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EVALUATION OF A CAMPUS SERVICE QUALITY RECREATIONAL SCALE

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Abstract: In the past two decades, several researchers have applied service quality frameworks in sport-related domains in measuring service quality among participants. However, university campus recreation has been scarce as compared to organised sport at local, regional and national levels, which often depends on a limited tenure linked to their membership as a registered student at a university. The purpose of the study is to investigate service quality dimensions as perceived by university leisure and recreation students. A cross-sectional survey was undertaken among 301 university students using a non-probability purposive sampling. Variables that constituted campus recreation service quality were operationalised through a literature review, including sport and recreational scales. Through factor analysis, seven distinct dimensions of campus recreation service quality were established. These factors were labelled: people interaction, facility design, sociability, physical change, equipment, ambience and program range. Item total correlations show satisfactory convergence of the items within their relevant constructs. This study complements the existing recreational sports body of knowledge by exploring campus recreation service quality. These dimensions may assist campus recreation mangers to understand the dimensions that are pertinent among students within a university context better. Recreation managers, in their periodic measurement of service quality, can incorporate these dimensions.

JEL classification: M30, M31, M39.

Keywords: service quality, campus recreation programs, factor analysis, university.

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1. Introduction

Higher education (HE) is extensively considered to be part of the service industry since the orientation of its institutions is to deliver quality services to students in an increasing competitive milieu (Yeo, 2008). Universities administration and programmes are competing with various options vying for students' time in order to impact the students' development. In recent years, HEIs have realised that their academic esteem alone is not enough to appeal to the world's top students and whole academic partakers. Researchers have found that non-academic aspects of campus life can positively influence student success (Belch et al., 2001). Extracurricular programmes is another option to provide many opportunities for increasing the quality of student life on campus (Sturts & Ross, 2013). Similarly, Castle et al. (2015) alludes to at least 78% of university students being recreational facility users. This figure is expected to be higher, to date since universities not only undertake education and academic management, but also encourage their students to engage in recreational activities (Schmidt, 2017).

Traditionally, recreation was deliberated as a public good, which concentrated on outreach to susceptible people, families and communities. However, in recent times, a renewed description of recreation states that recreation is an activity willingly undertaken primarily for pleasure and enjoyment and that it flows from a feeling of well-being and satisfaction (Torkildsen, 1999). Recreation overlays with sports but also includes an assortment of other leisure activities that are not included in sporting classifications (Morris et al., 2003). It is the experience that manifests from freely chosen participation in physical, social, intellectual, ingenious and spiritual quests that enrich individual and community well-being (Canadian Parks and Recreation Association, 2015). The National Intramural-Recreational Sports Association (2014) proclaims that recreation is a vital leeway of the education process and contributes to the physical and academic development of students, enhances campus relations with campus constituencies and augments the opportunities to other participants in sport and recreational programs, services and facilities.

Campus recreation has received increased attention as recruitment, retention and satisfaction of students have become priorities for the administration of HEIs (Lindsey & Sessoms, 2006; Celik & Akyol, 2015). Recreational sport participation for university students is advantageous in a variety of ways through creation of a superior quality of campus life (Ellis et al., 2002). These include some developments in academic retention assertiveness towards learning as well as physical and mental well-being. Providing recreational programmes is critical to the overall development of mankind and often provides a vehicle to the overall educational engagement and academic achievement (Nichlos, 2007). These recreation programmes offered and the campus recreation facilities are considered as key components of a student's decision to attend a certain institution (Haines, 2001:2007, Zizzi et al., 2004, Scott, 2014). The programmes are often intellectualized as providing a site for self-control and character building (Hartmann, 2003).

Healthy institutions are societies in which students have the physical and mental well-being to conduct their academic life. Therefore, providing positive methods to develop a sense of belonging is one advantage of the healthy societies. The vital role played by recreation is captured by Young & Potgieter (2004) who posit that a lack of recreational opportunities reflects negatively on students' wellness, which can lead to greater negative social deeds such as crime and violence. In the same vein,

the researchers in this study believe that the exposition of university students to a variety of organised activities could have a positive impact on deviant behavior. An appreciation of the dimensions that constitute campus recreation programmes' patronage, may be key to student life establishments and marketers in guaranteeing operational planning activities to attract students and maximise student development.

