

ANALYSIS OF EDUCATIONAL COST IN NIGERIAN UNIVERSITIES

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Abstract

Education cost refers to the real resources (human, material and time) used up in the production of human capital estimated in monetary value. The study was carried out to estimate the structure of educational cost and evaluate the performance of universities in Nigeria. Specifically, an attempt was made evaluate the cost of undergraduates, cost of postgraduates and the cost of carrying out research in the universities. The researcher adopted a descriptive survey of ex-post-facto research design. Stratified random sampling technique was used to select 30 out of the 79 public universities in Nigeria. The stratification was based on geographical location, proprietorship and specialty. A researcher-designed instrument tagged, "University Cost and Efficiency Checklist" (UCEC) was used to gather data for the study. The instrument was validated by five experts in Measurement and Evaluation, Educational, Management, Operation research and statistics. Statistical techniques such as percentage, mean score and standard deviation were used in the descriptive analysis of the data collected. Stochastic Cost Frontier Estimator (SCFE) was also adopted in the estimation of university's costs. The findings of the study indicated that the total cost of the selected universities was found to be 58.592 billion. The total cost of undergraduate teaching was found to be ₦9.948 billion while the unit cost of undergraduate teaching was found to be ₦20.577 million. The total cost of postgraduate programmes was found to be ₦42.172 billion with unit cost of ₦1.306 million. In the same vein, it was found out that the average cost was found to be ₦120 million. Based on the findings of the study it was recommended among others that the university authorities should embark on cost-saving activities that will reduce cost as well as wastage, this is to ensure optimal utilization of spaces and, optimum enrolment. Allocation of resources to the universities should be made to be highly competitive and this should be based on the performance of the institutions in the previous year. In formulating policy for the universities, the government should eliminate systemic factors that could cause wastage in the use of resources.

Keywords: Educational Cost, Cost of Undergraduate, cost of Postgraduate

Introduction

In today's economic and financial environment, the issue of cost and efficiency of universities is becoming increasingly sensitive even in countries like Switzerland, Britain and United States of America where universities have been relatively well funded with respect to number of students. This is because, weighing

accrued to universities are utilized in achieving the objectives for which they were established and from which a number of decision can be made regarding the institutions that are not efficient in the use of resources (Oyeniran, 2010).

In addition, there had been an increase in the number of students enrolled in Nigerian universities and the government is faced with the problem of providing university education in a more efficient and effective manner that will enable the existing resources to be used to meet the increasing demand for university education. To this end, this policy change has exerted pressure on the university administrators and policy makers to emphasize productivity, efficiency and cost-effective management.

Cost of education can positively and negatively impact on university efficiency. This is because; cost of education encompasses the cost of all the factors of production in the production of university's output (Oyeniran, 2010). Cost of education is a very important indicator in determining university efficiency. This is because resources are allocated to the universities in form of funds. The central thesis of this study is to examine the extent to which the funds allocated to the universities are utilized to achieve the objectives for which they were established.

The Concept of Educational Cost

According to Popoola (1989), costs in education have been viewed from two perspectives. These are the monetary and opportunity cost. Longe (1984) opined that cost of education is the monetary value of the resources used up in the production of human capital during a given period of time. Accordingly, the cost of education is money payment made to acquire the resources needed to operate a school. They include money spent on salary and allowances of personnel, the purchase of goods and services and the acquisition or use of plant and equipment (Popoola, 1989).

In real terms, it is difficult to quantify the cost of education. Since there is a choice between alternatives in the utilization of money invested in education, cost is more than the amount of money spent in purchasing the service. Rather, it is the opportunity cost foregone that constitute the cost of education (Nwadiani 2000). In the real sense of it, educational cost is the real resources (material, human and time) used up in the production of "improved men" — human capital estimated in monetary value.

