

RELATIONSHIP BETWEEN STUDENT ENROLMENT AND SOCIAL COSTS OF UNIVERSITY EDUCATION IN NIGERIA

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Abstract

The study investigates the relationship between student enrolment and social costs of university education in Nigeria. The descriptive survey research design was used for the study. Four research questions were raised and answered through data analysis. An instrument titled University Social Cost Checklist (USCC) was used to collect data on student enrolment and recurrent and capital expenditures of federal universities from Nigerian Bureau of Statistics (NBS) and National Universities Commission (NUC). Data collected were analysed using frequency counts and simple percentage. The study showed ₦91,767.20 as average social cost in 2001. However, the cost increased by 137.6% in 2006 to ₦218,023.91. Between 2006 and 2007, average social cost reduced by 34.6% to ₦142,538.86. This might not be unconnected with increase in student enrolment from 464,025 in 2006 to 610,072 as increase in student enrolment tends to reduce average social cost. Thereafter, average social cost continued to increase consistently from 2007. In 2010, average social cost was ₦321,072.63 owing to fluctuation in student enrolment in that year. Based on the findings of the study, it was recommended that the pattern of recurrent expenditure should be looked into to identify areas of excessive spending. Also, access to university education (federal universities) should be increased. Additionally, more federal universities should be established and the existing universities should be funded to increase their carrying capacities.

Key words: *Student enrolment, social costs and university education.*

Introduction

Student enrolment is expected to be one of the major factors that influence social cost of education. As student enrolment increases, other things being equal, one would expect social costs to increase in the same direction. As turnover is a catalyst to a retail outlet and raw materials to manufacturing industry, student enrolment is expected to be a driving force on government expenditure (social costs) on education. Ideally, positive relationship is expected to exist between student enrolment and social costs of education. Increase in student enrolment should lead to increase the number of institutions of learning being established. This is expected to be accompanied with increase in the provision of classrooms/lecture theatres, basic amenities and recruitment of teaching and non-teaching staff among others to cope with the increase in student enrolment. In Nigeria, government spending on university education at federal level has been on the increase almost every year without a corresponding increase in the number of federal universities and student enrolment. For instance, between 2000 and 2009, the number federal universities in Nigeria was twenty seven (27) with unstable student enrolment. According to 2009/2010 National Bureau of Statistics (NBS), student enrolment was 325,707 in 2001 while social costs (recurrent and capital expenditures) was ₦29,889,219,502.84. In 2006 enrolment figure increased to 464,025 (42.4%) while social cost increased to ₦101,168,545,258.26 (238%). However, student enrolment reduced from 464,025 in 2006 to 340,524; 26.6% reduction in 2009. Within the same periods, social costs increased from ₦101,168,545,258.26 to ₦110,564,269,064 (9.3%). A critical look at this pattern of expenditure shows that while student enrolment is decreasing, government capital and recurrent expenditures continue to increase. The researcher is trying to investigate what factors could be responsible for the large differences between government spending on federal university education and student enrolment? This study therefore investigates the influence of student enrolment on social costs in Nigerian federal universities.

Studies on Educational costs

Cost is generally defined as what is given up to achieve something of future benefit. It is the sacrifice made today for future benefit. It can also be referred to as a sacrifice made for the purpose of achieving a

particular objective. Babalola (1995) described cost as a measure of what is given up for the purpose of consuming a commodity. In education, cost refers to the monetary and non-monetary values used up in order to educate an individual or group of individuals. Babalola (2000) and Ayeni (2003) in Isuku (2014) viewed cost as a measure what is given up (monetary and non-monetary) to produce an activity. Education cost can also be referred to as the real resources in form of money and sacrifices that are used up by the individuals and society to produce an educated person. It is what an individual or the society incur in order to acquire education or to train an individual or group of individuals. Ayeni (2003) defined educational cost as the sacrifice made by individual, states, nations as well as institutions of learning to produce an educated individual or individuals. According to Babalola (1992), educational cost is a measure of what a student, an institution of learning or the public has to give up in order to produce an educated individual or a group of individuals. Education cost can be grouped into social cost and private cost. Social costs refers to the direct and indirect costs borne by the society through the government for the purpose of producing an educated person. It can also be defined as the totality of government expenditures for the purpose of training an individual or group of individuals. Adeyemi (1998) classified education cost as monetary or non-monetary. It includes the actual amount spent and what would have been spent on the alternative forgone. Educational cost can also be classified in three ways namely: private, institutional and social costs. Private costs are costs incurred by the individual students and their families for the purpose of acquiring education. They include both direct and indirect costs of education. These costs are borne through tuition fees, earnings forgone, additional living costs, books, uniforms and transport. In recent time, as a result of the prevalence of information communication and technology (ICT) in education, some new private costs have emerged. These include cost of internet connectivity personally or via commercial cyber café. Other recently introduced educational costs include acceptance fee, caution deposits and cost of uniforms for certain learners and administrative charges.

