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Student satisfaction to service quality of university's sports centre: A factor analysis approach

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Masnita Misiran^{1,*}, Zahayu Md Yusof¹, Adyda Ibrahim¹, Chong Siow Hui¹, Nur Fatiha Baharin¹, Hairani Hamid¹

¹ Department of Mathematics and Statistics, School of Quantitative Science, Universiti Utara Malaysia, Sintok, Kedah, Malaysia

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ABSTRACT

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Student's lifestyle should comprises of both academic and extracurricular activities as both activities have been proven to increase maturity and develop mental resilience in student's general well-being. This article attempts to extract attributing factors that contribute to the satisfaction of Universiti Utara Malaysia (UUM)'s Sport and Recreation Centre (SRC) among students residing in campus. Questionnaires were developed and distributed among UUM students by using systematic sampling method. We will use descriptive statistics and factor analysis to analyse the collected data. The results of 374 questionnaires discovered that the contributing factors are Tangibles, Responsiveness, Reliability and Assurance. These four factors show significant relationship with the student satisfaction towards UUM SRC. These findings reinforce the need for UUM's management to pay attention on the mentioned factors. In addition, this research can help the management to improve the service quality in UUM SRC by improving and increasing the reliability of the UUM SRC. Through these findings, the management can have a better understanding about what students need and improve the service quality in UUM SRC to satisfy the needs of students.

Keywords:

Confirmatory factor analysis, student satisfaction, questionnaire

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1. Introduction

Students that are actively involved with sport activities during their study have a well-shaped and largely developed personality [20]. Amongst these positive attributes include promoting a better health which leads to an increase of productivity, teaches soft skills e.g. taking orders, leadership, teamwork, performing in regulated system and socialization, and teaches behavioural habits for example motivation, discipline, tenacity, competitive spirit, responsibility, perseverance, confidence, and self-esteem [16]. Some studies also suggest the development of critical thinking, problem solving and diversity [4], and in developing a better concentration, learning, classroom behaviour, engagement in learning and self-esteem [20]. Besides, student's involvement with extracurricular

* Corresponding author.

E-mail address: masnita@uum.edu.my (Masnita Misiran)

activities is also believed to have boosted their academic achievements and attainments [9], [7], [6]. Agboola *et al.* [1] also suggested quality spaces for sport and recreation activities in a neighbourhood will significantly improve the quality of life in multicultural community, whereas Khan *et al.* [12] proposed the needs to promote sport as means to increase customer satisfaction. Thus, it is natural for the university to provide good campus environment to support these leisure and extracurricular activities.

Universiti Utara Malaysia (UUM) has a large and establish sports centre. Mostly every day, a lot of people, not only the staffs, students but also outside visitors come to do their sports in UUM Sport and Recreation Centre (SRC). It is important that UUM specifically UUM SRC knows what their clients need and understand their satisfaction towards the facilities in order for UUM SRC to manage the centre well and organised and also to make sure that the users are happy with the services given by UUM SRC.

Turman [21] in his study discovered that satisfaction of the users of recreational centre is very important for the management to improve their services. The management can run the centre smoothly when they knew what users' want. The opinion of users are valuable to help the management to focus on necessary improvement and guide them for their future investment based on users' requirement.

Since all undergraduate students in Universiti Utara Malaysia (UUM) are required to stay inside campus throughout their four years of study, it is very important for UUM to have a good and efficient sport and recreation center (SRC) inside its campus. Student's leisure activities in UUM involve the usage of these facilities, as the nearest gymnasium outside campus is approximately 10 km from UUM. A healthy lifestyle involves a minimum of 30 minutes physical activities daily, and the difficulties to reach such recreation centre will demotivate this cause. Thus, a well-maintained and reliable service quality of SRC inside campus will promote a healthy lifestyle among students, thus improving their social skills and academic performance. We refer our reader to several studies which focus on the importance of campus recreation facilities that correlate to student learning, development and academic success in [11], [3], and [5], to name just a few.

This article will study the factors deem important by UUM student that attribute to the satisfaction of the SRC in UUM. Previous study on customer satisfaction in the quality of service in Sport Center in other universities includes work by Theodorakis *et al.* [19], Ott [15] and Assaf [2], among others. Theodorakis *et al.* [19] examine the interaction between the service quality and customer satisfaction in spectator sports. They introduced a measurement system called SPORTSERV that enables them to measure the perceptions of service quality in sports. Using this system, they found a correlation between satisfaction and these five service quality dimensions. These dimensions are access, reliability, responsiveness, tangibles, and security. From the study, reliability and tangibles have the greatest impact on satisfaction, followed by responsiveness, access and security, while responsiveness has a negative effect on the customer's satisfaction. Ott [15] suggested an interaction between service quality, customer satisfaction, value and future intentions within campus recreation by using performance-based measures.

