



# IMPACT OF FACILITIES MANAGEMENT SERVICE QUALITY AND STUDENTS' SATISFACTION ON INSTITUTIONAL IMAGE (A Case Study of Abubakar Tafawa Balewa University Bauchi)

**A. U. Launi, A. Adeyemi., M. U. Bello, and M. U. Yahaya**

Department of Estate Management and Valuation, Faculty of Environmental Technology,  
Abubakar Tafawa Balewa University, Bauchi

**Abstract:** This study delved into the relationship between facilities management service quality, student satisfaction, and institutional image at Abubakar Tafawa Balewa University, Bauchi. Employing a quantitative research methodology, data was collected from 247 students through a structured questionnaire. The study aimed to assess the quality of facilities management services, student satisfaction levels, determine the impact of these factors on institutional image, and elucidate the nature of their interrelationships. Descriptive statistical analysis, including mean and ranking, was utilized to evaluate facilities management service quality and student satisfaction. The findings revealed moderate level in service delivery across different facilities management domains. Student satisfaction levels exhibited a similar pattern, with variations however, most of the respondents remained undecided. To ascertain the predictive influence of facilities management service quality and student satisfaction on institutional image, multiple regression analysis was conducted. Results indicated that both variables significantly contributed to institutional image, emphasizing their crucial roles in shaping the university's reputation. The regression model summary and the ANOVA result. The model produced overall R value of 0.67166 and R square value of 0.406 with F-statistics of 83.267 which are significant as indicated by p value of 0.000. This shows that the model predicts about 40.6% percent of the variation in Institutional image are translated by Students' Satisfaction and Facilities Management Service Quality. The study concludes that enhancing facilities management services and fostering high levels of student satisfaction are pivotal for improving the university's image. To achieve this, targeted service enhancements, infrastructure upgrades, and strategic communication initiatives are recommended. Further research is imperative to explore the long-term implications of these findings and to identify additional factors influencing institutional image.

**Keywords:** facilities management, student satisfaction, institutional image, Abubakar Tafawa Balewa University, higher education

## INTRODUCTION

Higher education institutions (HEIs) play a crucial role in the process of national development because of their ability to generate new knowledge, improve practice and promote innovations (Mowery, 2004) and to contribute to human capital development (Asteriou & Agiomirgianakis, 2001). Rising competition pushes universities to raise quality levels to encourage students to choose the same university for their future educational needs.

Teeroovengadum *et al.* (2019), posit that 'Institutions that were previously accessible to the societal elites only, now have to compete to attract students and gain market share. Higher education institutions (HEI) have become active and valuable partners towards the attainment of the United Nation's goals for sustainable development (SDG's) through its contribution in promoting healthy live and wellbeing of students, ensuring inclusive and equitable quality education which also serves as a pivot for enhancing economic growth and putting an end to poverty in developing economies (Gadzekpo *et al.*, 2022).

Facilities management (FM) is a key function in managing facility resources, support services and working environment to support the core business of the organisation in both the long and short term (Bröchner *et al.* 2019; Jensen & Van der Voordt, 2017). Nutt (2002-2003) argues that FM activities are relevant to an organisation's aspects and dimensions, such as the following: purpose, vision, mission, objectives, core competencies and goals; processes of work, operations and projects; environmental context, behaviour, culture and market; and product (s), infrastructure, property and facilities. Hence, the evolution of a discipline comprising property management, financial management, as well health and safety in buildings, engineering services, maintenance, domestic services and utilities supplies (Oladokun *et al.*, 2010). The range of facility services is larger, embracing these functions that seek to keep the building or establishment (educational or otherwise) operational within its defined performance parameters, and all the support services that the organization may require to enable it efficiently and effectively carryout its operations and meet its objectives (Okafor & Onuoha, 2019).

Kärnä *et al.* (2013), universities must unquestionably prioritize providing high-quality FM services in addition to maintaining a secure and well-maintained educational facility if they hope to meet their goals and thrive in the fiercely competitive market. By giving employees and students the necessary physical space to support their academic and practical work, FM plays a significant part in helping the institution achieve its objectives. There is an underlying need for Higher Education Institutions (HEI) to pay more attention to students needs in terms of facilities services delivery due to its impact in shaping the physical learning environments (PLE) which serves as a stimuli to enhance students learning and outcomes (Gadzekpo *et al.*, 2022).

Hanssen and Solvoll (2015), in a study that evaluated student satisfaction in Norwegian university asset that, the importance of university facilities quality for student satisfaction at Norwegian university such as social area, auditoriums and libraries affect student satisfaction towards the university. Manzoor (2013) explored students' satisfaction in private and public university facilities in Pakistan and found that facility provided to the students regarding the sport facility and the auditorium facility have significant positive effect on the students' satisfaction while accommodation facility does not. Ideris *et al.* (2016), in a study that evaluated student satisfaction with facilities in Universiti Utara Malaysia, found a significant relationship between five service quality dimensions and students satisfaction.