In the past two decades, several researchers have applied service quality frameworks in sport-related domains in measuring service quality among participants. However, research on university campus recreation has been scarce as compared to organised sport at local, regional and national levels, which often depends on a limited tenure linked to their membership as a registered student at a university. Relatively few attempts, in comparison to competitive recreational programmes at a national level, have concentrated on the development of situation-specific service quality models especially in campus recreation activities. There is paucity of studies from a student's perspective with respect to motivations to join and actively partake specifically in collegiate university recreation programmes. In addition, service quality models for recreational centres tend to vary considerable by content and other researchers have seldom validated them.

Recently, there appears to be a change in university student's participation in recreational programmes due to changing lifestyles and modern technology. Today's students devote a large portion of their time in academic lectures, laboratories or at their desks; hence, the need to participate in recreational activities is paramount. Thus, it is imperative to target this segment of the population with initiatives that will encourage them to engage in physically active lifestyles.

University students also seem to be unaware of existing campus recreation facilities availability and have limited knowledge of how to use these facilities. If recreational programmes fail to meet the anticipations of participants in their search of benefits, continued participation is unlikely. The purpose of the study is to evaluate a campus service quality recreation scale within a cohort of university students through an exploration of campus service quality dimensions as perceived by university students.

2. Literature Review

2.1. Underlying theories

Astin's (1984; 1999) student involvement theory and Tinto's (1993) student integration theory serve as the two fundamental frameworks in this study. These theories were applied often across many fields related to student life. According to Astin's (1984), students' participation in extramural activities contributes significantly to the success of university students. The application of this theory to university recreation programmes suggests that high-quality programmes and high student involvement rates lead to improved learning and personal development. Studies that integrate Astin's (1984) theory of involvement with benefits associated with participation in campus recreation can corroborate the necessity and significance of campus recreation. Furthermore, Astin (1999) argues that the environmental factors influencing a student to persist or not to persist implied student participation or involvement. Participation in campus recreation programmes also consequently lead to satisfaction with academics and a logic of belonging within the campus community (Moffitt, 2010) and positive association with academic success, health and wellness (Todd et.al., 2009).

Involvement by participants in university recreation sport highly correlates with key academic indicators and positive health behaviour over time (Hackett, 2007; Huesman et al., 2009).

On the other hand, Tinto's (1993) theory of integration postulates that student's involvement in extramural activities frequently leads to interactions that integrate the students within the social system of the institution. The assumption is that partisan culture within an institution strongly affects a student's obligation and commitment to a university (Sturts & Ross, 2013). Thus, participation in campus recreation programmes can have a significant influence on the environment on campus because of the high involvement rate of the student body.

While there was a period when the evidence backing these assertions was often anecdotal, there is an increased growing body of literature that provides dependable evidence verifying the value of campus recreation programmes on university campuses (Henchy, 2013; Forrester, 2014). The implication of these two theoretical assertions is that the more recreational programmes are able to appeal, occupy and involve students, the more socially satisfied they will become in respect of their overall university experience. By using this line of reasoning, student's participation (involvement) in campus recreation programmes will assist in facilitating their integration into the quality of life as well. To this end, students who are invested in campus recreation events, are more likely to continue their education in that particular institution.

2.2 Service quality and the dimensions in recreational settings

More recently, researchers have advocated that service quality is indispensable to the success of sport, leisure and recreation programmes (Denison, 2013). The service quality scale (SERVQUAL) developed by Parasuraman (1985) is one of the most widely used instruments for assessing service quality. Building on the previous models of SERVQUAL, Brady and Cronin (2001) later developed the hierarchical approach model to measure service quality.