This research work will investigate the contributing factors specifically catered to the sport and recreation centre in UUM campus. This will ensure that in future, the management will have a clear view of students' satisfaction towards the services they provided so that they will know when and where should the improvement being done. This study, which is specifically designed for UUM, is important as the demographic and experiences of the population in campus are unique in each university.

2. Factor Analysis and Satisfaction

2.1 Population and sample

To date, there is a total population of 13,000 undergraduate students in UUM in 2016. Sekaran and Bougie [18] suggested a sample of 374 to be selected from the population. By using stratified random sampling, four main routes in UUM are divided into four strata. Using simple random sampling, only one student residential hall (DPP) for each stratum will be chosen as our sub-population namely N1, N2, N3 and N4. For ease of explanation, these four DPP are named DPP A, DPP B, DPP C and DPP D. N1 represents DPP A (862 students), N2 is DPP B (883 students), N3 is DPP C (1232 students), and N4 is DPP D (1356 students). A proportion allocation is used to decide the individual stratum sizes, resulting to $n_1 = 74$, $n_2 = 76$, $n_3 = 106$ and $n_4 = 118$.

2.2 Reliability Analysis: Internal Consistency of Reliability

The reliability of questionnaire is tested using Cronbach's alpha. Gliem and Gliem [10] suggested Cronbach alpha that must be greater than 0.70 or 0.80 as a reasonable goal. We provide a summary of the results in Table 1, showing that all the items have the values of 0.9 and above, thus suggesting the reliability of the items in the questionnaire are being satisfied for all the items.

Table 1

Reliability analysis of the questionnaire

Items	Cronbach's Alpha
All items in questionnaires	0.979
Item Tangibles	0.933
Item Responsiveness	0.951
Item Reliability	0.958
Item Assurance	0.933

Factor analysis as in [14], [22] and [13] will then be adopted in this article.

2.3 Factor Analysis

Factor analysis is a statistical technique used to reduce many variables to a few dimensions [17]. Responses were subjected to a factor analysis by using the maximum likelihood method of extraction, varimax, and orthogonal rotation. By using Seiler [17], both Kaiser – Guttman criterion of retaining factors with eigenvalues greater than 1.0 and Catell's scree test were considered. In Table 2, four factors are retained that are accounted for 55.71% of the variance. The value of Kaiser-Meyer-Olkin's measure of sampling adequacy is recorded at 0.973 and the Bartlett's test of sphericity value also proves to be significant, with its associated probability is less than 0.05, suggesting that the correlation matrix is not an identity matrix.

2.4 Scree Plot

In this study, factor analysis is used to derive the new variables which are called factors in order to give better understanding about the data. The graphical scree plot proposed by Cattell [8] was used to reduce the number of factors from items in the instrument. Cattell's scree test plots the eigenvalues and monitors where the graph tails to shallow scree. Figure 1 shows an analysis of the

scree plot which revealed four items that should be extracted. These items have the point at which the eigenvalues seem to level off.