Social costs are the direct and indirect costs borne by the public through the government for the purpose of providing education for individual or group of individuals. It is the total expenditures incurred

by the government to train a particular individual or group individuals. Akangbou (1987) in Akpotu (2008) viewed social costs as social investment or government expenditures on education. It consists of both recurrent and capital expenditures of government on education. Benson (2011) in Ekpenyong and William (2013), described unit cost as a useful tool for diagnosing, comparing, evaluating, solving the prevailing education problems for logical and systematic decision making. Capital and recurrent expenditures on education constitute social costs of education. They represent government expenditure on capital projects (such as building of classrooms/lecture theatres, library, laboratory, purchase of equipment, furniture and fittings) and on-going spending (like payment of teaching and non-teaching staff, procurement of books, stationaries e.t.c). Studies conducted on educational costs showed that recurrent expenditure (teachers' salaries) take a large proportion of government expenditure on education. Akinyemi (2005), Oyetakin (2008) and Ofem (2011) in Oyetakin and Adeosun (2014) found that teachers' salaries take a larger percentage of government recurrent expenditure on education. Akpotu (2008), Oyetakin and Adeosun (2014), Akinyemi, Ofem and Adebisi (2012) as well as Ekpenyong and William (2013) carried out their studies on educational cost from different perspective. Akpotu (2008) focused his study on trend in social unit cost of secondary education in the South-West of Nigeria between 1996 and 2001. The findings showed that unit costs and student enrolment were not positively related. Oyetakin and Adeosun investigated the heterogeneities in the unit cost of university education in Nigeria using undergraduates students of eight faculties of three state and three federal universities in the south-west, Nigeria as its respondents. The study discovered the existence of variation in the private and social unit cost of undergraduate from one university to the other irrespective of ownership and disciplines. Oyetakin and Adeosun computed both private and social costs. Akpotu and Oyetakin and Adeosun studies were carried out in the South-West, Nigeria. Oyetakin and Adeosun focused their study on both federal and state universities in the South-West to determine variations in costs with respect to level of development, income, demand for higher education and population,; but this study concentrated on all the federal universities in Nigeria using recurrent and capital expenditures to determine relationship

between social costs and student enrolment.. Also, Akpotu's study is on secondary education, this study is on university education. This study is different from theirs because it considered the influence of student enrolment on social costs at university level.

Akinyemi, Ofem and Adebisi (2012) study was carried out to determine the influence of private cost on student enrolment in Nigerian universities. The study showed that household demand for university education was inelastic. Despite higher tuition fees which is higher than the average household income, there was still increase in student enrolment in the state universities. Ekpenyong and William 2013 investigated the unit cost of education as a determinant of students' learning achievement in universities in cross river state of Nigeria. The study reflected a non-significant relationship between staff unit cost and student's learning achievement. Oguntoyinbo and Fabunmi(2011) adopted 'ex post facto' research design to investigate the influence of unit cost on university education on students' academic performance among university of Ibadan students. The study showed a non- significant influence of unit cost of university education on students' academic performance.

This study, unlike Akpotu, Oyetakin and Adeosun, Akinyemi, Ofem and Adebisi, Ekpenyong and William as well as Oguntoyinbo and Fabunmi will compute the social unit cost of all the federal universities in Nigeria using secondary data (capital and recurrent expenditures between (2000-2009). In the area of cost of education, Akpotu investigated trend of social cost of secondary education in the south-west Nigeria. Furthermore, Oyetakin and Adeosun investigated the heterogeneities in the unit cost of university education in Nigeria and covered undergraduate students of eight faculties of three state and three federal universities in the south-west, Nigeria. This study is different in focus, because it deals with the relationship between social cost and student enrolment in all the federal universities in Nigeria between (2001-2009). Further, it will determine the average social cost and trend in student enrolment in the federal universities in the years under review.

