



## PERCEPTION OF STAKEHOLDERS IN FUNDING OF MEDICAL EDUCATION IN NIGERIA



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### ABSTRACT

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This paper examined how budgeting and funding impact teaching, research and community service (service delivery) in medical education in Nigeria using College of Medicine of the University of Lagos (CMUL) as the case study. The perception of key stakeholders of the medical school was obtained in highlighting the efficiency of funds utilisation over a 20-year period (1991/1992 to 2010/2011). The use of questionnaire was employed for theoretical tests and estimations. Theoretical statistical tools were used in the testing and analysis of the research hypotheses. The result showed extra budgetary spending for the first five years, when the CMUL received 114% of amount requested from the federal government. Subsequently, this was not sustainable and it was affirmed that budgeting and funding were relevant to service delivery of medical education. The study showed that available funding did not stimulate effective provision of medical education at the CMUL. The study recommended strict realignment of expenditure in favour of core activities of the medical school, quick implementation of contextualised funding model to replace the current normative and contractual model, introduction of tuition fees at undergraduate level, aggressive internally generated revenue drive and provision of conducive enabling environment for teaching and learning.

**Contribution/ Originality:** This study contributes to the existing literature by adopting Human Capital theory and Adolph Wagner's law of increasing state activity to address funding challenges of medical education. Accordingly, the policy relevance is not in doubt as such policies are backed up with quantitative analysis to engender qualitative service delivery.

### 1. INTRODUCTION

The focus of this study is to examine how budgeting and funding affect the quality of service delivery with respect to the core mandate of teaching, research and service in medical education in Nigeria. Johnstone (2003) identifies that the financial problems faced by higher institutions worldwide have two broad dimensions. The first is the high and increasing unit or per-student cost of higher education. The second is the pressure from increasing enrolments. According to Johnstone (op. cit), these exacerbating conditions are more prevalent in Sub-Saharan Africa (SSA) than in other parts of the world. Whereas the quantum of funding available may play a significant role in the ability of an institution to carry out its services, the efficiency of the fund utilisation is central to the measurement of institutional performance (Lindsay, 1982). According to Mirabent (2012) universities and their

medical schools operate in a turbulent environment and therefore must adapt to changes to position them to deliver optimally on their core mandates of teaching, research and service.

### 1.1. Statement of the Research Problem

The tertiary educational system in Nigeria has been bedevilled by inadequate financial resources to provide quality education to the citizenry; a situation prevalent in the last two decades (Odusote, 2013). As observed by Johnstone (2009) federal universities have had to cope with the rapid growth in students' population since the restoration of democracy in Nigeria in 1999 when a large number of the teeming population saw the need to pursue higher education. The Federal Government of Nigeria pursues a policy of free tuition and assumes the responsibility of funding the tertiary institutions owned by it. However, the astronomical increase in students' enrolments is not matched by a commensurate public funding. This has led to inadequacies, such as overcrowded classes, shortage of library and laboratory facilities as well as poor hostel conditions, which have ultimately affected the quality of education in the country.

The authors also observed a decline in the services and research activities during the study period in contrast to the 70's and 80's when a lot of inventions took place in our medical and health institutions to solve local health challenges. These days, there are hardly learned journal publications in this direction. The quantum of funding available though has been on the increase in absolute terms over the past two decades, but declining in real terms due to inflationary pressures. Funding has not been adequate to support the level of consumables and other training costs needed to cater for the rising students enrolment, maintenance and upgrading of the decaying infrastructure available to train the students optimally.

The motivation for this study therefore is based on the fact that there has been increasing number of medical institutions in Nigeria, all of which seems to be suffering from the same funding problem in terms of non-availability of modern equipment for teaching and research, decaying infrastructure, and improvement in services. Hence, the output of this study will bring to the fore the extent of this problem and proffer appropriate solution.

