PRIVATE COST AND EFFICIENCY OF POSTGRADUATE STUDENTS FOR SUSTAINABLE DEVELOPMENT OF UNIVERSITIES IN SOUTHWEST, NIGERIA

Oyetakin, Akinrotimi Iyiomo, *Ph.D.*
Department of Educational Management, Faculty of Education
Adekunle Ajasin University, Akungba-Akoko, Ondo State, Nigeria

Abstract
This paper examined the private cost and efficiency of postgraduate students for sustainable development of universities in Southwest, Nigeria between 2012 and 2017. As a descriptive research design of a survey type, it makes use of some direct cost indicators for measuring private cost and the output level for efficiency. Data were collected through the use of a validated questionnaire titled, Private Cost and Efficiency of Postgraduate Students in Universities (PCEPSU) with a reliability coefficient of r = 0.81. The study covered six public universities in South West Nigeria selected through stratification. The participants cut across 300 different categories of postgraduate students of the sampled universities. Two research questions were raised and two hypotheses generated and tested. Data were analyzed through descriptive and inferential statistics tools to test the research hypotheses for the study. The result shows that the private cost across faculties recorded the highest cost of ₦453,766 .23 in Science followed by Engineering with ₦429,901.22 and the least is Arts which recorded ₦287,304.30. Also, there is a positive and non-significant relationship between private cost of postgraduate students and efficiency in Southwest Universities in the study period (r = -.0627, P> 0.05) and significant difference existed in the private cost of postgraduates across disciplines in South-West Nigeria public universities in the period under study. ($F_{(5,30)}= 8.55$; $p<.05$).The implication of this result is that the variations in private cost does not determine the efficiency of postgraduate education as other variables such students' discipline, strike action, time, and students' crises are prevalent to success of postgraduate students. Based on the results, recommendations were provided such that Universities should checkmate all excessive crises which elongated the postgraduate students' academic calendar in order to pave ways for efficiency and inter university lecturing/training should be encouraged at the postgraduate level and this should be sponsored by the institutions and government as it will increase the level of postgraduate students efficiency.

Keywords: Efficiency Index, Prime Beneficiary, Cost of Living Approach, Market Basket Approach, Direct Private Cost, Neo-Classical Scholars

Introduction

Society depends on institution of learning to produce well-adjusted individuals who can fit properly into the environments. The education sector, like other sectors of the economy, needs the use of human, material and financial resources to function. Universities as the highest educational are statutorily charged with the responsibility of producing high level man power/human capital. Learning at the university level could be said to be effective if it results in bringing about the expected transformation in the attitudes skills and knowledge of the recipients/student over a period of time (Babalola, 2008). Effective learning, especially at that level should result in producing graduates who are adequately informed, technically equipped and morally prepared to become parents, good citizens selfless leaders. Over a decades ago, there has been a tremendous expansion of post graduate education in Nigeria based on its structure, size, students' evolvement, programme management and the man power required for its effectiveness, coupled with the social cost and private cost requirements for its sustainability.

The production of high-level manpower has placed the post graduate education on a priority position because of its role in achieving social and economic development of the nation. The high capital outlay required by the university education as stated by Maduewesi (2001), forms the basis for the success or failure of the university education. The university education runs within three stratum that is, undergraduate programmes, master degree programs and Doctorate degree programs. The completion of the first degree could be terminal based on the individual will, while prospective graduates of first degree could continue at the post graduate level. It is necessary to note that the more you consume education, the more the cost expended.

In recent times, there is contention as to who should bear the cost of education between the government and the beneficiaries of the system. However, the need for self-development and fuller life later makes it imperative that someone has to foot the bill of education most especially in the wake of ever increasing growth of youth population and the attendant increase in enrolment.

The neo-classical scholars in the field of economics believed that he who consumes more of education, should pay for it which thus explains the principle of prime beneficiary or benefiting pay principle. However, a substantial percentage of applicants for postgraduates are admitted into the federal, state and private universities which charge tuition fees/other levies which have now risen high. This is because these institutions operate in an economy characterized by high inflation rates and survive majorly on revenue generated.