Universities in Ghana are confronted with issues of inadequate and poorly managed facilities which sometimes raise the question as to whether they have the requisite capacity to support the training of higherly skilled manpower for the development of the country. Poor maintenance culture have left equipment such as airconditioners and ceiling fans faulty, there exist substandard cleaning services, broken lavatories amongs others. Certainly, attention has not been paid to their physical learning environment; especially, from the students

perspective (Acquah *et al.*, 2017). Similarly, Nigerian universities lack of proper maintenance has resulted in faulty equipment, including air conditioners and ceiling fans, substandard cleaning services, and dysfunctional laboratories, all of which contribute to a less-than-ideal learning environment, particularly from the students' perspective (Acquah *et al.*, 2017). Oluwunmi *et al.* (2017) investigated student satisfaction with major facilities in private university in Ogun State, Nigeria. The finding revealed that students are satisfied with library, ICT laboratory, classroom facilities but they were not satisfied with escape route and toilet facility. In a study that investigated student satisfaction with hostel facilities in Federal University of Technology, Akure-Nigeria, Ajayi *et al.* (2015), reported that the respondent were dissatisfied with the adequacy and functionality of some facilities such as laundry, bathroom and toilet facilities due to distance from room and level of cleanliness. The study called for urgent need for management of the institution to focus on the provision of adequate facilities in order to ensure conducive learning environment. Oluwunmi *et al.* (2012), investigated user satisfaction with residential facilities in Nigerian public university.

Abubakar Tafawa Balewa University (ATBU) in Bauchi, Nigeria, is a distinguished institution renowned for its academic contributions and national development. However, beneath this excellence lies a pressing concern, the university's persistent facilities management challenges affecting functionality, student experience, and its overall image. These challenges encompass inadequacies in lecture hall cleanliness, poor hostel maintenance, water supply issues, security concerns for off-campus students, unreliable internet services, and neglected building facilities. These problems have serious implications for student well-being, academic performance, and the institution's reputation.

### ***Aim of the study***

The aim of this study is to investigate the impact of facilities management service quality and students' satisfaction on institution image in Abubakar Tafawa Balewa University Bauchi, Nigeria with a view to provide a broader understanding of facilities management in universities and its influence on student experience and institutional reputation.

### ***Objectives of the study***

1. To determine level of Facilities management service quality in Abubakar Tafawa Balewa University.
2. To determine the level of Students' satisfaction with Facilities Management Service in the study area
3. To evaluate students' perception of the institution image in the study area
4. To examine the effect of facilities management service quality on students' satisfaction and institutional image in the study area

### ***Conceptual Framework***

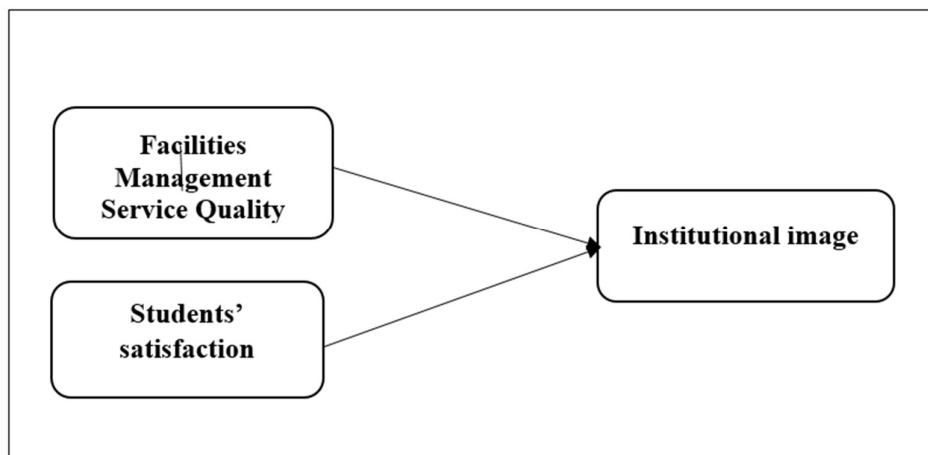
Service quality is considered an important criterion in evaluating the performance of service industry. The SERVQUAL model pioneered by Parasuraman *et al.* (1988) was found to be widely used in evaluating performance of service or service providers in different service sectors. For instance, in the facilities management field, SERVQUAL model, have been wholly or partly used to study issue of service quality and/or performance in different organisations such as hospital (Amos *et al.*, 2020, 2022), educational institutions (Aziz & Sapri, 2013; Ideris

*et al.*, 2016), commercial real estate (Karunasena *et al.*, 2018) and hospitality (Al-Gasawneh *et al.*, 2022; Günaydin, 2022) and host of others.

Although the fundamental theory of service quality suggests five dimensions of service quality, that is; reliability, responsiveness, assurance, empathy and tangibility, however, evidence shows that many studies introduced additional dimensions or entirely adopted different dimensions to investigate service quality in different service sectors (Amos *et al.*, 2020; Mattah *et al.*, 2018). This is unconnected with the fact that the nature of service varies across different industries, hence the need for additional or entirely new dimensions to capture the peculiarities of service being provided (Yusoff *et al.*, 2008).