The choice of College of Medicine of the University of Lagos (CMUL) is apt due to the age and location of the medical school in Lagos State, the commercial nerve centre of Nigeria and a cosmopolitan city. Accordingly, findings from this study may be representative of other Federal Government-owned medical schools in Nigeria due to the fact that they all adopt similar funding model as prescribed by the federal government of Nigeria. This study, therefore, also focuses on identifying the funding models that medical institutions in other parts of the world apply that have facilitated effective teaching, research and community service while recommending such models to serve as a benchmark to be applied by the CMUL.

### 1.2. Research Questions

The following research questions are posed to guide the investigations for the study:

1. What are the effects of existing budgeting and funding on teaching and learning at the CMUL?
2. What implications do current funding model in CMUL have for its service delivery?
3. To what extent can improved funding affect the expected outcomes of CMUL?

For research question 1, records on students' enrolment and students' graduation constitute secondary data analysed. Responses from administrators and lecturers provide evidence for the research question for scientific analysis purposes.

In research question 2, this study documents the secondary data on budget allocation and actual cost figures on general administrative costs, teaching and research expenses as well as academic staff learned conference attendance costs for the CMUL. The evidence for the research question is derived from the responses to the questionnaires; which are the perceptions of lecturers who also serve as consultants at the teaching hospital, the education managers, finance officers, technologists and students who are key stakeholders of the medical school. Research question 3 is addressed by careful analysis of fund allocations in relation to the perceptions of finance officers, lecturers and consultants, administrators, education managers and students obtained through the questionnaire.

## 2. PRIMARY DATA ANALYSIS

The data contained in this section were generated from all stakeholders of the CMUL. These stakeholders served as the targeted respondents. A total of 423 respondents made up of the academia, non-teaching staff (senior cadre), technologists and students (undergraduate and postgraduate) were selected randomly and questionnaires administered. Before the commencement of the analysis, tests of measurement tool (questionnaire) were performed to validate it as the proper data collection tool. Questionnaire tests, as used in this research were to evaluate inquiry of items within; verbally, and obtain the validity and reliability level. The questionnaire validity test was done through exhaustive literature review corroborated by expert opinions on application of questionnaire as a

data collection instrument. Cronbach-alpha (Cr) method was used to test for reliability. The Cr value is 0.988 (Table 1). This is larger than the benchmark value of 0.75, hence, the questionnaires were considered reliable.

**Table-1.** Cronbach's alpha method for reliability test for the study

	Reliability Statistics	
Cronbach's alpha	Cronbach's alpha based on	Number of items
0.988	standardised items	22

Source: Cronbach (1951)

**Table-2.** Analysis of administered questionnaires

Questionnaires administered	Questionnaires returned	Questionnaires usable	Questionnaires not usable
423	406	401	5

Source: Author

Table 2 shows that a total of 423 questionnaires were distributed, 406 returned, out of which 401 were usable (completed), yielding a response rate of 94.8%. This response rate was considered large enough and sufficient for statistical reliability and generality (Tabachnick and Fidell, 1996; Stevens, 2002). This high response rate undoubtedly improved the validity and reliability of the questionnaires since the greater the response rate, the more accurate its estimate parameters in the population sampled (Pallant, 2002). Hence, no further attempt was made to increase the sample size.

To guarantee the utmost precision of this work, the use of Scientific Package for Social Sciences (SPSS) software was employed. This research effort is devoid of any manual analysis prone to mechanical manipulations and shortcomings. This section is divided into three parts. The first contains personal information about distribution of the respondents; the second revolves around the research questions, while the third as well as the final parts hinge on the research hypotheses for acceptance or rejection at a given level of significance.

