



The influence of service quality variables in predicting satisfaction and behavioural intentions in a university campus recreation setting

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Abstract

Campus recreation is an integral part of student life and co-exists for reasons that align with the overall mission of a university, *inter-alia*, the provision of quality education, and enriching the quality of student life by a holistic preparation of students for their future endeavours. Studies indicate that engaging in some form of recreation sport reduces students' vulnerability to mental, emotional and physical problems. Sport and recreational participation also has the added advantage of buffering against social exclusion or social isolation, especially for students coming from communities that were previously marginalized. This study is premised by key variables that is germane in service quality and draws from a synthesis of literature by examining the effects of service quality on satisfaction and behavioural intentions within a university campus recreation setting in Gauteng, South Africa. The study is located within a post-positivism quantitative research paradigm and adopts a cross sectional survey approach collecting data from 301 university students who have engaged in campus recreation programmes. Through multiple regression analysis, the results show that people interaction, physical change and, equipment provisioning are significant predictors of campus recreation satisfaction. Moreover, satisfaction seems to strongly predict students' behavioural intentions.

The study is unique in that such evaluations within a university context on campus recreation are very scarce. The findings of the study are limited by the sample being restricted to one university. Larger sample sizes in various universities are desirable. Campus sport Managers can use this framework as a diagnostic tool to identify strengths and weaknesses in their services and through its application, offer direction in potential areas for improvement within a university environment.

Keywords: Campus recreation, service quality, satisfaction, behavioural intentions, university students.

Introduction



Campus recreation is an integral part of student life and it co-exists for reasons that align with the overall mission of a university, *inter-alia*, the provision of quality education, and enriching the quality of student life by preparing students holistically for the future. With university students leaving the dependency of their childhood; often associated with enduring responsibilities of adulthood and university life through exploring possible career paths, establishing their identities and determining what lifestyles to adopt are essential phenomena in a student's life (Cornelius, 1995).

Coming from pampered environments of their homes, schools and communities to the totally new environment of a university, their routines and habits that were established during the previous phases of their development within the structured environment of home and school are now disrupted. It is now about courses, professors and textbooks, sports, games, recreation, and other social interactions - as the most pleasant memories of the past are often left behind. These pressures are further accentuated in a student's repositioning to a larger and more impersonal disciplined structure of university life which involves interacting with peers from diverse geographical and sometimes ethnic backgrounds. In addition, there is an even greater focus on academic achievement and meeting deadlines in various forms of assessments (Santrock, 2004).

Notwithstanding these affirmations, studies indicate that engaging in some form of recreation sport reduces students' vulnerability to mental, emotional and physical problems (Gyurcsik, Bray & Brittain, 2004; Santrock, 2004; Chen, 2006; Gauché, 2006; Henchy, 2011). Sport and recreational participation also has the added advantage of buffering against social exclusion or social isolation, especially for students coming from communities that were previously marginalised (Nathan, Bunde-Birouste, Evers, Kemp, MacKenzie & Henley, 2010).

Problem statement

In South Africa, universities are under severe strain due to the ongoing students fees must fall campaign (Universities South Africa, 2016). This impetus is further exacerbated through ongoing nationwide student protests, *inter-alia* for no increase in student fees, no student fees and writing off of past debt accumulation arising from students fees. As a consequence, campus departments who are engaged in the provisioning of recreational services are now experiencing budget cuts. Afflicted with such difficulties, recreational services become the so called 'softer areas' where budget cuts could be an appropriate compared to areas of teaching and learning. Against this background, an appeal is made to campus recreation managers to allocate resources in the most effective and efficient ways to sustain campus recreation.

Research pertaining to campus recreational sport in South Africa seems to be deficient. The same cannot be said for research done in North America (Wilson, 2008). When comparing campus recreational sport at North American universities to the activities provided by South African universities and specifically the Vaal University of Technology, the types of activities or programmes are similar.

The difference lies in the entities responsible for the delivery of the campus recreational sport programmes. The North American universities depend on campus recreation departments with a formal delivery structure and management, whereas the Vaal University's activities are independent of clubs, subdivisions and units spread out across the campus. In North America, The National Intramural Recreational Sport Association (NIRSA), a non-state institution has more than 740 institutions as its members which together provide 94% of the recreational sport programmes for universities. In South Africa no such body exists apart from University Sport South Africa (USSA) which promotes sports at



regional, provincial and national levels in the tertiary education sector of South Africa at a competitive level.

Literature affirms that the habits of students today will influence the norms, beliefs and cultures of communities in the future (Leslie, Sparling & Owen, 2001). Students' habits during their stay at higher education institutions, will predict their habits during the rest of their lives (Schmidt, 2012).

