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PRIVATE RETURNS TO INVESTMENT IN UNIVERSITY EDUCATION IN SOUTHWESTERN NIGERIA

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ABSTRACT

This study investigated the viability of investment in university education in southwestern Nigeria among beneficiaries from 1983 to 2016, using the Net Present Value (NPV)

Descriptive survey design was adopted. Stratified random technique with equal allocation was used to select Federal University of Agriculture, Abeokuta (FUNAAB), Osun State University, Osogbo (OSUO) and Wesley University of Science and Technology, Ondo (WUSTO) Proportional to size stratified technique was used to select 403, 297 and 40 students from the faculties/colleges of Management Sciences, Natural and Applied Science and Engineering of the FUNAAB, OSUO and WUSTO. Further, 212 randomly selected employee respondents consisting of 170 university graduates, and 42 secondary school certificate holders from the public and organized private sectors in southwestern Nigeria were also used. Private Costs of University Education (PCUEI) and Workers' Age-Education-Life-Earnings (WAELEI) Inventories were used for data collection. The 2016 average bond rate (13.05%) and average lending rate (22.5%) were used as discounting rates to generate NPVs. Data were analysed using descriptive statistics.

Annual private costs of university education was ₦(345,592.56±88,211.24), while average private economic benefits (Education-Life-Earnings) was ₦48,278,548.20. The 2016 average bond rate and lending rate yielded ₦3,687,655.74 and ₦866,170.03 NPVs respectively.
Private returns to investment in university education were more viable than that of secondary education. Government should improve returns to investment in secondary education through employment opportunities.

Keywords: Investment in education, University, Private costs of education, Net present value

Introduction

Investment is generally defined as the commitment of resources (human, material, financial and physical) to a project for profit making or achievement of success in a business at a pre-determined future period. It can also be viewed as the addition of productive assets (fixed and

current) to an existing project for profit making at a determinable future time. Investment could be in human, physical and financial assets. Investment in human asset involves investment in education which could be social or private. Investment in education is the cost incurred to acquire a form of training in a school system that is capable of yielding future returns. People invest in education because of the belief that education is capable of yielding future returns. This explains the large earning differential between individuals with different levels of education.

Educational attainment level is one of the major determinants of labour market earnings and household welfare. It is obvious that high level of educational attainment has direct effects on individual earnings, labour productivity and national economic output or GDP. Literature has revealed the positive relationship between educational attainment and labour market earnings. Becker (2009), Dziechciarz (2011), Mendolicchio and Rhein (2011) as well as Psacharopoulos (2007) submitted that educational attainment, especially, at high level plays an important role in the determination of human productivity and earnings for individuals and society. Individuals with university degrees have the potential of earning higher wages than individuals with secondary school certificate because higher level of education is associated with higher skill acquisition, labour productivity, improvement in quality of outputs and labour market earnings.

In Nigeria, the demand for university education between 2006 and 2016 was higher than that of other forms of higher education (HE). Applicants for university education were between 77.6% and 98.89% of the total number of those who applied for higher education between 2006 and 2016. Most candidates in Nigeria opt for the high level manpower option (university education). A low percentage (1.11%) of applicants expressed preference for other forms of higher education in 2016. This appears to signal the extinction of the middle-level manpower institutions and probably informed the introduction of the unified tertiary matriculation examination (UTME) in 2011 (Table 1.1). This arrangement makes it compulsory for each candidate applying for higher education (HE) to pick one university, polytechnic and college of education even if he/she will not approach the last two higher institutions for admission. The widening enrolment gap between universities and polytechnics on one hand and polytechnics and colleges of education on the other, also underscore the declining interest of students in polytechnic education.

Table 1.1: **Universities Matriculation Examinations (UME), Monotechnics, Polytechnics and Colleges of Education Examination (MPCE) (2006-2016)**

YEARS	UME	%	MPCE	%	TOTAL
2006	868,000	83	176,064	17	1,044,064
2007	911,679	84	167,836	16	1,079,515
2008	1,192,050	79	310,022	21	1,502,072
2009	1,184,651	77.6	342,9082	22.4	1,527,559
2010	1,330,531	96.7	45,140	3.3	1,375,671
2011	N/A	N/A	N/A	N/A	N/A
2012	N/A	N/A	N/A	N/A	N/A
2013	N/A	N/A	N/A	N/A	N/A
2014	N/A	N/A	N/A		N/A
2015	N/A	N/A	N/A		N/A
2016	1,557,017	98.89	35,257	1.11	1,592,274

Source: Federal Ministry of Education, (Higher Education Statistics 2006-2016)

Most candidates in Nigeria opt for high level manpower option (university education) probably because the private returns to university education seem to be higher than that of other forms of education. For instance, Okuwa (2004) reported the returns to university education as 16.8%, colleges of education 12.7% and polytechnic education, 10.7%. The study did not indicate whether the returns to polytechnic education were for HND or OND holders.