### 2.1. Personal Data of Respondents

Basically, the personal information of the respondents summarised some cogent statistics on the distribution of job/academic status, position, course of study, student level of study and the work duration of the respondents who are non-students. As shown in Table 3, the distribution of the respondents is not skewed to any class of respondent but quietly normally distributed. The lecturers and students accounted for 31.9% and 26.4% of the total respondents, respectively. This further lends credence to the reliability of the administered questionnaire as it shows that main stakeholders in service delivery components of medical education were well attended to. The technologists who play complementary role in the laboratory and practical training of medical education also accounted for 9.5% of the total respondents. The finance officers and administrators were in charge of budget and funding proceeds; their involvement in this study also spun off vital information needed; beyond what figures and statistics could ordinarily reveal. They both accounted for 28.7% of the respondents. Other respondents and other stakeholders considered to be important were also considered.

**Table-3.** Job/academic status of respondents

STATUS	Frequency	Percentages
Lecturer/Consultant	128	31.9
Technologist	38	9.5
Finance officer	59	14.7
Administrator	56	14.0
Student	106	26.4
Others	14	3.5
<b>TOTAL</b>	<b>401</b>	<b>100.0</b>

Source: Research field survey, 2015.

The positions occupied by the respondents indicate their capacity to give good judgment on the true state of budget and funding at the CMUL since 72.3% of these respondents (Table 4) were at the managerial and senior staff cadre. This suggests that their views on budgeting and funding would have reflected their understanding of the conventions and expectations of this important aspect of medical training in Nigeria.

In tandem with the discussion in Table 4, the responses in Table 5 suggest that most of the respondents who were of the managerial and senior staff cadre had, at least, ten years working experience; given they accounted for 62.7% of the total respondents. The remaining 37.3% of the respondents had less than ten years' experience.

Table-4. Position of respondents

Position	Frequency	Percentages
Managerial	28	7.0
Senior Staff	262	65.3
Student	106	26.4
Others	5	1.3
<b>Total</b>	<b>401</b>	<b>100.0</b>

Source: Research field survey, 2015.

The importance of this information is that these respondents understood the socio-cultural components of medical education as delivered at the CMUL. The institutional framework, human factors, social impediments and the various cultural biases that hindered the service delivery of medical education, which the figures and statistics did not capture, were reflected in the elicited responses.

Table-5. Work duration of non-student respondents

Duration	Frequency	Percentages
0-5years	58	19.7
6-10years	52	17.6
11-15years	49	16.6
16-20years	42	14.2
21years and above	94	31.9
<b>Total</b>	<b>295</b>	<b>100.0</b>

Source: Research field survey, 2015.

On the student distribution of the analysis (Table 6), the questionnaires were administered to students directly and indirectly affected by the delivery of medical education. Some 77.4% of the targeted respondents who were students of Medicine, and Dentistry are directly affected while others who belong to the Basic Medical Sciences (22.6% of the total respondents) were indirectly affected by the service delivery of medical education. Essentially, this distribution reinforced the objectivity and consistency of distribution of the questionnaire administered that ultimately impacted on the reliability of the findings.

Table-6. Students' course of study

Course	Frequency	Percentages
MBBS and BDS	82	77.4
Others	24	22.6
<b>Total</b>	<b>106</b>	<b>100.0</b>

Source: Field survey, 2015.

Interestingly, these student respondents were on the verge of completing their medical education. As such, the responses elicited from them were expected to reflect the true picture of the education capital of the medical school of the University of Lagos. This is because they had acquired the needed skills and attained the level of education sufficient to judge the status of education content of the institution (Table 7).

Table-7. Level of student respondents

Level	Frequency	Percentages
500 Level	63	59.4
600 Level	43	40.6
<b>Total</b>	<b>106</b>	<b>100.0</b>

Source: Research field survey, 2015.

## 2. 2. Descriptive Analysis

The main objective of this research is the investigation of the impact of budget and funding on the service delivery of medical education in Nigeria, using CMUL as a case study. In the light of this, five research hypotheses were raised, the answers provided assisted in achieving this onerous objective. Prior to this, it was deemed

necessary to also employ the tool of descriptive statistics in the manner of frequencies and percentages to give a preliminary cursory look into the research questions raised and the responses generated bordering on the impact of budgeting and funding on teaching, learning and service delivery as perceived by the teaching staff, students and other stakeholders.

