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Correlational Analysis on the Influence of Tangibility Dimension of Academic Service Quality on Students Satisfaction in Adamawa State College of Education Hong

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Abstract

Academic service quality refers to students' evaluation of the gap between expected and perceived services delivered by institutions of learning, with the tangibility dimension representing the physical evidence of service such as classrooms, digital tools, laboratories, libraries, ICT facilities, and learning resources. This study examined the influence of the tangibility dimension of academic service quality on students' satisfaction and academic Performance in Adamawa State Colleges of Education, Hong. The study adopted a correlational design where both explanatory and predictive approach was employed to determine the nature and extent of the relationship as well as the predictive power of tangibility on satisfaction. A simple random probability sampling technique was used to select a sample of 238 respondents comprising both NCE and Undergraduate students of the College. Data were collected using a structured questionnaire and analyzed with Pearson correlation and regression. The findings revealed that tangibility has a significant positive relationship with students' satisfaction and academic Performance. Similarly, it significantly predicts students' satisfaction, accounting for a substantial proportion of the variance. This study fills the gap by providing empirical evidence from the Colleges of Education context where facility inadequacy remains a major challenge. The findings imply that investment in physical infrastructure is critical for improving student satisfaction and loyalty. For future research, it is recommended that the mediating role of student satisfaction in the relationship between tangibility, students' retention and completion be examined using a mixed-methods approach across multiple institutions in the North-east, Nigeria

Keywords: Tangibility, Academic Service Quality, Student Satisfaction, Education.

Introduction

Background of the Study

Higher education institutions in Nigeria are expected to deliver quality academic services that foster students learning outcomes and overall satisfaction. Service quality in education refers to the extent to which an institution meets or exceeds students' expectations in the delivery of academic and support services. In effort to develop strategies of improving quality of administrative and academic service delivery, one has to figure out what quality is being addressed to serve in enabling students to engage in effective measures for their satisfaction and brightening their future which is gradually becoming more uncertain (Usman et al, 2023).

Tertiary institutions especially colleges of education in the North-East Nigeria, and particularly in Adamawa State faces myriad challenges in terms of operational realities including insecurity, infrastructural deficits, low enrolment rate and resource constraints that directly affect service delivery (UNESCO, 2022). Adamawa State College of Education Hong, one of the major teacher training institutions in the state, plays a strategic role in human capital development for the region. However, institutional reports suggest that students' experiences with tangible academic services such as classrooms, libraries, ICT facilities, and learning materials remain unpredictable.

Given that student outcomes are a product of both academic engagement and institutional support, understanding how specific dimensions of service quality influence Students' Satisfaction and Academic Performance is essential. The tangibility dimension, which reflects the physical evidence of service, is particularly relevant in resource-constrained settings where visible facilities often shape students' perceptions of quality since students judges service quality with tangible instructional tools (Minja et al., 2024)). Thus the essence of this study is examine the relationship of Tangibility, Students' Satisfaction and Academic Performance its influence on Students' Satisfaction in Adamawa State College of Education Hong.

Statement of the Problem

Colleges of Education in Nigeria are mandated to produce qualified teachers who will drive basic education. To achieve this, the quality of academic service delivery, particularly the tangibility dimension, is expected to provide a conducive learning environment that enhances students' satisfaction and academic performance However, in North-East Nigeria, Colleges of Education including Adamawa State College of Education Hong operate within a context of infrastructural deficit, insecurity, low enrolment rate and funding constraints (Abbass, Wakili & Raji, 2023).

Subjective evidence indicates that students' perceptions of physical facilities and learning environment vary across programmes and influence their satisfaction and academic outcomes. Despite the importance of tangibility, empirical studies in Nigerian Colleges of Education have largely focused on general service quality without isolating the specific effect of tangibility on both Students' Satisfaction and Academic Performance Furthermore, there is limited evidence on whether NCE and undergraduate students in the same college perceive tangible facilities differently.

Therefore, this study examines the relationship between tangibility of academic service quality, Students' Satisfaction and Academic Performance and the predictive influence of tangibility on students' satisfaction in Adamawa State College of Education Hong.

Objectives of the Study

The main objective of this study is to examine the influence of tangibility dimension of academic service quality on Students' Satisfaction in Adamawa State College of Education Hong.

Specific objective of the study includes:

1. Determine the relationship among tangibility dimension of academic service quality, Students' Satisfaction and Academic Performance in Adamawa State College of Education Hong.
2. Ascertain the difference in the perception of tangibility of academic service quality between NCE and undergraduate students in the College.
3. Examine the extent to which tangibility dimension of academic service quality influences Students' Satisfaction in Adamawa State College of Education Hong.