The concept of cost comes into play in the production of goods and services. It may also be expressed in terms of monetary or non-monetary value when the owner of a factor of production offer that factor to a producer, the cost to the owner is represented by his consumption function, while the producer incurs a precise and

measurable money cost made up of wages, interest charge etc. Cost can therefore be studied for the purpose of determining an organization's income during a past period from which the organization determines its tax, liability and dividends policy.

Education cost is a measure of what a student, an institution of learning or the public has to give up in order to educate an individual or a group of people. The cost of education may be incurred by the producer's educational institutions or consumers (students) and their parents (Babalola, 1995). It includes physical and human resources that are used up and involved in the construction and operation of project and for short-run includes all inputs in the production of students. These resources or cost (input) are measured and expressed in monetary terms and includes the cost that have to be incurred to produce the intended benefits of the projects.

The Meaning of Cost in University Education

In a monetised economy, cost usually appears in the form of expenditure of money. It is the payment made to acquire goods and services. For example, as consumers, we refer to the cost of a computer or a textbook as the amount of money we pay to acquire the good. In the same vein, the costs of universities are usually money payments made to acquire the resources needed to operate the institutions. They include cash outlays for the wages and salaries of personnel, the purchases of goods and services, and the acquisition or use of plant and equipment (Okebukola, 2002).

The real costs however, lie beneath the money payments. The products or outcomes of higher education are obtained through the use of scarce resources. These resources consist partly of labour, capital and land. They consist partly of goods, services, plant, and equipment purchased from outside vendors. These purchased items are, however, also the product of labour, capital, and land employed by outsiders. Thus, all the expenditures of higher education reduce ultimately to payments for the services of scarce resources (Okebukola, Sambo, Adeogun, Quadri, Bankole & Popoola 2002). These same resources, could be allocated, and consists of the benefits that might have been realized from these resources, but were sacrificed, because these resources were committed to higher education. These alternative benefits might have been in the form of consumer goods - such as food, petrol, or tooth paste - and social goods-such as expressways, police protection, or environmental improvement (Okebukola et al, 2002). These are the kinds of benefits that are sacrificed when resources are devoted to higher education. These sacrificed opportunities represent the real costs, or as they are sometimes called, sacrificed opportunities represent the real costs, or as they are sometimes called, the opportunity costs. Whenever it is suggested the underlying assumption is that

the additional resources so used will produce a greater return than the same resources devoted to other purposes. Or when suggested that the resources employed in higher education should be cut back, the implication is that the same resources would produce a greater return if applied to an alternative use. So when one considers how much of the nation's resources should be devoted to higher education, there is an implicit comparison of the benefits that could be obtained from increments of other goods (Johnson, 2002)

Unit Cost

It is not difficult to calculate the total annual cost of operating a university. All that is needed is to add up all the expenditures making sure that only the costs that are properly allocated to the year in question are included. If we divide the total cost by the number of students enrolled we get the unit cost. Useful cost comparisons, either over time or among institutions require that expenditures be related to the number of units of service rendered (Okebukola, et al, 2002).

This method of rough approximation had the virtue of simplicity and worked reasonably well when the education of full-time resident undergraduate students is being considered. However, with the increasing differentiation of institutions by functions this rough and ready method of computing unit cost becomes faulty, except for comparisons of institutions having similar missions and student bodies. Also, the counting of number of students also has its complications. Some students attend part-time and others full-time. To estimate the effective number of students the concept of "full-time equivalent students" was devised. With this concept, the students' number was computed by country's full-time students as one each and counting part-time students as a fraction of one according to the number of credit hours for which they are enrolled. But students differ also as to academic level. Some undergraduates begin as 100-level students, some in 200 and some 500. Some are advanced graduate and professional students. Costs tend to be higher as students advance up the academic ladder (Okebukola et al 2002).

The educational cost per student therefore tends to be greater in institutions with high proportions of advanced students than in institutions with high proportions of beginners. To standardize the units in which teaching loads are measured, heavier weight must be assigned to advanced students than to beginners. The resulting adjusted enrolment is expressed in what is called "student units" — each unit being the equivalent of one full-time 100/200-level student. The unit cost of any institution can then be calculated by dividing the educational expenditures by the number of student units. Theoretically at least, the educational costs of institutions of all types may thus be reduced to the same unit and compared.