**Research Question 1: What are the effects of budgeting and funding on teaching and learning at the CMUL?**

**Table-8.** Effects of budgeting and funding structure on medical education at CMUL

	<b>Strongly Agree (SA)</b>	<b>Agree (A)</b>	<b>Undecided (U)</b>	<b>Disagree (D)</b>	<b>Strongly Disagree (SD)</b>	<b>TOTAL</b>
The medical school operates a dedicated budget specifically for curriculum activities	53 (13.2%)	94 (23.4%)	146 (36.4%)	62 (15.5%)	46 (11.5%)	401 (100%)
The medical school allocates the dedicated resources to meet the educational needs	53 (13.2%)	89 (22.2%)	129 (32.2%)	79 (19.7%)	51 (12.7%)	401 (100%)
Funding has been adequate to meet the needs of CMUL	49 (12.2%)	42 (10.5%)	72 (18.7%)	136 (33.9%)	102 (25.4%)	401 (100%)

Source: Field survey, 2015

To answer research question 1, three major questions are relevant; as depicted in Table 8. The responses elicited from the targeted respondents show that barely 27% disagreed that the dedicated budget being operated by the CMUL is directed towards curriculum activities. Some 36.6% of the respondents supported the positive interaction between budget and curriculum activities while 36.4% remained undecided. The implication is that the budget being operated by the CMUL is likely to impact significantly on curriculum development. This submission is reinforced by the responses elicited on the question that the medical school allocated the dedicated resources to meet the educational needs of the institution as 32.4% of the respondents disagree while 35.4% agree with 32.2% undecided. More so, 59.3% of the respondents disagree that funding had been adequate at meeting the needs of CMUL, while 22.7% agree with 18.7% of the respondents undecided. On the whole, this information shows that the budget and funding structure is likely to impact more meaningfully on medical education at the CMUL.

**Research Question 2: What implication does current funding model in College of Medicine of the University of Lagos have on its service delivery?**

**Table-9.** Current funding model and its implications on service delivery

	<b>Strongly Agree (SA)</b>	<b>Agree (A)</b>	<b>Undecided (U)</b>	<b>Disagree (D)</b>	<b>Strongly Disagree (SD)</b>	<b>TOTAL</b>
I am familiar with the funding model adopted by CMUL	47 (15.9%)	65 (22.0%)	79 (26.8%)	68 (23.1%)	36 (12.2%)	295 (100%)
There are inefficiencies in the normative and contractual funding model in use at CMUL	36 (12.2%)	52 (17.6%)	130 (44.1%)	47 (15.9%)	30 (10.2%)	295 (100%)
Improved funding would require a review of the existing model	67 (22.7%)	99 (33.6%)	77 (26.1%)	28 (9.5%)	24 (8.1%)	295 (100%)

Source: Field survey, 2015

Given that the funding model adopted at the CMUL is the normative and contractual funding model; discerning from Table 9, only about 37.9% of the respondents agree that they were familiar with the funding model adopted by CMUL, while 35.3% disagree and 26.8% were undecided. This shows that a fair percentage of the respondents were aware of the funding model in operation at the CMUL; although this appeared latent. As expected, majority of the respondents (44.1%) could not ascertain whether there were inefficiencies in the normative and contractual funding model in use at the CMUL while 29.8% believe inefficiencies were found, with only 26.1% responding otherwise. As such, majority of the respondents, to the tune of 56.3% affirm that for there to be improvement in the funding of medical education, there is a need for a review of the existing model. On the contrary, only 17.6% disagree with 26.1% of the respondents undecided. Putting these together, it could be inferred that the existing funding model did not impact meaningfully on service delivery at the CMUL thus, the introduction of a new funding model is required. This is the concern addressed in Table 10.