Previous studies on investment in higher education (HE) in Nigeria (by Mohammed and Abdul Hakim (2014), Amaghionyeodiwe and Asinubi (2007) Okuwa (2004), Aromolaran (2002) Samuel (1987) and Alani (1988), emphasised social returns to university and polytechnic education using Mincerian earning model to analyse data obtained from labour market survey except Samuel and Alani.but put little emphasis on the justification for private returns. This study is different because it considered returns to university education from the private point of view using one federal, state and private university in suthwestern Nigeria. This study therefore

investigated private returns to investment in university education with a view to justify increase in demand for university education in Nigeria.

Literature review

Research evidence has shown a link between investment in education and returns to education. As returns to education increases, other things being equal investment in education increases.. The profitability of investment is explained by the relationship among the expected income flow from the capital good or educational programme, the cost of that good and the market rate of interest. Investment in any project can only be economically justified if the rate of return is positive and higher than the alternative rate of return. The concept of human capital formation refers to conscious and continuous process of acquiring requisite knowledge, education, skills and experiences that are crucial for rapid economic growth of a country.

Individuals' earning capability and employment prospects is being determined by his/her level of investment in human capital. Therefore, investment in human capital plays a prominent role in the determination of distribution of income in any society, the level of firms' productivity and economic growth. Increase in stock of human capital through education and training enhances employees productivity through skill acquisition. This leads to increase in wages and improvement in working conditions. Return on investment in education is the reward of investment in education. This reward can be in the form of earnings and other social returns like honour, status and accommodating attitude.

The concept of return on investment in education is very similar to that of any other investment. It is a summary of the cost and benefits of the investment incurred at different point in time. Christian and Roger (2013) adopted Mincer (1974) earnings function on data drawn from the 2005 employment and informal sector survey to investigate the private return on education in urban Cameroon. The findings reveal that the first level of the secondary education brings a marginal return of 2.54% for civil servants, 4.70% for formal private workers and 5.53% for informal workers. Two year additional schooling after the GCE-AL increases wages by 6.6.54% in the public sector and by 32.96% in the formal private sector. Dorrit and Daniela (2014) estimated the returns to schooling in South Africa using data from national income dynamics

survey conducted in 2008 and Mincerian earnings regressions for both the wage employed and the self-employed. Semi-logarithmic earnings regressions by gender among the youth in wage employment revealed that returns to years of schooling are higher among women than among men. For the non-youth in wage employment, the returns among men are higher than among women. For the self-employed; there is no significant difference in the returns to years of schooling for young men and women, while for the older cohort the returns are significantly higher among women than among men.

Elia and Mika (2012), carried out a comparative study of university and polytechnic graduates in Finland and the implications of higher education on earnings to assess the quality of higher education. The findings showed that university graduates earn more than polytechnic graduates. Also male graduate earns more than female graduate. Monthly earnings of male university graduate was 3,335 while female graduate earn 2,702. Also 2,820 was the monthly earnings of male polytechnic graduate and 2,076 was the monthly earnings of female polytechnic graduate. Amaghionyeodiwe and Asinubi (2007) adopted Mincerian earning model to analyse data obtained from 1995 labour market survey to determine whether or not higher levels of schooling results to higher returns to education in Nigeria. The study shows that wage returns are directly related to additional years of schooling and increase as the level of education increases. According to the findings, the mean monthly earning for all categories of Nigeria College of education graduates was ₦3880.37, it was ₦5330.01 and ₦9133.02 for polytechnic and university graduates respectively. Okuwa (2004) computed private returns on higher education in Nigeria to find out variation in the rate of returns on different levels of education. The findings revealed 16.8%, 12.7% and 10.7% as returns to university, polytechnic and colleges of education respectively.