In a study of institutional costs, it would have been desirable to include the costs of organized research and public service, because research and public service are integral and important functions of universities. To include them, however, would have required units in which the products of research and public service could be measured. Unfortunately, in these two, activities do not lend themselves to measurement in discrete units. It is generally difficult, except through the broad general judgment of experts, to measure the output of an institution's organized research or public service programme. Cost studies, therefore, are usually confined to the educational function for which a tenable measuring unit is available. This unit is a full-time -equivalent student with appropriate adjustment for academic level (Okebukola, 2001; 2002) the present study is no exception.

Research Questions

In order to guide this study and explore the problem, the following research questions were raised.

- i RQ 1: What is the total cost of education in Nigerian universities?
- ii RQ 2: What is the cost of undergraduate programme in Nigeria Universities?
- iii RQ 3: What is the cost of Postgraduate Programme in Nigeria Universities?
- iv RQ 4: What is the cost of Research in Nigeria Universities?
- v RQ 5: What is the total marginal cost in Nigeria Universities?

Methodology

Research Design

The study employed a descriptive type of ex-post-facto research design. This is because the variables studied had already occurred (Oyeniran, 2010).

Samples and Sampling Technique

The population for the study consists of all universities in Nigeria while the target population comprised of all the public universities. The target population is 79 universities comprising of 40 federal and 39 state universities out of which 30 universities were selected (Oyeniran, 2010). This number is large enough to ensure that all the categories of public universities were adequately represented so that valid generalisation can be made for the university system as a whole. In view of this, stratified random sampling technique was used for the selection of the sample. Based on Oyeniran 2010 study, these strata consisted of federal, state, conventional and specialised universities. The proportional random sampling based on 40% of the total number of universities in each geopolitical zone will select at least two universities in each of the six geopolitical zone of Nigeria.

Research Instrument and Data Source

Data collection for this study was ensured through the use of a checklist entitled "University Cost and Efficiency Checklist" (UCEC) (Oyeniran, 2010). The instrument was designed to collect data on variable of cost and efficiency. The instrument consists of eight sections, which are sections A to H. Section A has to do with biodata of each university. Section B deals with teaching inputs while section C deals with teaching outputs. Section D is on research inputs while section E is on research outputs and sections F and G is on recurrent and capital expenditures respectively. The instrument was administered to each university through the Academic Planning Unit while some data were collected from the National Universities Commission (NUC).

Estimation of Cost Function

In order to analyse the cost structure of universities; the cost function is formulated. This is to relate the total cost which is the dependent variable to the number of undergraduates, number of postgraduates (excluding number of Ph.D) and research outputs proxied by the number of Ph.D degrees awarded by each university which are the independent variables. Number of Ph.D. degrees awarded is chosen as a measure of research output based on Carnegie classification of universities as reported by Filippini and Lepori (2006). This in effect, is to estimate the cost of undergraduate teaching, cost of postgraduate programmes and cost of research outputs. Also the total teaching cost, marginal cost, unit cost were also estimated. In the cost function, the total cost consisted of capital and recurrent costs. The capital cost comprised of cost of building and equipment, maintenance and library costs. The recurrent cost on the other hand includes salary and allowances of academic and non-academic staff, stationeries cost etc.