Table-10. Recommended model of funding at CMUL

Funding model	Frequency	Percentage
Access-Equity model	66	22.4
Contextualised model	96	32.5
Performance-based model	47	15.9
Host-Proprietor-University model	33	11.2
Pay-for-Performance (P4P) model	53	18.0
<b>TOTAL</b>	<b>295</b>	<b>100</b>

Source: Research field survey, 2015.

The response on the funding model adopted at the CMUL was targeted at the employees of the institution which comprise the teaching staff, technologists, finance officers and administrators. These were the respondents expected to understand the operational dynamics of the institution; including the workings of budget and funding. The responses appeared to be well-distributed among the respondents but significantly, most of them (about 32.5%), believe that the funding model was contextualised; and 11.2% of the respondents, accounting for the funding model of the Host-Proprietor-University type. Of the access-equity funding model, only 22.4% of the respondents alluded to; closely followed by those of Pay-for-Performance and Performance-based models with 18.0% and 15.9% of the respondents, respectively, who consented to them. As such, the study, in meeting one of its objectives, concluded that the recommended funding model for the funding of medical education at the CMUL should be the contextualised.

### Research Question 3: How does funding affect the expected outcomes of CMUL?

Table-11. Effect of funding on expected outcomes at CMUL

	Strongly Agree (SA)	Agree (A)	Undecided (U)	Disagree (D)	Strongly Disagree (SD)	TOTAL
Funding has been adequate to meet the needs of CMUL	49 (12.2%)	42 (10.5%)	72 (18.0%)	136 (33.9%)	102 (25.4%)	401 (100%)

Source: Research field survey, 2015

Interestingly, the responses detailed in Table 11 show that most of the respondents, 59.3% disagree that funding had been adequate to meet the needs of the CMUL, while 22.7% of them agree, 18% were undecided. The implication of these responses is that funding did not positively affect the expected output and service delivery of the institution. While these responses have been revealing, a robust conclusion could not be reached with the use of only frequency and percentage analysis of responses without performing formal tests through testing of stated hypotheses. This concern is addressed in the next section of the analysis; involving significant testing of the stated hypotheses.

### 2.3. Hypotheses Testing and Interpretation of Findings

This section analysed the hypotheses formulated for this study. Although, all the research questions; from which the research hypotheses were drawn have been analysed and tested using the descriptive method adopted; the actual hypotheses were tested in this section with the use of chi-square and correlation coefficient analytical tools.

#### HYPOTHESIS One:

H<sub>0</sub>1: There is no significant relationship between budgeting and teaching in medical education in Nigeria.

To test this hypothesis, a chi-square test was conducted on the question that enquired whether the medical school allocates the resources dedicated for curriculum equitably to meet the educational needs (i.e. teaching).

**Table-12.** Chi-Square Table -The medical school allocates the resources dedicated for curriculum equitably to meet the educational needs (equit\_educ\_needs).

	Observed N	Expected N	Residual
Strongly Agreed	53	80.2	-27.2
Agreed	89	80.2	8.8
Undecided	129	80.2	48.8
Disagreed	79	80.2	-1.2
Strongly Disagreed	51	80.2	-29.2
Total	401		

Source: Research field survey, 2015

In Table 12, on the basis of equally likelihood probability, the expected frequency of 80.2 is ascribed to each of the response scale of Strongly Agreed (SA), Agreed (A), Undecided (U), Disagreed (D) and Strongly Disagreed (SD). The observed frequencies, show that there exists departure from the expected. It is not expected that a residual (departure) of 48.8 would exist for those undecided, 29.2 for those strongly disagreed and 27.2 for those that strongly agreed. Of all, only those that disagreed were close to expectation with only a negligible -1.2 residual, and closely followed by those that agreed, by a departure (or residual) of 8.8.

