Exploring the Factors Affecting the Perceived Program Quality of International Sports Education Programs: The Case of a Chinese Sports University

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ABSTRACT

This study explored and tested factors affecting the perceived quality of international sports education provisions in the context of a Chinese sports university. Based on a comprehensive literature review, on-site observations, interviews with students and administrators, and a test of content validity by a panel of experts, a questionnaire was developed and administered to 61 international students attending a sports university in China. An exploratory factor analysis produced five factors related to perceived program quality, with 22 items retained (i.e., leaning environment, service orientation, administrative professionalism, content assurance, and academic growth). Hierarchical regression analyses revealed that these program quality factors positively ($p < .05$) predicted student perceptions, satisfaction, and behavioral intentions toward the international program. The partial mediating role of satisfaction for the relationships between the program service quality factors and behavioral intention was supported. Discussions are focused on the practical implications for marketing practitioners.

INTRODUCTION

Higher education is increasingly seen as a commercial product to be bought and sold, much like any other commodity (Altbach, 2001). Being facilitated and governed by The General Agreement on Trade in Service (GATS) among the World Trade Organization (WTO) members, international higher education, as a type of service trade, has developed rapidly in the past two decades and become a significant educational service sector. In 2003, there were 2.117 million foreign students in the Organization for Economic Co-operation and Development (OECD) areas and other nations providing data (OECD 2005, p. 254 & 273). The reasons for globalizing higher education institutions are complex, one of which arguably being economic (Tomkovich, Al-Khatib, Baradwaj, and Jones, 1996; Yang, 2003). In nations where foreign students are an important source of generating revenue, educational institutions have a strong incentive to expand their student enrolments (Marginson and Van Der Wende, 2007). For example, the United States, with its over 671,000 international students, is currently by far the largest host country and home to more than a quarter of the world’s foreign students (The Chronicle of Higher Education, 2010). Foreign students contribute more than $12 billion to the U.S. economy each year (Altbach, 2004). Further, two-thirds of the international students
report that their personal or family funds pay for their studies (Altbach, 2004). Approximately 356,000 international students were studying in Britain in 2007. They paid nearly £2 billion (US$4 billion) in fees and contributed more than £5 billion to the nation’s wealth (University World News, 2007).

Whereas English-speaking nations, such as the United States, the United Kingdom, Australia, Canada, and New Zealand remain the largest international education destinations, hosting more than 50% of foreign students in the world (Marginson, 2006), emerging economies, such as China, India, and Malaysia have increasingly become an important provider of educational programs for many international students (Marginson, 2006; Teichler, 2004). For instance, in 2005, China hosted 141,087 foreign students; by 2009, the figure increased to 238,184. Among these, 67.84% were from other Asian countries, 15.06% from Europe, and 10.73% from North and South America (China Ministry of Education [MOE], 2010). South Korea, the United States, Japan, Vietnam, and Thailand were the top five supplying nations for China’s international education programs. The majority of international students enrolled in China’s colleges and universities are there for Chinese social, medical, and humanity programs, such as Chinese language, Chinese medicine, Chinese history, Chinese cultural studies, traditional Chinese health care techniques, and Tai Chi and Wushu (Liu, 2003). Many of these programs provided by China’s education institutions are considered niche products in the international education market. On one hand, the growth of China’s international education industry is the result of its success in economic reform; on the other hand, the augmentation echoes the trend of pluralization that naturally accompanies globalization (Marginson, 2006; Teichler, 2004). In recent years, many universities in China have entered into an international exchange program agreement with institutions of other countries. Additionally, with research universities in China developing in conjunction with business and employment opportunities for graduates in the country, China’s attractiveness as an international study destination will continue to grow (Marginson and Van Der Wende, 2007).

With the trend of internationalized higher education, sports education programs have also gradually reached a global market and have become an inseparable element of the international education industry. Chinese sports universities/colleges are pioneers that have provided professional sports preparation programs for foreign students. These programs, embedded with Chinese philosophy, history, Eastern culture, traditional rituals, and wellness techniques, can provide foreign students with both professional training and a unique cultural learning experience. Unlike sports training programs offered within the private sector, sports education programs are mainly provided by public higher education institutions that are authorized to recruit foreign students and offer degrees and other educational diplomas/certificates. In China, the sports education system, which initially learned from the former Soviet Union, enjoys a special position in the world’s sports higher education system (Riordan and Jones, 1999). No other country in the world has as many sports universities/colleges as are established in China. By 2004, there were six national institutions of sports higher education, ten provincial institutions of sport higher learning, and more than 300 sports colleges/departments affiliated with other universities (Li, 2004).

Traditional Chinese sports have long been an enrichment module in China’s higher education programs. In Beijing, almost all of the comprehensive universities offer traditional Chinese sports programs for foreign students (Zhou, 2004), and many institutions have added this element to their curriculum as a competitive advantage. Some institutions even strategically seek academic cooperation with a sport university/college located in the same community or geographic region. In 2005, 547 of 141,087 international students in China’s sports universities were actually pursuing a sports-related degree. In 2006, this number had doubled to 1,332. Popular sports education degree programs include traditional Chinese sports, athletic training, sports management, sports communication, and sports medicine (China MOE, 2006, 2007). It is expected that China’s international sports education programs will continue to attract more foreign students.
In addition to economic contributions, international students have contributed to academic improvement, promoted political exchanges, diversified campuses, and increased international cooperation (Tomkovick et al., 1996). With an understanding of the positive benefits, international education programs have received great emphasis and support from the Chinese government (China MOE, 2010). Education has been traditionally regarded as a public cause in China, and sports education programs are no exception. Unlike some Western countries, higher education in China is a particularly scarce public resource for most Chinese families when considering China has a population of more than 1.3 billion. Chinese schools do not feel pressured to compete in markets to recruit and retain domestic students. Whether or not students are satisfied with their experience is not a pressing concern for most schools. When carrying this mentality into international education programs, university administrators, faculty, and staff generally have difficulty changing their perspective and operating international education programs in accordance with the norms of a modern service industry. With the exponential growth of foreign students in China, however, the quality issues have increasingly become an important concern.

Researchers support the notion that quality is a central issue related to recruiting and retaining students, the image of the educational institution, and even the reputation of higher education of the host nation. Program quality also has a strong effect on student satisfaction and behavioral intention (Elliott and Shin, 2002; Wright and O'Neill, 2002; Zeithaml, Berry, and Parasuraman, 1996; Zhang, Smith, Lam, Brimer, and Rodriguez, 2002). Various researchers in business administration have indicated that high customer satisfaction results in an improved reputation for the organization, lower costs of attracting new customers, fewer resources devoted to handling and managing complaints, and more customer referrals (Anderson and Sullivan, 1993; Fornell and Wernerfelt, 1987; Kotler and Keller, 2006; Zeithaml et al., 1996). Likewise, program quality has emerged as a key strategic issue for higher education institutions (Harvey and Green, 1993; Hill, 1995; Rowley, 1997; Wright and O'Neill, 2002).