Charging of, and increasing tuition fees are widely recognized as a cost-shaving/cost reduction strategy for solving educational funding problems arising from increased educational and facility cost. According to Sanyal and Martins (2006), cost-sharing in education advocates that, cost of education be shared among government, parent, students and institutional donors/organizations. Government share comes

through funds from people's tax (directly or indirectly) and by reducing the purchasing power. While parents share by paying the tuition fees, bearing the living cost and providing out-of-pocket expenditure whereas students share by obtaining and repaying the loan after graduation (if any) and individual/corporate organizations share the costs of education by providing endowment and scholarships to students. Educational costs vary greatly between and within countries; between different levels, types and sizes of institution; between location and among courses within the same institution. Several factors are attributed to be the cause of the costs variations, among them are teacher characteristics, teaching periods, student-teacher ratio, class size, facilities and equipment. At the post graduate level wide-range of differentials in costs have been identified.

Private cost of education is said to be the cost borne by the individual students, parent/guardians (Oyetakin, 2016). In education, the private cost is decided into two components namely: direct private costs and indirect private costs are the actual expenditure by the individuals or their parents for providing education, while the indirect private costs refer to alternatives forgone by the individuals for embarking on education program. The notable indices for private cost of post graduate education includes tuition fee, levies, books and stationaries, feeding, transportation and accommodation. However, Belawati (2006) identify some other private costs of learners to include caution fee deposits, administrative charges and costs of information communication technology.

Recently, parental income and choice of institution has been a concern to education policy makers. Thus, Munn (1998) posited that the educational system in an area tilt the balance of power in the relationship between the consumer (parent/student) and the producer (institution). Balducci, clements, Gus and Gupa (2005) in a research submitted that parent income on a student choice of education is an important issue for the general welfare of the system. This, a steady increase in the evolvement of post graduate student is also attributed to the fact that our economy was unable to keep pace with the rate of unemployment, and to the concern of Nigerian parents regarding the high rates of unemployment now sees post graduate of education as the means of securing a comfortable and well paid occupation for their children (Anna and Eugenia, 2005).

Parents who have obtained further educational opportunities seems to have less stress in lives because they most likely make more money while spending time than those who unfortunately have not been able to finish high school for one reason or another. As a corollary to the above mention Dooley, Abigail and Leslie (2001) submitted that children whose parent have higher income have better access to quality schools and these same parents shape the tastes and expectation of their children and nurture their intellect by assisting them to direct their future studies. The thought is based on the financial capacity of the higher income parents are to pay for postgraduate education of their children/wards.

Experts in economics of higher education argues that universities are losing their abilities to effectively discriminate prices of postgraduate education (Okafor, 2004). Thus, tuition and other fees charged by institutions depend on several factors such as: what kind of institution it is, price mechanism and the need to upgrade the labor force in other to have greater diversity of opportunities in the type of programmes and courses which call for variation in the tuition fee charge for postgraduate programs by various universities as justified by relatively different program costs, placement opportunities, earnings expectation, high programme demand and decline in government funding pattern.

The teachers' role at the postgraduate level is crucial to effective and efficient learning, the teacher is expected to provide essential inputs like adequate planning of lesson notes, effective deliver of lessons, proper monitoring and evaluation of students' performance, proving regular feed-back on students' performance improvement on instructional materials, adequate keeping or records and appropriate discipline of students to produce and enhance expected learning achievement in secondary schools (Ayeni, 2010).

There are two strategies for estimating variations in the local cost of living. One strategy is to examine the cost of a specified collection of goods and services used by consumers in each community in a method called the market basket approach. The total costs of a basket of consumer goods and services in each community are compared to illustrate differences in the cost of living. The second strategy is to calculate the true cost of hiring lecturers by observing the regional variations of salaries of comparable professionals as propounded by Rothstein and Smith (1997) in Oyetakin and Adeosun (2014). This strategy does not assume that academic and non-academic staff salaries are exactly the same as salaries of other professionals; rather, it assumes a relatively constant relationship across localities between the salaries of staff and other professionals.

The application of this second strategy requires the calculation of an index based on the salaries or wages of people in occupations that are similar to university employees, but not including school district employees. There are a number of advantages to the cost of living approach. The clearest advantage is that cost of living indices measure costs that are beyond the control of university administrators. The cost of living approach is also quite straightforward. While there are still many complex measurement issues involved, the approach produces cost measures that can be compared relatively easily and directly. (Battesse and Coelli, 1993).