**Table-13.** Chi-Square Test Statistics - The medical school allocates the resources dedicated for curriculum equitably to meet the educational needs (equit\_educ\_needs)

	equit_educ_needs
Chi-Square(a)	50.534
Df	4
Asymp. Sig.	.000

Source: Research field survey, 2015

Putting this together, the null hypothesis that observed frequencies equal the expected frequencies, and the chi-square t-statistics value is obtained. The statistics shown in Table 13 show the rejection of this hypothesis with asymptotic significant probability value of 0.00. This suggests that the observed is significantly different from the expected. This implies that the null hypothesis expectation is that the medical school did not allocate the resources dedicated for curriculum equitably to meet the educational needs. The rejection of this hypothesis indicates that the medical school did allocate the resources dedicated for curriculum equitably to meet the educational needs of the institution; hence, the conclusion that budgeting has been relevant in the service delivery of medical education at the CMUL; meaning that it is efficient. The second hypothesis is considered next.

**HYPOTHESIS Two:**

H<sub>02</sub>: There is no significant relationship between budgeting and learning in medical education in Nigeria.

To test this hypothesis, the use of the chi-square test was employed to investigate if the medical school operates a dedicated budget specifically for curriculum activities (i.e. learning).

The chi-square test was done with the null hypothesis that budgeting structure has no significant effect on learning at the CMUL. The deviation from the expectation was substantial for those undecided with 65.8 residual, followed by the respondents that strongly disagree with -34.2 residual while those that strongly agree have a deviation from expectation to the tune of -27.2 residual. The one that appeared least deviated was the responses of those that agree with 13.8 residual, followed by those that disagree with -18.2 residual (Table 14).

**Table-14.** Chi-Square Table – The medical school operates a dedicated budget specifically for curriculum activities (ded\_budgt\_curr)

	Observed N	Expected N	Residual
Strongly Agreed	53	80.2	-27.2
Agreed	94	80.2	13.8
Undecided	146	80.2	65.8
Disagreed	62	80.2	-18.2
Strongly Disagreed	46	80.2	-34.2
Total	401		

Source: Research field survey, 2015

As evidence, the chi-square statistics of 84.3 significantly rejects the null hypothesis that the medical school did not operate a dedicated budget specifically for curriculum activities with the use of the chi-square test. As such, it could be inferred from this statistics that budgeting structure had a significant effect on learning in the CMUL. This finding further reinforced the results obtained in hypothesis 1 that budgeting had been relevant in the medical education of the CMUL; thus, efficient in resource allocation.

**Table-15.** Chi-Square Test Statistics - The medical school operates a dedicated budget specifically for curriculum activities (ded\_budgt\_curr)

	ded_budgt_curr
Chi-Square(a)	84.299
Df	4
Asymp. Sig.	.000

Source: Research field survey, 2015

**HYPOTHESIS Three**

H<sub>03</sub>: There is no significant relationship between funding and teaching in medical education in Nigeria.

In testing this hypothesis, the study examined if funding had been adequate to meet the needs of CMUL (Table 16).

**Table-16.** Chi-Square Table - Funding has been adequate to meet the needs of CMUL (adeq\_fundg).

	Observed N	Expected N	Residual
Strongly Agreed	49	80.2	-31.2
Agreed	42	80.2	-38.2
Undecided	72	80.2	-8.2
Disagreed	136	80.2	55.8
Strongly Disagreed	102	80.2	21.8
Total	401		

Source: Research field survey, 2015

Interestingly, these responses suggest significant proportions of the deviations between the observed and the expected responses were skewed more to those that disagree that funding had not been adequate to meeting the needs of CMUL. While 80.2 was expected on an equally likelihood probability, the responses obtained suggest that most respondents were more than the expected number while those who were either supposed to agree or strongly agree fell short of the expected number of 80.2 responses. The negative skewness on the part of those who were to either agree or strongly agree coupled with the positive skewness on the part of those who were either supposed to disagree or strongly disagree produced chi-square test statistics presented in Table 17.