Although most of the fundamental dimensions may be conjoint across service industries, researchers approve that each service industry is unique. This is because the significant factors of quality are likely to be deliberated differently by most researchers (Garcia & Caro, 2010). Despite the relative novelty of Brady & Cronin (2001) conceptualisation, it became crucial to develop industry-specific models to fit different contexts. The usage of service quality measures explicit to recreational sport was pioneered by Osman et al. (2006) and closely followed by Ko & Pastore (2007). Against this backdrop, Ko & Pastore (2007) conceptualised a four-dimensional model of service quality for evaluating the perception of a user of service quality in respect of recreational programmes. The suggested model consists of four dimensions, namely interaction quality, physical environment quality, result or outcome quality and programme quality, with 11 sub-dimensions (espoused in Section 7) to capture campus recreation service quality.

Interaction quality

This dimension refers to the mutual relation of employee-customer interface (Howat et al., 2008) and the process of providing the services (Hartline & Ferrel, 1996), which comprise attitude, behavior and expertise sub-dimensions (Brady, 1997; Brady &

Cronin, 2001). Two kinds of interaction in service delivery can occur via client-employee interaction and inter-client interaction (Ko & Pastore, 2007). Therefore, it is critical to assess both the client-employee interaction and the inter-client interaction.

Physical environment quality

Several attempts to describe the effects of physical surroundings on consumers are built on research in environment psychology. This dimension refers to dominant mood, design of the facility and the available equipment (Soleymani et al., 2012) and consists of three sub-dimensions, namely facility design, ambience and equipment (Baker, 1986; Bitner, 1992; Brady & Cronin, 2001; Ko & Pastore, 2007).

Programme quality

This dimension is regarded as the customers' insight of the excellence of the program (Brady & Cronin, 2001) and is defined by three specific sub-dimensions, namely the range of programme (Kim & Kim, 1995), operating time (Wright et al., 1992) and information (Howat et al., 1996; Ko & Pastore, 2007).

Result or outcome quality

It should be noted that outcome does not refer to a final result but rather to the consequences experienced over a succession of service encounters (Dagger, Sweeney & Johnson, 2007). Therefore, this dimension focuses on what the consumer gains from the service and includes physical change, sociability and valence (Mazis et al., 1975; Milne & McDonald, 1999; Ko & Pastore, 2007; Khosravi et al., 2015).

3. Research Methodology

3.1. Methodology

The study employed a quantitative research design as the researcher deemed appropriate in order to use multivariate techniques to establish campus recreation service quality dimensions among university students. The cross-sectional survey approach was adopted to ensure reliability, as all participants were exposed to standard questions. Furthermore, the cross-sectional survey method was selected since it was envisaged that the use of a survey could not only make assessments more precise by enforcing uniform definitions upon the participants, but would also enable the collection of homogenous data from all the participants.

3.2. Sampling, data collection and sample composition

The study sample consisted of students of a university located in southern Gauteng Province in South Africa using the purposive sampling procedure. This non-probability sampling procedure was adopted in order to avoid numerous biases associated with selecting sample members from a sample frame that do not participate in campus recreation.

The fieldwork was conducted in August/September 2016 (during the normal university semester period) after ethical clearance had been obtained from the participating institution. During the collection of data, a number of ethical concerns such as the participants' right to anonymity, were adhered to. Two trained research assistants distributed the questionnaires to the participants to ensure that they were properly completed. Out of a total of 600 questionnaires distributed, 310 were useable in the final analysis (i.e. a response rate of 52% was recorded).

Of the 301 sampled respondents in this study, 57% (n=171) were male and 43% (n=130) were female. The majority of the respondents were between 18 to 25 years (n=261; 87%), followed by the age group between 26 and 33 years (n=36; 12%) and the age group between 34 to 41 years, (n=4; 1%).

The ethnicity category was dominated by Africans (n=281, 93%), followed by Coloureds (n=11; 4%), Whites (n=6; 2%) and Indians/Asians (n=3; 1%). Lastly, most participants participated in soccer (41%; n=124).