Student Enrolment

Student enrolment is one the key factors that determine government expenditure on education. As turnover/sales is to retail outlet so also is

student enrolment to an institution of learning. It also influences the profitability or otherwise of a profit-making institution. An increase in student enrolment will call for increase in recurrent and capital expenditures. Student enrolment can be viewed as the total number of students in an institution of learning at a particular period of time. Akinyemi, Ofem and Adebisi (2012) investigated the impact of tuition fees /school charges on the household income, student enrolment, private demand for university education and gender disparity to determine the percentage enrolment with respect to percentage increase in the private cost. The results obtained showed decline in enrolment in the Federal universities from 340,524 (33.20%) in 2009 to 339,364 (36.17%) in 2010. Akpotu (2008), analysed social costs of secondary education in South West Nigeria (1996-2001) and found that student enrolment is inversely related to unit costs of secondary education. There had being inconsistency in student enrolment at higher education especially at university level across the nations of the world since year 2000. UNESCO 2009, in Burnett (2008, 2) observed that enrolment rose from 10 million to 16 million within ten years,(1996-2006) in Latin America and the Caribbean. Christian and Roger (2013) reported that student enrolment in State Universities and at the Catholic University of Central Africa (CUCA) increased from 91 000 in 2004-2005 to above 105000 between 2005-2006 academic year. Burnett (2008) reported low student enrolment in some parts of the world at tertiary level. In Africa, South and West Asia student enrolment were 5 per cent, 11 per cent in 22 per cent respectively. Also in the Arab States 25 per cent was the student enrolment.

Purpose of the study

The study is specifically designed to investigate the relationship between student enrolment and social cost of university education. The study will compute the average social cost of university education in Nigeria between 2001-2009 and also determines the trend in student enrolment in the years under review.

Statement of the problem

There is a mismatch between student enrolment and government recurrent and capital expenditures of federal universities in Nigeria. Student enrolment that is expected to be a driving force on

government recurrent and capital expenditures seems to be on the decline while government recurrent and capital expenditures is increasing. Increase in student enrolment is expected to lead to the establishment of more universities which is expected to lead to the provision of classrooms/lecture theatres, basic amenities and recruitment of teaching and non-teaching staff among others. For instance, in Nigeria federal universities, student enrolment was 325,707 in 2001 while social costs (recurrent and capital expenditures) was ₦29,889,219,502.84. In 2006 enrolment figure increased to 464,025 (42.4%) while social cost increased to ₦101,168,545,258.26 (238%). However, student enrolment reduced from 464,025 in 2006 to 340,524; 26.6% reduction in 2009. Within the same periods, social costs increased from ₦101,168,545,258.26 to ₦110,564,269,064 (9.3%). The question is what factors necessitated increase in government recurrent and capital expenditures while student enrolment is declining? The study aims at finding out the relationship between student enrolment and government recurrent and capital expenditures and to determine the factors that contributed to increase in government recurrent and capital expenditures without corresponding increase in student enrolment.

Research questions

- i. What is the average social costs of university education in Nigeria between 2001 and 2009?
- ii. What is the trend in student enrolment in the Nigerian federal universities between 2001 and 2009?
- iii. To what extent does student enrolment influences average recurrent expenditure of university education?
- iv. To what extent does student enrolment influences average social cost of university education?

Methodology

This study adopted the descriptive survey research design to collect secondary data on student enrolment and recurrent and capital expenditures of federal universities from Nigerian Bureau of Statistics (NBS) and National Universities Commission (NUC) of various issues. Four research questions were raised and answered through data analysis.

Instrumentation:

The university social cost checklist (USCC) was the instrument used by the study to collect the following data

- i. Federal university student enrolment for the years (2001- 2010)
- ii. Recurrent expenditures of Federal universities for the years (2001- 2010)
- iii. Capital expenditures of Federal universities for the years (2001- 2010)

Data Analysis

Secondary data were obtained through the checklist from national bureau of statistics (NBS) various issues. Data collected were analyzed using frequency counts and simple percentage. The analyses are shown in the Tables 1, 2, 3 and 4. In the computation of average social cost of university education, cost data and student enrolment were analyzed to show any difference in the average social cost in the years under review.