There are also a number of disadvantages to the cost of living approach. First, high-quality, current data can be expensive to collect. In addition, using the market basket approach can be problematic because people in different locales often purchase different mixes of goods and services. In other words, a market basket approach relies on comparability: for researchers to make a viable comparison, the items purchased in the compared communities must be similar. This poses some challenges, since, for example, people in urban areas often buy different items than do people in rural areas

(Oyetakin and Adeosun, 2014).). Further, the market basket approach does not reflect local variations in community characteristics such as climate, crime rates, or cultural amenities. McMahon (1994) argues that because lecturers may live outside the location in which they teach, the cost of living index values for districts may mis-estimate the actual cost of education. Thus, education cost adjustments based on a cost of living index may compensate location that face a high cost of living but which also have a number of amenities that make those districts desirable places to work (Rothstein and Smith, 1997).

According to Wachira, (2002), those who pays may also have a bearing on unit costs as well as on the social goals of expanded opportunity and equity. Efficiency and equity alone, for example, would suggest that users or beneficiaries in this case, students and, to a degree, their parents should bear most of the costs of higher education, as they do in the private sectors of, the United States of America, Japan, the Philippines, Korea, and much of South America, or as they do in those public sectors that have begun covering a substantial portion (say, 20 to 40 percent) of unit costs by tuition as in, e.g., the United States, Canada, or Australia. The reasons are obvious and conventional. The requirement to cover more nearly the full costs with tuition fees should discourage waste and encourage a reallocation of resources to the most productive uses. The reliance on tuition as a significant revenue source also places a substantial share of the burden on those who benefit (and who are more likely to be affluent anyway) rather than on those general taxpayers who do not so directly benefit and who are also likely to be from less-advantaged backgrounds.

At the same time, the goals of expanded opportunity for the disadvantaged and of expanded participation for the social and economic benefits enjoyed by all citizens suggests the appropriateness and even the necessity of some taxpayer subsidy for higher education generally, as well as the need for means-tested subsidies for those families otherwise unable to pay. Thus, the goals of access, efficiency, and equity interact with the issues of aggregate expenditures, unit costs, and the apportioning of the burden.

Statement of the Problem

The Nigerian economy where universities operate is characterized with costs differentials amidst rising costs of training postgraduate students which seems to be a clog in the wheel of sustainable development of education in Nigeria. The inherent micro and macro-economic challenges of consumers in the procurement of quality educational services at the postgraduate level constitutes a problem of costs and thus affect the standard of postgraduate education. The cost of educational wastages and subsequent low enrollment of students for postgraduate programmes due to rising private cost leaves a gap between the different income earners and the society. The dividing evolvement and cost challenges of postgraduate education has probably affected the efficiency of the universities and sustainable development in recent times.

The purpose of this study centered on identification of private cost variables of postgraduates education per course of study and finding out the relationship between private cost and efficiency of postgraduate programme in south west in Nigerian universities.

Research Questions

The following research questions were advanced for the study:

1) What is the contribution of private cost variables of postgraduate education in South west universities in Nigeria?
2) What is the private cost and efficiency of postgraduate education by course of study in the South west universities in Nigeria?

Research Hypotheses

The following hypotheses were generated and tested:

1) There is no significant relationship between private cost and efficiency of postgraduate education in southwest universities in Nigeria.
2) There is no difference in the private cost of post graduate education by course of study in the southwest universities in Nigeria

Method

A descriptive research design of a survey type is adopted for this study. This is based on the fact that the study analyses the private cost of universities education in southwest Nigeria from 2012 to 2017.

The population of the study consisted of all fulltime master degree students of the University of Lagos, Akoka, Lagos state (UNILAG), Olabisi Onabanjo University, Ago-Iwoye, Ogun state (OOU), Ekiti State University Ado-Ekiti, Ekiti state (EKSU), University of Ibadan, Oyo state (UI), Adekunle Ajasin University Akungba-Akoko, Ondo state (AAUA), and Obafemi Awolowo University, Ile-Ife, Osun state (OAU).

The sampling methods used after stratification into courses was purposive from which 10 postgraduate students were selected from five faculties in each University. A total of 50 students per university which gives a total of 300 postgraduate students used for the study. A self-constructed checklist titled, Private Cost and Efficiency of Postgraduate Students in Universities (PCEPSU) was used to gather information for the analysis. It was validated and found reliable at r = 0.81.