3.3. Measuring Instrument

A two-section self-administered questionnaire was developed to collect data from the participants. The first section of the questionnaire sought to collect information on participants' general and biographical profile such as gender and age. The second section of the questionnaire was adapted from the Scale of Service Quality in Recreational Sports (SSQRS) developed by Ko and Pastore (2005) using a seven-point Likert scale ranging from 1=strongly disagree to 7=strongly agree.

3.4. Reliability and Validity

Reliability was established through the computation of Cronbach alpha coefficients and composite reliabilities (CR) values. Both reliability measures were adopted with a benchmark value of 0.70 (Malhotra, 2010). The reliability for the campus recreation sub-scales displayed an acceptable level of reliability values that ranged from 0.74 to 0.86 (Cronbach alpha) and 0.74 to 0.88 (CR) respectively These results are presented in Table 1. In addition, a cut-off point of 0.50 on the item-to-total correlations was upheld as recommended by Pallant (2013).

Construct validity was established during factor analysis. The factor structure showed high factor loadings (>0.50). The construct validity of the factors were also examined in terms of convergent and discriminant validity. Convergent validity was assessed through the correlation analysis procedure. The results indicate moderate to strong correlations (r=0.250 to r=0.590) between the constructs thus displaying a confirmation of convergence. In Table 1, individual variable loading for the research constructs were from 0.529 to 0.724, therefore, greater than the recommended threshold of 0.50 (Anderson & Gerbing, 1988) showing a tolerable individual item convergence, as 50% or more of each item's variance was shared with its respective variable.

Discriminant validity was ascertained by checking if the correlations between the constructs was not greater than 0.80 (Hulland, 1999). Since none of the correlations were greater than 0.80, a satisfactory level of discriminant validity was realized. As seen in Table 1, all SV values were lower than the AVE values, further confirming discriminant validity (Fornell & Larcker, 1981).

Table 1. Reliability and accuracy statistics

Research construct		Descriptive statistics		Cronbach's test		CR	AVE	Shared variance
		Mean	SD	Item-total	α Value			
People interaction (PIN)	PIN_1	4.37	1.15	.52	.86	.88	.50	.26
	PIN_2			.53				
	PIN_3			.58				
	PIN_4			.63				
	PIN_5			.62				
	PIN_6			.57				
	PIN_7			.64				
	PIN_8			.58				
	PIN_9			.59				
Facility design (DES)	DES_1	4.36	1.38	.59	.83	.83	.56	.34
	DES_2			.69				
	DES_3			.72				
	DES_4			.64				
Sociability (SOC)	SOC_1	4.73	1.22	.53	.77	.77	.51	.30
	SOC_2			.58				
	SOC_3			.57				
	SOC_4			.56				
Physical change (PHC)	PHC_1	4.38	1.50	.71	.84	.84	.64	.30
	PHC_2			.70				
	PHC_3			.70				
Equipment (EQU)	EQU_1	4.33	1.53	.66	.81	.81	.60	.28
	EQU_2			.68				
	EQU_3			.66				
Ambience (AMC)	AMC_1	4.50	1.37	.55	.78	.79	.56	.35
	AMC_2			.63				
	AMC_3			.66				
Programme range (ROP)	ROP_1	4.52	1.39	.62	.73	.74	.50	.17
	ROP_2			.56				
	ROP_3			.59				

N.B. Mean values are based on a seven-point Likert scale ranging from 1=strongly disagree to 7=strongly agree. Cronbach alpha test statistics are derived from Reliability measures through SPSS Version 24.0. Lastly, CR, AVE and Shared variance were computed from CFA output through AMOS Version 24.0.