As a result, the many FM functions found in the literature were operationalized to provide the service quality dimensions employed in this study. As stated in Oyedeji (2018), Hinks and McNay (1999), and Shohet and Lavy (2017), the general cleaning and maintenance (GCM) dimension, for example, includes indicators like cleaning of common areas, maintenance of lecture halls, maintenance of laboratories and studios, and maintenance of student hostels. The services that have a direct connection to the employees of the units in charge of carrying out the FM function are what make up the FM support services (FSS), which were operationalized. Functions including the professionalism of security services, the efficacy of the security alert/surveillance system, the promptness with which the security unit addressed power outages, the promptness with which the security unit responded to emergencies, and other related services are among the indicators that measured this dimension (Nicholas *et al.*, 2022).

Oyedeji (2018)'s operationalization of the learning environment support service included ancillary/allied services that are part of FM activities and whose provision enhances users' comfort and productivity at work. The dimension was measured using the following services: waste management, health care, internet, transportation, recreation, library, and other similar services judged necessary to improve learning in HEI settings. The reasoning behind this conceptualization stems from Bröchner's (2017) claim that researchers can either use the SERVQUAL scale as it is or modify it, or they can rely on one or more scale items from the current instrument, or they can create a new instrument by conducting a survey using factor analysis (Nicholas *et al.*, 2022).



*Conceptual framework*

**METHODOLOGY**

The research design and methodology for this study were quantitative in nature. A descriptive survey design was adopted to collect data from students at Abubakar Tafawa Balewa University Bauchi using five point lickert scale questionnaire with different descriptors. A sample size of 247 students was selected using simple random sampling. The questionnaire was designed to assess the level of facilities management service quality, students' satisfaction, and the institution's image. Statistical Package for Social Sciences (SPSS) was used to analyze the quantitative data. Frequency, standard deviation, mean ranking, and regression analysis were employed to achieve the research objectives.

**RESULT AND DISCUSSION**

***A. Facilities Management Service Quality***

The first objective of this study aimed to determine Facilities Management Service Quality in Abubakar Tafawa Balewa University Bauchi, and it was evaluated using various constructs as presented in tables 1 below.

Table 1: Facilities Management Service Quality

<b>Facilities Management Service Quality</b>	<b>N</b>	<b>Mean</b>	<b>Std D.</b>	<b>Rank</b>	<b>Remark</b>
The quality of Physical Facilities	247	3.09	.978	5 <sup>th</sup>	M
Condition of Equipment	247	3.55	.957	2 <sup>nd</sup>	M
Personnel Appearance and competence	247	3.06	.978	7 <sup>th</sup>	M
Communication Materials	247	2.98	1.038	9 <sup>th</sup>	M
Service Fulfillment with regard to Facilities Management	247	3.08	1.103	6 <sup>th</sup>	M
Consistency of Facilities Management Service	247	3.72	3.365	1 <sup>st</sup>	M
Facilities Management Meeting specific Needs and requirements	247	3.29	1.138	4 <sup>th</sup>	M
Effectiveness of Facilities Management in Problem Resolution	247	3.09	1.169	5 <sup>th</sup>	M
Timeliness in attending request	247	3.31	.908	3 <sup>rd</sup>	M
Responsiveness in Handling Inquiries	247	3.08	1.216	6 <sup>th</sup>	M
Courtesy of Facilities management personnel	247	2.74	1.128	14 <sup>th</sup>	M
Trustworthiness Facilities management personnel	247	2.81	1.220	13 <sup>th</sup>	M
Your safety while using FM service	247	2.82	.993	12 <sup>th</sup>	M
Willingness to Believe in their actions and commitments	247	2.84	1.039	11 <sup>h</sup>	M
Your Perception of FM Reliability based on your experiences	247	2.93	1.008	8 <sup>th</sup>	M
Elements of Trust, benevolence and integrity of FM personnel	247	2.90	1.025	10 <sup>th</sup>	M
<b>Facilities Management Service Quality (Aggregated)</b>	<b>247</b>	<b>3.1</b>	<b>.78305</b>		<b>M</b>

Consistency of Facilities Management Service achieved the highest mean of M=3.72, SD=3.37, ranking first while Courtesy of Facilities Management personnel had a lower mean of M=2.74, SD=1.13, placing it in 14th position.

The quality of Physical Facilities was rated at a mean of M=3.09, SD=0.98, ranking 5th. The condition of Equipment scored higher with a mean of M=3.55, SD=0.96, placing it in 2nd position. Personnel Appearance and Competence garnered a mean of M=3.06, SD=0.98, ranking 7th. Communication Materials received a mean rating of M=2.98, SD=1.04, positioning it in 9th place. Service Fulfillment in relation to Facilities Management was rated at M=3.08, SD=1.10, ranking 6th.

Facilities Management meeting specific Needs and requirements had a mean of M=3.29, SD=1.14, placing it in 4th position. Effectiveness in Problem Resolution scored

M=3.09, SD=1.17, ranking 5th. Timeliness in attending requests received a mean of M=3.31, SD=0.91, ranking 3rd. Responsiveness in Handling Inquiries was rated at M=3.08, SD=1.22, ranking 6th.