The computation in this chapter entails a preliminary analysis of private costs by each of the sampled students from 2012 to 2017 across faculties and universities on each of the cost carrying items by postgraduate students such as tuition, feeding, clothing, transportation, books and stationery, levies and consumables. The stream of these cost items were summarized per students sampled of which the average per annum across the years under study. The average crude costs were adjusted for alpha coefficient of 0.67 and this provides reasonable evidence for the refined cost used.

Result

Research Question One

What is the contribution of the private cost variables of postgraduate education in South west universities in Nigeria?

The computation of the private costs variables of the Postgraduate students across faculties were averaged to arrive at table 1.

Table 1: Average Refined Private Direct Cost by Faculties of Postgraduate Students in South-west Universities from 2012 to 2017

Cost Variables	Arts ₦	Education ₦	Social Sciences ₦	Management ₦	Sciences ₦	Engineering ₦
Tuition	135,605.00	109,608.40	211,930.40	154,265.40	241,275.60	228,542.52
Books/Stationery	12,183.11	51,751.60	39,363.44	35,565.10	44,800.51	57,607.80
Transportation	17,995.40	17,717.60	11,983.60	16,288.90	31,960.60	29,245.60
Feeding	65,517.50	64,892.33	55,023.50	46,082.00	64,654.60	42,734.00
Clothing	29,380.44	22,069.00	20,921.43	22,555.52	27,082.40	24,421.30
Levies	10,223.63	10,345.04	11,401.12	12,020.00	11,290.90	12,900.00
Consumables	16,399.31	18,688.82	11,358.50	35,298.10	32,701.82	34,450.00
Total	**287,304.39**	**295,072.39**	**300,518.65**	**322,075.02**	**453,766.23**	**429,901.22**

***Source: Fieldwork* (Adjusted for alpha – coefficient of 0.67)**

Table 1 reveals that Faculty of Science recorded the highest cost of ₦453,766 .23 followed by Engineering with ₦429,901.22 and the least is Arts which recorded ₦ 287,304.30. Across all faculties Book/Stationery was highest in Engineering with ₦ 57,607.80 followed by Education with ₦ 51,751.60 with Arts recording the lowest of ₦ 12,183.11. On consumables while Management had ₦35,298.10 as highest, the least of ₦ 11,358.50 was recorded in Faculty of Social Sciences.

Research Question Two

What is the private cost and efficiency of postgraduate education by course of study in the South west universities in Nigeria?

The private costs variables were calculated and averaged to get the institutional private cost of the Postgraduate students across faculties to arrive at table 2.

Table 2: Average Refined Private Unit Cost of Postgraduates in Universities by Faculties in South-West Nigeria from 2012 to 2017

FACULTY	AAUA	EKSU	OAU	OOU	UI	UNILAG	Average
	₦	₦	₦	₦	₦	₦	₦
Arts	303,870.00	288,250.00	286,870.00	273,925.00	264,060.00	253,870.00	**278,474.17**
Management	311,869.00	296,790.00	269,760.00	274,325.00	282,020.00	270,700.00	**236,284.00**
Education	296,700.00	291,390.00	246,700.00	264,045.00	291,110.00	264,270.00	**275,702.00**
Engineering	336,360.00	325,350.00	299,180.00	330,855.00	317,840.00	379,670.00	**331,542.50**
Science	316,360.00	300,350.00	291,180.00	310,855.00	307,840.00	309,670.00	**306,042.50**
Social Sci.	288,970.00	297,030.00	261,700.00	288,035.00	281,150.00	285,930.00	**283,802.50**
Average	**309,021.50**	**299,860.00**	**275,903.33**	**290,340.00**	**290,670.00**	**294,401.33**	**285,307.95**

Source: Fieldwork

From table 2, Private Unit Cost faculty by faculty pattern reveals that, AAUA had the highest with ₦309,021.50, while OAU had the least with ₦275,903.33. On the average cost by Faculties, across the Universities, Engineering had the highest with ₦ 331,542.50, followed by Science with ₦ 306,042.50 while the lowest cost was recorded by Management with ₦ 236,284.00.