Research has shown that universities must make use of campus-based programmes to accommodate the students' development. It is by observing the above-mentioned research findings that the concept of campus recreation is adopted by institutions for higher education and as such to encourage students to become more active and to invest in a healthy lifestyle (Leslie *et al.*, 2001). Moreover, scholars over the years have become confident in their argument that providing quality services is not only an essential factor in generating customer satisfaction but an underlying criterion that measures the competitiveness of a service organisation (Anderson, Fornell & Lehmann, 1994; Çelik & Akyol, 2015; Eraslan & Çimen, 2016).

The study is unique in that such evaluations within a university context, on campus recreation are scarce. Moreover, university campus recreation managers can use the results to refine their campus recreation strategies in the provisioning of service to students. To date, the studies of service quality in sport have focused on identifying the dimensions of quality in health and fitness services, leisure and recreation services, and spectating sport services (Ko & Pastore, 2004). An empirical gap in research therefore exist within a South African university context to explore the influencing service attributes that impact on satisfaction and future behavioural intentions to engage in recreation.

Literature review

Campus recreation

For the purpose of this study, campus recreation is broadly defined as any leisure activity undertaken by students outside the academic demands of university life which includes, among others, activities such as dancing, aerobics, exercise, jogging and meditation. It includes sport activity for fitness and fun. It is a diverse area that incorporates instructional sport, informal sport, intramural sport and extramural sport (Mull, Bayless & Jamieson, 2005), ranging from modest to vigorous exercise levels and students can participate in sport activities on a regular or an irregular basis (Maron, *et al.*, 2004). No regular training is required and there is no pressure to excel against others as compared with competitive sports (Maron, *et al.*, 2004).

Recreational sports have become increasingly important in colleges and universities. Participation in recreational sports supports the total student development concept which suggests that a variety of dimension in college or students learning environment contributes to their overall development (NIRSA, 2013). In addition, recreational sports contribute to the development of healthy active lifestyles thereby enhancing the wellbeing and quality of life of college and university students.

Service quality

Bitner and Hubbert (1994:77) define service quality as "the consumer's overall impression of the relative inferiority/superiority of the organisation and its services". A more traditional definition of service quality focusses on the comparison of consumer expectations with actual performance of the service (Parasuraman, Zeithaml & Berry, 1988). The 1980's has witnessed a proliferation in service quality



research and a recognised research stream emerging from the Nordic (Grönroos, 1984) and American schools of thought (Parasuraman, Zeithaml & Berry, 1985; 1988). The Nordic stream of thought suggested three service quality dimensions, namely, the functional, technical and outcome quality. The American stream of thought viewed service quality as the difference between the expected level of service and customer perceptions of the level of service received. Perhaps the seminal work in the conceptualisation and operationalisation of perceived service quality can be traced to the research of Parasuraman *et al.* (1985; 1988) who proposed five dimensions through the SERVQUAL model: reliability, responsiveness, assurances, empathy and the tangibility characteristics of the service experience. Later Cronin and Taylor (1992) triggered the SERVPERF performance only measure of service quality and excluded the expectations component of service quality due to them being scored consistently high. Despite variations, researchers have used both models in different contexts (Yildiz, 2011).

Researchers have also come up with varied factor structures in service quality literature and there is no general agreement as to the content of the dimensions (Howat, Absher, Crilley & Milne, 1996; Padadimitrius & Karterolitis, 2000; Chelladurai & Chang, 2000). With specific emphasis in recreational sports, Ko and Pastore (2005) developed a Scale of Service Quality in Recreational Sports (SSQRS). The instrument comprises four dimensions of service quality, namely programme quality, interaction quality, outcome quality and the physical environment.

The first dimension of SSQRS refers to the perceptions about the excellence of the programme. Interaction quality, the second dimension of the instrument relate to the perceptions of how the service is delivered, including the interactions which take place during the service encounter. The third dimension relate to outcome quality which is actually the service act that a participant receives from the service.

Finally, the last dimension, the physical environment quality encompasses aspects of the ambience, the design of the facility and the equipment used to enhance the recreational experience which includes the functional and aesthetic features. The instrument contained 11 sub-dimensions of service quality: range of programme, operating time, physical change, programme information, client-employee interaction, inter-client interaction, physical change, valence, sociability, ambience, facility design, and equipment. The instrument was found to be reliable with Cronbach's alpha value ranging from 0.73 to 0.94 which were considered satisfactory and with factor loadings >0.50 for all items.

Satisfaction and behavioural intentions

Related studies on service quality suggest that the quality of services rendered is a predictor of customer satisfaction (Cronin & Taylor, 1992). Oliver (1977) defines satisfaction as a product or service that provides a pleasurable level of consumption-related fulfilment. It is the overall feeling customers have towards a product or service.