Trustworthiness of Facilities Management personnel scored similarly low at M=2.81, SD=1.22, ranking 13th. Your safety while using FM services was rated at M=2.82, SD=0.99, ranking 12th. Willingness to Believe in their actions and commitments had a mean of M=2.84, SD=1.04, placing it in 11th position. Your Perception of FM Reliability based on your experiences scored M=2.93, SD=1.01, ranking 8th. Lastly, Elements of Trust, benevolence, and integrity of FM personnel had a mean of M=2.90, SD=1.02, ranking 10th.

The aggregated Facilities Management Service Quality had a mean of M=3.10, SD=0.78 which signifies a moderate level of facilities service quality.

**B. Students’ Satisfaction with facilities management Services**

The second objective of the study seek to determine Students’ Satisfaction with facilities management in Abubakar Tafawa Balewa University Bauchi, this was evaluated using various constructs as presented in table 2 below.

Table 2: Students’ Satisfaction with facilities management Services

<b>Level of Student Satisfaction</b>	<b>N</b>	<b>Mean</b>	<b>Std. D</b>	<b>Rank</b>	<b>Remark</b>
Furniture maintenance	247	3.35	1.188	8 <sup>th</sup>	M
Maintenance of sewage system	247	3.62	1.440	3 <sup>rd</sup>	U
Maintenance of classes/ studios/ laboratories	247	3.06	1.228	15 <sup>th</sup>	U
Maintenance of Sport facilities	247	3.13	1.173	12 <sup>th</sup>	U
Students’ hostel maintenance	247	3.63	1.185	2 <sup>nd</sup>	S
Lecture theatres maintenance	247	3.24	1.191	11 <sup>th</sup>	U
Maintenance of parking space	247	2.80	1.143	21 <sup>st</sup>	U
Space planning and management	247	3.06	1.299	15 <sup>th</sup>	U
Maintenance of lawn/ flowers	247	3.60	1.226	4 <sup>th</sup>	S
Cleaning of common areas (toilets, staircase, lobby)	247	3.42	1.345	7 <sup>th</sup>	S
Maintenance of building service (plumbing, lighting	247	3.50	1.329	6 <sup>th</sup>	S
Professionalism of security services	247	3.09	1.268	13 <sup>th</sup>	U
Effectiveness of security alert, surveillance system (CCTV, Rapid response office etc)	247	3.87	1.251	1 <sup>st</sup>	S
Promptness of security unit in responding to emergency	247	3.56	1.314	5 <sup>th</sup>	S
Promptness in addressing power problem	247	3.31	1.254	10 <sup>th</sup>	U
Promptness of facility management unit in attending to complaint/enquires	247	3.31	1.201	10 <sup>th</sup>	U
Health care services	247	2.72	1.262	22 <sup>nd</sup>	U
Internet service	247	2.67	1.152	23 <sup>rd</sup>	U
Transportation services	247	2.84	1.074	19 <sup>th</sup>	U
E-service	247	2.62	1.112	24 <sup>th</sup>	U
Cafeteria & canteen service	247	3.04	1.079	16 <sup>th</sup>	U
Recreational facilities	247	3.07	1.082	14 <sup>th</sup>	U
Cafeteria & canteen services	247	2.87	1.000	18 <sup>th</sup>	U
Virtual learning facilities	247	3.03	1.174	17 <sup>th</sup>	U
Library services (journal subscription, repository, e-library)	247	2.51	1.043	25 <sup>th</sup>	U
Waste management services	247	3.34	1.299	9 <sup>th</sup>	U
Firefighting service	247	2.81	1.226	20 <sup>th</sup>	U
<b>Level of Student Satisfaction (Aggregated)</b>	<b>247</b>	<b>3.15</b>	<b>.7250</b>		<b>U</b>



Furniture maintenance was rated at a mean of  $M=3.35$ ,  $SD=1.188$ , ranking 8th. Maintenance of the sewage system scored higher, with a mean of  $M=3.62$ ,  $SD=1.440$ , placing it in 3rd position. Maintenance of classes, studios, and laboratories garnered a mean of  $M=3.06$ ,  $SD=1.228$ , ranking 15th. Maintenance of sports facilities received a mean rating of  $M=3.13$ ,  $SD=1.173$ , positioning it in 12th place. Students' hostel maintenance achieved a high rating of  $M=3.63$ ,  $SD=1.185$ , ranking 2nd.

Lecture theatres maintenance was rated at  $M=3.24$ ,  $SD=1.191$ , ranking 11th. Maintenance of parking spaces received a lower mean of  $M=2.80$ ,  $SD=1.143$ , placing it in 21st position. Space planning and management garnered a mean of  $M=3.06$ ,  $SD=1.299$ , ranking 15th. Maintenance of lawns and flowers scored well, with a mean of  $M=3.60$ ,  $SD=1.226$ , placing it in 4th position. Cleaning of common areas (toilets, staircases, and lobbies) had a mean of  $M=3.42$ ,  $SD=1.345$ , ranking 7th.