The efficiency index used was the average of postgraduate students admitted and those graduated at the record time of eighteen months in all universities to show the efficiency rate that was converted to percentages in the academic sessions under study to arrive at table 3.

Table 3

Private Cost and Efficiency of Postgraduate Education across Universities by Faculties in South-West Nigeria from 2012 to 2017

Faculty	Average Cost	% Efficiency	% Wastage
	₦		
Arts	278,474.17	90.25	9.75
Management	236,284.00	78.20	21.80
Education	275,702.00	79.50	20.50
Engineering	331,542.50	67.45	32.55
Science	306,042.50	69.23	30.77
Social Sci.	283,802.50	89.91	10.09

Source: Fieldwork

Table 3 shows that Faculty of Arts with average private cost of ₦ 278,474.17 had the highest level of efficiency with 90.25% postgraduate students graduating at the record time, followed by Social Science with a an average cost of ₦ 283,802.50 with efficiency rate of 89.91%. The Engineering Faculty which had the highest private cost of ₦ 331,542.50 had the lowest efficiency level of 67.45%.

Hypotheses Testing

Hypothesis One

There is no significant relationship between private cost and efficiency of postgraduate education in southwest universities in Nigeria.

The collated and calculated primary generated from the PCEPSU were subjected to analysis using correlation to arrive at table 4.

Table 4

Summary of Correlation Analysis between Private Cost and Efficiency of Postgraduate Education in Southwest Universities in Nigeria

Variable	N	df	r. cal	r. tab	Decision
Postgraduate Private Cost	300				
	298		0.838	0.627	NS
Efficiency		300			

NS= Not Significant at 0.05 Level (2 tailed)

Table 4 reveals a positive and non-significant relationship between private cost of postgraduate students and Efficiency in Southwest Universities in the study period. (r = -.0627, P> 0.05). This implies that the hypothesis which states that there is no significant relationship between private cost and efficiency of postgraduate education in southwest universities in Nigeria is upheld.

Hypothesis Two

There is no difference in the private cost of post graduate education by course of study in the southwest universities in Nigeria.

In order to test this null hypothesis a one-way Analysis of Variance in the six courses of studies in the South-West public universities was performed. This was done to ascertain whether significant differences exist in the Postgraduate students' private cost.

Table 5

Summary of Difference in the Private Cost of Postgraduate Education by Course of Studies in Southwest Universities in Nigeria

Variable	Sum of Squares	Mean Square	df	F	Sig.
Between Groups	13935.89	278 7.18	5	8.55	.000
Within Groups	9776.33	325.88	30		
Total	**23712.22**		**35**		

The results of the ANOVA performed in table 5 showed that significant difference existed in the private cost of postgraduates across disciplines in South-West Nigeria public universities in the period under study. ($F_{(5, 30)} = 8.55$; $p<.05$). The difference was statistically significant. Thus, the hypothesis is rejected.

Discussion

The findings from the study on non-relationship between private cost and efficiency contradicts with the findings of Njeru and Orodho (2003) that relationship exist between di private cost and efficiency of schools. This means that students' yearly investment on education in time and money reveals the magnitude of educational wastage which is an erosion of the limited resources for the sustenance and development of postgraduate education. The money invested in this studies does not guarantee a successful performance of the students' at the postgraduate as other variables such as discipline, courses, time, interruption in school calendar due to strike action and students crises determines success at the postgraduate level. Bassey and Akinyemi (2012) in a study also found out that problems encountered by students which may not necessarily be monetary delay the timely completion of postgraduate programmes in Nigerian universities.

Cost differentials across disciplines by the postgraduate students as reveal by this study is in line with Taubman and Wales (2012) from their research work, using data from various editions of the statistical abstract of the United States (U.S. Bureau of the Census) submitted that there was a significant difference between social unit cost and private unit cost of education.

The finding on cost differentials is corroborated by the study carried out by Saruparia and Lodha (2013) on private cost of technical and professional education who concluded that there was a variance in the social and private cost of both technical and professional education in India

Conclusion

Based on the findings of this study, it is therefore concluded that costs carrying variables such as transportation, accommodation, tuition, and other living cost are the predictors of postgraduate students private cost. Also, the variations in private cost does not determine the efficiency of postgraduate education as other variables such as students' discipline, strike action, time, and students' crises are prevalent to success of postgraduate students that could lead to a sustainable education development in Nigeria.