The cost function according to Oyeniran (2010) is defined as:

$$C = f(y_1, y_2, y_3) \text{------(1)}$$

Where C is the total cost, y_1 is the vector of the number of undergraduates, y_2 is the vector of the number of postgraduates and y_3 is the vector of the number of PhD degrees conferred. Specifically, the cost function is expressed as follow:

$$C = \beta_0 + \beta_1 y_1 + \beta_2 y_2 + \beta_3 y_3 + \beta_4 y_1^2 + \beta_5 y_1^3 + \beta_6 y_1 y_2 + \beta_7 y_1 y_3 + \beta_8 y_2 y_3 + \epsilon \text{------(2)}$$

Therefore the total cost at university j , y denotes the i th number of students. The form of cost function explored in this study

$$C = \beta_0 + \sum \beta_i y_i + \sum_{i=1, j=1}^{33} \beta_{ij} y_i y_j + \epsilon \text{------(3)}$$

and ε is the error term. The associated marginal cost of undergraduate teaching, postgraduate programmes, research outputs and unit cost are given in equations 4, 5, 6 and 7 respectively.

$$\frac{dc}{dy_1} = \beta_1 + 2\beta_4 y_1 + \beta_7 y_2 + \beta_8 y_3 \text{-----(4)}$$

$$\frac{dc}{dy_2} = \beta_2 + 2\beta_5 y_2 + \beta_7 y_1 + \beta_9 y_3 \text{-----(5)}$$

$$\frac{dc}{dy_3} = \beta_3 + 2\beta_6 y_3 + \beta_8 y_1 + \beta_{10} y_2 \text{-----(6)}$$

$$AC = \frac{C_j}{\sum y_{ij}} \text{-----(7)}$$

Results and Findings

Research Questions

Research Question 1: What is the total cost of universities?

Table 1: Analysis of total cost of universities.

This was derived from equations 1, 2 and 3.

S/N	Universities	Total Number of Students	Total cost (Million ₦)	Unit Cost (Million ₦)
1.	UNV 1	32672	4195	0.13
2.	UNV 2	15062	70.64	0.005
3.	UNV 3	14262	1955	0.14
4.	UNV 4	28959	2399	0.083

5.	UNV 5	20193	1764	0.087
6.	UNV 6	17891	4201	0.025
7.	UNV 7	16420	159	0.0097
8.	UNV 8	15320	2168	0.142
9.	UNV 9	25959	3819	0.15
10.	UNV 10	21228	1435	0.12
11.	UNV 11	13226	1253	0.095
12.	UNV 12	25744	6340	0.25
13.	UNV 13	18143	556	0.031
14.	UNV 14	31679	4449	0.14
15.	UNV 15	8920	426	0.048
16.	UNV 16	7925	422.21	0.056
17.	UNV 17	7360	38.14	0.052
18.	UNV 18	9035	1657	0.18
19.	UNV 19	22929	1110	0.048
20.	UNV 20	16214	1453	0.09
21.	UNV 21	30712	1547	0.05
22.	UNV 22	16702	1116	0.067
23.	UNV 23	21320	6088	0.029
24.	UNV 24	20430	2279	0.112
25.	UNV 25	20518	1546	0.075
26.	UNV 26	25610	1292	0.047
27.	UNV 27	9737	1063	0.11
28.	UNV 28	20677	1408	0.068
29.	UNV 29	15677	823	0.053

9.	UNV 9	23318	587.5	0.025
10.	UNV 10	15560	220.7	0.025
11.	UNV 11	13985	192.6	0.014
12.	UNV 12	22767	593.4	0.026
13.	UNV 13	16634	855.2	0.0051
14.	UNV 14	27277	684.4	0.025
15.	UNV 15	7685	65.5	0.008
16.	UNV 16	7402	68.0	0.009
17.	UNV 17	6750	58.6	0.009
18.	UNV 18	7556	255	0.034
19.	UNV 19	21867	170.8	0.008
20.	UNV 20	15207	223.5	0.015
21.	UNV 21	22604	237.9	0.010
22.	UNV 22	12936	171.7	0.058
23.	UNV 23	19446	936.5	0.005
24.	UNV 24	19706	350.0	0.018
25.	UNV 25	18698	237.8	0.013
26.	UNV 26	24000	183	0.008
27.	UNV 27	9501	163.5	0.017
28.	UNV 28	21159	216.6	0.010
29.	UNV 29	13445	653.8	0.049
30.	UNV 30	19601	132.0	0.067
TOTAL		515184	9.948	0.61
			3.66	