Results

Cost analysis

$$UESUC = f(R_c, C_c) \dots\dots\dots 1$$

$$UESUC = \frac{R_c + C_c}{S_e t} \quad \text{or} \quad \sum_{S_e t=1} UESUC$$

UESUC = University education social unit cost

R_c = Recurrent expenditure for the years involved

C_c = Capital expenditure for the years involved

S_e = Student enrolment for the years involved

\sum = Summation of social cost

t = years of training (1-10 years)

$$AVTS_c = \frac{TSC}{S_e} \dots\dots\dots 2$$

$$AVTR_c = \frac{TRC}{S_e} \dots\dots\dots 3$$

$$AVTC_c = \frac{TSC}{S_e} \dots\dots\dots 4$$

Question 1: What is the average social cost of federal university education in Nigeria between 2001 and 2009

Table 1.1: Student enrolment and social costs of university education (2001-2010)

Year	Enrolment	Recurrent Exp.% ch in R E	Cap. Exp% ch in CE	Total Exp. (R& C)	AVTE
2001	325,707	28,419,719,502.84 -	1,469,500,000.00-	29,889,219,502.84	91,767.20
2002	349,502	30,351,483,193.00 6.8%	1,936,785,632.003 1.8 %	32,288,268,825.	92,383.65
2003	419,253	34,203,050,936.33 12.7%	4,226,691,359.001 18%	38,429,742,295.33	92,662.41
2004	450,377	41,492,948,787.01 21.3%	0.00--	41,492,948,787.01	92,129.37
2005	393,366	45,264,489,886 9.1%	0.00 ---	45,264,489,886	115,069.65
2006	464,025	89,195,206,559.26 97.1%	11,973,338,699 --	101,168,545,258.26	218,023.91
2007	610,072	75,535,305,299.90 -15.3%	11,423,660,000 4.6%	86,958,965,299.9	142,538.86
2008	433,950	93,558,110,781.00 23.9 %	7,080,757,723.103 8%	100,638,868,504.10	231,913.51
2009	340,524	101,134,141,830.00 8.1%	9,430,127,234 33.2%	110,564,269,064	324,688.62
2010	339,364		15,402,382,798	108,960,493,579	
2010			11,110,830,980	112,244,972,810	

Table 1.1. shows that the average social cost of university education fluctuates between 2001 and 2007 and thereafter continued to increase on yearly basis up to 2010. In 2001, the average social cost was ₦91,767.20 per student. The cost increased by 137.6% in 2006 to ₦.218,023.91 Between 2006 and 2007, average social cost reduced by

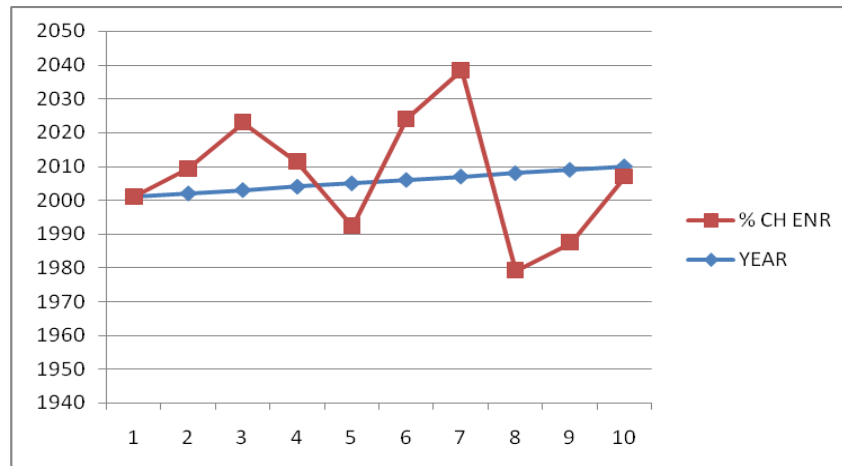
35% to ₦.142,538.86. Average social cost continued to increase consistently from 2007 upward. In 2008, average social cost was ₦ 231,913.51. This amount increased by 40% in 2009 to ₦324,688.62. (Table 1.1)

Question 2: What is the trend in student enrolment in the Nigerian federal universities in the years between 2001 and 2010?

Table 1.2: Trend in student enrolment in the Nigerian federal universities

Year	Enrolment	% change in enrolment
2001	325,707	0%
2002	349,502	7.3%
2003	419,253	20%
2004	450,377	7.4%
2005	393,366	-12.7%
2006	464,025	18%
2007	610,072	31.5%
2008	433,950	-28.9%
2009	340,524	-21.5%
2010	339,364	-0.3%

Bar chart showing trend in student enrolment in the Nigerian federal universities



The table and the chart show fluctuation in student enrolment between 2001 and 2010. In 2001, student enrolment was 325,707. This enrolment figure increased to 349,502 (7.3%) in 2002. There was a downward trend in enrolment between 2008 and 2009. Enrolment reduced from 433,950 in 2008 to 340,524 (21.5%) in 2009. The enrolment further decreased to 339,364 (0.3%) in 2010. (Table 1.2).

