
Mediated relationships between the constituents of service quality and behavioural intentions: a study of women's college basketball fans

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Abstract: Although service quality research has been widely conducted in sport and leisure settings, there has been relatively little research examining consumers' perceptions of service quality in collegiate sporting events, particularly women's sports. In addition, much scrutiny has been given to the servicescape and its effect on consumer satisfaction, but relatively little attention has been given to other constituents of service quality in the context of spectator sports. Therefore, the purpose of this study was to examine the effects of service attributes on perceived service quality, and to explore how consumer satisfaction in women's college basketball mediates the relationship between consumers' perceived service quality and their behavioural intentions to attend future games. The results provide important information about service evaluation in sport settings which can be considered by sport marketers when developing their overall strategy to deliver higher service quality to achieve a competitive advantage in the marketplace.

Keywords: women's college basketball; service attributes; perceived service quality; satisfaction; behavioural intentions.

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1 Introduction

The marketing of college sports (typically categorised as providers of hedonic services: Jiang and Wang, 2006) has grown tremendously as the number of spectators attending college sporting events continues to increase (Hightower et al., 2002). With this growth comes a need to understand the role of service quality in the formation of customer satisfaction, and ultimately, repatronage intentions. Over the past few decades, academic researchers and service marketers have focused on consumers' perceptions of service quality (e.g. Grönroos, 1982; Kang and James, 2004; Parasuraman et al., 1985, 1988; Rust and Oliver, 1994; Zeithaml et al., 1996), its measurement dimensions (e.g. Carman, 1990; Cronin and Taylor, 1992; Hamer, 2003; Parasuraman et al., 1985, 1988), and its relationship to satisfaction (e.g. Cadotte et al., 1987; Churchill and Surprenant, 1982; Fornell, 1992; Oliver, 1993, 1997; Rust and Oliver, 1994) in order to achieve a competitive advantage by providing what consumers need in an effective and efficient manner. The early research in service quality literature has focused on empirical testing of the SERVQUAL measurement (Parasuraman et al., 1985, 1988) and its conceptualisation (Carman, 1990; Cronin and Taylor, 1992). Subsequently, criticism of SERVQUAL has led to additional dimensions of service quality such as technical and environmental attributes in order to fully address service encounter outcomes (Grönroos, 1982; Lehtinen and Lehtinen, 1982; Rust and Oliver, 1994).

Research has shown that perceived service quality can be influenced by technical (Grönroos, 1982; Lehtinen and Lehtinen, 1982), functional (Grönroos, 1982; Lehtinen and Lehtinen, 1982) and environmental (Bitner, 1992) attributes. These attributes of service quality deal with the service outcome, consumer-employee interaction and the service environment, respectively (Brady and Cronin, 2001). Since the outcomes of service quality include satisfaction (Cronin and Taylor, 1992; Kang and James, 2004; Lentell, 2000; Parasuraman et al., 1985, 1988; Reidenbach and Sandifer-Smallwood, 1990; Woodside et al., 1989) and behavioural intentions such as consumer loyalty, word of mouth and repatronising a product or service (Anderson and Fornell, 1994;

Bitner, 1990; Sivadas and Baker-Prewitt, 2000), its role in overall service delivery should not be underestimated.

While service quality research has been widely conducted in sport and leisure settings such as fitness centres or recreation facilities (Howat et al., 1996; Kim and Kim, 1995; Papadimitriou and Karteroliotis, 2000), there has been relatively little research examining consumers' perceptions of service quality in relation to satisfaction and behavioural intentions in collegiate sporting events (specifically women's sports) (McDonald et al., 1995; Theodorakis and Kambitsis, 1998; Theodorakis et al., 2001). In particular, holistic research examining all three dimensions of service quality (technical, functional and environmental attributes) in spectator sport settings is lacking. Furthermore, studies examining service quality in spectator sport settings have focused entirely on competitions involving male athletes. The recent research has uncovered motivational differences between spectators of men's and women's sports (Funk et al., 2003; James and Ross, 2004), perhaps research investigating other spectator attitudes such as service quality perceptions is warranted. Therefore, this study sought to address these two gaps in the literature. Specifically, this study extends the body of knowledge by applying three dimensions of service quality (technical, functional and environmental attributes) and testing the causal relationship between perceived service quality and satisfaction (and, subsequently, behavioural intentions) in the context of women's college basketball.

2 The constituents of service quality

In the service quality literature, there have been multiple dimensions of service quality suggested because a consumer's perception of service quality is a complex process (Brady and Cronin, 2001). The SERVQUAL model by Parasuraman et al. (1988) has been widely adopted for explaining consumers' perceptions of service quality. The conceptualisation of the SERVQUAL model is based on the perception gap between the received service quality and the expected service quality. Parasuraman et al. (1985) originally suggested 10 determinants of service quality: reliability, responsiveness, competence, access, courtesy, communication, credibility, security, understanding the consumers and tangibles. They later reduced those ten determinants into five constituents of service quality: reliability, responsiveness, empathy, assurances and tangibles.