Aromolaran (2002), adopted labour market earnings function of Mincer 1974 and OLS technique to compute wage returns on schooling in Nigeria. Private direct costs of education, social expenditures and benefits were used for the computation. The study reveals low estimates for men and women at primary and secondary levels (2% to 4%) and substantial estimate at post-secondary education level (10% to 15%). Further, the study shows that wage rate varies

substantially across gender and age categories. For instance, female wage earners receive 18.5% less than males. The study also discovered that the estimated private returns on an average year of schooling was found to be between 4.6% and 5.3% for male and female wage earners, and 3.6% and 2.8% for male and female self-employed earners respectively.

Statement of the problem

Private returns to investment in education play a significant role in the choice decision of candidates seeking admission to higher education institutions, particularly universities. In Nigeria, statistics place more emphasis on the provision and demand for university education than other forms of higher education. It could be that the returns to university education is higher than other forms of higher education in Nigeria. Previous studies on investment in higher education (HE) in Nigeria emphasised social returns to university, polytechnic and colleges of education but put little emphasis on the justification for private returns. This study was designed to investigate the viability of investment in university education in southwestern Nigeria, among beneficiaries from 1983 to 2016, using the Net Present Value (NPV).

Purpose of the study

The main purpose of this study is to investigate the private returns to investment in university in the South-West, Nigeria. Further, the following are the specific objectives the study:

i. to estimate the average private costs of training a university graduate in the South-West, Nigeria.
ii. to determine the viability of investment in university education through the computation of the net present value (NPV).
iii. to determine the earnings differential between university graduate and school certificate

Research Questions

The following research questions were answered in this study:

i. What is the average private cost of university education in southwestern Nigeria?
ii. How much would an individual expect as private returns as measured by net present value (NPV) to investment in university education in south western Nigeria?

iii. What is the earning differential between a university graduate and a school certificate holder in south western Nigeria.?

Significance of the Study

University education is expected to play vital role in the socio-political, economic and technological advancement of a nation. It is expected to contribute to the socio-political and economic wellbeing of the citizens and the gross domestic product (GDP). Stakeholders (students, parents, education credit facility providers, government and policy makers) will benefit from the findings of this study in the following capacities:

From the estimate of the average private cost of university education, students and parents will be able to prepare adequately for the financial requirements of university education. The findings of this study will also assist them to know the likely private returns to be achieved from investment in university education in the South-Western Nigeria. This study points out the differences in the private costs borne by the students in the institutions. This would help students and parents make rational decision as to which institution to seek admission while considering the cost element.

METHODOLOGY

Research Design

This study adopted descriptive survey research design. This is because the variables investigated could not be controlled by the investigator and the event had occurred. Further, the researcher essentially described a phenomenon that had existed.

Population of the Study

This study used two sets of population. The first comprised mostly final year students of university from the departments of Accountancy, Banking and Finance and Business Administration of the Faculty/School/College of Management Science/Commerce and Communication as well as departments of Computer Science, Microbiology,

Chemistry/Biochemistry, Mathematics and Statistics from the Faculty/School of Natural/Applied Sciences. Others were from the Faculty/School of Engineering, namely departments of Electrical and Electronic Engineering, Civil Engineering, Mechanical Engineering and Computer Engineering. Final year university undergraduates students were chosen to participate in this study because they had spent at least three years in the university system and should be able to give better cost profile. The universities that participated in this study were Federal University of Agriculture Abeokuta; Osun State University, Osogbo; and Wesley University of Science and Technology, Ondo, Ondo State.

The second set comprised university graduates and school certificate holders working in the public and private sectors (schools, banks, telecommunication companies, agricultural outfits, pharmaceutical retail outlets, oil and gas--petrol stations, etc.) of the economy in the major cities of Southwestern Nigeria, irrespective of the institution they attended,.

Sample and Sampling Techniques

Stratified random sampling technique with equal allocation was used to select Federal University of Agriculture, Abeokuta (FUNAAB), Osun State University, Osogbo (OSUO) and Wesley University of Science and Technology, Ondo (WUSTO) . Proportional to size stratified technique was used to select 1304 students from the faculties/colleges of Management Sciences, Natural and Applied Science and Engineering of the institutions. The student respondents were 403, 297 and 40 from the FUNAAB, OSUO and WUSTO respectively. The departments were purposively selected to ensure that they were common to all the three institutions.

Additionally, two hundred and twelve (212) workers, comprising one hundred and seventy (170) university graduates, and forty two (42) school certificate holders were randomly selected from public and private sectors of the economy.