Source: Fieldwork, 2010

Table 1 showed that the total cost of education in the selected universities was found to be 58.592 billion. The total cost for federal universities (UNIV1-UNIV20) was ₦39.870 billion which was about 68% of the total cost of education in the selected universities while State universities (UNIV21-UNIV30) accounted for about 32 % of the total cost which was about ₦18.922 billion. When universities were grouped according to type, the total cost for conventional universities (UNIV1- UNIV14, UNIV21-UNIV24 and UNIV26 and UNIV27) was ₦48.048 billion that is about 82% of the total cost while the total cost for specialized universities (UNIV15-UNIV20, UNIV25 and UNIV28-UNIV30) was ₦10.543 billion that is 18% of the total cost.

Research Question 2: What is the cost of undergraduate programme in Nigeria Universities?

Table 2. Analysis of the cost of undergraduate in Nigerian universities.

This was generated from equation 1, 2 and 3.

S/N	Universities	Number of Undergraduates	Cost of Undergraduates (Million ₦)	Unit Cost of Undergraduate (Million ₦)
1.	UNV 1	26774	645.4	0.024s
2.	UNV 2	17441	106.7	0.0062
3.	UNV 3	17008	300.7	0.018
4.	UNV 4	27972	369.1	0.013
5.	UNV 5	16977	271.4	0.016
6.	UNV 6	11695	646.4	0.055
7.	UNV 7	14318	244.6	0.017
8.	UNV 8	15895	333.5	0.021

Marginal Cost

Source: Fieldwork, 2010

Table 2 showed that the total number of undergraduate students in the selected universities was 15184 with an average number of students as 17,173. The total cost of undergraduate programme was found to be ₦9,948 billion while the unit cost of undergraduate teaching was found to be ₦20,577 million. The results also showed that conventional universities (univ1-univ14, univ21 – univ24 and univ26 and 27) had the highest cost of undergraduate while specialized universities (univ15-univ20, univ25 and univ28-univ30) had the lowest cost of undergraduate. Furthermore, the total cost of undergraduate programme for state universities (univ21-univ30) was found to be ₦3,285 billion that is, 33% of the cost of undergraduate programme. The cost of undergraduate programme for specialized universities was found to be ₦1,614 billion and accounted for about 16.2% of the total cost of undergraduate programme. The marginal cost of undergraduate teaching was found to be ₦3,66 million.

Research Question 3: What is the cost of Postgraduate Programme in Nigeria Universities?

Table 3. Analysis of the cost of Postgraduate Programmes in Nigerian universities. This was generated from equation 1, 2 and 3.

S/N	Universities	Number of Postgraduates	Cost of post graduates (Million ₦)	Unit Cost of Postgraduates (Million ₦)
1.	UNV 1	5901	333.5	0.56
2.	UNV 2	621	561.5	0.90
3.	UNV 3	1254	1,554	1.23
4.	UNV 4	809	1,907	2.40
5.	UNV 5	690	1,402	2.0
6.	UNV 6	6190	3,339.6	0.54
7.	UNV 7	2102	1,263.8	0.60
8.	UNV 8	1425	1,723	1.20

9.	UNV 9	2611	3,035	1.16
10.	UNV 10	568	1,140	2.0
11.	UNV 11	1241	9955	0.80
12.	UNV 12	2977	3,066	1.02
13.	UNV 13	1881	441.8	0.23
14.	UNV 14	4402	3,536	0.80
15.	UNV 15	1235	338,	2.73
16.	UNV 16	526	351.5	0.67
17.	UNV 17	610	303	0.49
18.	UNV 18	2393	1,316.8	0.55
19.	UNV 19	574	882.6	1.50
20.	UNV 20	1007	1,155	1.10
21.	UNV 21	675	1,229	1.82
22.	UNV 22	622	887	1.42
23.	UNV 23	1854	483.9	0.26
24.	UNV 24	724	1,811	0.16
25.	UNV 25	1820	1,229	0.67
26.	UNV 26	1602	947.6	3.58
27.	UNV 27	236	844.6	3.58
28.	UNV 28	609	1,118.9	1.58
29.	UNV 29	856	653.8	0.76
30.	UNV 30	2819	1319.5	0.72
TOTAL		49834	42,172	34.3
Marginal Cost		113		

