

Education Marketing; Examining the Link between Physical Quality of Universities and Customer Satisfaction

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Abstract: The relevance of service environment in the delivery of quality services can not be over emphasized. The simultaneity of production and consumption of services makes it necessary for the students (consumers) to be in the servicescape. This unique feature makes qualitative infrastructure and enabling environment very crucial for quality delivery system. Educational services must embrace quality delivery system if it must remain the platform for true and sustainable development. This study explores the link between the physical quality (enabling environment) of Nigerian Universities and customer satisfaction. Survey method and stratified sampling technique were employed for this study. Nine Universities were selected proportionately from Private, State and Federal Universities in south west, Nigeria. Two hypotheses were raised in the study. Descriptive statistics, ANOVA and regression analysis were employed for the test of the hypotheses. The findings revealed that there were significant differences among the three categories of Universities in terms of their physical quality imperatives. It was also confirmed that physical quality has significant effect on customer satisfaction. It was therefore recommended that concerted efforts must be made by the education stakeholders to invest on improving the infrastructural facilities of the Universities for better positioning in the global market place.

Keywords: Physical quality; Customer satisfaction; Nigerian Universities

JEL Classification: M3; I2

1. Background of Study

Privatization, diversification, decentralization, internationalization and increased competition in higher education and other market forces have caused institutions of higher education to reorganize themselves to be more sensitive to “market needs” (Maringe, 2006). Since the 1980s, Universities in many countries have shifted from elite to mass higher education. During periods of economic constraints, public Universities continuously experience pressures from governments to demonstrate

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maximum outputs from their allocated financial inputs. In line with the global and national economic challenges, cuts in University funding seem to be “inevitable”. The shift has been accompanied by a wave of managerialism, including the following: corporate managerialism, commercialization of research, and the commoditization of knowledge (Mok, 2000). These changes have an effect on how higher education institutions operate nowadays and they are seen as the driving forces for the marketization of higher education (Maringe, 2006).

Higher education institutions are rapidly changing as a result of the dynamic national, regional and global developments. Marketing theories and concepts, which have been effective in business, are gradually now being applied by many Universities (Brown & Oplatka, 2006; Temple & Shattock, 2007) with the purpose to gain competitive advantage. Service quality issues have, however, remained a key focus facing stakeholders within Higher Education-students, staff (academic and support), employers, and other clients. There has been a consensus on the importance of service quality issues in Higher Education. However, the identification and implementation of the right measurement instrument remains a challenge to the practitioners.

National Universities Commission is the accrediting and regulatory body responsible for maintaining quality among the Nigerian Universities. However, in today’s world of business, the role of customer in the determination of service quality can not be overemphasized. In the same vein, the technical aspect of quality is being addressed by the regulatory body; we should not lose sight of the user-based approach of service quality maintenance. Zeithaml and Bitner observed that quality has always been referred to as not just what the service provider puts into the service but what the customer gets out of the service. (apud Al Khattab & Aldehayyat, 2011) If there is any sector in Nigeria that demands the attention of all and sundry, it is the quality standard of education.

2. Statement of Research Problem

Meanwhile, Alfa (1993) has earlier reported that the challenges facing Nigerian Universities are complex. According to him, it is a combination of limited access, increasing cost, decreasing quality and inflexibility in course selection. He further noted struggling economies, outdated academic equipments and obsolete organizational structure are among the issues facing University education in Nigeria today.

According to Uche, Okoli and Ahunanya (2011), an important component for assuring the quality of higher education is physical quality, apart from the teacher and students input. This is because the operations of staff and students could be worthless if adequate preparation is not made for relevant facilities, equipment and

other relevant materials are not made available for the users. Meanwhile, Erinoshio (2008) observed that the rapid expansion of Universities is at a price to the nation. According to him, the physical facilities of many public Universities are grossly inadequate and/or in a state of disrepair. Many Nigerian Universities' libraries are bereft of leading international journals and new books while the quality and quantity of teachers are not adequate. Many of these Universities also lack adequate modern information and communication technologies. He further stated that although the Government is determined to license as many of private Universities as presumably meet the set conditions, it is doubtful whether they have the capacity to fill the gap that is being created by the poor state of public Universities. It is as a result of this that the study is centered on the following objectives;

3. Objectives of the Study

1. To examine and compare physical quality imperative of public Universities (federal and state) with private Universities in South West, Nigeria and vice versa.
2. To determine the effect of Physical Quality imperative on customer satisfaction.