The issue of quality in higher education has been examined extensively from several perspectives. Educators traditionally define program quality based on academic excellence. University administrators, however, tend to view higher education as an applied field of business, where contemporary service quality theories developed by Parasuraman, Zeithaml, and Berry (1985, 1988) and other researchers (Bitner, Faranda, Hubbert, and Zeithaml, 1997; Brady and Cronin, 2001; Brady et al., 2005; Cronin and Taylor, 1992) can be applied. From this point of view, many researchers have investigated factors affecting the quality of higher education programs (Hill, 1995; Owlia and Aspinwall, 1996; Walker, 1999; Wright and O'Neill, 2002) and programs for international students (Pereda, Airey, and Bennett, 2007; Tomkovick et al., 1996; Walker, 1999). Most of the studies have been conducted primarily in such countries as the United States (Tomkovick et al., 1996), the United Kingdom (Hill, 1995; Pereda et al., 2007), and Australia (Wright and O'Neill, 2002). Several were based, however, in the context of developing countries (Abdullah, 2005, 2006). Researchers have also identified different quality factors associated with specific fields of educational programs, such as engineering (Owlia and Aspinwall, 1998), business administration (Tomkovick et al., 1996), medicine (Holdford and Reinders, 2001), and tourism and hospitality (Pereda et al., 2007). A great need exists for sports education institutions to understand how their international students assess their learning experience; however, there has been an apparent dearth of studies into quality issues associated with sports education programs.

The purpose of this study was to explore the factors affecting the perceived quality of international sports education in the context of a Chinese sports university and to assess the predictability of program quality factors to student perception, satisfaction, and behavioral intention toward the international education program. It was anticipated that findings of this study would provide university administration with information on key factors affecting the quality of delivery in international education programs. Consequently, high-quality programs can be developed to meet the needs of students from diverse cultural and educational backgrounds.
LITERATURE REVIEW

Sports Education as a Service

International sports education can be defined as an educational service from at least two perspectives. First, according to the WTO, international trade in education among WTO members has been identified as a type of service trade and is governed by the GATS, a treaty that went into force in January 1995 as a result of the Uruguay Roundtable negotiations. International education is commonly divided into four categories: primary, secondary, higher (tertiary), and adult education ("S/C/W/49", 1998). Higher education, per se, means post-secondary education at either the sub-degree or university levels, advanced theoretical and professional education, and practical/occupational education according to the International Standard Classification of Education (UNESCO, 1997). Providing sports-related education and training for the international student, therefore, logically falls within all of these three subcategories of higher education. Arguably, sports related education and training is more diverse than general academic education. Looking at the program offerings from sports universities worldwide, such as the German Sport University-Cologne, Beijing Sports University, and National Korea Sport University, the programs they provide for international students generally include sub-degree or degree studies of different levels (i.e., Associates, Bachelor's, Master's, and doctoral), theoretical advanced studies in a general sports area or certain specific area(s), sport-skill related practical education (with or without theoretical study), and athletic performance related training. From the perspective of service classification, New Zealand initiated a special negotiating proposal for sporting services to the Council for Trade in Services of the WTO in 2001 ("S/CSS/W/94", 2001), which distinguished athletic performance related training services from academic study and teaching sports and recreational activities. They proposed adding the former to the existing classification of sporting services. This study primarily considers academic education and amateur athletic training provided by a Chinese sports university.

Second, international sports education has several distinguishing characteristics: intangibility, inseparability, heterogeneity, and perishability (Kotler and Keller, 2006; Parasuraman et al., 1985; Ross, 2006). Unlike manufactured products, the educational service cannot be easily seen, felt, or touched. Meanwhile, producing and consuming the service is inseparable as consuming the service occurs simultaneously while it is delivered; thus, it is a process that requires students to actively engage. Students have to be involved in the production process in order to consume the product, and usually share the experience with domestic and other foreign students who are involved in the same production process (i.e., in-class or out-of-class experiences). Additionally, international sports education programs are heterogeneous in nature. Institutions provide differentiated programs for different cohorts of foreign students, with the quality of programs varying from place to place and perhaps even from day to day. This means that program standardization and quality control are likely a challenging issue. Due to the importance of instructor-student contact in sports education, international sports education programs are usually delivered through face-to-face classroom instructions, where great variability exists in curriculum content, instructor quality, pedagogical style, and teaching performance. Essentially, sports education programs are produced on site and become perished after the education service is delivered. Due to these special characteristics, consuming this type of educational service is usually an experience that is elusive and evaluated subjectively (Parasuraman, Zeithaml, and Berry, 1985).

Service Quality and Measurement

Managing service quality has long been a challenge for industrial professionals because it is quite difficult to understand how consumers perceive service and service quality; a comprehensive definition of service quality is notoriously difficult to produce. Many researchers consider that service quality is an attitude of overall judgment about service superiority (Abdullah, 2005) and conceptualize the concept of service quality as perceived quality.
(Rowley, 1997). Many researchers (Gronroos, 1984; Parasuraman et al., 1985) support the notion that service quality as customers perceive it stems from comparing what they feel the service providers should offer (i.e., customer expectations) with their perceptions of how the service deliverer performs. Thus, this defines service quality as: “quality = customer’s perception – customer’s expectations.” This thinking is based on the disconfirmation paradigm developed by Oliver (1980) and Churchill and Surprenant (1982). These researchers maintained that satisfaction is related to the size and direction of the disconfirmation experience, where disconfirmation is resultant of a person’s initial expectations. Based on this theory, Grönroos (1982, 1984) developed a service quality model to capture how customers perceive the quality of a given service and divided the customer’s perception of a particular service into two dimensions: (a) technical quality and (b) functional quality. Grönroos (1984) referred functional quality as the “expressive performance of a service” (p. 39).