**Table-17.** Chi-Square Test Statistics - Funding has been adequate to meet the needs of CMUL (adeq\_fundg)

	adeq_fundg
Chi-Square(a)	75.920
Df	4
Asymp. Sig.	.000

Source: Research field survey, 2015.

The chi-square test statistics of 75.92 show a significant difference between the expected and observed frequencies with an asymptotic significant probability value of 0.00. The implication is that funding had been adequate to meeting the needs of CMUL. It is concluded that funding had significant effect on teaching at the CMUL.

**HYPOTHESIS Four**

H<sub>04</sub>: There is no significant relationship between funding and learning in medical education in Nigeria.

To test this hypothesis, the study if scholarship schemes were available for award to deserving students of CMUL (Table 18).



**Table-18.** Chi-Square Table - Scholarships schemes are available for award to deserving students (avail\_schlar\_schem).

	Observed N	Expected N	Residual
Strongly Agreed	83	80.2	2.8
Agreed	129	80.2	48.8
Undecided	65	80.2	-15.2
Disagreed	79	80.2	-1.2
Strongly Disagreed	45	80.2	-35.2
Total	401		

Source: Research field survey, 2015

On the question of whether the scholarship schemes were available for award to deserving students of the college, -36.4 deviations of the observed from the expected was noticed from the respondents that disagree and strongly disagree with such submission. Deviation as indicated by the residual of the observed from the expected frequencies of those that agree and strongly agree is about 51.6 residual while those indifferent recorded -15.2 residual. To ascertain these deviations from the observed and expected responses, the chi-square test statistics was conducted to provide a better indicator for significance testing (Table 19).

**Table-19.** Chi-Square Test Statistics - Scholarships schemes are available for award to deserving students (avail\_schlar\_schem)

	avail_schlar_schem
Chi-Square(a)	48.140
Df	4
Asymp. Sig.	.000

Source: Research field survey, 2015

The chi-square test statistics of 48.14 has asymptotic probability value of 0.00. This significance suggests a rejection of the hypothesis that scholarship schemes were available for award to deserving students of CMUL. By implication, it could be inferred that funding structure would have a significant effect on learning in the CMUL; if available. To evaluate the first four hypotheses, a T-test was conducted to compare significance tests between budgeting and funding in ascertaining which matter more for service delivery of medical education at the CMUL.

**HYPOTHESIS Five**

H<sub>05</sub>: There is no significant relationship between improved funding and service delivery in medical education in Nigeria.

In testing this hypothesis, the researcher took cognisance of group statistics and independent sample T-test responses elicited from the respondents. This was done by considering some service delivery variables, such as teaching and medical education generally as independent variables against funding as a dependent variable.

Table -20. Independent Samples T-test

		Levene's Test for Equality of Variances		T-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
equit_educ_needs	Equal variances assumed	15.440	.000	-25.878	120	.000	-2.21707	.08567	-2.38670	-2.04744
	Equal variances not assumed			-25.288	98.306	.000	-2.21707	.08767	-2.39104	-2.04309
ded_budgt_curr	Equal variances assumed	66.833	.000	-27.193	120	.000	-1.78569	.06567	-1.91571	-1.65568
	Equal variances not assumed			-30.370	103.232	.000	-1.78569	.05880	-1.90230	-1.66909
adeq_fundg:	Equal variances assumed	296.717	.000	-41.202	120	.000	-2.69014	.06529	-2.81941	-2.56087
	Equal variances not assumed			-48.671	70.000	.000	-2.69014	.05527	-2.80038	-2.57991