Two perspectives emerge from a review of literature on satisfaction. From a cumulative relationship perspective, Bitner and Hubbert (1994) defined overall satisfaction as a cumulative evaluation of all service encounters and experiences between a customer and the supplying organisation. Deng, Lu, Wei and Zhang (2010) state that customer experiences cumulative satisfaction after having a good experience of using the product or service. On the other hand transaction-specific satisfaction arises from a specific encounter which may be determined primarily by focusing on consumers' emotional reactions (Olsen & Johnson, 2003).



Oliver (1997) maintains that the aggregated satisfaction episodes (cumulative) from a series of consumption experiences result in overall satisfaction. Some researchers and scholars also argue that customer satisfaction leads to service quality (Olajide, 2011), whereas others believe that service quality leads to customer satisfaction (Cronin & Taylor, 1992). In addition, the relationship between customer satisfaction and service quality and the way these two concepts relate to re-patronage behaviour intentions remains largely unexplained (Hoffman & Bateson, 2002).

However, literature reveals that the cumulative perspective of satisfaction seem to be a better predictor of customer intentions and behaviours (Olsen & Johnson, 2003). In recreation and sport-related literature there is empirical evidence that user satisfaction and their behavioural intentions are consequences of service quality (Lee, Lee & Yoo, 2000; Sureschander, Rajendran & Anantharaman, 2002).

Researchers in the past have demonstrated that satisfaction leads to loyalty and future patronage (Oliver, 1977; Bloemer, De Ruyter & Wetzels, 1998). Zeithaml, Berry and Parasuraman (1996) suggest that behavioural intentions are associated with a service provider's ability to get its customers to:

- 1) Say positive things about them,
- 2) Recommend the facility to others and
- 3) Remain loyal through frequent revisits.

In the same vein Cronin et al. (2000) capture the positive aspects of behavioural intentions and developed three indicators of behavioural intentions: repurchase intentions, positive word-of-mouth intentions and customer loyalty. Several studies confirmed that service quality indirectly influenced behavioural intentions through customer satisfaction (Kuo, Wu, & Deng, 2009; Tian-Cole, Crompton, & Willson, 2002). Therefore, a large number of researchers have noted that customer satisfaction is a better determinant of behavioural intentions than service quality (Chen & Tsai, 2007; Clemes, Gan, & Kao, 2008). High levels of customer satisfaction are likely to reinforce customer intentions of using the service and to engage in positive recommendations with others (Tian-Cole et al., 2002).