Whereas, there has been a general agreement that the aforementioned constructs are important aspects of service quality, many researchers have also criticised the limitations of SERVQUAL regarding its conceptualisation and measurement scales (Babakus and Boller, 1992; Babakus and Mangold, 1992; Carman, 1990; Cronin and Taylor, 1992). For instance, Cronin and Taylor (1992) raised an issue in relation to service quality conceptualisation of SERVQUAL as a gap between consumers' expectations and perceptions. They argued that considering the expectations-performance gap as the basis for service quality is inadequate because much of empirical research supported performance-based measures of service quality (in comparison to the measures based on a disconfirmation gap) and revealed strong relations with service quality (e.g. Babakus and Boller, 1992; Babakus and Mangold, 1992; Churchill and Surprenant, 1982). Babakus and Boller (1992) also suggest that the use of performance-based measures of service quality has more explanatory power than the measures based on the gap between expectations-performances. Similarly, some researchers (e.g. Kang and James, 2004;

Mangold and Babakus, 1991) argue that SERVQUAL focuses on the service delivery process instead of fully addressing other service quality dimensions such as the service-encounter outcomes (i.e. technical dimensions). In other words, the SERVQUAL measurement does not adequately include a technical quality dimension. Furthermore, many researchers have reported that the constituents of SERVQUAL are not sufficient to measure service quality in certain industries (Cronin and Taylor, 1992; Finn and Lamb, 1991).

Alternatively, Grönroos (1984) suggests two dimensions of service quality: technical attributes and functional attributes. These two dimensions have been identified as constituents of service quality based on the conceptualisation of service quality between the perceived service and the expected service (Grönroos, 1984). As an extension of Grönroos' model, Rust and Oliver (1994) suggest a three-component model by adding service environment as a component. In their model, service product, service delivery and service environment are suggested as constituents of service quality. Service product and service delivery are synonymous with the technical attribute and functional attribute, respectively. In the same spectrum of conceptualisation, Brady and Cronin (2001) offer three dimensions of service quality: the service outcome (i.e. technical attribute), the consumer-employee interaction (i.e. functional attribute) and the service environment (i.e. environmental attribute).

The technical attribute relates to the quality evaluation of core services; in other words, the outcome of the service act or what the consumers receive from the sellers' services (Grönroos, 1982, 1984). Unlike the functional attribute, the technical attribute in the case of sports events or games is thus related to the quality of team or athletic performances at the events, which usually cannot be controlled by sport marketers (e.g. Kelley and Turley, 2001). The functional attribute incorporates the five service quality determinants proposed by Parasuraman et al. (1988) and involves the consumers' evaluation of how the service is delivered. The evaluation of the functional attribute is based on the consumers' perceptions of service employees during the service delivery (Grönroos, 1982). Employees are very important because they are the first point of contact with consumers during the service delivery (Bitner, 1990, 1992; Grot and Dye, 1999). In the context of a sporting event, the functional attribute could be exemplified by the spectators' interactions with employees working in the areas of parking, concession, merchandise or the ticket office.

Lastly, research has shown that the environmental attribute affects the overall perception of quality in the service encounter (e.g. Baker, 1986; Bitner, 1990, 1992; Wakefield et al., 1996). Especially in the sports context, the service environment (e.g. Bitner, 1992) makes important contributions to satisfaction levels since the consumer spends an extended period of time observing and experiencing it when attending an athletic contest (Turley and Fugate, 1992; Wakefield and Blodgett, 1996). Perceptions of the sports facility significantly influence excitement and satisfaction with the encounter (Wakefield and Blodgett, 1994), spectators' desire to stay in the environment (Wakefield and Sloan, 1995; Wakefield et al., 1996) and their likelihood of repatronising games at the same facility (Kelley and Turley, 2001; Wakefield et al., 1996).

For example, Bitner (1992) identifies ambient conditions, space/function, signs/symbols and artefacts as environmental dimensions which affect consumer responses. The effects of the servicescape on consumers' behavioural responses, such as

approach or avoidance or staying or returning, are illustrated in his framework. As key elements determining servicescape quality, Wakefield and Blodgett (1996) further develop the environmental dimensions which include layout accessibility, facility aesthetics, seating comfort, electronic equipment/displays and facility cleanliness.

In the sporting event context, however, the service environment (often referred to as servicescape; Bitner, 1992) has been examined primarily in isolation without considering other constituents of service quality in explaining the relationships with consumer satisfaction and behavioural intentions (e.g. Bitner, 1992; Theodorakis et al., 2001; Wakefield and Blodgett, 1994; Wakefield and Sloan, 1995; Wakefield et al., 1996). For example, factors such as the attitude and skills of the arena personnel (functional attribute) and the quality of the participating teams (technical attribute) may also impact consumer outcomes. With the notable exception of Greenwell et al. (2002), who examined the impact of multiple dimensions of service quality on the customer satisfaction of minor league hockey spectators, the effects of the functional and technical attributes on perceived service quality, consumer satisfaction and behavioural intentions have received relatively little attention, particularly in the case of spectator sport settings.

This study, therefore, suggests a framework for service quality in sporting event contexts that includes the functional attribute, technical attribute and environmental attribute as constituents of service quality (Figure 1). It further examines how these three constituents of service quality affect the consumers' behavioural intentions through the mediated effects of perceived service quality and satisfaction. Based on the foregoing discussion, the following Research Hypotheses (RH) have been developed:

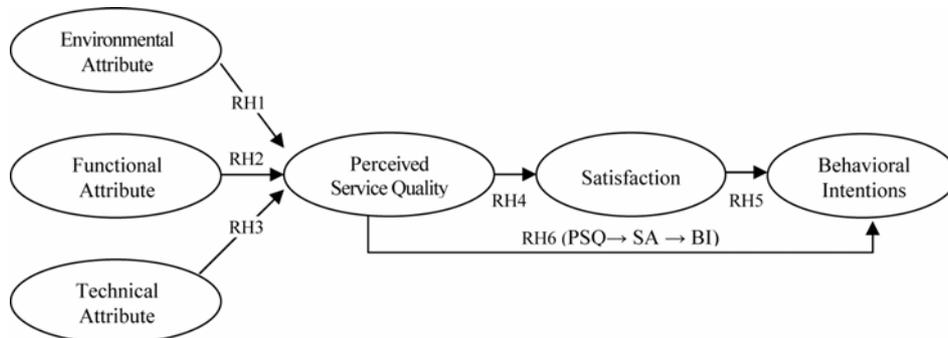
RH₁: The environmental attribute of the service has a positive effect on perceived service quality in women's college basketball.

