be based on group data. It is estimated that the questionnaire will take approximately 10-15 minutes to complete. Upon completion, return the questionnaire to the person who asked you to fill them out.

Feel free to contact either of us if you have any questions or concerns. Thank you.

Sincerely,

Yong Jae Ko
Ph.D. Candidate
Ko.30@osu.edu
(614) 688-9671

Donna L. Pastore
Associate Professor
Pastore.3@osu.edu
(614) 292-0954
APPENDIX H

Cover Letters for Staff and Leaders of Department of Recreational Sport
Dear Mr. Mike Dunn,

This is Yong Jae Ko, a Ph.D. Candidate of Sport Management Program at The Ohio State University. The reason that I am sending you this message is to ask you about the possibility of surveying users of the OSU recreation program. Currently, I am conducting research for my dissertation, which is titled "A Multidimensional and Hierarchical Model of Service Quality in Participant Sport." The Department of Recreational Sport at OSU is a top quality program in the United States. I believe that your support can not only help me to finish my degree, but also produce some helpful information for other university recreational sports program.

Attached is an abstract of my dissertation, acceptance letter for presentation, and the first chapter of my dissertation. I appreciate for your help in advance. If you have any questions, please call me or contact me by e-mail.

Sincerely,

Yong Jae Ko
(614) 688-9671
Ko.30@osu.edu

Enclosures
May 9, 2000

Dear staff members:

We are conducting a study which examines service quality within participant sport industry. Specifically, we are interested in the development of a generic model and survey instrument that measure customers' perceptions of service quality and their satisfaction level in various segment of participant sport including recreational sport and fitness services. The classes and programs within the Department of Recreational Sport will be used to access a sample of the study.

Your assistance with distributing and collecting questionnaires for this study is greatly appreciated. The questionnaires are boxed in bundles of 25. You may take the appropriate number that you need for your class/es. Each questionnaire is packaged in an envelope with directions and a pencil. The direction instructs the students to complete the questionnaire and then place it back into the envelope.

You simply need to hand out the envelopes to your class, allow 10-15 minutes for your students to complete the questionnaire, collect the finished forms, and return them to the office of the Department of Recreational Sport.

Feel free to contact us if you have any questions or concerns. Thank you very much for your assistance.

Sincerely,

Yong Jae Ko
Ph.D. Candidate
Ko.30@osu.edu
(614) 688-9671

Donna L. Pastore
Associate Professor
Pastore.3@osu.edu
(614) 292-0954
APPENDIX I

Data Collection Procedures –
Mall Intercept Survey Schedule
<table>
<thead>
<tr>
<th></th>
<th>Day1</th>
<th></th>
<th>Day2</th>
<th></th>
<th>Day3</th>
<th></th>
<th>Day3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10AM</td>
<td>4PM</td>
<td>10AM</td>
<td>4PM</td>
<td>10AM</td>
<td>4PM</td>
<td>10AM</td>
<td>4PM</td>
</tr>
<tr>
<td>Front Desk</td>
<td>(x) (x)</td>
<td></td>
<td>(x) (x)</td>
<td></td>
<td>(x) (x)</td>
<td></td>
<td>(x) (x)</td>
<td></td>
</tr>
<tr>
<td>Weight Room</td>
<td>(x) (x)</td>
<td></td>
<td>(x) (x)</td>
<td></td>
<td>(x) (x)</td>
<td></td>
<td>(x) (x)</td>
<td></td>
</tr>
<tr>
<td>Multipurpose Room</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gyms</td>
<td>x</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swimming Pool</td>
<td>x</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: ( ) - Recreational sport personnel assisted for data collection (e.g., front desk personnel)
APPENDIX J

Missing Data and Descriptive Statistics
<table>
<thead>
<tr>
<th>N (%)</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Missing Data (N)</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>V1</td>
<td>241</td>
<td>3.00</td>
<td>7.00</td>
<td>5.6017</td>
<td>1.0835</td>
<td>225</td>
</tr>
<tr>
<td>V2</td>
<td>232</td>
<td>1.00</td>
<td>7.00</td>
<td>4.6940</td>
<td>1.4374</td>
<td>9</td>
</tr>
<tr>
<td>V3</td>
<td>241</td>
<td>1.00</td>
<td>7.00</td>
<td>5.4523</td>
<td>1.2478</td>
<td>3.73</td>
</tr>
<tr>
<td>V4</td>
<td>241</td>
<td>1.00</td>
<td>7.00</td>
<td>4.7095</td>
<td>1.6503</td>
<td></td>
</tr>
<tr>
<td>V5</td>
<td>233</td>
<td>1.00</td>
<td>7.00</td>
<td>5.0129</td>
<td>1.5270</td>
<td>8</td>
</tr>
<tr>
<td>V6</td>
<td>241</td>
<td>1.00</td>
<td>7.00</td>
<td>5.4647</td>
<td>1.2144</td>
<td></td>
</tr>
<tr>
<td>V7</td>
<td>239</td>
<td>1.00</td>
<td>7.00</td>
<td>5.1464</td>
<td>1.3840</td>
<td>2</td>
</tr>
<tr>
<td>V8</td>
<td>240</td>
<td>1.00</td>
<td>7.00</td>
<td>5.2375</td>
<td>1.4340</td>
<td>1</td>
</tr>
<tr>
<td>V9</td>
<td>234</td>
<td>1.00</td>
<td>7.00</td>
<td>4.9060</td>
<td>1.4322</td>
<td>7</td>
</tr>
<tr>
<td>V10</td>
<td>240</td>
<td>1.00</td>
<td>7.00</td>
<td>4.7667</td>
<td>1.5265</td>
<td>1</td>
</tr>
<tr>
<td>V11</td>
<td>239</td>
<td>1.00</td>
<td>7.00</td>
<td>5.2678</td>
<td>1.3139</td>
<td>2</td>
</tr>
<tr>
<td>V12</td>
<td>239</td>
<td>1.00</td>
<td>7.00</td>
<td>4.8954</td>
<td>1.4673</td>
<td>2</td>
</tr>
<tr>
<td>Valid N</td>
<td>226</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| V13   | 241     | 1.00    | 7.00   | 5.0664        | 1.4789          |         |
| V14   | 239     | 1.00    | 7.00   | 5.0460        | 1.3133          | 2       |
| V15   | 240     | 1.00    | 7.00   | 5.1917        | 1.4336          | 1       |
| V16   | 241     | 1.00    | 7.00   | 5.2365        | 1.3716          |         |
| V17   | 239     | 1.00    | 7.00   | 4.9331        | 1.3299          | 2       |
| V18   | 235     | 1.00    | 7.00   | 4.9319        | 1.4276          | 6       |
| V19   | 241     | 1.00    | 7.00   | 5.2531        | 1.4194          |         |
| V20   | 237     | 1.00    | 7.00   | 5.0295        | 1.4333          | 4       |
| V21   | 238     | 1.00    | 7.00   | 4.9706        | 1.4154          | 3       |
| V22   | 241     | 1.00    | 7.00   | 5.0332        | 1.4020          |         |
| V23   | 241     | 1.00    | 7.00   | 5.1286        | 1.4362          |         |
| Valid N | 232     |         |        |               |                 |         |