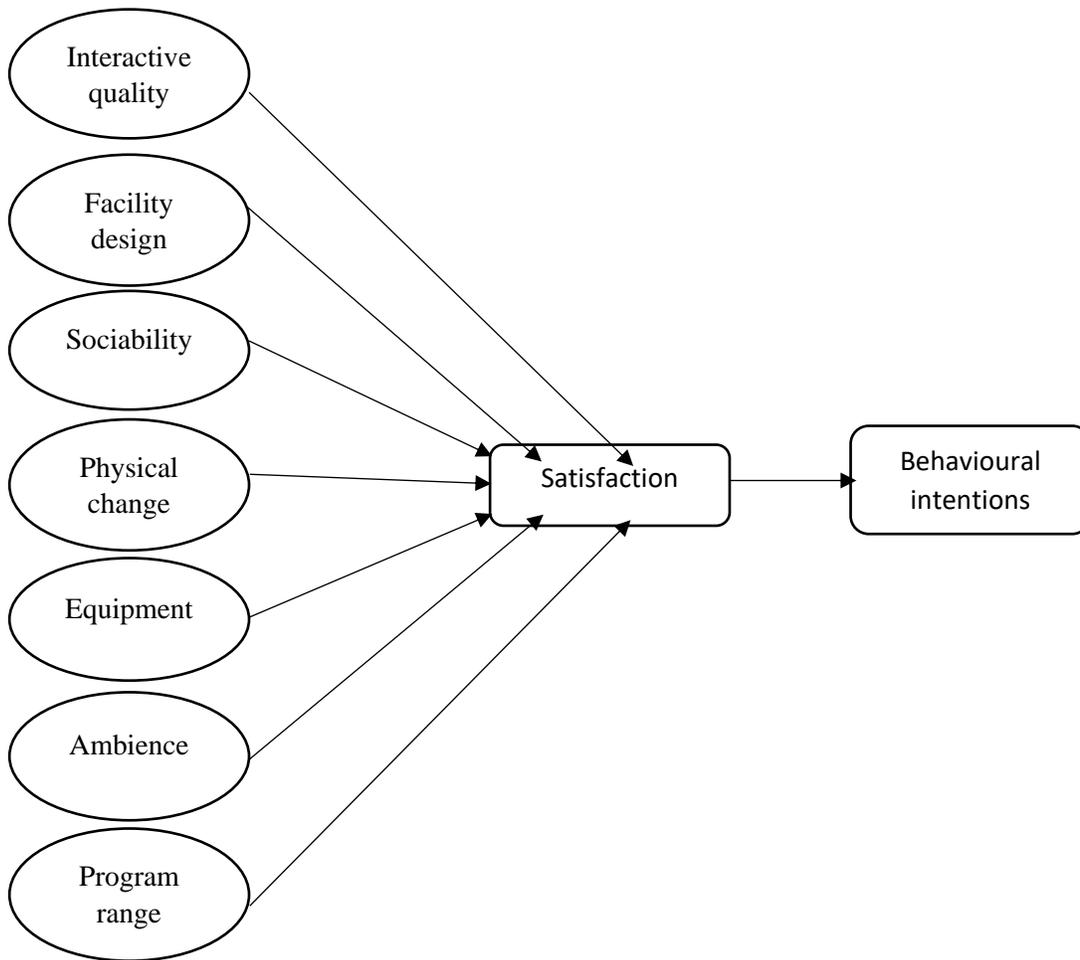
Purpose of the study

The study examines the effects of service quality variables in predicting satisfaction and behavioural intentions in a university campus recreation setting in Gauteng, South Africa.

Conceptual framework and hypotheses

A conceptual framework is suggested where the seven service quality constructs were treated as antecedents (independent variables) to satisfaction (moderating variable) which in turn influence future behavioural intentions (outcome variable). Figure 1 shows the conceptual model depicting the variables.

Figure 1: Conceptual framework



Arising from the conceptual framework, hypotheses were formulated.

- H₁: There is a positive relationship between interactive quality and satisfaction
- H₂: There is a positive relationship between facility design quality and satisfaction
- H₃: There is a positive relationship between sociability quality and satisfaction
- H₄: There is a positive relationship between physical change quality and satisfaction
- H₅: There is a positive relationship between equipment quality and satisfaction
- H₆: There is a positive relationship between the ambience quality and satisfaction
- H₇: There is a positive relationship between range of programmes quality and satisfaction
- H₈: There is a positive relationship between satisfaction and behavioural intentions

Methodology and design of research

The methodology of this research is embedded within a post-positivism and applied quantitative research paradigm adopting a cross sectional survey. The research design of this study was a basic applied research approach seeking predictive relationships within the studied variables.

Sample



The sample of the study comprised students from the Vaal University of Technology. A non-probability purposive sampling procedure was used to identify students who regularly participated in various forms of recreational sport in 2016.

Instrumentation and data collection

Based on the research undertaken by Ko and Pastore (2005) and implications suggestions later by Ko and Pastore (2007:41) that “an appropriate use of SSQRS may help campus recreation programs improve their offerings and retain current participants”, the instrument was used to collect data from a university campus recreation cohort. The instrument contained four main dimensions with 11 sub-dimensions to capture campus recreation quality. Items for the satisfaction construct were also adapted from the same instrument. Behavioural intentions scale was adapted from Oliver (1997). The instruments were based on 7-point Likert scales with 1 denoting strongly disagree to 7 denoting strongly agree. Further, demographic data were included the survey (gender, age and type of recreational sport that students were engaged in).

Data collection was undertaken by four fieldworkers, sourced from each of the four faculties (Engineering, Human Sciences, Management Sciences and Applied and Computer Sciences). Each of the fieldworkers was given 150 questionnaires to administer. The purpose of the study was clearly explained to each fieldworker. This enabled fieldworkers to survey students within the four faculties. Of the 600 questionnaires distributed 301 was finally accepted for analysis.

Data Analysis Procedures

The results were analysed using the Statistical Package for Social Sciences (SPSS) and the Analysis of Moment Structures (AMOS) version 23.0. Correlation and regression analysis was used to explore the relationships among the studied variables.

Results

Sample composition

There were more male students (n=171; 56.8%) in the sample compared to female students (n=130; 43.2%). Majority (n= 108; 54%) of the respondents were in the age category 18-25 years, followed by those who were in the age category 26-33 years (n=36; 12%) and those who were over 42 years (n=4; 1.3%). African students constituted the majority of students (n=281; 93.4%). Soccer (n=124; 41.2%), netball (n=38; 12.6%), and volleyball (n=25; 8%) and dance (n=21; 7%) seem to be the primary type of recreational sport of students in the sample.