RH₂: The functional attribute of the service has a positive effect on perceived service quality in women's college basketball.

RH₃: The technical attribute of the service has a positive effect on perceived service quality in women's college basketball.

Justifications for the remaining links in the proposed model are presented below.

Figure 1 The hypothesised relationships



3 Perceived service quality and satisfaction

Researchers have suggested that perceived service quality and satisfaction are distinct constructs (Bitner, 1990; Bolton and Drew, 1991; Cronin and Taylor, 1992; Parasuraman et al., 1985, 1988). For instance, Cronin and Taylor (1992) point out that perceived service quality is an overall evaluation whereas satisfaction is a transaction-specific measure. Oliver (1993, 1997) identifies that consumer satisfaction is both an evaluative (i.e. cognitive) and emotional judgment, including both an end state and process, whereas perceived service quality refers to consumers' evaluative perceptions at a specific point in time. Anderson and Fornell (1994) also suggest that perceived service quality relates to a global evaluation of a firm's service-delivery system, whereas satisfaction reflects judgmental experience originated from the differences between an expected and perceived quality. Hence, the key difference between perceived service quality and satisfaction identified from the literature is that perceived quality is an overall evaluation, something related to managerial delivery of the service, whereas satisfaction is the consumers' experiences emerging as a reaction to service encounters (Sivadas and Baker-Prewitt, 2000). Particularly, in this study, satisfaction is conceptualised as a function of overall satisfaction with multiple experiences with the organisation (Bolton and Drew, 1991) rather than the narrower definition of service encounter satisfaction provided by Bitner (1992).

With regard to the causal relationships between perceived service quality and consumer satisfaction, the order of the relationship between the two constructs has been the subject of debate. Although some researchers posit that satisfaction (a transaction-specific evaluation) leads to service quality (a more general and global evaluation) based on the assumption that accumulated transaction-specific evaluations influence more general evaluations (e.g. Bitner, 1990), much empirical research has suggested perceived service quality as an antecedent of satisfaction (Cronin and Taylor, 1992; Kang and James, 2004; Lentell, 2000; Parasuraman et al., 1985, 1988; Reidenbach and Sandifer-Smallwood, 1990; Woodside et al., 1989). For instance, Cronin and Taylor (1992) empirically examined the causal order between service quality and satisfaction to investigate this subject of debate. They found empirical support for perceived service quality as an antecedent of satisfaction. Originally, Parasuraman et al. (1985, 1988) suggested that perceived service quality affects the level of consumer satisfaction. In addition, Bolton and Drew (1991) conclude that consumer satisfaction is influenced by the presence of a preestablished service quality perception. Lentell (2000) points to this link by suggesting that a higher level of service quality perception results in higher consumer-satisfaction responses. Bitner et al. (1994) and Anderson and Fornell (1994) have also reported that perceived service quality predicts the variance of consumer satisfaction, while at the same time the causal link is intuitive to some extent.

In a sports related context, Wakefield and Blodgett (1994, 1996) examined service environmental quality, one of the constituents of service quality in our study. Their study suggests that environmental quality significantly influences the spectators' satisfaction in a spectator sport setting. They also suggest that perceptions of the sports facility significantly influence excitement and satisfaction with the encounter, the spectators' desire to stay in the environment (Wakefield and Sloan, 1995; Wakefield et al., 1996) and their likelihood of repatronising games at the servicescape (Wakefield et al., 1996).

Taylor et al. (1993) have also found that perceived service quality has significant positive relationships with consumer satisfaction in both health club and golf course settings. Therefore, the foregoing discussion leads to the following research hypothesis:

RH₄: Perceived service quality has a positive effect on consumer satisfaction in women's college basketball.

4 Behavioural intentions

Researchers have suggested that consumer satisfaction has a positive relationship with a wide range of consumers' behavioural intentions such as consumer loyalty, word of mouth, repatronising a product or service, etc. (Anderson and Fornell, 1994; Bitner, 1990; Sivadas and Baker-Prewitt, 2000). For example, Sivadas and Baker-Prewitt (2000) point out that satisfaction is positively related to consumers' recommendations of products or services, their intentions to repurchase the products or services, and their loyalty. Some other researchers suggest that greater consumer satisfaction results in greater repurchase intentions, whereas consumer dissatisfaction results in purchase discontinuation, brand switching, and consumer defection (LaBarbera and Mazursky, 1983).

However, with regard to the causal relationship between perceived service quality and behavioural intentions, there has been some debate in the literature whether perceived service quality has an indirect influence on behavioural intentions only through satisfaction or if it has a direct effect on behavioural intentions. Although some researchers argue for a direct link between perceived service quality and consumers' behavioural intentions (Parasuraman et al., 1988, 1991; Taylor and Baker, 1994; Zeithaml et al., 1996), the majority of studies suggest that consumer satisfaction mediates the relationship between perceived service quality and behavioural intentions (Anderson and Sullivan, 1993; Taylor, 1997). For example, Bitner (1992) suggests that the overall perceptions of servicescape will affect consumer behaviours, such as attraction, prolonged staying time, spending money and returning, through positive reaction (e.g. satisfaction) to servicescapes. Researchers have also proposed that the servicescape is mediated by cognitive and emotional responses, thereby indirectly affecting loyalty, word of mouth, or repatronising the service (Bitner, 1992; Wakefield and Blodgett, 1994; Wakefield et al., 1996).