Source: Fieldwork, 2010

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Table 3 presents the cost of postgraduate programmes and the associated variables. The number of postgraduate students in the selected universities was 49,834 and the average number of postgraduate students was 1,661. The total cost of postgraduate programmes was found to be ₦42.172 billion with unit cost of ₦1.306 billion. The results showed that universities with higher number of postgraduate students had high cost of postgraduate above the average cost, and this comprised of the first generation (UNIV1,4,6,9,12 and 14) conventional (UNV1-UNIV14, UNIV21-24 and UNIV26 and 27) universities.

The cost of postgraduate programmes in the selected universities (UNIV21-UNIV30) was ₦10.525 billion that is about 25% of the total cost of postgraduate programmes. In the same vein, the cost of postgraduate programmes for specialized universities (UNIV15-UNIV20, UNIV25 and UNIV28 and UNIV30) was ₦7.439 billion. That is about 18% of the cost of postgraduate programmes. The marginal cost of postgraduate teaching was ₦113 million, and this indicates that it will cost the government ₦113 million to train one additional postgraduate student in the universities.

The results also showed that the cost of postgraduate programmes appeared to be higher than the cost of undergraduate. This might be due to the fact that postgraduate students consume more and high quality resources than the undergraduate students and that most universities exploit economies of scale in undergraduate teaching but not in the postgraduate programmes. This findings was in line with the studies of Carrington et al, 2005 and Creed et al, 2002 in the Australian universities.

Research Question 4: What is the cost of Research in Nigeria Universities?

Table 4 Analysis of the cost of Postgraduate Research in Nigerian universities.

These were generated from equation 1, 2 and 3.

S/N	Universities	Number of PhD Degrees	Cost of Research (Million ₦)	Cost per Unit Research (Million ₦)
1.	UNV 1	57	215	2.8
2.	UNV 2	25	36.2	1.5
3.	UNV 3	26	100	0.38
4.	UNV 4	37	1230	33.25

5.	UNV 5	57	90.5	1.6
6.	UNV 6	230	215.5	0.936
7.	UNV 7	55	81.5	1.5
8.	UNV 8	35	111.2	3.1
9.	UNV 9	132	195.8	0.15
10	UNV 10	28	73.6	2.6
11.	UNV 11	31	64.22	2.0
12.	UNV 12	62	197.8	3.1
13.	UNV 13	77	28.5	0.37
14.	UNV 14	122	22.18	0.20
15.	UNV 15	18	21.8	1.2
16.	UNV 16	21	22.7	1.0
17.	UNV 17	18	1.96	0.10
18.	UNV 18	28	85	3.0
19.	UNV 19	11	57.0	5.2
20.	UNV 20	14	74.53	5.3
21.	UNV 21	42	79.31	1.9
22.	UNV 22	39	57.24	1.5
23.	UNV 23	14	31.21	2.2
24.	UNV 24	17	116.9	6.9
25.	UNV 25	18	79.29	4.4
26.	UNV 26	33	61.15	1.9
27.	UNV 27	19	54.5	2.9
28.	UNV 28	14	72.19	5.2
29.	UNV 29	12	42.18	3.5

30.	UNV 30	12	85.13	7.1
TOTAL		1304	3.604	108
Marginal Cost			1492	

Source: Fieldwork, 2010

Table 4 showed the volume and cost of research activities taking place in the selected universities. The result of data analysis shows that 83% of research took place in federal universities (UNIV1-UNIV20) while only 17% took place in state universities (UNIV21-UNIV30). It was also found that only 18% of research activities took place in specialized universities (UNIV15-UNIV20, UNIV25 and UNIV28-UNIV30) while about 82% of research took place in conventional (UNIV1-UNIV14, UNIV21-UNIV24 and UNIV26 and UNIV27). Only eight universities had the volume of research above the mean value of 44 units and this included all the first generation and very few second generation universities.