Exploratory factor analysis

Exploratory factor analysis (EFA) was initially conducted on each construct in order to establish the factor structure for campus recreation service quality, satisfaction and behavioural intentions. The individual results for the study constructs are reported in Table 1.

Table 1: Results for exploratory factor analysis of the research constructs



Constructs	Bartlett's tests of sphericity ¹	KMO ² (sampling adequacy)	Eigen-values ³	% of variance ⁴	No of items
	Sig				
Campus recreation quality					
Interactive quality	.000	.891	1.080	64.77	9
Facility design					4
Sociability					4
Physical change					3
Equipment					3
Ambience					3
Range of programmes					3
Satisfaction	.000	.826	2.856	71.40	4
Behavioural intentions	.000	.805	2.648	66.19	4

¹ Refer to sig measured by the Bartlett's Test of Sphericity. ² Refer to sampling adequacy is measured by the Kaiser-Meyer-Olkin Measure (KMO). ³ Eigenvalue is measured by extraction of factors >1 using the Kaiser Criterion. ⁴ % of variance measures the total of extracted variance resulting from factor extraction using the Kaiser Criterion.

Confirmatory factor analysis

Building from the EFA, confirmatory factor analysis (CFA) was conducted using Maximum Likelihood (ML) extraction in the AMOS programme to assess the construct reliability of the factors and to check whether the model satisfactory fits the data. ML was used in the study as this method is tolerant to violations of the assumptions of non-normality especially, in non-probability sampling (Olsson, Foss, Troye & Howell, 2002). The following goodness-of-fit measures were considered as a guide to an acceptable model fit: chi-square/degree of freedom (< 3.0), incremental fit index (IFI) >0.90, Tucker-Lewis index (TLI) >0.90, comparative fit index (CFI) >0.90, and standard root mean square error of approximation (RMSEA) <0.08 (Hu & Bentler, 1999).

The overall fit of the model was acceptable (Table 2). The chi-square degrees of freedom was below the recommended threshold of <3.0. The IFI, TLI, CFI and RMSEA are all deemed to be satisfactory as it met the required threshold for fit measures (Bryne, 1998).

Table 2: Goodness-of-fit statistics

Fit indices	CFA
Chi square/degree of freedom	1.985
Incremental fit index (IFI)	0.915
Tucker- Lewis index (TLI)	0.900
Comparative fit index(CFI)	0.913
Root mean square error of approximation (RMSEA)	0.057

Reliability and validity

Coefficient alpha and composite reliabilities were computed to test the reliability of the measurement scales. Coefficient values >0.70 are considered sufficient to conclude that the proposed dimensions are reliable (Nunnally & Bernstein, 1994). Table 3 show that both the Cronbach alpha and composite reliability values for each construct met the recommended threshold value >0.70 and found to be reliable.

An examination of the indicators' loadings on their respective constructs provides evidence of convergent validity of the scale. Anderson and Gerbing (1988) recommends factor loadings for convergent validity should be > 0.5. As indicated in Table 3, the factor loadings are all above the



recommended value ranging from 0.560 to 0.803. This indicates an acceptable individual item convergence in the validity of all scale items. Discriminant validity was assessed by comparing the average variance extracted (AVE) values for each construct with the squared correlations between the respective constructs. Since none of the squared correlations exceeded the AVE values (Table 3) discriminant validity was confirmed (Yoshida & James, 2010). Furthermore, discriminant validity is established when the correlation between the dimensions are not excessively high (>0.85) (Kline, 1998). The correlations between constructs ranged from 0.181 to 0.689, thus providing further evidence of discriminant validity (See Table 4).

Table 3: Reliability and accuracy statistics

Research construct		Descriptive statistics		Cronbach's test		CR	AVE	Shared variance	Factor loadings
		Mean	SD	Item-total	α Value				
People interaction (PIN)	PIN ₁	4.37	1.15	.529	.860	.50	.88	.26	.607
	PIN ₂			.531					.717
	PIN ₃			.586					.656
	PIN ₄			.634					.698
	PIN ₅			.629					.694
	PIN ₆			.571					.610
	PIN ₇			.643					.686
	PIN ₈			.583					.630
	PIN ₉			.592					.673
Facility design (DES)	DES ₁	4.36	1.38	.591	.833	.56	.83	.34	.658
	DES ₂			.697					.792
	DES ₃			.724					.786
	DES ₄			.640					.742
Sociability (SOC)	SOC ₁	4.73	1.22	.539	.767	.51	.77	.30	.613
	SOC ₂			.586					.669
	SOC ₃			.578					.670
	SOC ₄			.565					.726
Physical change (PHC)	PHC ₁	4.38	1.50	.714	.839	.64	.84	.30	.796
	PHC ₂			.705					.802
	PHC ₃			.700					.799
Equipment (EQU)	EQU ₁	4.33	1.53	.661	.817	.60	.81	.28	.765
	EQU ₂			.684					.803
	EQU ₃			.668					.745
Ambience (AMC)	AMC ₁	4.50	1.37	.556	.780	.56	.79	.35	.741
	AMC ₂			.635					.781
	AMC ₃			.667					.716
Range of programmes (ROP)	ROP ₁	4.52	1.39	.622	.736	.50	.74	.17	.784
	ROP ₂			.569					.749
	ROP ₃			.496					.560