Another influential model is the GAP model developed by Parasuraman, Zeithaml, and Berry (Parasuraman, Berry, and Zeithaml, 1990; 1985, 1988; Zeithaml and Bitner, 2003). This model identifies five gaps regarding service quality: (1) between customers’ expectations and management’s perceptions of those expectations; (2) between management’s perceptions of customers’ expectations and service quality specifications; (3) between service quality specifications and service delivery; (4) between service delivery and external communications to customers about service delivery; and (5) between customers’ expectations and perceived service. They contended that the perception gap (i.e., gap 5) is a summation of the other four gaps and further developed a multi-attribute SERVQUAL instrument to measure perceived service quality. The refined SERVQUAL was developed based on four samples and the resulted scale consists of general questions in five dimensions: (1) tangibles, (2) reliability, (3) responsiveness, (4) assurance, and (5) empathy. They claimed that the SERVQUAL is a generic instrument that can be applied across a wide spectrum of services and further acknowledged that these factors would serve as reference points to begin evaluating a service institution’s performance. Indeed, SERVQUAL has been used or adapted extensively as a tool to measure service quality in various industries including banking (Lassar, Manolis, and Winsor, 2000), medical clinic (Pakdil and Harwood, 2005), hospitality (Babakus and Mangold, 1992); and higher education (Aldridge and Rowley, 1998; Tan and Kek, 2004).

Whereas Grönroos (1982, 1984) and Parasuraman et al. (1985,1988) clearly focused on comparing performance perceptions and expectations, other researchers have argued that service quality is derived from comparing performance with ideal standards (Teas, 1993) or from perceptions of performance alone (Cronin and Taylor, 1994; Cronin and Taylor, 1992). For example, Teas (1993) contended that Parasuraman et al.’s expectation measure “lack[ed] discriminant validity with respect to the concepts of attribute importance, performance forecasts, and classic attribute ideal points” (p. 31). Cronin and Taylor (1992) were particularly critical about the expectation measure and developed their own performance-based measure, titled SERVPERF. By excluding any consideration of expectations, the SERVPERF scale is the unweighted perception components of SERVQUAL. In their empirical work in four industries, Cronin and Taylor (1992) found that the SERVPERF measure outperformed any other measure of service quality, and that it had greater predictive power to provide an accurate service quality score than SERVQUAL. They argued, therefore, that the performance-only measure best reflected a customer’s perception of service quality, and that expectations should not be part of the service quality concept. Likewise, Brown, Churchill, and Peter (1993) challenged the conceptualization of service quality as a difference score between perceptions and expectations. They, too, reported that SERVQUAL failed to achieve sound discriminant validity among its components and that the perceptions component alone was preferable. Boulding, Kalra, Staelin, and Zeithaml (1993) also rejected the value of an expectations-based SERVQUAL and concurred that service quality is meaningfully influenced by perceptions.

**Service Quality in Higher Education and Sports Industries**

Researchers in higher education and sports marketing have adopted or adapted both the
SERVQUAL and SERVPERF models to measure service quality in their specific fields. Tomkovick et al. (1996) adopted SERVQUAL to measure the quality of international education programs provided by American business schools and concluded that SERVQUAL had sound validity and reliability, and was thus applicable to the higher education industry. In contrast, using a modified SERVQUAL to measure the quality of British higher education institutions, Cuthbert (1996) indicated that empirical data did not confirm the original five dimensions due to unacceptable measurement properties. This researcher further advocated that a seminal measure specific to the higher education industry should be developed. While the debate on whether SERVQUAL is applicable to higher education still persists, some researchers have described the skirmish between SERVQUAL and SERVPERF in the general services literature. Several other scales were generated based on either weighted (i.e., performance weighted by importance) (Owlia and Aspinwall, 1996, 1998) or unweighted SERVPERF model (Abdullah, 2005, 2006; Wright and O'Neill, 2002). For example, Owlia and Aspinwall (1998) developed a framework for measuring program quality in engineering education. Through an exploratory factor analysis and regression analysis that involved a sample of 79 university students, the researchers found four factors (i.e., academic resources, faculty competence, staff attitude, and pedagogical content) predicted students’ overall perception of program service quality. Wright and O'Neill (2002), on the other hand, used a performance-only measure and identified four factors associated with university on-line library services: reliability, contact, tangibles, and response. Most studies were conducted in Western countries with the exception of Abdullah’s (2005, 2006) studies, which developed a 35-item performance-only HedPERF scale in the context of Malaysian higher education. Through conducting a factor analysis, this researcher identified six factors: non-academic aspects, academic aspects, reputation, access, program issues, and understanding. The last factor was later discarded due to poor statistical fit index.

Comparable to general higher education, program service quality studies specific to the sports and fitness industry also abound and have identified varying factors that affect program perceptions and customer satisfaction. For example, Chelladurai, Scott, and Haywood-Farmer (1987) identified professional services, consumer services, peripheral services, facilities and equipment, and secondary services to be associated with the service quality of fitness clubs. Lam, Zhang, and Jensen (2005) also advanced a model for evaluating the service quality of health-fitness clubs that included the following factors: staffing, programs, locker room, physical facilities, workout facilities, and child care. Ko and Pastore (2005) proposed a hierarchical model of service quality in the recreational sports industry that contained 11 first-order factors (i.e., range of program, operating times, information, client-employee interaction, inter-client interaction, physical change, valence, sociability, ambience, design, and equipment) that fell into four second-order factors (i.e., program quality, interaction quality, outcome quality, and physical environment quality). Nevertheless, through further review of literature on the service quality of sport programs, no study has been found that focused on service quality factors specific to international sports education, signifying the need to conduct an exploratory study. Although a plethora of studies have been conducted in the general services, higher education, and sports marketing contexts, researching findings on the essential dimensions of service quality and their predictability to criterion variables such as satisfaction and behavior intentions have been rather inconsistent and even conflicting at times. An investigation into the factors affecting the perceived program quality of international sports education programs appears necessary, particularly for Chinese sports universities that are surrounded by a boosting economy and attracting global attentions in recent years. Understanding the predictability of these identified factors would help obtain insightful information of program service quality factors in their nomological network. Furthermore, many researchers have supported the notion of industry-specific and organization-specific measures of service quality (Cronin and Taylor, 1992; Murray and Howat, 2002; Tan and Kek, 2004). It would make a practical sense that when investigating program quality factors in offering international sports education, industry-specific indicators are included in the measurement. As aforementioned, the perception paradigm (i.e., performance-only measures) has its merits and at times is considered superior to the
disconfirmation paradigm (i.e., expectations minus performance perceptions) in terms of measurement relevance, accuracy, and clarity.

Criterion Variables

The overall perception of service quality, satisfaction, and behavioral intentions are three most critical and thus most frequently examined criterion variables in previous studies (Boulding et al., 1993; Cronin, Brady, and Hult, 2000; Zeithaml et al., 1996). In terms of an overall perception, numerous researchers indicated that consumers usually have a global judgment on overall quality of the service an organization provides. Thus, evaluating consumer opinion on overall service quality can serve as a unique and independent measure to which specific perception measures on program service quality can be referred. Several researchers have adopted this general measure as a dependent variable to assess the predictive validity of consumer perceptions of specific service functions (Cronin and Taylor, 1992; Owlia and Aspinwall, 1998; Parasuraman, Berry, and Zeithaml, 1991).