Table 3.2: Sample Size Distribution (Universities)

University	Federal university of Agriculture Abeokuta			Osun state university Osogbo			Wesley university of science and technology Ondo		
Faculties/colleges	Population	Sample Size	%	Population	Sample size	%	Population	Sample Size	%
Management sciences	307	163	53.1	264	154	58.3	10	10	100
Natural/Applied Sciences	251	160	63.7	127	97	76.4	47	30	63.8
Engineering	102	80	78.4	79	46	58.2	___		

Source : Academic planning unit of the universities

Respondents of Workers' Age-Education-Life-Earnings Inventory (WAELEI)

S/N	Qualifications	Respondents
1	Degree	170
2	SSCE	42
Total		212

Source : field survey, 2016

Research Instruments

Primary data were collected for this study through two instruments, namely "Private Costs of University Education Inventory (PCUEI)" and "Workers Age-Education-Life-Earnings Inventory (WAELEI)".

PCUEI was used to collect data on the private costs of university education from university undergraduates of the three universities sampled for the study. It is believed by the researcher that the selection of the students is appropriate because they had spent at least three years in the university and should have adequate information about the cost profile. PCUEI is divided into two parts: Part A collected information on sex, age and marital status. Part B obtained

information on name of institution, ownership of institution, course/field of study, entry qualification, reasons for enrolment in university education, health status and expenditures on different items for the purpose of acquiring university education.

WAELEI obtained information from university graduates and secondary school leavers working in the private and public establishments in Southwestern Nigeria. The information obtained are sex, age, marital status, ownership of institution attended, highest qualification with dates, subjects offered (relevant in the case of university), occupation, year of first appointment, year of present employment, working experience, salary and fringe benefits, tax paid and waiting period before securing employment. The benefits of university education were computed, using cross-sectional data obtained from sampled workers of different ages collected at a single time. This was helpful in estimating the average age-education earnings profile for workers instead of using data for sampled workers collected over their entire working life. The instrument was used to collect information on the economic benefit of the different levels of education to the different categories of workers covered in this study.

Validity of the Instruments

This study adapted the research instruments used by Samuel (1987) and Alani (1988) on economic returns to investment in technological education in Lagos State and economic returns to investment in teacher education in Ogun State, already validated in the department of Educational Management, University of Ibadan. Information for the development of the items was collected by reading relevant literature. The items in the instruments were edited by experts in investment appraisal, human capital development and educational planning from the departments of Economics, Counselling and Human Resources Development and Institute of Education, University of Ibadan. This ensured the face and content validity of the instruments.

Reliability of the Instruments

Workers Age-Education-Life-Earnings Inventory (WAELEI) seeks factual information which cannot be frequently changed by the respondents. A pilot study was conducted on staff and students of University of Ibadan to determine the reliability of the instruments. Reliability

coefficients of 78% and 70.3% were computed for private costs of university education inventory (PCUEI) and Workers Age-Education-Life-Earnings Inventory (WAELEI) respectively. Hence, the instruments are reliable.

Methods of Data Collection

Data on private costs of university education inventory (PCUEI) were collected from students of the three institutions by the researcher and research assistants. The research assistants were trained before they administered the instrument on the respondents. Copies of the instrument were given to the students during lectures after they had been randomly selected. For each respondent, the total direct private costs were calculated by summing up the monetary expenditures on the items mentioned in the instrument. The indirect private costs (earnings foregone) were computed by finding the average post-tax earnings of school certificate holders. This is because the respondents for Workers Age-Education-Life-Earnings Inventory (WAELEI) were sampled from public and private establishments in Southwestern Nigeria. Using a single-sector salary scale (like federal or state government salary scale) will distort the findings of the study.

The Workers Age-Education-Life-Earnings Inventory (WAELEI) was administered by the researcher and research assistants in the selected companies and government establishments in the major cities of Southwestern Nigeria. Cross-sectional data were collected for the purpose of obtaining data for WAELEI. This is because it is not possible for the respondents to be within same age bracket. By this means, university graduates, HND, ND and SSCE holders of different age groups working in various companies (such as financial institutions, civil service, pharmaceutical outlets, agricultural outfits, telecommunication Company and petrol stations) were randomly selected to complete the inventory.

Data Analysis

Private returns to investment in university education were computed using, cost and benefit data. The data collected were analysed using descriptive statistics, frequency counts, simple percentage score, independent sample test and Pearson product moment correlation coefficient.