Research Questions

1. What is the relationship among tangibility dimension of academic service quality, Students' Satisfaction and Academic Performance in Adamawa State College of Education Hong?
2. Is there any significant difference in the perception of tangibility of academic service quality between NCE and undergraduate students in the College?
3. To what extent does tangibility dimension of academic service quality influence Students' Satisfaction in Adamawa State College of Education Hong?

Hypotheses of the Study

Ho1: There is no significant relationship among tangibility dimension of academic service quality, Students' Satisfaction and Academic Performance in Adamawa State College of Education Hong.

Ho2: There is no significant difference in the perception of tangibility of academic service quality between NCE and undergraduate students in the College.

Ho3: Tangibility dimension of academic service quality does not significantly influence Students' Satisfaction in Adamawa State College of Education Hong.

LITERATURE REVIEW

Academic service quality in higher education refers to the overall assessment of the excellence of educational services provided to students which encompasses teaching, curriculum delivery, assessment, student support, and physical infrastructure (Pekkaya, Pulat & Zeydan 2023). The National Commission for Colleges of Education (NCCE) mandates Colleges of Education to maintain minimum standards in staffing, facilities, and academic processes to ensure quality teacher production (NCCE. 2021)

In Nigeria, studies have shown that perceived service quality significantly influences students' learning engagement and institutional reputation. However, in North-East Nigeria, service delivery is challenged by insurgency, poor funding, and brain drain of academic staff (Abbas, Wakili & Raji, 2023]. For institutions like Adamawa State College of Education Hong, improving service quality is a survival strategy to retain students and maintain accreditation [

Tangibility is one of the five dimensions of SERVPERF/SERVQUAL and refers to the appearance of physical facilities, equipment, personnel, and communication materials [Parasuraman, Zeithaml, & Berry, 1988]. In education, tangibility includes classrooms, lecture halls, libraries, laboratories, ICT centers, hostels, and instructional materials [Usman et al., 2023).

Academic Performance refers to the measurable outcome of a students' learning, often assessed through GPA, test scores, and completion rates (York et al. 2019). It is a critical indicator of educational

effectiveness and a predictor of future career success. In Colleges of Education, Academic Performance determines NCE certification and employability. High academic performance is influenced by both student factors and institutional factors such as service quality. Recent studies by Pena et al. (2022), shows that service quality and four of its dimensions could contribute to students' academic achievement. The study views service quality as a school higher-order capability that supplement students' capabilities.

Challenges of Colleges of Education in North-East Nigeria

Colleges of Education in North-East Nigeria operate within a context of prolonged insecurity, inadequate funding, and infrastructural decay (UNESCO, 2022). Key challenges include:

- Insecurity and Displacement: Boko Haram insurgency has led to destruction of facilities and displacement leading to low enrolment rate of students (Abbas, Wakili & Raji, 2023).
- Infrastructural Deficit: Many colleges lack adequate classrooms, laboratories, and ICT facilities required by NCCE standards (NCCE, 2021).

Students' Satisfaction is defined as students' evaluative judgment of the extent to which their educational involvement meets their expectations in terms of academic content, institutional support and campus infrastructure (Gurbuzer & Acuner, 2025). It reflects an emotional response to the quality of academic and non-academic services received.

In higher education, students' satisfaction derived by the perception good learning materials strongly influences retention, academic engagement, and institutional loyalty (Gurbuzer & Acuner, 2025). Studies Tanzania show that tangibility, reliability, and responsiveness are key drivers of either higher or lower student satisfaction (Minja et al., 2024). Satisfied students are more likely to perform well academically.

In view of that, work has been done in examining service quality and customer satisfaction in library, accommodation, sport, tourism, hospitality, classroom etc. similarly it has been conducted in private institutions of higher education in Asian Countries (Taeshik & Youjae, 2018), Administrative service quality delivery in the public tertiary institutions in Malaysia (Usman & Fadimatu, 2019),.

In their study of service quality and students satisfaction, Yaeshik and Youjae (2018) found that overall service quality has strong relationship with student satisfaction in private higher education institutions. Although literature reviewed shows that the 5 dimensions of SERVPERF instruments are the most used Despite existing studies, no research has specifically examined the influence of tangibility on both Students' Satisfaction and Academic Performance with a comparison between NCE and undergraduate students in Adamawa State College of Education Hong. This study fills that gap.