Student satisfaction refers to how favorable a student’s subjective evaluations are of the various outcomes and experiences associated with his or her education (Oliver and DeSarbo, 1988). Student satisfaction in an international sports education program is shaped continually by repeated experiences with instructional activities and elements of the campus life (Elliott and Shin, 2002). Scholars generally agree that satisfaction interacts with emotional affect (e.g., attitude, loyalty, commitment) and has a consequential influence on consumer’s behavioral intention and actual behavior (Oliver, 1980, 1997). Parasuraman et al. (1985, 1988) claimed that service quality is an antecedent of customer satisfaction. For many international education providers, student satisfaction is an avenue through which they can gain a competitive advantage.

Zeithaml et al. (1996) contended that service quality has significant behavioral consequences (i.e., remain enrolled or drop out), which in turn will translate into the organization’s financial performance. Customers who remain with an organization are more likely to make repeated purchases and spread favorable word-of-mouth communication. As a result, organizations may be able to charge a higher price than their competitors. For most international sports education providers, student retention and favorable word-of-mouth are two important goals. However, directly measuring actual behaviors can be difficult at times. Based on the theory of reasoned action, Fishbein and Ajzen (1975) argued that behavioral intention can serve as a proxy of actual behavior; thus, intention to remain in the education program and intention to refer the programs to others can be useful indicators for the actual behavior.

METHOD

Instrument

Because previous studies lacked direct relevance to assessing program quality factors related to the provision of international sports education, formulating the preliminary questionnaire was accomplished through the following activities: (a) conducting a comprehensive review of literature on the studies in the contexts of higher education program quality and sports program service quality, (2) conducting on-site observations of the operations of international sports education programs by the research team for over a period of more than two academic years, (3) conducting unstructured interviews with international sports education program administrators and foreign students who were attending or had just graduated from or left the university within two years of when this study was conducted; and (4) conducting a test of content validity by a panel of experts with expertise in international sports education in China.
Little consistency of factor structure was found in the review of literature; nonetheless program quality indicators (i.e., items) identified by a number of previous studies (Abdullah, 2005; Ko and Pastore, 2005; Owlia and Aspinwall, 1998; Pereda et al., 2007) were considered most relevant to international sports education program and they were thus used as primary references for writing the items. Specifically, items related to tangible and intangible aspects of infrastructure and facilities, sufficiency and qualifications of faculty, program delivery, supportive services, interactions, and outcome were incorporated into the scale. In particular, performance items in the SERVPERF measure developed by Cronin and Taylor were taken into consideration.

Relevant and useful information was gathered through direct observations and face-to-face interviews. Through employment and/or voluntary activities in international centers of two separate universities that were responsible for administrating international sports education programs, the researchers conducted unstructured observation of program service operations on-site. Open-ended notes were taken and summarized in an essay format. Interviews with international sports program administrators and international students were based on semi-structured, open-ended questions to obtain insights and suggestions about writing program service quality items. Three program administrators and 15 international students (9 South Korean, 3 Japanese, 2 Australian, and 2 Swedish) who had recently graduated or left the university participated in the interviews. Major questions included “What do you expect to achieve by attending this program?”, “Why have you chosen this program and what are major considerations?”, “What are the most important factors influencing your overall experience in the program?”, “In what aspects can the institution improve its program service quality?”. To enhance administrative and promotional relevance of the content of the preliminary questionnaire, items considered not directly relevant to international sports education programs or not under the program administration’s volitional control were excluded, mainly including tuition, geographical location, city environment, and weather conditions.

Based on these procedures, a preliminary questionnaire consisting of 35 program service quality indicators, 1 indicator for overall program perception; 2 items for general satisfaction with the program, and 2 items for behavioral intention was developed and submitted to a panel of international students (n = 30) for a test of content validity. Panel members were asked to examine the relevance, clarity, and representativeness of each item on a 5-point Likert scale (5 = very relevant/clear/representative to 1 = not relevant/clear/representative). Using a mean score above 3.0 (i.e., neutral point on the Likert 5-point scale) as a criterion, program service quality with 25 items, overall program perception with 1 item, general satisfaction with the program with 2 items, and behavioral intention with 2 items were retained. Constructive suggestions for the retained items were also incorporated into wording modifications. The final version of questionnaire was formulated and each item was phrased into a 5-point Likert scale with anchors that were reflective of program service quality, overall program perception, general satisfaction with the program, and behavioral intention, respectively. Additionally, five demographic questions (gender, age, nationality, student status, and duration of stay in China) in a multiple choice format were included in the questionnaire. The questionnaire was completely developed in Chinese language.

Data collection took place on the campus of the sports university. The questionnaire was administered to the respondents in classroom settings, following a brief introduction on the research purpose, nature, and significance of the study to the international students. Although all respondents had a good level of proficiency in the Chinese language, interpreters proficient in Korean, Japanese, and/or English were on site to provide linguistic assistance during data collection process. Generally, it took an individual approximately 15 minutes to complete the questionnaire. All responses were anonymous and confidentiality was ensured.

Data Analyses
The statistical program SAS 9.2 was adopted in this study to conduct statistical analyses. Descriptive statistics for the demographic, program service quality, overall program perception, general satisfaction with the program, and behavioral intention variables were calculated. An exploratory factor analysis with principal component extraction and varimax rotation was conducted for the program service quality variables. Cronbach’s alpha reliability coefficients were calculated for the program service quality, overall program perception, general satisfaction with the program, and behavioral intention factors. Interrelationships among program service quality, overall program perception, general satisfaction, and behavioral intentions factors were examined. The mediating effect of general program satisfaction was examined by conducting a hierarchical regression analysis following the procedures in a SAS macro developed by Preacher and Hayes (2004).

RESULTS

Descriptive statistics for the program service quality variables are presented in Table 1. All of the mean scores were centered around 3.0, the midpoint on the Likert 5-point scale. Further examination of the distributions of these variables revealed that the skewness and kurtosis indexes for the variables were all with +2.0, indicating the normality assumption was maintained and it was appropriate to proceed with a factor analysis (Nunnally and Bernstein, 1994). Descriptive statistics for overall program perception, general satisfaction with the program, and behavioral intention items were also calculated, where the mean scores for overall program perception was 2.87 (SD = 0.90), the mean scores for the general satisfaction variables (“XXX’s program is value for money and time”; “How satisfied are you with XXX’s program?”) were 3.38 (SD = 1.00) and 2.70 (SD = 0.82), and the mean scores for the behavioral intention variables (“If you have a second chance, how likely you would consider XXX’s program as your first choice?”; “would you recommend XXX’s program to your friends?”) were 2.92 (SD = 1.10) and 3.30 (SD = 1.05).