Concerning the sports context, a few studies have shown that consumer satisfaction with the servicescape in the leisure service setting has positive effects on the length of staying time and repatronising intentions (Bateson and Hui, 1992, Wakefield and Blodgett, 1996). Wakefield and Blodgett (1996) emphasised the importance of the servicescape such as layout, aesthetics, seating and cleanliness in keeping sport consumers coming back to college football and minor league baseball games. Additionally, Wakefield and Blodgett (1999) noted that positive perceptions of physical environment can stimulate consumers' satisfaction and behavioural intentions in leisure service settings. However, other constituents of service quality with relation to consumers' behavioural intentions have received little attention within the sports context (Lantell, 2000).

In the present study, we adopt the more popular perspective that the relationship between service quality and consumers' behavioural intentions is mediated by consumers' cognitive or emotional reactions (e.g. satisfaction) to service quality. Consequently, RH 5 and 6 have been proposed in relation to the foregoing discussion.

RH₅: Consumer satisfaction has a positive effect on their behavioural intentions in women's college basketball.

RH₆: Perceived service quality has a positive effect on consumers' behavioural intentions mediated by their satisfaction in women's college basketball.

5 Service quality in the context of women's basketball

Women's basketball is the most televised women's college sport and has the most television exposure overall following football and men's basketball. Even though women's college basketball is at an all-time high in popularity, numerous universities still struggle to increase fan attendance at women's basketball games (Brennan, 2007; 2005–2006 *Women's Basketball Attendance Breakdown*, n.d.). There has been some evidence that spectators of women's sports differ from those of men's sports in their motives for attending the sporting events. For instance, James and Ridinger (2002) found fans of women's basketball cited higher aesthetic motives when compared to fans of men's basketball. Additionally, Funk et al. (2003) indicated that some of the significant motives (e.g. role model and socialisation) of spectators in attending women's sporting events (Women's National Basketball and Women's World Cup) were not evident when examining the motives of spectators of men's sports. The socialisation motive is conceptually related to the functional and environmental attributes of service quality; therefore, it is entirely plausible that these determinants of service quality may have a differential impact among spectators of women's sports versus spectators of men's sports. In consideration of the expanding market of women's college basketball, sport marketers need to gain a better understanding of how their fans perceive service attributes. Further, sport marketers also need to understand how different service attributes influence the spectators' level of satisfaction and their respective behavioural intentions.

The purpose of this study, therefore, is to extend prior service quality work on consumers of women's college basketball, to examine the effects of service attributes on perceived service quality, and to explore how spectators' level of satisfaction with women's college basketball mediates the relationship between their perceptions of service quality and their behavioural intentions to return to future events. This study is intended to serve as a foundation for providing knowledge of service evaluation in the sport setting, because the delivery of higher levels of service quality is increasingly identified as a key strategy for sport marketers to position themselves more effectively in the marketplace (cf. Brown and Swartz, 1989; Parasuraman et al., 1988). As an attempt to extend the knowledge of spectators' service evaluation in women's college basketball, the study will help to sport marketers and service providers to understand which aspects of a particular service attribute best define its quality. It will also enable sport marketers,

before implementing marketing efforts, to examine whether spectators actually repatronise services based on their experiences of high service quality received or from the high satisfaction achieved with those experiences.

6 Method

6.1 Data collection and participants

A survey instrument was used to measure how service attributes, perceived service quality and satisfaction influence consumers' behavioural intentions of repatronage of the sporting event (Table 1). The targeted team in the survey is one of the more successful women's basketball programmes in recent history, averaging more than 10,000 spectators per game, while the average home attendance for Division I women's basketball was 1544 for the 2005–2006 season (*2005–2006 Women's Basketball Attendance Breakdown*, n.d.). The team's 20-year-old facility is one of the largest campus basketball facilities in the nation, and the average home game attendance results in the arena being filled to 63% of its capacity.

Data were collected through a self-administered questionnaire distributed to a convenience sample of 287 undergraduate students who had attended a Division I women's college basketball at the host institution in the previous month. These students were recruited from various sport management, retailing and communication courses at a major public university in the Southeastern region of US. To minimise the potential for participant recall error, respondents were asked to complete the questionnaire in the context of the most recent game they attended. 22 (7.6%) individuals did not provide completed questionnaires, so their responses were not included in the final analysis. Of the 265 participants in this study, slightly more than half ($n = 136$ or 51.3%) were females, and the majority (98.1%) of students' ages ranged from 19 to 25.

It is important to note that there has been some controversy as to whether students are representative of the general population as well as whether studies utilizing student samples possess external validity. In some studies, students' survey responses were found to be different than those of household consumers (Cunningham et al., 1974; Park and Lessig, 1977). Other research, however, suggests that students make decisions or process information in a manner similar to the general population (Lamb and Stern, 1979) and provide similar responses to those of their non-student counterparts (Bergmann and Grahn, 1997). In relation to the current exploratory study, the student sample was familiar with women's college basketball, which enhances internal validity (Gwinner and Eaton, 1999). However, since student samples may possess different levels of team identification than a non-student sample, and team identification may moderate one's perception of service quality, those wishing to generalise the results of the present study should do so with caution.