The private direct costs of university and polytechnic education were computed for each of the departments sampled for the study. The private indirect costs (foregone earnings) were computed using post-tax income of school certificate holders. The underlying assumption is that the students gained admission to university immediately after completing secondary education. The profitability of investment in university education was computed by means of cost-benefit technique and net present value (NPV). Further, the cost and benefit data were discounted using 13.05% average bond rate as at August 2016 and 22.5% average bank lending rate across major sectors (Agriculture, mining and quarrying, oil and gas, manufacturing and real estate and construction) of the economy in Nigeria.

Discussion of findings

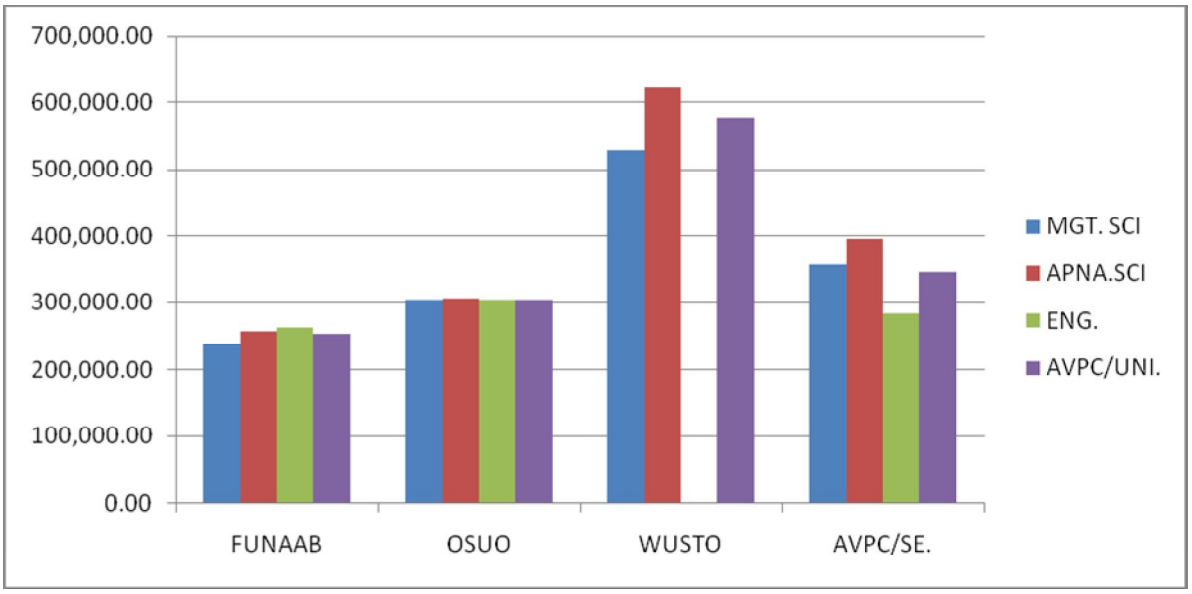
Research question one: What is the average private cost of university education in Southwestern Nigeria?

Average Private Cost of University Education (APCUE)

Institutions / Faculty/college	Federal University of Agriculture Abeokuta	Osun state University Osogbo	Wesley University of Science and Technology Ondo	Average direct private cost/per session	Indirect cost/earnings foregone	Average private cost/per session
Management Sciences	239,702.10	304,104.30	528,413.50	245,806.63	111,600	357,406.63
Applied and Natural Sciences	257,240.50	305,429.40	623,956.40	283,942.10	111,600	395,542.10
Engineering	263,208.60	304,441.30	---------	172,228.95	111,600	283,828.95
Average private cost/session	253,383.73	304,658.33	576,184.95	233,992.56	111,600	345,592.56

Source :PCUEI

Average Private Cost of University Education (APCUE)



According to the table and graph blow, the average private cost of university education varies according to the ownership of the institution and field of study. At Federal University of Agriculture Abeokuta, average private cost per session was ₦253, 383.73. At Osun State University Osogbo, average private cost per session was ₦304, 658.33.18 and, at Wesley University of Science and Technology Ondo, it was ₦ 576,184.95. In Southwestern Nigeria, average private cost of acquiring university education across the faculties/colleges of management sciences, applied and natural sciences and engineering was ₦345, 592.56 per session. The costs were arrived at after adjusting for foregone earning (indirect costs). Indirect cost was computed by finding the post-tax average earnings of school certificate holders across different sectors of the economy in Southwestern Nigeria since the respondents were from public and private sectors of the economy.