Bartlett’s Test of Sphericity and Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy are two tests often recommended prior to conducting a factor analysis (Stewart, 1981). Findings of Bartlett’s Test of Sphericity ($\chi^2 = 1088; df = 435; p < .001$) in this study rejected the null hypothesis that the correlation matrix came from a pool of variables that are independent and indicated that the data were appropriate for a factor analysis (Bartlett, 1950; Bartlett, 1951). The overall KMO measure of sampling adequacy was .77, indicating that the sample size was adequate for a factor analysis (Kaiser and Rice, 1974). A scree plot of the eigenvalues (Cattell, 1966) from the principal components analysis and an eigenvalue equal to or greater than 1.0 (Kaiser, 1960) were used to determine the number of factors. Consequently, five factors were extracted, with a total of 69.6% variance explained.

Squared multiple correlations (SMC), which is the amount of variation in each variable explained by all other variables within data factor, was used as our initial estimate of the communality of each variable (Lattin, Carroll, and Green, 2003). The five-factor solution showed that all of the SMCs, with the exception of three items (i.e., “competent faculty” “plenty of logistics resources” and “foreign-Chinese student interaction”) were above 0.50, a critical criterion for the communality of a variable (MacCallum, Widaman, Preacher, and Hong, 2001). For example, “competent faculty” had a communality value of 0.15, indicating that 85% of the variation in this item was not explained by the factor. For the purpose of item purification, these three items were removed from further analyses. After deleting the three items, total communality estimates among the remaining 22 items were 13.09 with a mean value of 0.59, which was above the .50 threshold (MacCallum et al., 2001). Data for the remaining 22 items were subject to a factors analysis with principal component extraction and varimax rotation, which further revealed five factors, including Service Orientation (6 items), Administrative Professionalism (6 items), Content Assurance (4 items), Learning Environment (3 items), and Academic Growth (3 items). A factor loading equal to or greater than .40 without double loading (Nunnally and Bernstein, 1994) was used to further examine the relevance of items within a factors, and the findings from this examination confirmed with those derived from the communality values (Table 1). Factor scores were calculated by using the least square prediction mechanism.
### Table 1
**Descriptive Statistics and Factor Analysis Solution from Principal Component Extraction**

<table>
<thead>
<tr>
<th>Item</th>
<th>M</th>
<th>SD</th>
<th>Factor I</th>
<th>Factor II</th>
<th>Factor III</th>
<th>Factor IV</th>
<th>Factor V</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Service Orientation (α=.89)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual attention</td>
<td>3.07</td>
<td>1.08</td>
<td>.86</td>
<td>.19</td>
<td>.01</td>
<td>.06</td>
<td>.16</td>
</tr>
<tr>
<td>Willingness to help</td>
<td>3.31</td>
<td>1.15</td>
<td>.79</td>
<td>.15</td>
<td>.07</td>
<td>.01</td>
<td>.25</td>
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<tr>
<td>Timely fulfillment of promised services</td>
<td>3.08</td>
<td>1.13</td>
<td>.74</td>
<td>.25</td>
<td>.29</td>
<td>.13</td>
<td>.02</td>
</tr>
<tr>
<td>Sincere interest in students’ needs</td>
<td>2.64</td>
<td>1.06</td>
<td>.68</td>
<td>.03</td>
<td>.26</td>
<td>.32</td>
<td>.15</td>
</tr>
<tr>
<td>Timely respond to students’ request</td>
<td>2.92</td>
<td>1.04</td>
<td>.67</td>
<td>.27</td>
<td>.30</td>
<td>.15</td>
<td>.11</td>
</tr>
<tr>
<td>Unbiased attitude towards foreign students</td>
<td>3.32</td>
<td>1.25</td>
<td>.61</td>
<td>.37</td>
<td>.14</td>
<td>.25</td>
<td>.02</td>
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<tr>
<td><strong>Administrative Professionalism (α=.88)</strong></td>
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<td>Professional admission procedures</td>
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<td>.15</td>
<td>.70</td>
<td>.14</td>
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<tr>
<td>Articulated and reasonable regulatory rules</td>
<td>2.90</td>
<td>0.77</td>
<td>.21</td>
<td>.68</td>
<td>.20</td>
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<tr>
<td>Sensitive handling of foreign students affairs</td>
<td>2.82</td>
<td>1.06</td>
<td>.28</td>
<td>.64</td>
<td>.19</td>
<td>.30</td>
<td>.12</td>
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<td>Neat and clean appearance</td>
<td>2.57</td>
<td>1.27</td>
<td>.34</td>
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<td>.20</td>
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<td>1.09</td>
<td>.25</td>
<td>.53</td>
<td>.34</td>
<td>.44</td>
<td>.12</td>
</tr>
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<td>Adequate orientation activities for foreign students</td>
<td>2.66</td>
<td>1.03</td>
<td>.31</td>
<td>.50</td>
<td>.31</td>
<td>.08</td>
<td>.20</td>
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<tr>
<td><strong>Content Assurance (α=.76)</strong></td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Sufficiency of program instructors</td>
<td>3.10</td>
<td>0.83</td>
<td>.03</td>
<td>.22</td>
<td>.72</td>
<td>.11</td>
<td>.01</td>
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<td>Ease of access to program facilities</td>
<td>2.69</td>
<td>1.09</td>
<td>.24</td>
<td>.23</td>
<td>.65</td>
<td>.16</td>
<td>.26</td>
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<tr>
<td>Consistent and sequential program arrangement</td>
<td>2.70</td>
<td>.90</td>
<td>.28</td>
<td>.21</td>
<td>.54</td>
<td>.04</td>
<td>.03</td>
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<tr>
<td>Relevance of program content to students’ goals</td>
<td>2.90</td>
<td>1.06</td>
<td>.37</td>
<td>.14</td>
<td>.47</td>
<td>.11</td>
<td>.24</td>
</tr>
<tr>
<td><strong>Learning Environment (α=.65)</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Institution/program reputation</td>
<td>2.98</td>
<td>0.88</td>
<td>.02</td>
<td>.17</td>
<td>.13</td>
<td>.77</td>
<td>.11</td>
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<tr>
<td>Appealing campus environment</td>
<td>3.00</td>
<td>1.00</td>
<td>.33</td>
<td>.03</td>
<td>.22</td>
<td>.58</td>
<td>.10</td>
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<tr>
<td>Friendliness to foreign students</td>
<td>3.48</td>
<td>1.03</td>
<td>.03</td>
<td>.26</td>
<td>.02</td>
<td>.56</td>
<td>.16</td>
</tr>
<tr>
<td><strong>Academic Growth (α=.68)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Progress in sports-related studies</td>
<td>2.85</td>
<td>0.83</td>
<td>.16</td>
<td>.17</td>
<td>.09</td>
<td>.21</td>
<td>.70</td>
</tr>
<tr>
<td>Progress in Chinese language/culture learning</td>
<td>3.02</td>
<td>0.96</td>
<td>.07</td>
<td>.13</td>
<td>.00</td>
<td>.13</td>
<td>.69</td>
</tr>
<tr>
<td>Progress in sports skills</td>
<td>3.08</td>
<td>0.90</td>
<td>.02</td>
<td>.13</td>
<td>.41</td>
<td>.14</td>
<td>.56</td>
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</table>