Table 1 Convergent and discriminant validity for the measures

<i>Factors/Variables</i>	<i>Standardised loading</i>	<i>AVE</i>	ϕ^2
<i>Technical attribute</i>		0.75	0.31–0.60
Win/loss record of HOME team adds excitement to the place.	0.90		
Conference standing of HOME team adds excitement to the place.	0.91		
Win/loss record of OPPOSING team adds excitement to the place.	0.83		
Conference standing of OPPOSING team adds excitement to the place.	0.82		
<i>Functional attribute</i>		0.72	0.23–0.56
People working at the arena are taking action to address my needs.	0.82		
The attitude of people working at the arena is courteous.	0.88		
People working at the arena are knowledgeable.	0.86		
<i>Environmental attribute</i>		0.50	0.28–0.60
The facility provides an enjoyable atmosphere.	0.73		
The facility is kept clean.	0.71		
The facility's layout makes it easy to get where I want to go.	0.67		
The signs at the arena are helpful.	0.71		
<i>Perceived service quality</i>		0.88	0.32–0.59
The service provided at the game is excellent.	0.94		
I have received high quality service at the game.	0.95		
The service provided at the game is outstanding.	0.93		
<i>Satisfaction</i>		0.83	0.40–0.56
I am satisfied with my decision to attend this game.	0.89		
I am happy with the experiences I have had at this game.	0.95		
I truly enjoyed going to this game.	0.89		
<i>Behavioural Intentions</i>		0.90	0.23–0.56
I will go to another [university name] women's basketball over the next few months.	0.94		
I am more likely to attend future [university name] women's basketball games.	0.96		
I would continue to go to [university name] women's basketball games.	0.95		

Note: ϕ^2 indicates the squared phi correlation.

6.2 Measures

All constructs included in the study were measured using multiitem scales in order to analyse all relevant domains of the construct. The scale of service attributes was developed based on the conceptual work of Bitner's (1992) servicescape, and Grönroos' (1984) technical and functional quality. As shown in Table 1, 11 items were adapted from the instrument to measure three service quality dimensions: the technical, functional and environmental attributes. The measures of perceived service quality and behavioural intentions were adapted from Hightower et al.'s study (2002), and satisfaction was measured with three items similar to those used by Oliver (1980). In addition, all constructs in the proposed model were measured by seven-point Likert type scales anchored by *strongly disagree* (1) and *strongly agree* (7). Initial reliabilities of each category for the instrument ranged from 0.800 for the environmental attribute to 0.963 for behavioural intentions (Table 2). Scale reliabilities exceeding the 0.70 threshold are shown to have an acceptable level of reliability (Nunnally, 1978). A correlations matrix indicated moderate discriminant vitality among the six factors (Table 2). Since all correlation coefficients were below the maximum value (i.e. $r < 0.85$) suggested by Kline (1998), and a review of previous research suggested that all of the six factors were conceptually different, all six factors in the current study were subjected to further analysis.

Table 2 Correlations, means and standard deviations of the variables

	<i>Tech.</i>	<i>Func.</i>	<i>Env.</i>	<i>Pser.</i>	<i>Sat.</i>	<i>Bint.</i>	<i>M</i>	<i>SD</i>
Tech.	(0.925)						5.76	1.26
Func.	0.629*	(0.887)					4.96	1.14
Env.	0.663*	0.641*	(0.800)				5.18	0.91
Pser.	0.595*	0.659*	0.659*	(0.934)			5.00	1.07
Sat.	0.700*	0.545*	0.656*	0.717*	(0.956)		5.41	1.26
Bint.	0.534*	0.414*	0.579*	0.565*	0.726*	(0.963)	5.28	1.54

Note: Tech. = Technical Attribute, Func. = Functional Attribute, Env. = Environmental Attribute, Pser. = Perceived Service Quality, Sat. = Satisfaction, Bint. = Behavioural Intentions; Cronbach alphas are reported in parentheses along the diagonal; * indicates that correlation is significant at the $p < 0.01$ level.

6.3 Data analysis

The analysis of data from the survey was performed using SPSS 14.5 and LISREL VIII (Jöreskog and Sörbom, 1990). Prior to testing the RH, the measurement model was examined by a Confirmatory Factor Analysis (CFA), which allows for an evaluation of convergent and discriminant validity. In the main stage of analysis, a Path Analysis with Maximum Likelihood Estimation was used to examine the aforementioned RH including the direct and indirect relationships among the service attributes, perceived service quality and satisfaction. According to Tabachnick and Fidell (1996), our sample size of 265 was adequate for the selected statistical procedure.

7 Results

7.1 Psychometric evaluation of the measures

The measurement model for each latent variable was represented by a minimum of three indicators, and the scale of each latent variable was fixed by assuming that the variance of each latent variable was equal to one. As shown in Table 1, the estimated standardised loadings, reflecting the validity of each observed variable as a measure of the latent variable, were generally high, ranging from 0.67 to 0.96. Additionally, the estimated correlations among the latent variables were all positive with magnitudes ranging from 0.44 to 0.76, which was consistent with expectations founded in the literature.

Concerning the convergent validity, the Average Variance Extracted (AVE) estimates ranged from 0.50 to 0.90 for all latent constructs. AVE estimates greater than the common target of 0.50 are considered to exhibit satisfactory convergent validity (Fornell and Larcker, 1981; Hair et al., 2006). Also, the AVE for each construct, excluding the environmental attribute, was greater than the squared correlations, thereby indicating adequate discriminant validity (Lichtenstein et al., 1990).

The calculated fit indices for all scales were also applied to assess a reasonable model fit via a CFA. The Root Mean Square Error of Approximation (RMSEA) was 0.09, below the maximum value threshold of 0.1 suggested by Steiger (1990) and Kelloway (1998) to indicate reasonable absolute fit of the data to the model. Comparative fit was assessed via the Normed Fit Index (NFI = 0.97), Non-Normed Fit Index (NNFI = 0.97) and Comparative Fit Index (CFI = 0.98). The fit indices for all scales met or exceeded the minimum threshold value of 0.90 suggested by Kelloway (1998). Therefore, based on the overall results of the CFA the researchers deemed the measurement model to be acceptable in terms of overall fit and convergent and discriminant validity, thus, all variables were subjected to further analysis.