Recommendations

Based on the findings of this research work, it is therefore recommended as follows.

1. The cost of education has been on increase over the years and as a result becoming more burdensome on the postgraduate students. Universities should

checkmate all excessive crises which elongated the postgraduate students' academic calendar in order to pave ways for effectiveness and efficiency,

2. Business organizations should make it as a matter of urgency, should share part of their corporate social responsibility in form of scholarship award, donations of books and materials to assist postgraduate students in cushioning the cost of embarking on some expensive but courses in areas of need.
3. 3. Planners in the field of education should also assess the cost-benefit analysis of university postgraduate education and encourage government at both state and federal to divert the hard-earned resources on fields/courses that are of greater benefits to both individuals and the society at large.

References

Anna, S. and Eugenia, M. (2005). Parental perception of the education of their adolescent children: Evidence from Greek secondary, *Journal of Career and Technical Education*, 2,(22), 12.

Ayeni, A.J. (2010). *Teacher's instructional task performance and principals' supervisory roles as correlates of quality assurance in secondary schools in Ondo State,* Unpublished Ph.D. Thesis, Obafemi Awolowo University, Ile-Ife, Osun state, Nigeria.

Babalola,J. B. (2002). Cost benefit analysis and project management, *External Studies Programme Series*, Ibadan: University of Ibadan .

Bassey, I.O. & Akinyemi, S. (2012). Private cost of bachelor's degree programme by major fields in Nigeria, *Journal of Studies in Education*, 2(2), 255-258.

Battesse, G.E. and Coelli T.J. (1993). A stochastic frontier production function incorporating a model for technical inefficiency effects. *Working papers in econometrics and applied statistics*,University of New England.

Belawati, T. (2006). Financing management system in open management, external studies programme series, Ibadan: University of Ibadan.

Baldacci, E., Clement, B, Cui, Q & Gupta, S. (2005). What does it take to help the poor, finance and development: *Quarterly Magazine of the IMF*.

Maduewesi, E. J. (2001). Funding of early childhood education in E.J. Maduewesi (Ed.) *Financing of education in Nigeria*, Ibadan: The Nigeria Academy of Education Year Book.

McMahon, W. W. (1994). Interstate cost adjustments. In J. W. Fowler (Ed.), *Selected papers in school finance*, Washington, DC: National Center for Education Statistics.

Munn, P. (1998). Parental influence on school policy: some evidence from research, *Journal of education policy*, 13 (3), 379-394.

Njeru, E.H. & Orodho, J.A. (2003). Education financing in Kenya: the secondary school bursary scheme, Nairobi: Downton Printing Works.

Oyetakin, A. I. & Adeosun, L. (2014). Analysis of heterogeneities in the unit cost of university education in Nigeria, *European Scientific Journal,* Kocani, Macedonia: 1 (12), 231-239.

Oyetakin, A.I. (2016). *The economics of education, A systemic approach*, Lagos: Daroye Publishers.

Okafor, M.C. (2004). *Impact of change in postgraduate tuition fees enrolment demand in University of Ibadan, An empirical analysis* Unpublished M.Ed. dissertation, Department of Educational Management, University of Ibadan, Oyo state.

Rothstein, R.& Smith, J. (1997). *Adjusting Oregon education expenditures for regional cost differences*. A feasibility study submitted to Confederation of Oregon School Administrators. Management Analysis and Planning Associates, L.L.C.

Sanyal, B.C.& Martin, M. (2006). Financing higher education: International perspective in financing of universities higher education in the world, *Global Universities Network For Innovations*, New York: Palgrave Macmillan.

Saruparia C & Lodha S. L (2013): Private cost of technical and professional education with reference to J.N.V. University, Jodhpin (Rajasthan) India. Retrieved on 13/05/13 from *www.iiste.org.*

Taubman P. J.& Wales T (2012). *Estimating private and social cost of higher education.* Retrieved on 13 /05/13 from *www.nber.org/Chapter/c3666.*

Wachira, K (2002). Nigeria Forbids Public Universities to Charge Tuition, Retrieved on 23/07/16 .From *http://chronicle.com/daily/2002/05/2002052806n.htm*