Cronbach’s (1951) alpha coefficients were calculated for the five program service factors: Service Orientation, Administrative Professionalism, Content Assurance, Learning Environment, and Academic Growth, and the coefficients were .89, .88, .76, .65, and .68, respectively for the factors. Two factors had a coefficient that was slightly lower than .70 standard (Nunnally and Bernstein, 1994), in part due to a small number of items that were retained within these two factors. Considering that the level of deviation was not substantial, a decision was made to retain these two factors.
factors in further analyses. This decision also took into consideration the indication made by (Hair, Anderson, Black, and Tatham, 2009, p. 125) that an alpha coefficient equal to or greater than .50 would be 'merely adequate for an exploratory research'. Cronbach’s alpha coefficients were also calculated for the general satisfaction and behavioral intention constructs, which were 0.74 and 0.86, respectively.

Findings of regression analyses on the relationships of the program service quality factors to general program perception, overall program satisfaction, and behavioral intention constructs are presented in Table 2. Four program quality factors (Service Orientation, Administrative Professionalism, Content Assurance, and Learning Environment) were found to be significantly \( (p < .05) \) predictive of the general program perception, with a total of 43.5% variance explained. Four program quality factors (Service Orientation, Administrative Professionalism, Content Assurance, Academic Growth) were significantly \( (p < .05) \) predictive of the overall level of program satisfaction, with a total of 43.1% variance explained. All five service quality factors, including Academic Growth, were significantly \( (p < .05) \) predictive of behavioral intentions, with a total of 58.9% variance explained.

### Table 2
Results of Multiple Regression Analyses Examining the Relationships between Quality Factors and Criterion Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>( B )</th>
<th>( SE_{B} )</th>
<th>( t )</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Criterion Variable – Overall Perception</strong> ( (R^2 = 0.435, R^2_{adj} = 0.383, F_{5,55} = 8.46, p &lt; 0.01) )</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Service Orientation</td>
<td>0.38</td>
<td>0.10</td>
<td>3.94</td>
<td>0.000</td>
</tr>
<tr>
<td>Administrative Professionalism</td>
<td>0.29</td>
<td>0.10</td>
<td>2.87</td>
<td>0.000</td>
</tr>
<tr>
<td>Content Assurance</td>
<td>0.18</td>
<td>0.10</td>
<td>1.79</td>
<td>0.003</td>
</tr>
<tr>
<td>Learning Environment</td>
<td>0.33</td>
<td>0.10</td>
<td>3.24</td>
<td>0.001</td>
</tr>
<tr>
<td>Academic Growth</td>
<td>0.07</td>
<td>0.10</td>
<td>0.73</td>
<td>0.236</td>
</tr>
<tr>
<td><strong>Criterion Variable – Satisfaction</strong> ( (R^2 = 0.431, R^2_{adj} = 0.379, F_{5,55} = 8.32, p &lt; 0.01) )</td>
<td></td>
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<td></td>
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<tr>
<td>Service Orientation</td>
<td>0.58</td>
<td>0.17</td>
<td>3.37</td>
<td>0.000</td>
</tr>
<tr>
<td>Administrative Professionalism</td>
<td>0.56</td>
<td>0.18</td>
<td>3.08</td>
<td>0.002</td>
</tr>
<tr>
<td>Content Assurance</td>
<td>0.53</td>
<td>0.18</td>
<td>2.88</td>
<td>0.003</td>
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<tr>
<td>Learning Environment</td>
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<td>0.18</td>
<td>1.45</td>
<td>0.076</td>
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<td>Academic Growth</td>
<td>0.43</td>
<td>0.19</td>
<td>2.33</td>
<td>0.012</td>
</tr>
<tr>
<td><strong>Criterion Variable – Behavioral Intention</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Model 1:</strong> ( (R^2 = 0.589, R^2_{adj} = 0.552, F_{5,55} = 15.76, p &lt; 0.01) )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service Orientation</td>
<td>1.08</td>
<td>0.18</td>
<td>5.90</td>
<td>0.000</td>
</tr>
<tr>
<td>Administrative Professionalism</td>
<td>0.37</td>
<td>0.19</td>
<td>1.96</td>
<td>0.028</td>
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<tr>
<td>Content Assurance</td>
<td>0.81</td>
<td>0.19</td>
<td>4.18</td>
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<td>Learning Environment</td>
<td>0.48</td>
<td>0.19</td>
<td>2.50</td>
<td>0.008</td>
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<tr>
<td>Academic Growth</td>
<td>0.58</td>
<td>0.20</td>
<td>2.98</td>
<td>0.002</td>
</tr>
<tr>
<td><strong>Model 2:</strong> ( (R^2 = 0.677, R^2_{adj} = 0.641, F_{6,54} = 18.86, p &lt; 0.01; \Delta R^2 = 0.088, \Delta F = 14.71, p &lt; 0.01) )</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Service Orientation</td>
<td>0.79</td>
<td>0.18</td>
<td>4.42</td>
<td>0.000</td>
</tr>
<tr>
<td>Administrative Professionalism</td>
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<td>0.19</td>
<td>0.55</td>
<td>0.292</td>
</tr>
<tr>
<td>Content Assurance</td>
<td>0.55</td>
<td>0.19</td>
<td>2.97</td>
<td>0.002</td>
</tr>
<tr>
<td>Learning Environment</td>
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<td>0.17</td>
<td>2.00</td>
<td>0.025</td>
</tr>
<tr>
<td>Academic Growth</td>
<td>0.37</td>
<td>0.18</td>
<td>2.03</td>
<td>0.024</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>0.49</td>
<td>0.13</td>
<td>3.84</td>
<td>0.000</td>
</tr>
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</table>
The potential mediating effect of overall program satisfaction on the relationships between the program service quality factors and behavioral intention was examined. To claim a mediating effect, four conditions are usually required: (a) a significant relationship exists between the independent variable and the mediator; (b) a significant relationship exists between the mediator and the criterion variable; (c) a significant relationship exists between the independent variable and the criterion variable; and (d) when the mediator and independent variable are used simultaneously to predict the dependent variable, the previously significant path between the independent variable and the dependent variable will be reduced to become a weaker path. However, methodologists have argued that the method described by Baron and Kenny (1986) suffers from low statistical power in most situations (MacKinnon, Lockwood, Hoffman, West, and Sheets, 2002). Preacher and Hayes (2004, p. 719) proposed a more powerful strategy for testing mediation that requires that the total effect (c) to be mediated should be significant, and that the indirect effect (total effect - direct effect, or c'c) be statistically significant in the direction predicted by the mediation hypothesis. Simultaneously, the program service quality factors and the overall program satisfaction construct explained 67.7% of variance in behavioral intention, with 8.8% of the variance uniquely associated with overall program satisfaction (see Table 2, Model 2). By adding overall program satisfaction to the prediction model, however, all five path coefficients between the program service quality factors and behavioral intention were reduced. This indicated that overall program satisfaction partially mediated the relationship between the program service quality factors and the behavioral intention construct. In particular, the path between Administrative Professionalism and the behavioral intention construct became statistically nonsignificant (p > .05). To further examine the mediating effect of overall program satisfaction on each of the program service quality factors, tests on each factor were executed following the hierarchical regression analytical procedures outlined by Preacher and Hayes (2008). The overall mediating effects of the overall program satisfaction are illustrated in Table 3 and further depicted in Figure 1. All five mediating paths were found to be statistically significant (p < .05) using planned directional test.
DISCUSSION