7.2 Research hypotheses test

A path analysis via SEM was employed in order to examine the RH. The results of the path analysis supported RH 1 and 2, thus the environmental and functional attributes had a significant influence on perceived service quality (environmental: $t = 5.64$, $p < 0.01$; functional: $t = 3.67$, $p < 0.01$). The environmental attributes and functional attributes, which were determinants of perceived service quality, show total effects of 0.531 and 0.317, respectively, both due entirely to the corresponding direct effect. Approximately 64% of the variance of perceived service quality was explained by the environmental and functional attributes (see Table 3).

Concerning Hypothesis 3, the results did not support a positive direct relationship between the technical attribute and perceived service quality. However, the results indicated a positive direct relationship between the technical attribute and satisfaction ($t = 8.08$, $p < 0.01$). This means that the technical attribute, which was operationalised as the quality of home and opposing teams' performances in this study, appears to have an influence on spectators' satisfaction, but not their perceived service quality. In this sporting event context, perhaps the technical attribute is more related to a transaction-specific measure, which is an important characteristic of satisfaction, than a long-run overall evaluation, a characteristic of service quality (Bitner, 1990; Bolton and Drew, 1991; Cronin and Taylor, 1992).

Table 3 Standardised casual effects for the proposed model

Outcome	Determinant	Causal effects		
		Direct	Indirect	Total
Perceived quality $R^2 = 0.637$	Environmental attribute	0.531		0.531
	Functional attribute	0.317		0.317
Satisfaction $R^2 = 0.685$	Perceived service quality	0.475		0.475
	Environmental attribute		0.252	0.252
	Functional attribute		0.150	0.150
	Technical attribute	0.443		0.443
Behavioural intentions $R^2 = 0.576$	Satisfaction	0.759		0.759
	Perceived service quality		0.360	0.360
	Environmental attribute		0.191	0.191
	Functional attribute		0.114	0.114
	Technical attribute		0.336	0.336

Note: All effects reported in this table were statistically significant at the $p < 0.05$ level.

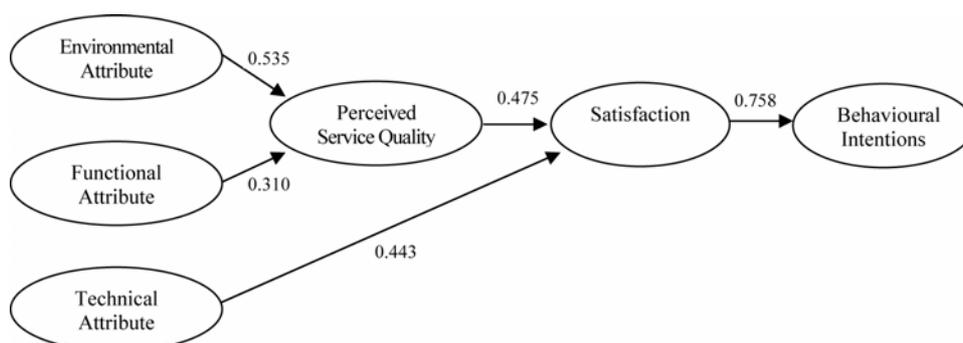
As seen in Table 3, research hypothesis 4 was supported by the significant positive relationship between satisfaction and perceived service quality ($t = 8.65$, $p < 0.01$). The results also showed that the dominant determinant of satisfaction was perceived service quality with a total effect of 0.475, comprised primarily by a direct effect, followed by technical attributes with a direct effect of 0.443. The functional and environmental attributes exerted modest indirect effects on satisfaction. These determinants accounted for approximately 69% of the variance in satisfaction.

The results also provided support for both hypothesised relationships, RH₅ and RH₆, that satisfaction positively influences behavioural intentions ($t = 15.52$, $p < 0.01$) and perceived service quality positively influences behavioural intentions mediated by satisfaction ($t = 7.80$, $p < 0.01$). The results indicated that the determinant of behavioural intentions with the largest total causal effect was satisfaction (0.759) with the entire total effect due to a direct effect. Perceived service quality, the second most important determinant of behavioural intentions showed a total effect of 0.360 due to an indirect effect, whereas the three constructs of service quality (environmental attributes, functional attributes and technical attributes) showed indirect effects of 0.191, 0.114 and 0.336, respectively. Approximately 58% of the variance in behavioural intentions was explained by satisfaction, perceived quality, environmental attributes, functional attributes and technical attributes.

Therefore, analysis of the LISREL estimates suggested that two service attributes (functional and environmental) have a significant effect on consumers' behavioural

intentions mediated by both perceived service quality and satisfaction, whereas the technical attribute has such an effect mediated only by satisfaction. These results supported the indirect effects between the constructs of service quality and consumers' behavioural intentions and provided a conceptual path model derived from the estimated standardised direct effects among the latent variables. As demonstrated in Figure 2, all significant standardised direct effects were indicative of some practical importance (i.e. larger in magnitude than approximately 0.1; Hair et al., 2006).

Figure 2 Standardised direct effects for the revised model



8 Discussion and conclusions

The primary purpose of this study was to gain a better understanding of the effect of service attributes on perceived service quality and examine the effect of satisfaction with women's college basketball on the consumers' behavioural intentions for returning to the sporting event. The results of the current study indicated that all three constructs of service quality (technical, functional and environmental attributes) do have a significant influence on consumers' behavioural intentions, albeit in a different manner.