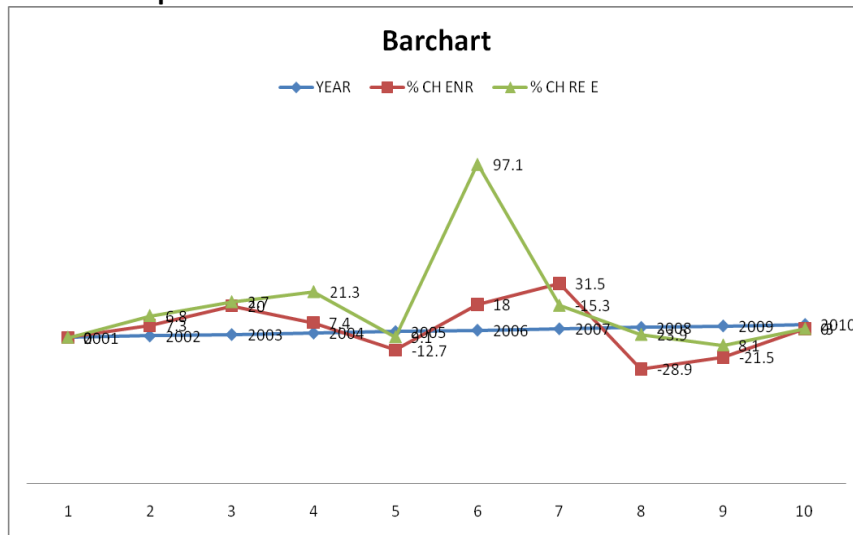
Research question 3

To what extent does student enrolment influence average recurrent expenditure of university education in the years under review?

Table 1.3: Percentage change in student enrolment and recurrent expenditure.

Year	Enrolment	% change in expenditure enrolment	% change in recurrent
2001	325,707	0%	0%
2002	349,502	7.3%	6.8%
2003	419,253	20%	12.7%
2004	450,377	7.4%	21.3%
2005	393,366	-12.7%	9.1%
2006	464,025	18%	97.1%
2007	610,072	31.5 %	-15.3%
2008	433,950	- 28.9%	23.9%
2009	340,524	-21.5%	8.1%
2010	339,364	-0.3%	

Bar chart showing Percentage change in student enrolment and recurrent expenditure.



The table and the bar chart show percentage change in student enrolment and recurrent expenditure between 2001 and 2009. Student enrolment does exert serious influence on recurrent expenditure of university education. In 2001, student enrolment was 325,707 while recurrent expenditure was ₦28,419,719,502.84. Between 2008 and 2009, student decreased to 93426(21.5%) while recurrent expenditure increased to ₦7576031049 (8.1%) table 1.3

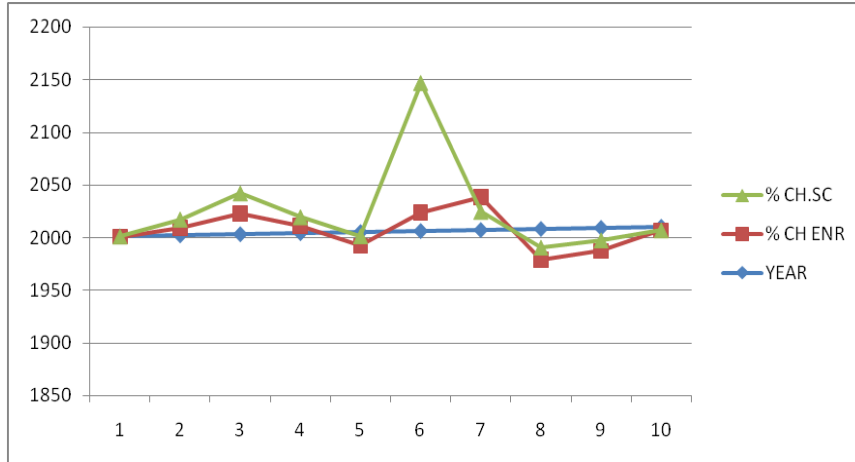
Question 4: To what extent does student enrolment influence social cost of university education?