Source: Research field survey, 2015

As shown in Table 20, the Levene test for equality of variances indicates that the equality of variances assumed can be rejected at the 5% level of significance for the responses of all the variables of interest. Meanwhile, the responses from the variable that funding has been adequate to meeting the needs of CMUL have the highest variance; the highest deviation from the expected. This is closely followed by the responses that the medical school operates a dedicated budget specifically for curriculum activities but least varied from the expected was the responses that medical school allocates resources dedicated to curriculum equitably to meet the educational needs. The implication is that funding has been the least significant as well as relevant to the service delivery of medical education in CMUL while the budget and budgeting structure are lesser and less relevant, respectively, in meeting the service delivery of CMUL. Also, the T-test for the Equality of Means; under the assumptions of equal and unequal variances reinforced the findings that funding is considered less equal to expectation in impacting on service delivery of CMUL while budget and budgeting structure followed in successive order. This is evident with the T-statistics values of -41.2 and -48.7 under equal and unequal variances for funding and -27.2 and -30.4 for the simultaneous impact expectations of budgeting and -25.9 and -25.3 for budgeting structure, respectively.

### 3. FINDINGS

The budgeting method used by all federal universities and medical schools in Nigeria including CMUL is normative/incremental budgeting method. Federal Government also makes irregular interventions to the universities and medical schools, especially on provision of academic buildings and equipment infrastructure through contractual funding model. Incremental budgeting and funding models assume budget provisions of previous years were adequate to execute the activities of the current year and merely add a marginal percentage increase to cover for inflation. This assumption is flawed in major respects mainly due to steep increases in the number of students admitted yearly into the medical schools and the need to adequately provide for their training needs in terms of teaching consumables, laboratory equipment and lecture theatres. The budgeting and funding methods in use in CMUL have not been adequate for the services expected to be provided.

Students at federal universities and medical schools in Nigeria do not pay tuition fees at undergraduate levels but are permitted to pay minimal services charges only. Education is generally considered as the greatest form of investment in human resources. It elevates the learners' intellect, improves their quality of life as well as individuals' skills and efficiency in the production process (Machlup, 1982). Students and their parents invest in their education through payment of tuition fees, purchase of books and other learning materials, and living expenses among others. According to Steel and Sausman (1997) the social rates represent the costs and benefits borne by the society. Akinwande (2013) shows the paltry details of fees paid by undergraduate students in federal universities in Nigeria; which appeared to be grossly inadequate to support students' training in the absence of adequate government funding. Earlier studies by Adaralegbe (1990) and Adesina (1990) cited by Bello (2014) buttressed the fact that parents and students must pay for education so that government policy on free tuition does not amount to an empty promise. They further argued that other countries that run free education programmes usually provide opportunities for students to raise funds either directly or indirectly towards financing of their education. This could be in form of bursary grants or students loans payable after graduation and subsequent employment.

### 4. RECOMMENDATIONS

Arising from the conclusion drawn from this study, the following suggestions are made as policy recommendation:-

1. Sound Internal Control System. It is recommended that the finance department of the institution should be properly staffed through recruitment and training of qualified chartered accountants such that all money allocated and funding sourced would not only be properly channelled but also, adequately accounted for documentations and utilisations as well as improvement of medical education.

2. Timely Implementation of New Funding Model. To complement a sound internal control mechanism, the contextualised funding model should quickly replace the normative and contractual funding model currently in use.
3. Aggressive IGR Drive. The institution needs to be empowered to generate a significant proportion of its internally generated income to adequately fund its growing operations.
4. Conducive Enabling Environment. The provision of conducive enabling environment cannot be overemphasised in the delivery of medical education and the adequate allocation of budget and funding arising therefrom.
5. Government should consider the introduction of tuition fees at the undergraduate level to give necessary support for raising funds by the medical schools that require huge quantum of resources to carry out their statutory functions of teaching and learning. The free tuition policy at the undergraduate level of medical education could be a dis-incentive to timely completion of training programmes by medical students. The present level of income generation through tuition fees of less than 5% of total income should be significantly improved upon to about 20% of total income in line with the emerging trend around the world. Human capital theory upon which this study was built, recognises that tertiary education is an investment and should partly be paid for by the students and parents in form of tuition and obligatory charges.
6. Arising from the recommendation of introduction of tuition fees, government should institute bursary and loan schemes to support brilliant and indigent students who may need such support for their university education.

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