Correlation analysis

Spearman's non-parametric correlations between the constructs were undertaken. The results of the correlation analysis is reported in Table 4. Moderate to strong correlations were found between satisfaction and people interaction ($r=.429$; $p<0.01$), satisfaction and facility design ($r=.480$; $p<0.01$), satisfaction and sociability ($r=.416$; $p<0.01$), satisfaction and physical change ($r=.442$; $p<0.01$), satisfaction and equipment ($r=.525$; $p<0.01$), satisfaction and ambience ($r=.491$; $p<0.01$) and satisfaction and range of programmes ($r=.290$; $p<0.01$). Satisfaction in turn showed strong positive correlations with behavioural intentions ($r=.689$; $p<0.01$).



Table 4: Correlations between constructs

Factors	PIN	DES	SOC	PHC	EQU	AMC	ROP	SAT	BIN
People interaction	1.000								
Facility design	.510**	1.000							
Sociability	.431**	.547**	1.000						
Physical change	.426**	.548**	.516**	1.000					
Equipment	.425**	.400**	.333**	.393**	1.000				
Ambience	.492**	.590**	.435**	.515**	.514**	1.000			
Range of programmes	.303**	.257**	.250**	.320**	.413**	.283**	1.000		
SAT	.429**	.480**	.416**	.442**	.525**	.491**	.290**	1.000	
BIN	.384**	.504**	.415**	.460**	.393**	.442**	.181**	.689**	1.000

*** Correlation is significant at the 0.01 level (2-tailed). SAT= Satisfaction. BIN = Behavioural intentions. PIN=people interaction. DES=Facility design. SOC= Sociability. PHC=Physical change. EQU=Equipment. AMC= Ambience.*

Regression analysis

Collinearity statistics namely the variance inflation factor (VIF) and tolerance values were computed in order access multicollinearity in the data set. Variables which have VIF values >10 and tolerance values <0.10 indicate multicollinearity problems (Pallant, 2010). As shown in Table 5 none of the independent variables had VIF values more than 10 and tolerance value <0.10 confirming the absence of multicollinearity in the data. To examine the influence of service quality dimensions on students' levels of satisfaction, regression analysis was performed (Model 1) with satisfaction as the dependent variable and people interaction, facility design, sociability, ambience, physical change, equipment, ambience and range of programmes as independent variables.

The overall regression was significant ($F = 28.16$; $p < .001$; $p < .05$). Three of the seven variables (people interaction, physical change and equipment) were significant in predicting students' satisfaction.

Table 5 lists the standardized coefficients of each independent variable. The R-square value indicated that approximately 42% of the variance in students' satisfaction levels with campus recreation was primarily due to their perceptions of the personal interaction, their physical change and the equipment provided by the university.

Another regression analysis was performed (Model 2) to examine the influence of satisfaction on students' future behavioural intentions (students' re-use intentions). Since previous studies have shown strong evidence of the impact of satisfaction on future behavioral intentions (e.g., Tian-Cole et al., 2002), students' levels of satisfaction was included as an independent variable.

The overall regression was significant ($F = 281.87$; $p < .001$) (see Table 5). Overall, satisfaction explained approximately 49% of students' intentions to re-use the campus recreation facilities.

Table 5: Regression analysis - study constructs

Model 1: Dependent variable (Satisfaction)	Standardised beta	t	sig	Collinearity statistics
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Independent variables				Tolerance	VIF
People interaction	.130	2.215	.028*	.592	1.690
Facility design	.124	1.926	.055	.493	2.029
Sociability	.103	1.786	.075	.617	1.621
Physical change	.121	2.039	.042*	.581	1.721
Equipment	.318	5.542	.000**	.618	1.618
Ambience	.039	.617	.538	.499	2.002
Range of programmes	.006	.114	.910	.787	1.270
R= .634 R ² = .402 Adjusted R ² = .388 F change = 28.169 * sig at p< 0.05 ** sig at p<0.001					
Model 2: Dependent variable (Behavioural intentions)	Standardised beta	t	sig	Collinearity statistics	
Independent variable				Tolerance	VIF
Satisfaction	.697	16.78	.000**	1.000	1.000
R= .697 R ² = .485 Adjusted R ² = .484 F change = 281.878. * sig at p< 0.05 ** sig at p<0.001					