Average private cost of Osun State University was higher than that of Federal University of Agriculture Abeokuta because of higher tuition fee and accommodation cost which accounted for 39% and 26.7% respectively of the total private cost. At Federal University of Agriculture Abeokuta, a federal institution, tuition fee is highly-subsidised. A large number of the students enjoyed boarding facility provided by the university, which made the cost much lower than that

of Osun State University. At Wesley University of Science and Technology Ondo, tuition fee and accommodation cost accounted for 75.8% and 13.8% of the private cost respectively. Being a private institution, the tuition fee is much higher than the two other institutions. Transport cost, which was 1.13% in Wesley University, was the lowest of the three universities because of the provision of boarding facility for the students. At Federal University of Agriculture Abeokuta and Osun State University, transport cost accounted for 6.8% and 7.5% of the private cost respectively. At Federal University of Agriculture Abeokuta, ₦ 128,102.10 was the average direct private cost per session in the Faculty of Management Science, ₦ 145,640.50 in the Faculty of Applied and Natural Sciences and ₦151, 608.60 in the Faculty of Engineering. At Osun State University, ₦ 192504.30 was the average direct private cost per session in the Faculty of Management Science, ₦ 193,829.40 in the Faculty of Applied and Natural Sciences, and ₦ 192,841.30 in the Faculty of Engineering. Average direct private cost per session in the Faculty of Management Science at Wesley University of Science and Technology Ondo was ₦416, 813.50 and ₦ 512,356.40 in the Faculty of Applied and Natural Sciences

The findings of this study showed that Faculty of Management Sciences at Federal University of Agriculture had the least average direct private cost per session. This is unlike what obtains at Osun State University where average direct private cost per session was the highest in the Faculty of Applied and Natural Sciences followed by faculty of Engineering and Faculty of Management Sciences being the least At Wesley University of Science and Technology, average direct private cost per session of Faculty of Applied and Natural Sciences was higher than average direct private cost of Faculty of Management Sciences. Average direct private cost of acquiring university education per session in Southwestern Nigeria in the faculty/school of Management Sciences was ₦ 245,806.63. It was ₦ 283,942.10 in the faculty/school of Applied and Natural Sciences and ₦ 172,228.95 in the faculty/school of Engineering. Faculty/school of Applied and Natural Sciences had the highest private cost, followed by the faculty/school of management sciences (as shown by the tables in the appendix).

The findings of this study corroborate the findings of researchers like Oyetakin and Adeosun (2014), Igot and Samuel (2012) and Agboola Adeyemi (2012), Ofem (2011) and Balami (2004)

that private cost of university education varies according to institutional ownership and field of study. Their findings did not show variation in the private cost due to school location as shown by this study.

Research question two: How much would an individual expect as private returns to investment university education in Southwestern Nigeria?

In the computation of private returns to university education, 13.05% bond rate of August, 2016 and 22.5% average bank lending rate were used. The private returns to investment in university education in Southwestern Nigeria as measured by net present value (NPV) using bond rate and average bank lending rate on post-tax earnings, yielded ₦ 3,687,655.74 and ₦ 866,170.03 respectively. These are positive values showing that investment in university education is worthwhile. Bond rate and average bank lending rate were used to compute NPV because investment in university education requires between four and six years depending on the course of study. In Nigeria, government bonds require minimum of five years to get to maturity unlike treasury bill whose maturity period ranges between 91 days and 364 days. Also, average bank lending rate of major sectors of the economy like oil and gas, real estate construction, agriculture, mining and quarry and manufacturing was used on the assumption that the fund used to finance university education was obtained as loan from bank. This shows that using bank loan to finance university education is not economically viable (Table 4.14 and 4.16). The result of this study corroborates the findings of researchers like Peter (2014), Afzal (2011), Amin and Awung (2005) and Amaghionyeodiwe and Asinubi (2007) that university education has the highest private returns.

Similarly, this study revealed that earnings increase as the level of education increases. Further, the results of this study are in line with human capital theory postulated by (Mincer, 1958; Becker, 1962 and Shultz, 1961) which states that "investments in human capital improve the productive efficiency of individuals which results in increase in returns to individuals through higher pay (and for employers through improved productivity and performance as well as for the

society as a whole)". On the contrary, Edokat-(1998) and Psacharopoulos (2004) found that the returns to education decreases with increase in the level of education.