Design of the study

The study adopted a quantitative research approach using a correlational research design where both explanatory and predictive correlational designs were employed. According to Creswell (2020), an explanatory correlational design is used to describe the degree of relationship between two or more variables while a predictive correlational design is used to predict an outcome or criterion variable from one or more predictor variable. Pearson Product-Moment Correlation was used examine the relationship among Tangibility dimension of Service Quality Performance, (SERVPERF), Academic Performance and Students Satisfaction while Multiple regression analysis was conducted to determine the extent to which Tangibility predicts Academic Performance and Students' Satisfaction. Similarly, data were

collected using a modified SERVPERF questionnaire developed and adjusted by Cronin and Taylor (1994) and modified by Usman et al (2023),

Population of the Study

The population of the study was the entire undergraduate, NCE II and NCE III students Adamawa State College of Education Hong which encompasses all the six (6) Schools or Faculty namely:- School of Art and Social Sciences, School of Early child care and primary Education, School of Education, School of Languages, School of Science and Scholl of Vocational and Technical Education.

Sampling Size and Procedure

The total sample size of 238 respondents was used in this study while a simple random probability sampling procedure was similarly used in collecting sample of the study from the entire population. All respondents of the study from various schools were given an equal opportunity in participating in the study using those with odd matric numbers with exception of 32 and 21 respondents from NCE and undergraduate respectively who have even matric numbers, so as to enlarge our sample size.

Data Collection Procedure

The data collected was obtained through a modified SERVPERF questionnaire developed and adjusted by Cronin and Taylor (1994). This survey instrument consisted of two sections namely section 1 and section 2, the Section 1 focused on the demographic background of the respondents that is the filter information, while Section 2 deals on the Performance scores consisted of twenty two scale items within five Service Quality dimensions (Tangibility, Reliability, Responsiveness, Assurance and Empathy).the study mainly focused on the Tangibility dimension with four (4) items that deals with physical appealing Instructional facilities, buildings digital tools and admirable learning environment Responses was obtained through a 7 Likert scales approach ranging from 1-strongly disagree to 7- strongly agree.

Data Analysis Techniques

Data collected was analyzed using SPSS Statistical Package Version 22. Where both descriptive and inferential statistics were conducted. In addition Reliability Cronbach's Alpha coefficient for inter item consistency was obtained and to satisfy the objective of the study Independent t-test, correlation matrix and multiple regression were conducted to answer the specific research questions of the study.

Table 1: Demographic Data of the respondents

Category	Variable	Frequency	Percentage	Cumulative Percentage
Gender	Male	127	53.4	53.4
	Female	111	46.6	100
Study Level	NCE	144	60.5	60.5
	Undergraduate	94	39.5	100

Table 1 shows the demographic analysis with respect to gender of respondents in terms of frequency distribution, percentage and cumulative percentage. The table displays that out of 238 respondents, 53.4% (127) by gender were male and 46.6% (111) were female. The gap between the male and female respondents is narrow showing an increase in enrolment rate of the female. .similarly, the table presents

the study level of the respondents where 60.5% (144) were NCE students and 39.5% (94) were undergraduates.

Variable	Items	Alpha
Tangibility	**4**	.702
Academic Performance	9	.810
Students' Satisfaction	5	.716

Table 2: Reliability of Tangibility and Latent Variables

The inter-items consistency reliability of the measures used was assessed using Cronbach's Alpha coefficient which is considered as the most widely used for behavioral studies recommended for studies inclined to social sciences (Hair et al., 2021). According to Pallant (2020), a Cronbach coefficient score of 0.70 and above is considered acceptable in social science research. The result of the reliability test of the variables as demonstrated in Table 2 disclosed that the Cronbach's alpha coefficients of all the variables namely Tangibility (0.702), Academic Performance (0.810) and Students' Satisfaction (0.716) are greater than the 0.70 recommended as acceptable level. Therefore, the instrument used was deemed reliable and suitable for further analysis.

Table 3: Correlation Matrix

Construct	Mean	SD	Sig.	Tangibility	Students' Satisfaction	Academic Perf
Tangibility	28.80	5.16	.000	1		
Students' Satisfaction	30.59	4.45	.000	.520**	1	
Academic Performance	47.68	6.61	.000	.567**	.716**	1

****. Correlation is significant at the 0.01 level (2-tailed).**

The results of correlation between variables of the study, as shown in Table 3 indicate that the strength of correlation between most of the variables is moderately strong and, consequently they produced a large effect. Specifically, the dependent variable (Students' Satisfaction) was strongly correlated to all the variables. In a nutshell, Tangibility had a strong, significant and positive correlation with Students' Performance (r =.52, p<.05), and Academic Performance (r =.56, p< .05).