Maintenance of building services (plumbing, lighting) was rated at  $M=3.50$ ,  $SD=1.329$ , ranking 6th. Professionalism of security services received a mean of  $M=3.09$ ,  $SD=1.268$ , ranking 12th. Effectiveness of security alerts, surveillance systems (CCTV, Rapid response office, etc.) achieved the highest rating with a mean of  $M=3.87$ ,  $SD=1.251$ , ranking 1st. Promptness of the security unit in responding to emergencies scored  $M=3.56$ ,  $SD=1.314$ , ranking 5th. Promptness in addressing power problems had a mean of  $M=3.31$ ,  $SD=1.254$ , ranking 10th.

Promptness of the facility management unit in attending to complaints/inquiries was also rated at  $M=3.31$ ,  $SD=1.201$ , ranking 10th. Healthcare services received a lower mean of  $M=2.72$ ,  $SD=1.262$ , placing it in 22nd position. Internet service was rated even lower at  $M=2.67$ ,  $SD=1.152$ , ranking 23rd. Transportation services had a mean of  $M=2.84$ ,  $SD=1.074$ , ranking 19th. E-services received a mean of  $M=2.62$ ,  $SD=1.112$ .

Cafeteria and canteen services had a mean of  $M=3.04$ ,  $SD=1.079$ , ranking 16th. Recreational facilities scored  $M=3.07$ ,  $SD=1.082$ , ranking 14th. Cafeteria and canteen services (repeated) scored  $M=2.87$ ,  $SD=1.000$ , ranking 18th. Virtual learning facilities had a mean of  $M=3.03$ ,  $SD=1.174$ , ranking 17th. Library services (journal subscription, repository, e-library, etc.) received a low rating of  $M=2.51$ ,  $SD=1.043$ , ranking 24th. Waste management services had a mean of  $M=3.34$ ,  $SD=1.299$ , ranking 9th. Finally, firefighting services were rated at  $M=2.81$ ,  $SD=1.226$ , ranking 20th. The aggregated level of student satisfaction was  $M=3.15$ ,  $SD=0.7250$  which indicates the respondents remained level of satisfaction was moderate.

### ***C. Institutional Image.***

The third objective seek to assess Institutional Image in Abubakar Tafawa Balewa University and it was evaluated using various constructs as presented in table 3 below. The evaluation utilized a 5-point scale.

Table 3: Institutional Image.

<b>Institution image</b>	<b>N</b>	<b>Mean</b>	<b>Std. D</b>	<b>Rank</b>	<b>Remrk</b>
University Reputation Values	247	2.19	1.003	9 <sup>th</sup>	L
Perception of the university influence in your decision-making, such as admissions	247	2.45	1.011	5 <sup>th</sup>	L
Willingness to recommend the university to Others	247	2.83	1.280	1 <sup>st</sup>	M
Your connection with image and identity that the university portrays	247	2.66	1.034	3 <sup>rd</sup>	M
Your attachment with the university identity	244	2.40	1.036	6 <sup>th</sup>	L
The performance of university alumni in various organizations and capacities	247	2.82	1.246	2 <sup>nd</sup>	M
The success recorded by the university	247	2.37	2.293	7 <sup>th</sup>	L
University's national recognition	247	2.21	1.199	8 <sup>th</sup>	L
University's international recognition	247	2.48	1.281	4 <sup>th</sup>	L
<b>Institution image (Aggregated)</b>	<b>244</b>	<b>2.491</b>	<b>.8677</b>		<b>L</b>

University Reputation Values were rated at a mean of M=2.19, SD=1.003, ranking 9th. Perception of the university's influence on decision-making, such as admissions, had a mean of M=2.45, SD=1.011, ranking 5th. Willingness to recommend the university to others garnered a significantly higher mean of M=2.83, SD=1.280, placing it in 1st position. Your connection with the image and identity the university portrays received a mean of M=2.66, SD=1.034, ranking 3rd. Your attachment to the university identity had a mean of M=2.40, SD=1.036, ranking 6th.

The performance of university alumni in various organizations and capacities was rated at M=2.82, SD=1.246, placing it in 2nd position. The success recorded by the university had a mean of M=2.37, SD=2.293, ranking 7th. University's national recognition was rated at M=2.21, SD=1.199, ranking 8th. University's international recognition had a mean of M=2.48, SD=1.281, ranking 4th. The aggregated institution image had a mean of M=2.4916, SD=0.86767. which indicates that respondents reported institution image as low or poor.

***D. Impact of facilities management Service quality and students' satisfaction on Institutional Image in the study area***

The fourth goal of this study is to ascertain the impact of facilities management Service quality and students' satisfaction on Institutional Image in Abubakar Tafawa Balewa University. Multiple Regression Analysis (MRA) was used to accomplish this goal. To make sure the data fit the requirements for multivariate analysis, quality assessments were carried out earlier in the analysis process. This is predicated on the suggestions made by Hair et al. (2017) and Pallant (2011), who state that data must be internally consistent, regularly distributed, and free of multicollinearity, missing values, and outliers. The advice was followed, and the conditions listed in section 4.3 above were all satisfied.

The enter method was used in the two models. In the enter method, 2 variables were entered into independent variables in the model while 1 was entered into independent variables in the model. The regression model was specified to produce the model summary, the analysis of variance (ANOVA) and the coefficient to determine the individual influences of each of the independent variables or predictors on the dependent variable as presented in tables below.