Discussion

The **first hypothesis (H₁)** posited that there would be a positive relationship between people interaction and satisfaction. This hypothesis was supported (t-value = 2.215; p < 0.05). In particular, the t-value (critical ratio) was 2.215, a value higher than the recommended threshold of 1.96 (Hair, Hult, Ringle & Sarstedt 2014:172), suggesting that employee interactive quality does positively influence satisfaction. An employee's behaviour and attitude are the typical items included in this dimension. Employee interactive quality is the subjective perception of how the service is delivered and reflects the customers perception of the interactions which take place during the service encounter (Ko & Pastore, 2007). Moreover, the people interaction factor also encompasses the interaction with fellow participants in the recreational encounter.

These results are congruent with the study undertaken by Howat, et al. (1996) which revealed that the personnel interaction dimension exerted significant amounts of variance on overall satisfaction in health centres. This finding is mirrored in Grönroos's (2005) interactive quality as the technical quality or relational quality in a service encounter. A study by Dhurup, Singh and Surujlal (2006) on service quality measurement in a South context established that the personal interaction factor in health and fitness centres was a pertinent factor and explained a high percentage of explained variance through an exploratory factor analysis procedure (40% of the explained variance).

The **second hypothesis (H₂)** posited that there would be a positive relationship between facility design and satisfaction. This hypothesis was not supported (t-value = 1.926; p > 0.05). Design quality includes both the functional and aesthetic nature of the facilities. A plausible reason for such an outcome could be attributed to the fact that not all recreational types require a design of a facility, for example, jogging.

The **third hypothesis (H₃)** posited that there would be a positive relationship between sociability and satisfaction. This hypothesis was not supported (t-value = 1.786; p > 0.05). The sociability dimension of service quality refer to the gratification of being with others who enjoy similar activities (Milne & McDonald, 1999). Recreational activities especially with team sport provide opportunities for interaction and socialisation (Zhang, Piatt, Ostroff & Wright, 2005). Socialisation with others adds to the recreational value of sport which leads to motivation in taking part in recreational activity. Ko and Pastore (2004) affirm that recreational consumption episodes are social processes in which students interact and influence each other. Theodorakis (2014) also assert that other contextual factors besides variety of programmes and equipment such as the presence of other customers (students) that may impact on a student's recreational experience. However, this was not the case in this study.



The **fourth hypothesis (H₄)** posited that there would be a positive relationship between physical change and satisfaction. This hypothesis was supported (t-value = 2.039; $p < 0.05$). This dimension refers to the post-consumption tangible evidence students experience when they participate in recreational sport such as improved physical fitness. Chelladurai (1998) state that, what consumers (students) gain from their involvement is an important element in developing their quality perceptions. In general, recreational sport users consume sport services to seek improved physical fitness and enjoyment.

The **fifth hypothesis (H₅)** posited that there would be a positive relationship between equipment quality and satisfaction. This hypothesis was supported (t-value = 5.542; $p < 0.05$). Equipment quality refers to devices used to enhance the sport experience (Ko & Pastore, 2005). For effective participation in recreational sport up-to-date equipment is essential in generating high levels of quality perceptions.

The **sixth hypothesis (H₆)** posited that there would be a positive relationship between ambience and satisfaction. This hypothesis was not supported (t-value = .617; $p > 0.05$). Ambient condition refers to nonvisual aspects of service in the environment such as temperature, lighting and noise (Baker, 1986).

The **seventh hypothesis (H₇)** posited that there would be a positive relationship between the range of programmes and satisfaction. This hypothesis was not supported (t-value = .114; $p > 0.05$). The range of programmes refers to the variety and attractiveness of programmes that are available to students on campus and the excellence of the programmes through which students experience sport services.

The **eight hypothesis (H₈)** posited that there would be a positive relationship between satisfaction and behavioural intentions. This hypothesis was supported with a direct effect (t-value = 16.78, $p < 0.001$). These results are not surprising as empirical evidence show a strong positive association between customer satisfaction and future behavioural intentions (Fornell, 1992, Anderson & Sullivan, 1993; Cheng, Lai & Yeung, 2008). Moreover, satisfied customers are more likely to recommend the sport that they participate in to other students (Auka, 2012). If students are satisfied with the quality of service, they have a greater propensity to re-use the facilities available to them in the future. Furthermore, they are more likely to spread positive word-of mouth communications to friends (Ravald & Grönroos, 1996). The results indicate that customer satisfaction directly influences customer behavioural intentions. Since campus recreation membership is built into the fee structure of the university, students see it as a waste of money if the facilities are not used which may have become a driving force for their intention to re-use campus recreation facilities.