This study explored factors affecting the perceived program service quality of international sports education programs provided by a major Chinese sports university and also examined the interrelationship of program service quality to general program perception, overall program satisfaction, and behavioral intention. Consistent with the literature,
findings of this study supported the notion that program service quality is a multidimensional construct. Based on a literature review, observations, and interviews, a preliminary scale was developed to measure program service quality factors associated with international sports education programs. An empirical study was carried out to assess the measurement properties of program service quality factors and their predictability to general program perception, overall program satisfaction, and behavior intention. A scale measuring program service quality was derived with 22 items under five factors: Learning Environment, Service Orientation, Administrative Professionalism, Content Assurance, and Academic Growth.

With respect to the relationship between program service quality factors and criterion variables, findings of this study indicated that overall program perception, satisfaction, and behavioral intention can be predicted by the program quality factors. The five program quality factors collectively explained about 40% variance of overall program perception and satisfaction, and 60% variance of behavioral intention. These findings were consistent with those of Cronin and Taylor’s study (1992) in the following ways: (1) program quality is an antecedent of consumer satisfaction; (2) consumer satisfaction has a significant effect on behavioral intentions; and (3) program quality has less effect on behavioral intentions than does consumer satisfaction. The total variance explained by the program quality factors in this study was similar or even higher than previous studies. For example, in the context of retail store service quality, Dabholkar et al. (1996) found that service quality factors explained a total of 42.2% of variance in the intention to shop and 49% of variance in the intention to recommend to others. Yosuke, Bennett, and Zhang (2007) found that 54.3% of variance in consumer satisfaction with an action sporting event was associated with service quality factors.

In brief, the five-factor solution provides a parsimonious understanding of service quality associated with international sports education programs. The structural relations between program quality factors, satisfaction and behavior intentions conform to existing body of literature in service marketing.

**IMPLICATIONS FOR MARKETING PRACTITIONERS**

Today, the world has become “smaller” as communications and travel allow people to move about the world more quickly and freely. The growing impact of global climate is inescapable for most institutions and individuals. It is a universal trend, but also nuanced according to world region, traditions, language, and cultures (Marginson and Van Der Wende, 2007). Sports, which are laden with cultural values and symbolic meanings (Chalip, 1992; Thomas and Dyall, 1999), are one of a few cultural vehicles that have implicated global connectivity. Higher education institutions can no longer downplay the significance of international sports education programs with today’s increasing cross-border flows. Sports education institutions, particular those in the emerging economies, have an opportunity and space to pilot their own global engagement by providing their unique cultural-specific products to the world. However, institutions in these nations need to overcome many constraints, in order to survive and thrive in the international education marketplace. One of the most intimidating issues is program service quality. Quality, an important factor in every industry, plays a predominant role in determining consumer satisfaction and future behavioral intention, which will ultimately translate to retaining consumers (Zeithaml et al., 1996). Education institutions in emerging economies such as China have faced various difficulties in initiating and sustaining international education programs (Wang, Lo, and Hui, 2003).

The findings of this study suggest several implications for future improvement in international sport education program management and marketing practice. Given that uncontrollable factors are by nature unmanageable, the focus of this study was to identify the impact of the manageable quality areas that are critical to the satisfaction and retention of consumers (i.e., international students).
Significant predictability of the program quality factors indicate high relevance of these factors to the operation of international sports education programs; thus, program administrators and instructors need to pay special attention to ensure high quality delivery of these functional areas of the program.

The Learning Environment factor refers to the tangible and intangible aspects of an institution through which a sports education program is delivered to its international customers. This factor reflects the omnibus variables associated with the place and location that consuming the education service takes place. It reflects the “tangibles” dimension of SERVQUAL (Parasuraman et al., 1985, 1988) or the “physical aspects” dimension of the Retail Service Quality Scale (Dabholkar, Thorpe, and Rentz, 1996). It also contains the intangible aspects that considered as extensions of the tangibles such as reputation, campus culture, and international exposure. With respect to international sports education, institution reputation, physical environment, and friendliness of domestic students were key indicators of this factor. In this study, Learning Environment was found to be related to students’ overall perception of program service quality and behavioral intention, confirming the relevance and importance of this factor. Nevertheless, the Learning Environment factor was not found to be predictive of overall student satisfaction toward the program, which may be due to the fact that a number of Learning Environment variables were predetermined and primarily influential to a student prior to being admitted into the program. Usually, the Learning Environment is known to students in advance either by a direct campus visit or by indirect information from various information sources (e.g., printed brochures, news reports, the Internet, and word of mouth). After a student has made a decision to attend the program, the impact of Learning Environment might not be predictive of on their satisfaction level may drop, even to a nonsignificant level.

The Administrative Professionalism factor contains unique regulatory, procedural, and operational aspects of international education program. Items clustered in this factor are basic elements of any international education program. In essence, they represent the professionalism with which an institution carries out an international education program. Considering the fact that a majority of institution employees had never been immersed in other cultures, they understood neither the sensitivity of cultural, political, or ethnical issues, nor how a student was treated in other systems of higher education. As a result, foreign students often demand or require administrative practices such as sensitive handling of foreign students’ affairs, well-articulated and reasonable regulations, and adequate orientation activities. Administrative professionalism was found to be predictive of overall perception, satisfaction, and behavioral intention. There was evidence indicating, although not statistically significant, that the impact of administrative professionalism on behavioral intention was partially mediated by satisfaction.