The results of the current study suggested that the technical attribute had a direct influence on satisfaction whereas the functional and environmental attributes had a direct relationship with perceived service quality. In turn, perceived service quality directly influenced satisfaction. In other words, the technical attribute influenced behavioural intentions through satisfaction, but the functional and environmental attributes influenced behavioural intentions through overall perceived service quality and satisfaction. The findings are consistent with the findings of Wakefield and Blodgett (1999) since the functional attribute was directly related to the perception of service quality in our study. They found that the functional attribute (i.e. intangible service quality) was the predominant factor in determining affective responses in a place offering hedonic services (i.e. a spectator sport event). Kang and James (2004) also argued that the functional attribute may have a larger influence than the technical attribute on one's perception of service quality (which was corroborated by our results), so it is important to recognise the differential influence of functional and technical attributes. For instance, in the context of a spectator sporting event, consumers would consider other attributes associated with the process of service delivery as evaluating the quality of service rather than the game related service attributes. Thus, our results indicate the interaction between

spectators and service personnel (volunteers and employees) is one of the important determinants of the overall evaluation of service quality in the context of spectator sporting events.

Extensive research supported our findings that the environmental attribute in the context of spectator sporting events had a significant effect on the overall perceptions of service quality. This factor also influenced satisfaction, a mediator between perceived service quality and behavioural intentions (Bitner, 1992; Hightower et al., 2002; Spangenberg et al., 1996; Wakefield and Blodgett, 1996). Since spectators spend moderate to long periods of time in a place offering hedonic services (Wakefield and Blodgett, 1996) the overall perceptions of service quality generated by the environmental attribute (i.e. layout, displays, cleanliness, facility aesthetics, etc.) is critical (Wakefield and Blodgett, 1999). In consideration of this finding as well as past research that indicates spectators of women's sports have higher socialisation motives than spectators of male sports (Funk et al., 2003), sport marketers should ensure that their sporting environments facilitate such social interaction activities (e.g. adequate adjacent seating for large groups, promotions that encourage fan interaction, presence of open spaces to encourage group congregation, etc.).

In many cases, positive evaluations of the environment as well as of service personnel have been regarded as the main factors affecting consumers' overall evaluations of service encounters, despite the consequences of the core product service (Bitner, 1992; Greenwell et al., 2002). In addition, Rasmussen (1999) suggests that the importance of evaluations of the environmental and functional attributes may be secondary to evaluations of the core product in the context of spectator sports. Hence, the environmental attribute and functional attribute are appropriately conceived as aspects of service quality, which influence satisfaction and behavioural intentions.

However, the technical attribute was linked directly to satisfaction rather than perceived service quality. Our findings are consistent with the research conducted by Madrigal (1995). He contends that spectators attending college women's basketball events have a strong tendency to focus on core product quality, that is, technical quality. It is well recognised that core product quality (i.e. team conference standing, win/loss record, etc.) is directly related to spectator satisfaction (Pan et al., 1997; Trail et al., 2002; Zhang et al., 1997). This particular result adds some interesting aspects to the body of knowledge in a sporting context. For instance, Kang and James' (2004) study of Korean cell phone users examined how technical quality, functional quality and a service provider's image dimensions influenced perceptions of service quality and satisfaction. In their study, technical quality had a direct influence on service quality perception as well as an indirect influence on satisfaction mediated by perceived service quality. However, in consideration of their sample and setting, their conflicting results with our study could be due to cultural differences and/or the uniqueness of the sport product compared to a non-sport product. In the case of Kang and James (2004), consumers perceived the technical attribute, which is based on the quality of core service, as an important aspect of service quality, whereas in a sporting event, spectators may realise that the service providers have less control over the core product (e.g. team conference standing, win/loss record, etc.) and are more likely to perceive the technical attribute as an important determinant of their level of overall satisfaction rather than perceived service quality. Since the technical attribute cannot easily be manipulated by sports

marketers, it is fortunate that consumers seem to make a distinction between the technical attribute and their overall perception of service quality in a sports event context.

Concerning the casual sequence between perceived service quality and satisfaction, the findings of the current study are consistent with the perspective derived from previous research indicating that perceived service quality should be considered as an antecedent of satisfaction (Cronin and Taylor, 1992; Kang and James, 2004; Lentell, 2000; Parasuraman et al., 1985, 1988; Reidenbach and Sandifer-Smallwood, 1990; Woodside et al., 1989). In other words, spectator satisfaction could be influenced by the presence of a preestablished service quality perception (Bolton and Drew, 1991). The findings also substantiate the empirical framework which suggests that spectators are likely to employ cognitive – affective – conative causal order to evaluate service quality (Oliver 1997; Bagozzi, 1992). Thus, the causal relationship of perceived service quality/satisfaction derived from the current study can provide an improvement in the capacity of the framework to clarify variance in spectators' behavioural intentions (Brady and Robertson, 2001) in the context of a spectator sporting event.

Since perceived service quality and satisfaction are distinct constructs (Bitner, 1990; Bolton and Drew, 1991; Cronin and Taylor, 1992; Parasuraman et al., 1985, 1988), and a spectator's cognitive judgment of service quality plays an antecedent role in influencing the affective evaluation of a service encounter in the context of a spectator sporting event, sport marketers should consider perceived service quality as a means of improving satisfaction judgments and make efforts to develop strategies that facilitate and strengthen positive satisfaction assessments (Brady and Robertson, 2001). In other words, systematic process should be considered by sport marketers to enhance spectators' behavioural intentions for their sporting events.