Table 4.14: Net Present Value (NPV) of University Education at (13.05%) 2016 bond rate (Post-tax Earnings)

Project Years	0	1	2	3	4	5
Amount in ₦	-369,592.56	-300,391.47	-265,715.59	-235,042.54	-207,910.25	574,817.11
Project Years	6	7	8	9	10	11
Amount in ₦	508,462.72	449,768.00	397,848.74	315,381.74	278,975.44	246,771.73
Project Years	12	13	14	15	16	17
Amount in ₦	218,285.48	193,087.55	204,433.99	180,835.02	159,960.21	141,495.10
Project Years	18	19	20	21	22	23
Amount in ₦	125,161.52	116,508.25	103,059.04	91,162.35	80,638.97	71,330.36
Project Years	24	25	26	27	28	29
Amount in ₦	78,325.40	69,283.86	61,286.03	54,211.44	47,953.51	42,303.76
Project Years	30	31	32	33	34	35
Amount in ₦	37,420.39	33,100.75	29,279.74	25,899.82	18,197.73	16,097.06
Project Years	36	37	38	39	40	41
Amount in ₦	14,238.89	12,595.21	11,141.27	14,350.15	12,693.63	11,228.33

Project Years	42	43	NPV(Years 0 - 43)			
Amount in ₦	9,932.18	8,785.66	3,687,655.74			

Source: computer printout

Table 4.16: Net Present Value (NPV) of University Education at (22.5%) 2016 average bank lending rate (Post-tax Earnings)

Project Years	0	1	2	3	4	5
Amount in ₦	-369,592.56	-277,218.42	-226,300.75	-184,735.30	-150,804.33	384,770.77
Project Years	6	7	8	9	10	11
Amount in ₦	314,098.59	256,407.01	209,311.85	153,125.26	125,000.21	102,040.99
Project Years	12	13	14	15	16	17
Amount in ₦	83,298.77	67,998.99	66,440.95	54,237.51	44,275.52	36,143.28
Project Years	18	19	20	21	22	23
Amount in ₦	29,504.72	25,346.14	20,690.72	16,890.39	13,788.07	11,255.57

Project Years	24	25	26	27	28	29
Amount in ₦	11,405.91	9,310.95	7,600.78	6,204.72	5,065.07	4,123.62
Project Years	30	31	32	33	34	35
Amount in ₦	3,366.22	2,747.94	2,243.21	1,831.19	1,187.38	969.29
Project Years	36	37	38	39	40	41
Amount in ₦	791.26	645.92	527.28	626.76	511.64	417.67
Project Years	42	43	NPV (Years 0 - 43)			
Amount in ₦	340.95	278.33	866,170.03			

Source: computer printout

Research question three: What is the earning differential between a university graduate and a secondary school certificate (SSCE) holder in Southwestern Nigeria?