3.5. Exploratory factor analysis (EFA)

The Kaiser-Meyer-Olkin (KMO) measure and the Bartlett's test of sphericity preceded the factor analysis procedure in order to confirm whether the data were suitable for factor analysis. The KMO test yielded a sampling adequacy of 0.89, which is within the tolerable range of 0.5 and 1.0 (Malhotra, 2010) and the Bartlett's

test results yielded a significant chi-square value (p=0.000) of 4103.24 with 406 degrees of freedom. Both results confirmed that the data is suitable for factor analysis (Kaiser, 1974). Thereafter, EFA through SPSS Version 24.0, with principal component analysis (as an approach that considers the total variance in the data) and varimax rotation (to minimize the number of factors that had high loadings) was performed to evaluate the essential dimensions of service quality as perceived by university students.

The total number of factors extracted were determined using three criteria, namely factor loading (>0.50), the percentage of cumulative/total variance (>50%) and the eigenvalues (>1).

The rotated factor matrix indicating the factors and their items as well as the factor loadings are shown in Table 2. Furthermore, the naming and interpretation of the extracted factors are explained in the Discussion of Results Section.

Table 2. Exploratory factor analysis

No Subscale items	F1	F2	F3	F4	F5	F6	F7
You can count on the employees at the university to be friendly	.53						
University employees take action when problems occur	.58						
University employees are competent	.69						
University employees handle problems promptly and satisfactorily	.71						
University employees recognise and deal effectively with the special needs of each recreational sport user	.61						
The university's customers have a positive impact on my perceptions of the university's sport recreation services	.65						
I am generally impressed with the patrons of the university	.64						
University customers follow rules and regulations	.63						
I find that the university's other customers consistently leave me with a good impression of its service.	.58						
The university's facility layout serves my purpose/needs		.60					
Impressed with the design of the university's facility		.76					
The facility is aesthetically attractive		.79					
The facility is safe and comfortable		.61					
Sense of family exist among university students			.74				
I made many friends through participating in the university's classes/programmes			.68				

No Subscale items	F1	F2	F3	F4	F5	F6	F7
I really enjoyed the social interaction in the university's classes/ programmes			.70				
The university's ambience is excellent			.57				
I feel that my physical fitness level has increased after having used the University's recreational sport classes/ programmes				.84			
I feel that my skill level has increased after participation in the University's recreational sport classes/ programmes				.71			
The activities that I have participated in at the university have improved my skill performance				.77			
The equipment (e.g. exercise equipment) provided by the university is up to date					.62		
A variety of up-to-date exercise equipment is available at the university					.60		
The equipment provided by the university is in good usable condition					.75		
The university's ambience is what I am looking for in a university recreational sport setting						.62	
The facility is clean and well maintained						.75	
I am consistently impressed with the facility's atmosphere						.76	
The university has various recreational sport classes or programmes							.76
The university offers a wide range of recreational sport classes or programmes							.70
The university offers popular recreational sport classes or programmes							.77
Eigen value	9.64	2.08	2.00	1.66	1.19	1.12	1.08
Total variance	33.21	7.21	6.90	5.71	4.10	3.82	3.71
Cumulative variance explained	33.21	40.42	47.32	53.03	57.13	60.95	64.66
F1=People interaction; F2 Facility design; F3 Sociability;F4 Physical change; F5 Equipment; F6 Ambience; F7 Program range							

3.6 Confirmatory Factor Analysis (CFA)

For the study, CFA using AMOS Version 24.0, was employed to ascertain the model fit **(**misfit) through indices recommended by Gaskin (2015) and appears in relevant analysis (Masmanidis, Tsigilis, & Costa, 2015) as follows: chi-square X2/df (<3.0), increment fit index (IFI>0.90) comparative fit index (CFI>0.90): Tucker-Lewis index (TLI >0.90) and the root mean square error of approximation (RMSEA<0.08).Results of the evaluation of the measurement model through showed reasonable model fit

(Table 3). The chi-square recorded a value of 1.98 which was below the recommended threshold of <3.0. The IFI, TLI, CFI and RMSEA which were 0.92, 0.90, 0.92, and 0.06 respectively, are all deemed to be satisfactory as they met the required threshold for fit measures (Bryne, 1998).