These findings can provide a number of insights for sport marketers. Firstly, since many of the people responsible for service delivery in college sports are part-time employees, sport marketers should pay more attention to recruiting procedures and training of those employees. Grot and Dye (1999) suggest that selecting employees, matching employees to service delivery and training employees play crucial roles for the sport settings in terms of providing better services. Thus, it is recommended that sport marketers develop training programmes for their employees in order to overcome possible misunderstandings during service delivery.

Secondly, sport marketers should make efforts to create an exhilarating physical environment. As our results indicate, an exhilarating physical environment will compensate for the failure of technical attribute achievement, which could often happen due to the unpredictable nature of sporting events. For example, promotions and activities designed to generate entertainment for the fans during breaks in game play may help to counteract poor team performance and result in higher levels of customer satisfaction.

Thirdly, sport marketers should promote their known strengths in service quality (Howat et al., 1996). While sport marketers might promote the quality of the teams' performances during the season to attract and retain more fans to their arenas, they should be aware that spectators seem to attribute core product quality to satisfaction rather than perceptions of service quality. While ultimately the technical, functional and environmental attributes eventually lead to repatronage intentions based on the results of the current study, sport marketers should be aware of the unique role each attribute possesses within those relationships. Furthermore, given the relative contribution of the environmental and functional attributes to perceived service

quality that were uncovered in the present study, sport marketers wishing to enhance perceived service quality should focus more attention on actions that will enhance the environmental attribute than the functional attribute, given its stronger link to perceived service quality.

Fourthly, given that the technical attribute was a strong predictor of customer satisfaction in the present study, marketers should recognise that a large degree of customer satisfaction is determined by a factor that is mostly out of their control, the quality of the core product. While the results of this study indicate that marketers should exploit potentially entertaining games whenever possible on the basis of the winning percentage and conference standing, marketers should strive to be more creative in the absence of compelling combination of opponents. While the winning percentage and conference standings of both teams may not always be enticing, other factors such as a traditional or geographic rivalry were not explored in the present study and may serve as potentially marketable factors. It is also important to note that the results of the present study relate to a highly successful team with a strong history of winning in women's collegiate basketball. As a result of consistent exposure to a successful team, the respondents may be overly sensitive to team success when compared to settings with less successful teams [cf. Zajonc's (1968) exposure-attitude hypothesis]. Future research is needed to explore the potentially moderating variable of team success on the relationship between the technical attribute of service quality and customer satisfaction.

Finally, in consideration of the overall consequences of service quality perceptions, sport marketers periodically need to track consumers' perceptions of service quality (Wakefield and Blodgett, 1999) and monitor sections of the arena where homogenous groups of fans tend to sit together, since different categories of consumers place different weights on service quality attributes (Kelly and Turley, 2001; Parasuraman et al., 1988). In cases where perceived levels of service quality have decreased over time, administrators should investigate why such changes have occurred (e.g. decreased provision of service quality, increased customer expectations of service quality, etc.). Once these factors have been identified, an appropriate strategy to address these factors should be implemented.

9 Limitations and future study

Given the use of a convenience sample and specific sport setting of women's collegiate basketball of the present study, our findings cannot be generalised to other consumer groups or sport settings. Future studies need to draw samples from different groups or categories of spectators in more diverse sport settings (particularly within women's sports). In this manner, we may analyse how consumers place different weights on particular service quality attributes as well as generalise the proposed model to a larger population since there is no general agreement regarding the dimensions of the service quality (Brady and Cronin, 2001; Kang and James, 2004).

Another limitation of the present study revolves around the issue of participant recall. Although eligible participants were required to have attended a collegiate women's basketball game on campus at least once in the prior month, and they were asked to reflect on their most recent game experience, it is possible that the participants' recollection of the event may have been more salient if data were collected immediately

after the event rather than at a later time. Further, since several collegiate women's basketball games were contested on campus during that month, the service quality perceptions reported by the participants in the present study are reflective of experiences over the course of several games, respective of the last game attended by each study participant. Of course, even in the absence of significant administrative policy changes regarding service quality provision over the course of those games, it is entirely possible that the elements of service quality could have varied from game to game. Future studies should perhaps confine their scope to one particular event and attempt to intercept spectators as they are leaving the event in order to minimise participant recall issues. Admittedly, this proposed study would be challenging, as it is often difficult to recruit participants during the exit process of an event.

The psychometric properties of the environmental attributes subscale also serve as a limitation to the present study. Specifically, the measure of environmental attributes demonstrated lower discriminant validity than other constructs. Thus, an improvement is needed in the measure of the environmental attribute in future studies in order to extend the foundational knowledge in understanding the relationships between service attributes, perceived service quality, satisfaction and behavioural intentions in diverse sporting event contexts. In addition, although the items for perceived service quality were acceptable in terms of reliability and convergent/discriminant validity, these items repeatedly utilised the term 'service', and spectators may not have considered a game related quality as a 'service'. This may have limited spectator responses to aspects that *they* regarded as a 'service' rather than *all* aspects that comprise the overall service. More research is needed to determine if the wording of these items needs to be altered in sport contexts.

Finally, much of the accessible research on service quality in sports has been focused on issues pertaining to *participation* sports settings such as leisure facilities or fitness centres (Crompton and MacKay, 1989; Howat et al., 1996; Kim and Kim, 1995; Papadimitriou and Karteroliotis, 2000). Therefore, future studies in this area should contribute more to our theoretical understanding of service quality's effect on consumers' behavioural intentions in the *spectator* sports environment. Empirical research also needs to be accumulated to compare the present findings to international spectator sports. It is likely that the service quality dimensions will have a disparate impact in different countries with regard to their structure of sports, economic factors and socio-cultural factors (Malhotra et al., 1994).

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