The cost of research was ₦3.604 billion for the year under review. The average cost was found to be ₦120 million. Also federal universities accounted for about 81% of the cost of research while state universities accounted for only 19%. Conventional universities accounted for about 15%. The cost per unit research was found to be ₦3.6 million, while the marginal cost of research was ₦1.492 billion. This implies that for universities to increase the volume of research by one unit it will cost about ₦1.492 billion.

Research Question 5: What is the total marginal cost in Nigeria Universities?

Table 5 Analysis of Total Marginal Cost in Nigerian universities.

These were derived from equations 4,5 and 6.

S/N	Universities	Marginal Cost of Undergraduate (Million ₦)	Marginal Cost of Postgraduate (Million ₦)	Marginal Cost of Research (Million ₦)
1.	UNV 1	0.23	1.3	36.0
2.	UNV 2	0.091	0.064	8.95
3.	UNV 3	0.058	0.20	8.97
4.	UNV 4	0.017	0.63	41.0

5.	UNV 5	0.20	0.072	1.52
6.	UNV 6	0.45	2.8	34.56
7.	UNV 7	0.12	0.75	3.0
8.	UNV 8	0.087	0.35	4.1
9.	UNV 9	0.25	0.55	12.5
10.	UNV 10	0.12	0.044	2.2
11.	UNV 11	0.10	0.40	1.8
12.	UNV 12	0.0097	0.55	25.0
13.	UNV 13	0.12	0.58	0.38
14.	UNV 14	0.070	0.92	31.7
15.	UNV 15	0.12	0.76	16.58
16.	UNV 16	0.18	1.0	22.8
17.	UNV 17	0.17	0.60	2.41
18.	UNV 18	0.006	1.20	18.95
19.	UNV 19	0.08	0.40	25.75
20.	UNV 20	0.05	0.14	4.8
21.	UNV 21	0.09	0.34	22.5
22.	UNV 22	0.17	0.26	8.2
23.	UNV 23	0.042	0.23	20.6
24.	UNV 24	0.037	0.20	18.0
25.	UNV 25	0.02	0.27	17.40
26.	UNV 26	0.008	0.086	31.0
27.	UNV 27	0.17	0.29	16.4
28.	UNV 28	0.002	0.33	23.0
29.	UNV 29	0.072	0.24	0.84

30.	UNV 30	0.05	0.17	21.4
	TOTAL	3.21	15.76	466
	AVERAGE	0.11	0.53	15.54

Source: Fieldwork, 2010

Table 5 revealed that the total marginal cost for undergraduate programme in the universities was ₦3.21 million while the average marginal cost of undergraduate programme was ₦110,000. Also, the total marginal cost for postgraduate programme was ₦15.76 million, while the average marginal cost for postgraduate programme was ₦530,000. In the same vein, the total marginal cost for research was ₦15.54 million. Out of the total marginal cost for undergraduate programme, state universities (UNIV1-30) had a total marginal cost of ₦680,000 with an average marginal cost of ₦68,000. The total marginal cost for federal universities (UNIV1-20) was ₦2.5 million giving an average of ₦13,000.

The conventional universities (UNIV1-14, UNIV21-24, and UNIV26 and 27) had a total marginal cost of ₦2.442 million giving an average marginal cost of ₦122,000. In the same vein, specialized universities (UNIV15-20, UNIV25 and UNIV28-30) had a total marginal cost of ₦768,000 giving an average marginal cost of ₦76,800.