The Service Orientation factor refers to the manner through which a sports education program is delivered to its international customers. It is represented by those essential quality attributes associated with service personnel (i.e., administrators, staff, and instructors) who are responsible for the service encounters. It is similar to the “attitude” dimension defined in Owlia and Aspinwall’s (1998) framework of quality in engineering education and “contact” dimension in Wright and O’Neill’s (2002) framework measuring the quality of on-line library service. In fact, this factor reflects a combination of the “reliability,” “responsiveness,” and “empathy” dimensions from the original SERVQUAL instrument (Parasuraman et al., 1985, 1988). In this study, these items were well loaded on a single factor with loading coefficients ranging from 0.67 to 0.79. Actually, it was not uncommon to find items under several SERVQUAL factors to be loaded on one factor. For example, Wright and O’Neill (2002) found that the first principal component of their model was a combination of “reliability,” “assurance,” and “empathy.” Cronin and Taylor (1992) reported that by conducting factor analyses of both the SERVQUAL and SERVPERF scales, 21 of 22 items loaded on a single factor. Service orientation also contains another indicator, “unbiased attitude toward foreign students with different backgrounds,” which is believed to be uniquely related to international
education. Service orientation was found to be consistently the most critical service quality factor influencing consumers’ overall perception, satisfaction, and behavioral intention.

Complementing Service Orientation, Content Assurance was another factor identified in this study. It represents the bottom line conditions of ensuring an international education program to be carried out smoothly. With respect to sports education, the sufficiency of program instructors, ease of access to program facilities, sequential program arrangements, and relevance of program content were found to be four principal elements. This is consistent with previous studies in the sports marketing literature that found sufficient instruction, access to facilities, and program arrangement were necessary for attracting and retaining customers to fitness club or sports programs (Kim, Zhang, and Ko, 2009). Although content assurance had the smallest magnitude of the regression coefficients among the four factors that significantly contributed to overall program perception, it was the second and third most important factor determining student’s behavioral intention and satisfaction, respectively.

Students have spent time and money to travel to another country for certain goals. The fifth factor, Academic Growth, represents the perceived outcome quality of participating in an international sports education program. Previous research studies in education and sports marketing supported the notion that sports education programs often provide participants with certain personal benefits and cultural learning opportunities (Chua, 2004; Clewes, 2003; Kim et al., 2009). These benefits were often conceptualized as indicators of an underlying aspect of service quality (e.g., Chua, 2004; Ko and Pastore, 2005). Regarding the international sports education programs under question, sports-related studies, Chinese language and cultural learning, and sports skills were identified as the three areas in which a perceived process was deemed most valuable. Although it was not found to predict overall program perception, academic growth was an important predictor of a student’s satisfaction and behavioral intention. The insignificant association between overall program perception and academic growth might attribute to the fact that academic growth was not a salient service quality aspect in students’ minds.

In particular, it appears that international students were sensitive to issues related to service orientation, administrative professionalism, and content assurance, which are essentially reflective of the processes in program delivery, responsibility, and accountability. Conducting periodical and adequate staff training, selecting and developing capable instructors, developing a code of professional conduct and ensuring compliance, and frequent monitoring program operations are key to the success of the program. Students are apparently smart consumers of international education programs and they pay attention to details, and they are also keen on the core attributes of the educational program, namely the content. Assuring the quality of instructional quality is a must to satisfy the needs, desires, and purpose of students attending a sports education program in a Chinese university.

The scale derived in this study can be used by the sports universities to monitor program service delivery it provides for current and future foreign students. The indicator variables and factor structure can be used to assess program quality, where each of the five program quality factors can be judged by calculating the magnitude of the averaged item scores within the factor. For example, the quality item means found in this study ranged only from 2.46 to 3.48 on the 5-point scale, indicating the institution needed significant improvement in almost all key quality areas. The scale will be more diagnostic when it is used in conjunction with the interviews or open-ended questions. It has been argued that indicators that define service quality may be heterogeneous across different industries (Cronin and Taylor, 1992) and organizations (Parasuraman et al., 1988). Managers and researchers must therefore consider individual factors when measuring the quality of services in different contexts. Marketing and managerial strategies will be more effective when all of the program quality factors and their indicators are considered.
Limitation and Future Research

Several limitations are recognized this study. The first limitation might be omitting possible important items. Although the development of the scale underwent relatively rigorous validation procedures (i.e., a comprehensive literature review, on-site observation, interviews, and statistical analyses), important indicator variables might not have been included in the original pool of items due to the small and homogeneous sample involved in this study. For example, the “competency of instructors” item, one of the most important indicators of program quality rated by the expert panel, was eliminated during the factor analytical process due to its low communality coefficient. A potential reason related to the problem of low communality might be that “competency of instructors” was the only item capturing the underlying faculty competency factor. Without at least one other item designed to measure the same common factor, it is uncertain of true importance of this factor in the analysis (cf., Lattin et al., 2003). In addition, the relatively low reliability coefficients of Learning Environment and Academic Growth might be because both factors had only three items that might not have fully captured the full range of these two program quality dimensions. Future studies should further examine additional important indicators germane to these two factors.

Although the five service quality factors were found predictive of the criterion variables in a nomological network relating to program quality, satisfaction, and behavioral intention, an exploratory factor analysis essentially was empirical data driven and the results might be of a strong robust level. A confirmatory study is suggested for future investigators. Additionally, a factor analysis usually requires a large sample size to ensure the stability of a factor solution. A rule of thumb for minimum sample size is that the subjects-to-variables ratio should be no lower than five (Arrindell and Van der Ende, 1985). Kline (1979) and Gorsuch (1983) recommended the minimum sample size be at least 100 even if the number of variables is less than 20. Following such of these suggestions, the current study should have at least 100 responses to the 20-item scale. Although the KMO value (i.e., .77) was acceptable, future studies should considering increasing the sample size, particularly when it is a confirmatory investigation. Finally, this study was conducted in a Chinese sports university with the majority of foreign students coming from South Korea. Those background factors specific to this host university and this cohort of students might interact with independent variables in this study and could certainly limit the generalizability of the findings beyond the setting of this study. Hence, future studies involving many universities/colleges in a country and even involving multiple countries are suggested in order to obtain generalized findings and enhance the formulation of theories and practice guidelines.

REFERENCES


**ABOUT THE AUTHOR**

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