The result of correlation among the independent variables Students' Satisfaction and Academic Performance shows a strong positive and significant relationship (r = .72, p<.05)

Table 5: Independent Samples T-Test

Variable	Study level	N	M	SD	t	df	p	Mean Diff	95% CI
Tangibility	NCE	194	29.55	4.88	3.54	236	001*	3.22761	[1.40-5.05]
	Undergraduate	94	26.33	5.34					

***p<.05**

An Independent Samples t-test was conducted to compare Tangibility scores for NCE and Undergraduate respondents. The result unveils that there a significant difference in scores for NCE

students (M=29.55, SD= 4.88) and Undergraduate (M=26.33, SD=4.34); t=3.54, p=.001, 95% CI [1.40-5.05]. The result suggests that NCE students report significantly higher perceived tangible physical and appealing facilities, digital instructional tools, neat teaching staff and conducive learning environment in Adamawa State College of Education Hong.

Table 4: Regression Analysis on the Influence of Tangibility dimension on Students' Satisfaction

Variable	Beta	t-value	p-value	Decision	
Tangibility	.567	9.151	.000	Rejected	
R-square					.321
Adjusted R-square					.317

a. Dependent Variable: Students' Satisfaction

The statistical scores presented in Table 4 reveal that Tangibility dimension of service quality significantly influences students' Satisfaction (β=.567; t= 9.151; p=.000). This finding contradicts hypothesis three (3), which predicted that Tangibility dimension has no significant influence on Students' Satisfaction. Moreover, the results show that a one-unit improvement in Tangibility dimension improves Students' Satisfaction by 56.7%.

In respect to the summary of the model, the R-square value of .321 indicates that Tangibility dimension accounts for 32.1% of the variance in Students' Satisfaction. The Adjusted R-square value of .317 Tangibility dimension still explains 31.7% of the variance in Students' Satisfaction.

Summary of Findings

1. Strong and positive relationship among Tangibility, Students' Satisfaction and Academic
2. There exist significant difference between NCE and Undergraduate students' perception of Tangibility.
3. Tangibility dimension of Academic service quality strongly, positively and significantly influenced Students' Satisfaction by 56% and more.

DISCUSSION OF FINDINGS

The first interesting finding of the study revealed a strong and positive relationship among tangibility dimension of academic service quality, students' satisfaction and academic performance. This implies that as physical facilities and learning environment improve, students' satisfaction and academic performance also increase. This finding align with the finding of Minja et al. (2024) which revealed that Tangibility receive the lowest satisfaction scores indicating a need for improved facilities, tangibility directly affect students' satisfaction, meaning when facilities are poor , satisfaction drops.

The second finding showed a statistically significant difference, with NCE students reporting higher mean scores on perceived tangibility. This suggests NCE students perceive tangible facilities as more appealing. This can be explained by NCCE (2021) minimum standards which mandate specific facilities for NCE programmes such as micro-teaching labs.

The third finding indicated that tangibility significantly and positively influenced students' satisfaction, accounting for 56% of the variance. This is a substantial effect. This strongly supports SERVPERF (Cronin & Taylor, 1994) and the finding goes in align with that of Gurbuzer & Acuner, (2025) which postulated that there strong association service and students' satisfaction. In North-East Nigeria where institutions face infrastructural challenges, improvements in tangible facilities become more salient.

Conclusion

Based on the findings, it is concluded that tangibility of academic service quality plays a vital role in shaping students' experiences in Adamawa State College of Education Hong. There is a strong positive relationship between tangibility, students' satisfaction and academic performance. NCE students perceive tangible facilities more favorably than undergraduate students. Most importantly, tangibility emerged as a major predictor of students' satisfaction, explaining 56% of its variation. Therefore, physical aspects of service delivery are fundamental to student satisfaction and academic success in Colleges of Education in North-East Nigeria.

Recommendations

1. Upgrade and Maintain Tangible Facilities: The College management, in collaboration with Adamawa State Government and TETFUND, should prioritize renovation of classrooms, libraries, ICT centers and laboratories.
2. Address Programme-Based Disparity: Ensure equitable distribution of tangible resources between NCE and undergraduate programmes
3. Leverage Tangibility for Student Satisfaction: Since tangibility explains 56% of satisfaction, adopt it as a strategic focus in quality assurance.
4. Secure funding from regular donors amidst regional challenges of insecurity, low enrolment rate and facility deficit.
5. The college should measure the perception of students on both academic and administrative service quality delivered regularly.

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