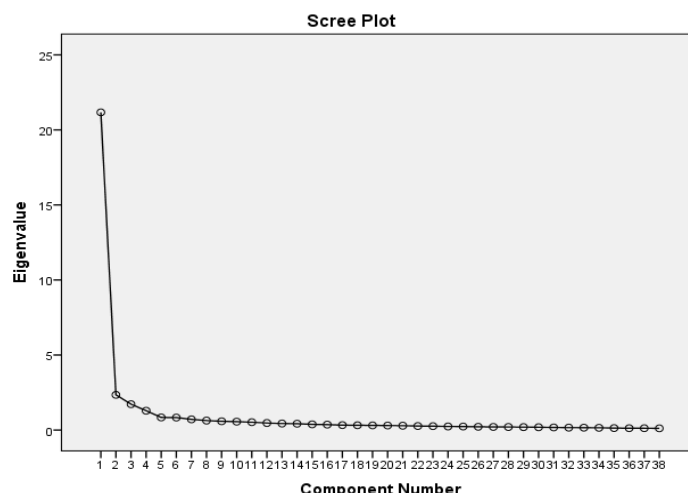


Fig. 1. Scree plot diagram showing the eigenvalues of the items

2.5 Varimax with Kaiser Normalization

Items with loadings of more than 0.5 are considered valid contributors. Table 2 presents the factor loading under four different categories; Factor 1 = Responsiveness, Factor 2 = Reliability, Factor 3 = Tangible, and Factor 4 = Assurance. Items 1 to 13 were loaded under Factor 1. Items 14 to 24 were loaded under Factor 2. Items 15 to 33 were loaded under Factor 3 and items 34 to 39 were loaded under Factor 4. For Factor 1, item 'Staffs of UUM Sports Centre are responsive to my requests' loaded the highest with factor loading of 0.786. Factor 2 loaded highest on item 'The time management of the facilities in UUM Sport Centre is reliable' with factor loading of 0.743 while for Factor 3, the highest loaded item is 'The physical setting provided by UUM Sport Centre is comfortable' with factor loading of 0.805. The last factor loaded highest on both item 'Coaches and Instructors of classes are able to guide me in teaching or training' and 'I feel secure and trust the Coaches and Instructors of classes' with factor loading of 0.743.

Table 2
Detail of factor analysis showing the loading of each item

No	Item	Factor			
		1	2	3	4
1	Staffs of UUM Sport Centre are willing to help me.	.772			
2	Staffs of UUM Sport Centre are responsive to my requests.	.786			
3	Staffs of UUM Sport Centre are responsive to	.773			
4	Staffs of UUM Sport Centre help me to precede my requests.	.729			
5	Staffs of UUM Sport Centre help me to solve my problems.	.757			
6	Staffs of UUM Sport Centre actively and aggressively provide services.	.725			
7	Availability of activity at convenient times.	.537			
8	UUM Sport Centre provides advance booking system.	.557			
9	Staffs of UUM Sport Centre paid sufficient attention when I speak.	.677			

10	Staffs of UUM Sport Centre are alert to my questions.	.686
11	Staffs of UUM Sport Centre are caring.	.637
12	Staffs of UUM Sport Centre are friendly.	.607
13	UUM Sport Centre is aware about the safety of the facilities.	.543
14	The regular lengths of opening hours during holidays are satisfactory.	.485
15	Availability of outdoor sports fields is adequate according to my needs.	.689
16	The opening hours of the sports facilities is satisfactory.	.670
17	The time management of the facilities in UUM Sport Centre's is reliable.	.743
18	Up-to-date information is available on UUM Sport Centre's programs and services.	.634
19	Programs offered by UUM Sport Centre start and finish on time.	.637
20	UUM Sport Centre offers a broad range of activities.	.649
21	UUM Sport Centre is well organized and well run.	.705
22	The staffs can answer the question correctly.	.609
23	Hours of operation are responsive to my schedule.	.485
24	UUM Sport Centre facilities are well maintained.	.509
25	UUM Sport Centre's facilities are well maintained.	.738
26	UUM Sport Centre's facilities are clean.	.766
27	The equipment provided by UUM Sport Centre is up-to-date.	.788
28	The physical setting provided by UUM Sport Centre is comfortable.	.805
29	The physical facilities are visually appealing.	.761
30	Clear and informative signals are provided.	.699
31	The lighting of the UUM Sport Centre is good.	.556
32	The hygienic condition of the changing rooms and toilets are good.	.553
33	Equipment variety exist in UUM Sport Centre supports a full range of fitness	.686
34	Coaches and instructors of classes are knowledgeable about their jobs.	.663
35	Coaches and instructors of classes are able to guide me in teaching or training.	.743
36	I feel secure and trust the coaches and instructors of classes.	.743
37	The staffs treat me with dignity and respect.	.676
38	The staffs are friendly and courtesy.	.626
39	The staffs give clear instructions in a language that I can understand.	.653

3. Discussion and Conclusion

This study was focused on the attributing factors that contribute to student's satisfaction towards UUM Sport and Recreation Centre. The findings suggest that the contributing factors in UUM campus include Tangibles, Responsiveness, Reliability, and Assurance, which is consistent with a few factors suggested by Theodorakis *et al.* [19]. These findings will enable management team and policy makers in UUM to plan for ways to improve its sport and recreation centre in the future. A thorough understanding of student's need and factors that are of importance to students will utilizes the use of funds to better equipped and improve UUM's own sport centre that will be fully capitalized by its

own resident to the utmost advantage accordingly. Through a full utilization of this sport centre, the university's aim to produce a holistic students' experience will be achieved.

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