4. Literature Review and Development of Hypotheses

4.1. Physical Quality

From the relevant literatures, physical quality has been identified as an important dimension of service quality. As a result of the simultaneous production and consumption of most services, the environmental facility i.e. its servicescape can play an important role in the service experience. In fact, the physical environment is part of the product itself. Physical evidence serves as a visual metaphor of what the company stands for. Physical facilities and the enabling environment in general, portray the quality of the institutions in terms of their staff/students friendliness, attraction to outsiders, aesthetics, healthy, safety and relevance (Okorie and Uche, 2004). Unfortunately, in Nigerian Universities, facilities are not regularly monitored for maintenance, no rehabilitation, no renovation, no replacement and any regular supervision and inspection of materials. Uche, Okoli and Ahunanya (2011) lamented that facilities required for effective teaching and learning were not adequate and at the same time did not meet global standard. According to Osokoya (2007), Private Universities were not expected to be deficient of facilities since private higher institutions in Africa are established by some legal provisions which normally stipulate some minimum requirements for

infrastructural facilities. In Nigeria, for example, a private higher institution is expected to be accredited by the Federal Government through its agency (NUC) before granting license to operate.

Based on the above discussion, this study attempted to find differences among the three categories of Universities.

Hypothesis

H₀: There are no significant differences among the Private, State and Federal Universities.

H₁: There are significant differences among the Private, State and Federal Universities.

4.2. Physical Quality and Customer Satisfaction

Hutton and Richardson (2004) found that the physical environment in a health care setting had a significant effect on customer satisfaction. A satisfied customer will possibly have positive intention to re-patronize and to recommend the service to other consumers. Customers have a high regard for a pleasant physical environment and express the satisfaction easily. According to Reimer and Kuehn, (2005), this is as a result of the fact that the servicescape has a direct and indirect effect on perceived service quality and ultimately the satisfaction of the customers. They further observed that Physical evidence influences the customer's perception of the quality of service. Reimer and Kuehn, (2005) are of the opinion that customers staying longer in a facility, like a University, emphasize the servicescape more in their perception of quality service. The customer can overlook a lot of quality issues if the physical environment is pleasing. Customers more readily recommend a physically pleasing environment to friends (Hutton and Richardson, 2004). As a communication tool: Physical evidence is particularly important as communication tool for services such as hotels, firms and theme parks that are dominated by experience attributes. Because services are intangible, customers often rely on physical evidence to evaluate the service before they purchase and to assess their satisfaction with the service during their pregnancy and after consumption (Zeithaml et al. 2006). Customers expect good service if the physical evidence is of high standard. Hoffman et al. (2005) say that due to the intangibility of services, customers often have trouble evaluating service quality objectively. Therefore they rely on physical evidence that surrounds the service to help them with their evaluation. This study attempted to examine the link between physical quality and customer satisfaction.

Hypothesis Two

H₀: Physical Quality does not have significant effects on Customer Satisfaction.

H₁: Physical Quality has significant effects on Customer Satisfaction.

5. Methodology

Purposive and ex-post-facto research method was adopted for the study. The alumni involved in the study were those graduated between year 2003 and 2011. The first set of graduates from private Universities in Nigeria was released in year 2003 and that informed the choice of the year. The major source of data for this research was a set of questionnaire distributed to alumni of nine Universities in south west, Nigeria. These nine Universities were proportionately selected from private, state and federal universities in ratio 5-2-2. One hundred respondents were selected from each of the Universities. The questionnaire has three sections (ABC). The first section of the questionnaire dealt with demographic information of the respondents, while the second section of the questionnaire dealt with physical quality imperatives while the last section dealt with customer satisfaction.

Each question in section B was designed so that respondents could react to the degree of agreement to the issue being discussed as follows:

Strongly Agree=5; Agree = 4; Undecided= 3; Disagree= 2; Strongly Disagree=1.

Meanwhile, in section c, respondents were expected to options ranging from much less satisfied (1) to much more satisfied (5).

The key research variables were developed from extant literature and supported by empirical and anecdotal evidence. All the data analysis procedure was done using the SPSS computer package. Data analysis was executed at 95% confidence level or better. The statistics, measurement scale, data analysis, reliability and validity tests used in this research followed the research suggestions in extant literature (Nunnally, 1978; among others). The Cronbach's Alpha of the measurement scale for the study was found to be 0.875. In order to ascertain the validity of the research instrument, factor analysis was carried out. The minimum loading for the scale is 0.397 and the loading is as high as 0.776. The KMO measures of sampling adequacy are 0.880, and its Barlett's Test of sphericity is $p=0.000$. This result strongly supports the convergent validity of the items in the instrument.

6. Data Analysis and Discussion of Findings

Hypothesis One

H₀: There are no significant differences among the Private, State and Federal Universities.

H₁: There are significant differences among the Private, State and Federal Universities.