The total marginal cost for postgraduate programme was found to be ₦15.76 million giving an average of ₦530,000. Out of this amount, the total marginal cost of postgraduate programmes in the federal universities was found to be ₦13.344 million. For state universities, the total marginal cost of postgraduate programme was ₦2.416 million. In the conventional universities, the total marginal cost of postgraduate programmes was found to be ₦10.65 million while the total marginal cost of postgraduate programme in specialized universities was ₦5.11 million. The total marginal cost for research was ₦466 million giving an average marginal cost of ₦15.54 million. Federal Universities contributed about ₦287 million. Furthermore, the conventional universities had the total marginal cost of research to be ₦312 million while specialized universities had about ₦154 million as total marginal cost of research.

Discussion of Findings

The finding of the study indicated that it costs more to operate federal and conventional universities than state and specialized universities. This is due to fewer programmes being run by state and specialized universities compared to federal and conventional ones. This therefore shows that both federal and

conventional universities had higher cost of undergraduate programme compared to their state and specialized universities.

The marginal cost reveals that it will cost the government about ₦3.66 million to educate one additional undergraduate in Nigerian university. The disparities between the federal and state universities in terms of marginal cost of research could be due to ownership and funding, while the disparity between the conventional and specialized universities might be as a result of differences in programmes. For instance, specialized universities are capital intensive.

The results also showed that the cost of postgraduate programmes appeared to be higher than the cost undergraduate. This might be due to the fact that postgraduate students consume more and high quality resources than the undergraduate students and that most universities exploit economies of scale in undergraduate programme but not in the postgraduate programmes. This findings was in line with the studies of Carrington et al, 2005 and Creedy, Johnson and Valenzuela, 2002 in the Australina universities.

Conclusion

Based on the findings, it can be concluded that the cost of university education in Nigeria was high, about ₦2.56million to train a Nigerian graduate. It was also concluded that the unit cost of producing a graduate was the cheapest of all the three programme of the Nigerian universities. Average cost of research was very high and could be concluded that they are not cost effective. The Nigerian universities cost profile varies and changes according to the level of the programme in question. Undergraduate programme had the least average marginal cost (₦110,000) while cost of research has the highest average marginal cost (₦15.54million). Finally, to project the cost of postgraduate and research in Nigerian Universities will be very difficult because of the high level of marginal cost.

Recommendations

Based on the findings of this study, the following recommendations were made:

The university authority should embark on cost-saving activities that will reduce unnecessary cost and wastage such as optimal utilization of spaces and optimum enrolment.

In the formulation for policy for universities, the government should eliminate systemic factors that cause waste in the use of resources such as over estimation and under estimation of cost.

In order to minimize resource wastage as identified by the finding of this study, resources allocation should be based on the need of each university and

EFFECTS OF TRAINING AND RE-TRAINING PROGRAMMES ON TEACHERS' PRODUCTIVITY IN SECONDARY SCHOOLS IN IJEBU-ODE LOCAL GOVERNMENT AREA OF OGUN STATE

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Abstract

This study was carried out to determine the effect of training and re-training programmes on job performance of secondary school teachers in Ijebu-Ode local government area of Ogun State. A survey research design was used and questionnaires were administered on one hundred teachers drawn from ten public secondary schools in proportion to the number of teachers per school. Also, a total of two hundred students were involved in the sample. Four research hypotheses were tested using Pearson Product Moment Correlation statistical analysis and t-test analysis. The reliability of the questionnaire was estimated as 0.81 using cronbach alpha while that of achievement test was estimated as 0.84 using Kuder Richardson formula 20. The findings revealed that there was significant difference between training and re-training of teachers and their productivity in the selected secondary schools. Again, the programmes contribute immensely to academic performance of students in secondary schools as the students taught by teachers who attended training and retraining workshops performed better than those taught by the teachers who do not attend workshops based on the post-test scores of the students involved. One of the recommendations of the study is that adequate budgetary allocation for training and re-training of teachers should be encouraged by the government.

Introduction

Teachers are the people abreast with the appropriate level of competence that is capable of turning out into the society students who have acquired literacy, numerical, manipulative and communicative skills (Ogbiji, 2006). Teaching

should be made to be highly competitive. This should be based on the performance of each university in the previous year.

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