| V24   | 239     | 1.00    | 7.00   | 5.6067        | 1.2916          | 2       |
| V25   | 241     | 1.00    | 7.00   | 5.6680        | 1.2836          |         |
| V26   | 241     | 1.00    | 7.00   | 5.3485        | 1.3459          |         |
| V27   | 235     | 1.00    | 7.00   | 4.7872        | 1.5653          | 6       |
| V28   | 240     | 1.00    | 7.00   | 5.5625        | 1.3859          | 1       |
| V29   | 240     | 1.00    | 7.00   | 5.5667        | 1.3614          | 1       |
| V30   | 239     | 1.00    | 7.00   | 5.3933        | 1.3978          | 2       |
| V31   | 241     | 1.00    | 7.00   | 5.7054        | 1.2249          |         |
| V32   | 241     | 1.00    | 7.00   | 5.6058        | 1.2509          |         |
| V33   | 237     | 1.00    | 7.00   | 4.3249        | 1.6051          | 4       |
| V34   | 239     | 2.00    | 7.00   | 5.3264        | 1.2810          | 2       |
| V35   | 237     | 1.00    | 7.00   | 4.2405        | 1.6966          | 4       |
| V36   | 237     | 1.00    | 7.00   | 4.5190        | 1.5693          | 4       |
| V37 | 241 | 1.00 | 7.00 | 3.6473 | 1.7854 |
| V38 | 241 | 1.00 | 7.00 | 3.6639 | 1.8186 |
| V39 | 240 | 1.00 | 7.00 | 3.6208 | 1.8619 | 1 .41 |
| V40 | 240 | 1.00 | 7.00 | 4.5458 | 3.0350 | 1 .41 |
| V41 | 241 | 1.00 | 7.00 | 4.5145 | 1.6686 |
| V42 | 241 | 1.00 | 7.00 | 4.4689 | 1.6956 |
| V43 | 239 | 1.00 | 7.00 | 3.8159 | 1.8853 | 2 .83 |
| V44 | 241 | 1.00 | 7.00 | 3.8382 | 1.8082 |
| V45 | 239 | 1.00 | 7.00 | 4.4268 | 1.7423 | 2 .83 |
| V46 | 241 | 1.00 | 7.00 | 3.7801 | 1.8834 |
| V47 | 239 | 1.00 | 7.00 | 4.0711 | 1.7294 | 2 .83 |
| V48 | 240 | 1.00 | 7.00 | 4.7208 | 1.6265 | 1 .41 |
| V49 | 240 | 1.00 | 7.00 | 4.7083 | 1.6838 | 1 .41 |

Valid N (listwise) 234

| V50 | 240 | 1.00 | 7.00 | 5.3917 | 1.3648 | 1 .41 |
| V51 | 240 | 1.00 | 7.00 | 5.3667 | 1.4049 | 1 .41 |
| V52 | 239 | 1.00 | 7.00 | 4.6234 | 1.8335 | 2 .83 |
| V53 | 239 | 1.00 | 7.00 | 4.7448 | 1.5495 | 2 .83 |
| V54 | 238 | 1.00 | 7.00 | 5.3109 | 1.4626 | 3 1.24 |
| V55 | 238 | 1.00 | 7.00 | 5.3109 | 1.3886 | 3 1.24 |
| V56 | 237 | 1.00 | 7.00 | 3.2110 | 2.0226 | 4 1.66 |
| V57 | 236 | 1.00 | 7.00 | 4.6441 | 1.7481 | 5 2.07 |
| V58 | 239 | 1.00 | 7.00 | 5.9665 | 1.2895 | 2 .83 |
| V59 | 239 | 1.00 | 7.00 | 6.0084 | 1.2502 | 2 .83 |
| V60 | 238 | 1.00 | 7.00 | 5.7017 | 1.2956 | 3 1.24 |
| V61 | 239 | 1.00 | 7.00 | 5.9498 | 1.2922 | 2 .83 |

Valid N (listwise) 232

226
REFERENCES


238


239