Table 1. Physical Quality*Categories of Universities Cross Tabulation

STATEMENTS	FEDERAL UNIVERSITIES			STATE UNIVERSITIES			PRIVATE UNIVERSITIES		
	N	M	SD	N	M	SD	N	M	SD
The classrooms have up-to-date teaching support equipment	191	2.91	1.26	199	2.66	1.02	478	3.72	1.07
The University has modern laboratory with complete collection.	191	2.74	.95	199	2.37	.94	478	3.47	1.08
The University provides student health centres	191	4.45	.90	199	3.87	1.05	478	4.01	.81
The University has nice and pleasant campus environment	191	4.07	.94	199	2.92	1.08	478	3.87	1.08
The University is visually appealing	191	4.18	.64	199	2.81	.99	478	3.72	1.25
The University provides good and functional internet facilities	191	3.50	1.37	199	2.29	1.15	478	3.56	1.10
student accommodation is safe	191	3.25	1.25	199	2.39	1.09	478	3.80	.99
The University has sufficient residential accommodation	191	2.18	1.23	199	1.83	.94	478	3.79	1.06
The library has a wide range of book and periodicals in my area of studies	191	3.12	1.06	199	2.78	1.27	478	3.72	.96
The rooms in the student residential accommodation are comfortable	191	2.81	1.12	199	2.29	1.05	478	3.40	1.16
Adequate printer facilities are available	191	2.41	1.05	199	2.08	.91	478	3.44	.99
The campus computers are sufficient for the student population	191	1.57	.56	199	1.89	1.53	478	2.91	1.13
The University has plenty of sport facilities	191	3.60	.71	199	2.92	1.02	478	3.24	1.11
The sport centre offers modern equipment	191	3.34	.65	199	2.64	1.10	478	3.06	1.15
The University offers modern accommodation at affordable prices	191	3.07	1.17	199	1.83	.95	478	3.20	.99

The University provides adequate parking areas	191	3.77	.85	199	3.74	1.13	478	3.82	.94
The University has modern computers with the latest programmes	191	2.97	.65	199	2.45	1.23	478	3.18	1.05
The University has modern computers with the latest programmes	191	2.97	.65	199	2.45	1.25	478	3.19	1.05
Overall Mean		3.23	.78		2.58	.53		3.52	.72

Source: Researchers' Field Survey Result (2012)

The table 1 revealed that Private Universities have the highest mean value for Physical Quality. (3.52). Next to that was the Federal Universities that had the mean value of 3.23. These two categories of Universities were rated a little bit above average while the perceived physical quality of the state Universities were considered to be poor.

From the Federal Universities Alumni point of views, the campus computers were not sufficient for student population (1.57).The result also revealed that printing facilities were not adequate (2.41) and the Universities did not have sufficient residential accommodation (2.81). They also believed that the University did not have enough modern laboratories with complete collections (2.74) as well as up-to-date teaching support equipments (2.91).

However, the Alumni of State Universities believed that such Universities did not have conducive learning environment and so rated the physical quality generally below average (2.58). The alumni believed that there were no sufficient residential accommodations and that campus computers were not sufficient among other things. But, they believed that there were adequate parking areas and student health centers were also considered to be appropriate.

Private Universities on the other hand were perceived to be good in terms of its physical quality. Many of the items under physical quality were rated above average except that they believed that campus computers were not enough for student population. (2.91)

The hypothesis was further subjected to ANOVA tests. The tables below revealed the results of the ANOVA test.

Table 2a. ANOVA Summary for Physical Qualities of Universities

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	126.376	2	63.188	129.941	.000
Within Groups	420.634	865	.486		
Total	547.010	867			

Source: Researchers' Field Survey Result (2012)

The F-value is the Mean Square Regression (63.188) divided by the Mean Square Residual (0.486), yielding $F=129.941$. From the results, the model in this table 4a is statistically significant (Sig =.000). The implication therefore is that there are significant differences in the physical qualities of the three categories of Universities at $F_{(2,865)} = 129.941$.

Table 2b. Multiple Comparisons of Physical Qualities Based on Types of University

(I) category of the university	(J) category of the university	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Federal University	State University	.65545*	.07064	.000	.4822	.8286
	Private University	-.29283*	.05969	.000	-.4392	-.1465
State University	Federal University	-.65545*	.07064	.000	-.8286	-.4822
	Private University	-.94828*	.05883	.000	-1.0925	-.8040
Private University	Federal University	.29283*	.05969	.000	.1465	.4392
	State University	.94828*	.05883	.000	.8040	1.0925

*. The mean difference is significant at the 0.05 level.