Table 3. Goodness-of-fit statistics

Fit indices	CFA
Chi square	1.98
IFI	0.92
TLI	0.90
CFI	0.92
RMSEA	0.06

4. Empirical Results

4.1. Correlations analysis

In order to establish the correlation between campus recreation program dimensions, non-parametric Spearman correlation tests were calculated to assess the existence of such association. This procedure was adopted because the data was not normally distributed and thus violated the assumptions of parametric data (Field 2005). The outcomes of the correlation analysis are shown in Table 4.

Table 4. Correlation analysis

Factors	1	2	3	4	5	6	7
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	
Programme range	.303**	.257**	.250**	.320**	.413**	.283**	1.000

Note: ** Correlation is highly significant at the 0.01 level (2 tailed)

4.2. Discussion of results

With regard to correlation analysis as reported in Table 4 , all pairs of inter-construct correlations are both significant and positive ($p<0.05$). The inter-item correlations among the campus recreation programme ranged from moderate ($r=0.250$) to strong association ($r=0.590$) among the factors. These correlations provide strong support of the interrelatedness of the dimensions of campus recreation programmes.

Table 1 reported the agreement/disagreement pertaining to the importance of each sub-dimension. Sociability (M=4.73 SD=1.22) was rated the most vital factor and explained most of the variance. The importance of range of programmes (M=4.52;

SD=1.39) and ambience (M=4.50; SD=1.37) was moderately high. Finally, physical change (M=4.38; SD=1.50), people interaction (M=4.37; SD=1.15), facility design (M=4.36; SD=1.38) and equipment (M=4.33; SD=1.50) had the lowest average respectively in importance rating, but above the neutral level.

Exploratory factor analysis (see Table 2) revealed seven factors, namely people interaction, facility design, sociability, physical change, equipment, ambience and program range. The items that loaded on the first factor labelled *people interaction*, (eigenvalue=9.64) explained 33.21 percent of the total variance and consist of nine items. This dimension of service quality support perceived recreational benefits, or the expectation thereof, that may be derived from one's leisure experiences. Furthermore, there is strong affirmation in the literature for the significance of an interactional dimension in the conceptualisation of perceived service quality (Brady & Cronin, 2001; Edginton et al., 2004; Denison, 2013; Yarimoglu, 2014). Mansor et al. (2012) captured the essence of this dimension in their assertion that interaction quality significantly influences students' satisfaction with service quality.

The items that loaded on the second factor labelled, *facility design*, (eigenvalue=2.08) explained 7.21 percent of the total variance and comprised four items that represent the service facilities layout, including practical and visually-pleasing components of the facility. In most instances, the design of a facility can occur at the front of a consumer's consciousness (Bitner, 1992) and design is one of the indicators of the perceived physical environment (Tang et al., 2001). In addition, Godbey's (2009) studies affirm that design has an effect on participation in health, recreation and wellness service settings. Taking cognizance of all aspects of the service situation during the design stage, will enable executives to track possible changes in the consumer's re-patronage intentions and ensure corporate success (Lee, 2003) as well as creating a welcoming and inclusive environment (Young et al., 2016).

The items that loaded on the third factor labelled *sociability*, (eigenvalue=2.00) explained 6.90 percent of the total variance and comprised four items that relate to positive social encounters resulting from the social gratification of being in the company of others who also delight in the same activity. The extent to which a campus recreation program supports social interaction is denoted as sociability of the location. Gao et al., (2010) provided empirical evidence to confirm the necessity of a sociability component in creating an atmosphere that is suitable and comfortable for social interaction. In addition, Lundberg et al. (2011) studies confirmed that recreation could be used as a therapeutic modality, which facilitates the development of social networks.

The items that loaded on the fourth factor, *physical change*, (eigenvalue=1.66) explained 5.71 percent of the total variance and comprised three items**.** The results from the Lagrosen & Lagrosen (2016) study confirm the role of physical change as a primary determinant of outcome quality dimension in the perception of service quality. Findings of Norman et al. (2006) provide sufficient evidence that recreational facilities variables are significantly associated to physical activity.