A plausible reason for the weak predictive relationship with some of the variables with satisfaction may be attributed to the fact that not all factors are recognised as equally important (Crompton & MacKay, 1989). While some recreational services involve facility-intensive recreation activities, others involve staff-intensive recreation activities. In their study, Crompton and MacKay (1989) demonstrated that in recreation settings where participants interacted more with the facility than with staff, ambience of the facility and equipment were more important than staff responsiveness. Lentell's (2000) study made use of three factors to measure service quality-physical evidence, staff and secondary services revealed that physical evidence explained 40% of the variance in user satisfaction while the contribution of the other two quality dimensions was only 6%. Further, in non-competitive recreational sport, especially within a campus recreation context, students primarily seem to participate in sport for social interaction and physical change (keep fit). On the contrary, students who participate in sport either at university or elite level in sport associations or organisations may vary in their service quality perceptions. University/college recreational sport in many ways, are therefore different from organised sport or activities in organisations whose athletes participate in sports at a competitive level. Thus, the



relationship among students' perceived service quality components may be different from those of other organised sport related programmes (Osman, Cole & Vessell, 2006).

Managerial implications

The findings of the study may provide valuable insights for managers of campus recreation. The seven dimensions which showed satisfactory reliability could be used as analytical tool for the measurement of the quality of services provided by the university in terms of campus recreation. These dimensions could be used to identify problem areas and provide guidance for future improvement of their services. Moreover, the levels of students' perceptions of service quality and satisfaction could be obtained periodically in order to find ways to improve the quality levels and satisfaction of students who participate in recreational sport activities.

Overall, the dimensions of recreational service quality may assist recreational managers in preparing strategies for improvement of their daily operations. While only three of the seven dimensions of recreational service quality were significant predictors of satisfaction, it does not imply that the other dimensions of recreation service quality should be ignored as a holistic approach is often required to improve campus recreation service quality. Moreover, students' satisfaction levels of campus recreation seem to contribute strongly to behavioural intentions (re-use) in the future. Campus recreation managers should therefore find innovative ways of improving the satisfaction levels of university students. Since campus recreation has the potential to improve student life and university experiences, recreation spaces such as lounges and proper equipment should be seen as a potential investment so that students can utilize these spaces as meeting socializing space even if they do not have time to work out. This will integrate the facilities into campus life, not just campus sports.

Limitations and suggestions for future research

This study assessed campus recreation quality in one institution only in the Gauteng province with a limited sample size and hence the results cannot be generalized to all university students and campus recreation as a whole as campus recreation facilities vary across universities in South Africa. Further test of the psychometric properties of the scale could be verified with larger sample sizes. Moreover the use of a purposeful sampling technique which further limits generalisations to other populations. Research should also be conducted on campus recreation in more universities in South Africa so that meaningful comparisons could be undertaken.

This research does not take into detail the adequacy or inadequacy of the campus recreational facilities or their programmes. Knowledge of existing facilities may affect participants' responses to the survey. Although it may be likely that the dimensions of recreational service quality are generic, further studies are required to establish whether these dimensions are applicable to other university campus recreational activities. The study was confined to those students who participated in recreational sport at an informal level as opposed to those who participate in campus competitive sport programmes who compete at a national level with other universities in the country. Future studies could be extended to those students who compete in organised competitive sport with other universities at a national level. A cross-section survey was undertaken at one point in time. Students may have dropped out or began to engage in campus recreation after the survey. Further research in the area of campus recreation should be undertaken over time, perhaps a longitudinal study across the students' entire university career.



Conclusion

Campus recreation programmes facilitate assists students in developing or refining their recreational skills which promotes a university spirit, enabling student retention and enhancing the quality of campus life among students. Campus recreation facilities and programmes thus continue to be a great factor for students as well as the contribution of recreation center activities and programs to the quality of life at their institution when deciding to continue at their university. Campus recreation programmes invariably s have a huge impact on various health and wellness outcomes. The range of recreation, sports and/or fitness activities are significant for students preceding to enrollment at a university and also after graduation. Developing and sustaining a healthy lifestyle is important to students both prior to their enrollment and also after they exit university. Participating in recreation activities and programmess increases interest in fitness. Campus recreation programmes have also been found to have an influence on various student learning outcomes that include providing them with skills and abilities they will certainly use in later life. The programmes allow opportunity for meeting new people and forming relationships, Fun and enjoyment are also important considerations as are relieving stress and achieving greater physical fitness. Having said this, in order for recreational sports facilities to make the most effective contribution to student life experience, they must be recognized as important and valued by the administration of the institution in which they reside.

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