Source: Researchers' Field Survey Result (2012)

Table 2c. Homogeneous Subsets Indicating Differences among the Categories of University

category of the university	N	Subset for alpha = 0.05		
		1	2	3
State University	199	2.5752		
Federal University	191		3.2307	
Private University	478			3.5235
Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

- a. Uses Harmonic Mean Sample Size = 242.860.
- b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Source: Researchers' Field Survey Result (2012)

Table 2c revealed that each the physical quality for each of the types of Universities has its peculiarities and uniqueness. In other words, the possibility of differences exists among the three categories of Universities.

The findings of this hypothesis corroborated the findings of Olatunji, (2011) that compared public and private Universities in Nigeria. Although his work was limited to availability of computers and the quality of computer literacy (basic skills), he found out that there were significant differences between the two sets of Universities. He reported that private Universities were better than Public Universities in that regard. In the same vein, Kimani, Kagira and Kendi (2011) carried out a study that compared the business students perceptions of quality of services received at both private and public Universities in Kenya. They found out that there were differences between Private and Public Universities. Private University in a rural was found having most positive leading scores in service quality.

Hypothesis Two

Ho; Physical Quality does not have significant effects on Customer Satisfaction.

H1; Physical Quality has significant effects on Customer Satisfaction.

Table 3a. Model Summary for Physical Quality and Customer Satisfaction

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.492 ^a	.242	.241	.72820

a. Predictors: (Constant), Physical Quality

Source: Researchers' Field Survey Result (2012)

This study revealed that there is relationship between PQ and CS at $r=0.492$, R-Square is the proportion of variance in the dependent variable which can be predicted from the independent variable. This value indicated that there is variance of 24.2% between Physical Quality and Customer Satisfaction.

Table 3b. ANOVA Results for Physical Quality and Customer Satisfaction

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	146.554	1	146.554	276.372	.000 ^a
	Residual	459.220	866	.530		
	Total	605.773	867			

a. Predictors: (Constant) Physical Quality

b. Dependent Variable: Customer Satisfaction

Source: Researchers' Field Survey Result (2012)

The F-value is the Mean Square Regression (146.554) divided by the Mean Square Residual (0.530), yielding $F=276.372$. From the results, the model in this table 5b is statistically significant (Sig =.000). The implication therefore is that physical quality has significant effects on customer satisfaction at $F_{(1,866)} = 276.372$.

Table 3c. Coefficients Result for Physical Quality and Customer Satisfaction

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.417	.104		13.632	.000
	Physical Quality	.518	.031	.492	16.624	.000

a. Dependent Variable: Customer Satisfaction

Source: Researchers' Field Survey Result (2012)

Table 3c revealed the extent of contribution of the predictor i.e. Physical Quality to customer satisfaction. (PQ; $\beta =-0.518$; $t =-16.624$; $p<0.01$) Since the significance

level for the variable is less than 0.01, it was justified that the null hypothesis should be rejected while the alternative hypothesis is accepted.

7. Conclusion

The relevance of physical facilities can not be overemphasized. The major functions of higher education, that is teaching, research and community development will neither be effective nor efficient without quality facilities put in place. Physical evidence, as it is popularly referred to in marketing parlance, is a yardstick through which consumers measure or determine the quality of services received. Education services are public goods that have many stakeholders, however the alumni of the three categories of Universities were considered as customers in this study. The findings validated the fact that physical quality has significant effect on customer satisfaction.

8. Recommendations

Based on the findings of this research, it was recommended that all hands must be on desk in ensuring that physical facilities are in good state for effective teaching, learning and research developments. Stakeholders are expected to contribute meaningfully towards “marketisation” of higher education on the platform of physical evidence.

The University management should ensure that there is enabling environment for quality teaching, learning and research. Specifically, management of state Universities should strive to make available up to date teaching support equipments, modern laboratories and residential accommodation for their students. However, the managements of both private and federal Universities should improve on the existing facilities and ensure that good maintenance culture is imbibed by the students and staff of their Universities.

There is need for **government** to increase the allocation of funds to education in the national budget. Government should strive to improve on all the necessary physical facilities within the University system. Up to date teaching equipments, adequate internet facilities, modern library with adequate and modern books, adequate residential accommodation as well as functional health centre to mention but a few should be made available for quality educational services. Dilapidated equipments should also be repaired, refurbished and maintained

Employers must also be willing and ready to partner with the proprietors of these Universities by providing financial support for research development and quality learning. Employers could be more socially responsible for the quality of higher education given to the citizenry.

Parents must be willing and ready to incur necessary costs in ensuring that their children are given quality education. Parents, with their purchasing power, have the ability to encourage the Universities that are providing quality education through patronage.

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