The items that loaded onto the fifth factor, *equipment* (eigenvalue=1.19) explained 4.10 percent of the total variance and comprised three items that incorporate the devices used to enhance the recreation experience. Consumers appraise programmes and services through physical surroundings, including equipment (Ko & Pastore, 2007). Pertinent to the literature review on equipment, consumers of recreation and leisure emphasizes on pursuing emotional fulfillment than practical usefulness from their service experience (Tang et al., 2001).

The items that loaded onto the sixth factor labelled *ambience, (*eigenvalue=1.12) explained 3.82 percent of the total variance and comprised three items that relate to the non-visual aspects of the service locality. Although ambient conditions may exist below the customer's consciousness level its importance cannot be overestimated in service delivery, since in recreational activities, consumer participate in both service production and consumption (Baker, 1986). This dimension also supports the findings of Dhurup (2014) who affirmed that ambience impacts patrons' evaluation of a service and intentions to patronise the facility in future. Furthermore, the ambient dimension of the physical service surrounding acts as a package by transmitting a total image in terms of probable usage and absolute quality of the service.

The items that loaded onto the seventh factor, labelled *program range*, (eigenvalue=1.080) explained 3.726 percent of the total variance and includes three items that refer to the variety and attractiveness of programmes offered to participants. Programming offered through campus recreation is positioned to assist HEIs in promoting a greater sense of community development and sound relationships.

5. Conclusion and Recommendations

The field of recreation is evolving on a daily basis and recreation has been an integral part of HE for decades. HEIs who focus on leisure and recreation, in addition to the primary services offering, have the greatest opportunity of maximising current and longtime benefits. Overall, this study's measurement outcomes were acceptable in terms of reliability and validity; although, there is certainly a need for supplementary work to validate the instrument. The attractiveness of university recreation and sport programmes could be used as a marketing tool to potential students to the campus.

The service quality dimensions identified need to be incorporated by recreation managers in their periodic measurement of service quality. These dimensions can additionally serve to inform practitioners of how best they can support students and enhance their development. Furthermore, the validated measuring instrument should be employed as an analytical methodology to uncover broad areas of sport and recreation center service quality and shortfalls. In addition, the findings of this study can be used by campus recreation program coordinators to defend the existence of their programmes and structure them in a manner that would produce the greatest benefits for the students. The attractiveness of the university recreation and sport programmes could be used as a marketing tool to prospective students to the campus.

Recreation sport program administrators should contemplate on further evaluation of the wants and needs of their clients to see if a change in programme operation is needed. In this regard, the outcomes of the study should assist university recreational sport professionals to document their impact on students' development and assist the entire campus community in understanding the role campus recreational programmes play in the broader mission of the university. The university recreational officers should consider all these factors as indispensable aspects for the success of campus recreation programmes.

The outcomes of this study need to be qualified in view of the limitations. Firstly, the study adopted a non-probability convenience sampling method, which does not provide for an objective valuation of the exactness of the sample finding (Malhotra, 2010). It is therefore recommended that future research in this context, include using

probability sampling.The use of quantitative methods only and depending solely on cross-sectional data as source of information, when attempting to validate the measuring instrument may be a limitation. To this end , the use of both quantitative and qualitative research, such as structured interviews, is encouraged as it will afford an opportunity to gather richer data and greatly support the findings of the study. The developed scale could also be applied to a longitudinal study to explore how consumers' perceptions and evaluation of service quality adjusts over time.

Secondly, the psychometric properties of the measuring instrument have been confirmed with a limited sample of students from one university. Further tests of psychometric properties of the measurement instrument using broader samples in other contexts could be appropriate to increase the confidence level in the usage of the scale.

Thirdly, the study was undertaken in a university situated in the southern region of Gauteng in South Africa, therefore, it would be unrealistic to generalise the findings in other HEIs. In future, the study can be extended to other regions and provinces in order to undertake comparative studies in service quality dimension within a sport and recreation context.

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