Table 1.4: Percentage change in student enrolment and social costs

Year	Enrolment	% change in enrolment	% change in social cost
2001	325,707	0%	0%
2002	349,502	7.3%	8%
2003	419,253	20%	19%
2004	450,377	7.4%	8%
2005	393,366	-12.7%	9.1%
2006	464,025	18%	123%

2007	610,072	31.5%	-14%
2008	433,950	-28.9%	11.4%
2009	340,524	-21.5%	9.9%
2010	339,364	-0.3%	

Bar chart showing percentage change in student enrolment and social costs



There is no significant relationship between student enrolment and social costs. Social costs increased from ₦29,889,219,502.84 in 2001 by 8% to ₦ 32,288,268,825 in 2002, while student enrolment increased by 7.3% to 349,502. Further, between 2008 and 2009, social costs increased by ₦ 9,925,400,559.9 (9.9%) and student enrolment reduced to 340,524. The findings show that social costs increased every year and student enrolment increased between 2001 and 2007 and started decreasing at an alarming rate from 2008. Between 2004 and 2005 student enrolment decreased by 12.7% while social costs increased by 9.1%. Also, between 2008 and 2009, enrolment decreased by 93,426 (21.5%) while social costs increased to ₦ 9925400559.9 (9.9%) (Table 1.4)

Discussion of findings

This section presents the results of the study based on the research questions. The data was analysed using the descriptive statistical tools.

The study shows ₦91,767.20 as average social cost in 2001. This cost increased by 137.6% in 2006 to ₦ 218,023.91. Between 2006 and 2007, average social cost reduced by 34.6% to ₦142,538.86. This might not be unconnected with increase in student enrolment from 464,025 in 2006 to 610,072 as increase in student enrolment tends to reduce average social cost. Thereafter, average social cost continued to increase consistently from 2007. In 2010, average social cost was ₦321,072.63. There is fluctuation in student enrolment in the years under review. In 2001, student enrolment was 325,707. This enrolment figure increased to 610,072 in 2007, a percentage increase of 87.3%. There was also a downward trend in student enrolment from 2008. The enrolment decreased by 21.5 % between 2008 and 2009.

The findings of the study did not show significant relationship between student enrolment and social costs. Social costs increased from ₦29,889,219,502.84 in 2001 by 8% to ₦ 32,288,268,825 in 2002 while student enrolment increased by 7.3% to 349,502. Further, between 2008 and 2009, social costs increased to ₦ 110,564,269,064 (9.9%) and student enrolment reduced to 340,524. The findings show that social costs increased every year and student enrolment increased between 2001 and 2007 and started decreasing at an alarming rate from 2008. Between 2004 and 2005 student enrolment decreased by 12.7% while social costs increased by 9.1%. Also, between 2008 and 2009, enrolment decreased by 93,426 (21.5%) while social costs increased by ₦ 9,925,400,559.9 (9.9%) (Table 1.4)

Conclusion

Considering persistent increase in social cost of university education without a corresponding increase in student enrolment, it is essential for the government to look into expenditure pattern especially recurrent expenditure to be able to identify factors that are responsible for the increase in recurrent expenditure since new universities were not established in the years under review and student enrolment is declining. Also, factors that are responsible for decline in student enrolment should be looked into since there is no decline in demand for university education.

Implications of the Study

The findings to this study have some implications for federal government, education policy makers and planners. Considering persistent increase in social costs especially recurrent expenditure of university education without a corresponding increase in student enrolment, it is essential for the government to look into expenditure pattern to be able to identify factors that are responsible for the increase in recurrent expenditure since new universities were not established in the years under review and student enrolment is declining. Also, factors that are responsible for decline in student enrolment should be looked into since there is no decline in demand for university education.

Education planners, actions should be taken to increase access to university education (especially federal university) since there is increase in demand for this type of education but decrease in student enrolment.

Recommendations

Government at all levels should increase budgetary allocation to university education to finance capital projects and also maintain existing ones. This will make university education functional and result oriented. The pattern of recurrent expenditure should be looked into to identify areas of excessive spending. Further, access to university education (federal universities) should be increased since there is no decrease in demand for university education but decrease in student enrolment. Also, more federal universities should be established and the existing universities should be funded to be able to increase their carrying capacities. The study shows less than 14% as capital expenditure. The percentage on capital expenditure should be increased to enable federal universities embark on meaningful capital projects to boost the standard of university education.

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