**Regression Model**

The regression model incorporates all the individual variables of Facilities management service quality and students’ Satisfaction into the regression model as presented in table 4 below.

Table 4: Model Summary and ANOVA

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig.
1	.637 <sup>a</sup>	.406	.401	.67166	83.267	.000 <sup>b</sup>

a. Dependent Variable: Institutional image

b. Predictors: (Constant), Students’ Satisfaction, Facilities Management Service Quality

The regression model developed to predict institutional image demonstrates a moderate level of predictive accuracy, explaining 40.6% of the variance in the dependent variable. Both Facilities Management Service Quality and Students’ Satisfaction emerged as statistically significant predictors of institutional image, indicating that improvements in these areas are likely to positively influence how the institution is perceived. The positive relationship between these variables and institutional image suggests that strategic investments in enhancing facilities management services and cultivating high levels of student satisfaction are crucial for bolstering the university's reputation and overall image.

The model explains 40.6% of the variance in institutional image ( $R^2 = .406$ ). This indicates that the independent variables, students' satisfaction, and facilities management service quality, are moderately correlated with institutional image. The adjusted  $R^2$  of .401 suggests that the model is a reasonably good fit, considering the number of predictors. The standard error of the estimate of .67166 indicates the average amount of error in predicting institutional image using the model. The F-statistic of 83.267 is significant at the .001 level, indicating that the model as a whole is statistically significant.

Table 9 shows the regression model summary and the ANOVA result. The model produced overall R value of 0.67166 and R square value of 0.406 with F-statistics of 83.267 which are significant as indicated by p value of 0.000 far below the recommended maximum of 0.05 (Pallant, 2011). This shows that the model predicts about 40.6% percent of the variation in Institutional image are translated by Students’ Satisfaction and Facilities Management Service Quality. In other words, about 40.6% percent in the changes in institutional image whether high or low can be explained by changes in Students’ Satisfaction and Facilities Management Service Quality. The model is fitted well and good as it produced a good R square and F statistics values.

Table 5: Regression Coefficients

	Unstandardized Coefficients		Stand. Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	.005	.201		.024	.981
Facilities Management Service Quality	.449	.072	.406	6.204	.000
Students’ Satisfaction	.350	.078	.293	4.476	.000

The unstandardized coefficient for Facilities Management Service Quality is .449, indicating that for every one-unit increase in Facilities Management Service Quality, Institutional Image increases by .449 units, holding Students' Satisfaction constant. This

coefficient is statistically significant ( $p < .000$ ). Similarly, the unstandardized coefficient for Students' Satisfaction is .350, meaning that for every one-unit increase in Students' Satisfaction, Institutional Image increases by .350 units, holding Facilities Management Service Quality constant. This coefficient is also statistically significant ( $p < .000$ ). Both independent variables, Facilities Management Service Quality and Students' Satisfaction, have a positive and significant impact on Institutional Image.

These results suggest that both Facilities Management Service Quality and Students' Satisfaction are positively associated with the dependent variable (Institutional Image) in the model. The standardized coefficients provide a more comparable measure of the relative strengths of these relationships, indicating that Facilities Management Service Quality has a stronger influence. Therefore, based on both the Beta coefficients and T-statistics, Facilities Management Service Quality has a more substantial impact on Institutional Image compared to Students' Satisfaction alone. The significant p-values for both variables imply that these relationships are unlikely due to chance.

### ***Discussion of Result***

This study investigated the factors influencing effect of facilities management service quality and students' satisfaction on institution image in Abubakar Tafawa Balewa University Bauchi, Nigeria. The findings revealed that both facilities management quality and students' satisfaction with facilities management positively influence institution image. These results align with existing literature highlighting the crucial role of well-managed facilities in attracting users, particularly within African cities (Ayeni & Adebayo, 2021; Oluwatoyin, 2020).

The results of the regression model align with the established theoretical framework linking service quality, student satisfaction, and institutional image. As posited by Sultan and Yin Wong (2013), perceived service quality, encompassing academic, administrative, and physical facilities, is a critical determinant of student satisfaction. Our findings corroborate this assertion, demonstrating a significant positive relationship between facilities management service quality and student satisfaction, as reflected in the model's coefficients. This is consistent with previous research (Ali et al., 2016; Kärnä & Julin, 2015; Manzuma-Ndaaba et al., 2016; Martínez-Argüelles & Batalla-Busquets, 2016; Saoud & Sanséau, 2019; Sultan & Yin Wong, 2014) emphasizing the positive correlation between service quality and student satisfaction in higher education.

Furthermore, the study's findings support the proposition that student satisfaction is a key driver of institutional image (Johnson et al., 2001; Nguyen & LeBlanc, 2001). The positive and significant relationship between student satisfaction and institutional image in our model is consistent with the notion that satisfied students are more likely to perceive the institution positively and recommend it to others (Andreassen & Lindestad, 1998; Dick & Basu, 1994). This aligns with the theoretical framework positing that service quality, through its impact on student satisfaction, ultimately influences institutional image (Grönroos, 1984; Jiewanto et al., 2012; Osman & Saputra, 2019).

The model's explanatory power of 40.6% indicates that while facilities management service quality and student satisfaction are significant predictors of institutional image, other factors not included in the model may also influence it. This is consistent with previous research highlighting the importance of various institutional features, such as the institution's name, services offered, and interactions with users, in shaping institutional image (Nicholas et al., 2022; Alcaide-Pulido, Alves, & Gutiérrez-Villar, 2017).

The findings of this study provide empirical support for the theoretical framework linking service quality, student satisfaction, and institutional image. The results emphasize the importance of both facilities management service quality and student satisfaction in shaping the university's reputation. These findings align with previous research and offer insights for higher education institutions seeking to enhance their institutional image.

## **CONCLUSION**

The research findings reveal a disparity in facilities management service quality and student satisfaction at Abubakar Tafawa Balewa University Bauchi. While some areas like equipment maintenance and service consistency received positive feedback, others such as personnel courtesy and problem resolution require improvement. Student satisfaction levels also varied across different facilities and services. The study emphasizes the importance of enhancing facilities management services, prioritizing student needs, strengthening institutional image, and implementing a continuous evaluation and improvement system to address these challenges and improve the overall university experience.

## **References**

- Acquah, P. C., Frimpong, E. B., and Borkloe, J. K. (2017). The Competency Based Training (CBT) Concept of Teaching and Learning in the Technical Universities in Ghana: Challenges and the Way Forward". *Asia Pacific of Advanced Research (APIAR)*, 3 (2), 172-178.
- Ajayi, M., Nwosu, A., & Ajani, Y. (2015). Students' satisfaction with hostel facilities in Federal University of Technology, Akure, Nigeria. *European Scientific Journal*, 11(34), 402-415.
- Alcaide-Pulido, P., Alves, H., & Gutiérrez-Villar, B. (2017). Development of a model to analyze HEI image: A case based on a private and a public university. *Journal of Marketing for Higher Education*, 27(2), 162-187.
- Al-Gasawneh, J. A., AlZubi, K. N., Anuar, M. M., Padlee, S. F., ul-Haque, A., & Saputra, J. (2022). Marketing performance sustainability in the Jordanian hospitality industry: The roles of customer relationship management and service quality. *Sustainability*, 14(2), Article 803.
- Ali, A., Zafar, H., Zia, M., ul Haq, I., Phull, A. R., Ali, J. S., & Hussain, A. (2016). Synthesis, characterization, applications, and challenges of iron oxide nanoparticles. *Nanotechnology, science and applications*, 49-67.
- Amos, D., Musa, Z. N., & Au-Yong, C. P. (2020). Performance measurement of facilities management services in Ghana's public hospitals. *Building Research & Information*, 48(2), 218-238.
- Andreassen, T. W., & Lindestad, B. (1998). Customer loyalty and complex services: The impact of corporate image on quality, customer satisfaction and loyalty for customers with varying degrees of service expertise. *International Journal of service Industry management*, 9(1), 7-23.

- Asteriou, D., & Agiomirgianakis, G. M. (2001). Human capital and economic growth: time series evidence from Greece. *Journal of Policy Modeling*, 23(5), 481-489.
- Ayeni-agbaje, A. R., NO, O., & Adebayo, A. I. SUSTAINABILITY DISCLOSURES AND ITS IMPACT ON FIRM'S VALUE IN NIGERIA.
- Aziz, Z. A., & Sapri, M. (2013). An assessment of facility service quality performance for Malaysian public building: SERVQUAL approach. In 4th ICBER 2013. *Proceedings of the 4th International Conference on Business and Economic Research, Bangi: Conference Master Resources* 620-632.
- Bröchner, J., Haugen, T. and Lindkvist, C. (2019), "Shaping tomorrow's facilities management", *Facilities*, 37 (7/8), 366-380.
- Dick, A. S., & Basu, K. (1994). Customer loyalty: toward an integrated conceptual framework. *Journal of the academy of marketing science*, 22, 99-113.
- Gadzekpo, A. A., Sapri, M., & Amos, D. (2022). The Effect of Facilities Management Services on The Physical Learning Environment of Technical Universities in Ghana. 12(5), 1460–1481. <https://doi.org/10.6007/IJARBSS/v12-i5/13238>
- Grönroos, C. (1984). A service quality model and its marketing implications. *European Journal of marketing*, 18(4), 36-44.
- Günaydın, Y. (2022). Service quality in hospitality businesses and its effect on revisit intention during the Covid-19. *Journal of Tourism Theory and Research*, 8(2), 37-46.
- Hair Jr, J. F., Matthews, L. M., Matthews, R. L., & Sarstedt, M. (2017). PLS-SEM or CB-SEM: updated guidelines on which method to use. *International Journal of Multivariate Data Analysis*, 1(2), 107-123.
- Hanssen, T.-E. S., & Solvoll, G. (2015). The importance of university facilities for student satisfaction at a Norwegian university. *Facilities*, 33(13/14), 744-759.
- Hinks, J., & McNay, P. (1999). The creation of a management-by-variance tool for facilities management performance assessment. *Facilities*, 17(1/2), 31-53.
- Ideris, M. S. K., Lim, T. Y., Rodzi, S. M., Romle, A. R., Zabri, M. A. H. M., & Mahamad, N. A. (2016). Students' satisfaction on facilities in Universiti Utara Malaysia. *World Applied Sciences Journal*, 34(6), 795-800.
- Jiewanto, A., Laurens, C., & Nelloh, L. (2012). Influence of service quality, university image, and student satisfaction toward WOM intention: A case study on Universitas Pelita Harapan Surabaya. *Procedia-Social and Behavioral Sciences*, 40, 16-23.
- Johnson, J. R., & Cheng, C. Z. (2001). Stochastic ion heating at the magnetopause due to kinetic Alfvén waves. *Geophysical research letters*, 28(23), 4421-4424.

- Kärnä, S., & Julin, P. (2015). A framework for measuring student and staff satisfaction with university campus facilities. *Quality Assurance in Education*, 23(1), 47-66.
- Karna, S., Julin, P., and Nenonen, S. (2013), "User satisfaction on a university campus by students and staff", *Intelligent Buildings International*, 5(2), 69–82.
- Karunasena, G., Vijerathne, D., & Muthmala, H. (2018). Preliminary framework to manage tenant satisfaction in facilities management service encounters. *Facilities*, 36(3/4), 171-194
- Manzoor, H. (2013). Measuring student satisfaction in public and private universities in Pakistan. *Global Journal of Management and Business Research*, 13(G3), 5- 15.
- Manzuma-Ndaaba, N. M., Harada, Y., & Shamsudin, A. S. (2016). Cognitive, affective and conative loyalty in higher education marketing: Proposed model for emerging destinations. *International Review of Management and Marketing*, 6(4), 168-175.
- Martínez-Argüelles, M. J., & Batalla-Busquets, J. M. (2016). Perceived service quality and student loyalty in an online university. *International Review of Research in Open and Distributed Learning*, 17(4), 264-279.
- Mattah, P. A. D., Kwarteng, A. J., & Mensah, J. (2018). Indicators of service quality and satisfaction among graduating students of a higher education institution (HEI) in Ghana. *Higher Education Evaluation and Development*, 12(1), 36-52
- Mowery, D. C., & Sampat, B. N. (2004). The Bayh-Dole Act of 1980 and university–industry technology transfer: a model for other OECD governments?. *The Journal of Technology Transfer*, 30, 115-127.
- Nguyen, N., & Leblanc, G. (2001). Corporate image and corporate reputation in customers' retention decisions in services. *Journal of retailing and Consumer Services*, 8(4), 227-236.
- Nicholas, Y., Mohammed, M. I., Ufere, K. J., & Kuna, A. I. (2022). *International Journal of Real Estate Studies INTREST Effect of Facilities Management Service Quality on User Satisfaction and Institutional Image*. 2(2012), 86–95.
- Oluwunmi, A. O., Ajibola, M. O., Iroham, C. O., & Eluyele, P. (2017). Students' satisfaction with major academic facilities in private university in Ogun State, Nigeria. *Covenant Journal of Business and Social Sciences*, 8(1), 43-59.
- Okafor, B., & Onuoha, D. (2019). Facility Management in Educational Institutions : A Study of Nnamdi Azikiwe Facility Management in Educational Institutions : A Study of Nnamdi Azikiwe University Awka. January 2016.
- Oladokun, T. T., Oyewole, M. O., & Odebode, A. (2010). PERCEPTUAL EVALUATION OF THE EFFECTIVENESS OF FACILITY. May.
- Osman, A. R., & Saputra, R. S. (2019). A pragmatic model of student satisfaction: A viewpoint of private higher education. *Quality Assurance in Education*, 27(2), 142-165.

- Oyedeji, J. O. (2018). Facility management of Nigerian universities: Case of University of Lagos, Lagos and the Bells University of Technology, Ota, Nigeria. *International Journal of Built Environment and Sustainability*, 5(2), 134-144
- Pallant, Julie. "Survival manual." A step by step guide to data analysis using SPSS 4.4 (2011).
- Saoud, S., & Sanséau, P. Y. (2019). Student loyalty through perceived service quality and satisfaction. *Advances in Social Sciences Research Journal*, 6(2).
- Shohet, I. M., & Lavy, S. (2017). Facility maintenance and management: a health care case study. *International Journal of Strategic Property Management*, 21(2), 170-182.
- Sultan, P., & Yin Wong, H. (2013). Antecedents and consequences of service quality in a higher education context: A qualitative research approach. *Quality assurance in education*, 21(1), 70-95.
- Sultan, P., & Yin Wong, H. (2014). An integrated-process model of service quality, institutional brand and behavioural intentions: The case of a University. *Managing Service Quality*, 24(5), 487-521.
- Teeroovengadum, V., Nunkoo, R., Gronroos, C., Kamalanabhan, T. J., & Seebaluck, A. K. (2019). Higher education service quality, student satisfaction and loyalty. *Quality Assurance in Education*, 27(4), 427–445. <https://doi.org/10.1108/QAE-01-2019-0003>
- Yusoff, W. Z. W., Ismail, M., & Newell, G. (2008). FM-SERVQUAL: A new approach of service quality measurement framework in local authorities. *Journal of Corporate Real Estate*, 10(2), 130-144.