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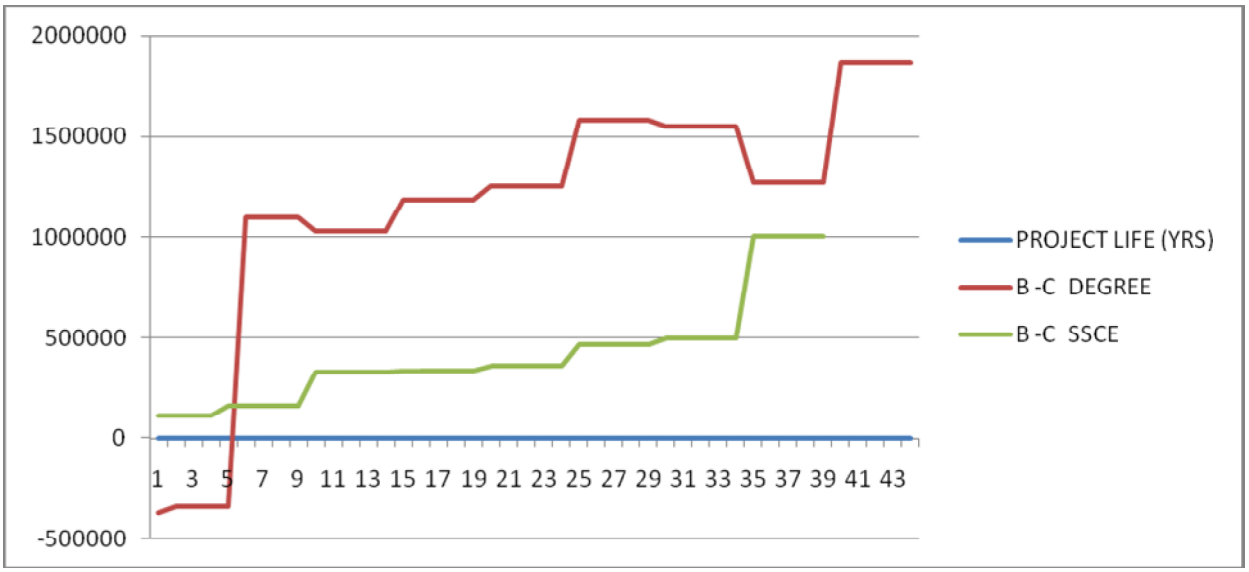
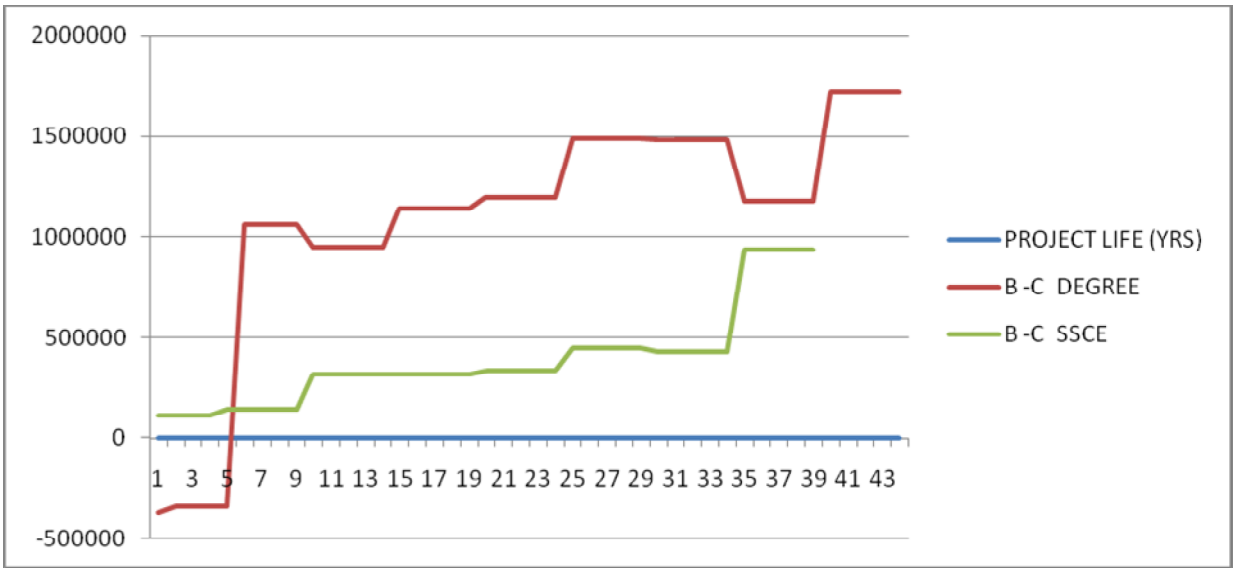
Table 4.21 :Age- Earning Streams and Differentials (DEGREE/ SSCE)

Earnings Streams	Pre-tax Earnings		Post-tax Earnings		Earnings Differential	
Qual. / Age group	DEGREE	SSCE	DEGREE	SSCE	Pre-tax	Post-tax
17-20	-------	446,400	-------	446,400	-446,400	-446,400
21-25	4,401,913.92	796,650	5,307,042	724,650	+4,705,742.40	+4,582,392
26-30	5,156,194.20	1,634,988.60	4,755,997.80	1,590,189	+3,521,205.60	+3,165,809
31-35	5,917,917.60	1,679,500.20	5,692,605	1,585,537.20	+4,238,417.40	+4,107,068
36-40	6,251,400	1,783,999.80	5,990,560.20	1,671,515.40	+4,467,400.20	+4,319,045
41-45	7,913,116.80	2,330,747.40	7,436,460	2,246,901.60	+5,582,369.40	+5,189,558
46-50	7,750,252.80	2,482,500	7,416,438	2,152,167.60	+5,267,752.80	+5,264,270
51-55	6,360,195.60	5,010,689.40	5,890,964.40	4,688,706.60	+1,349,506.20	+1,202,258
56-60	9,330,861.40	-------	8,577,852	--------	+9,330,861.40	+8,577,852
Private benefits	53,081,852.32	16,165,475	50,006,511	15,106,067	+38,016,855.80	+35,961,852.40

Graph showing Pre-tax Earnings Differential of DEGREE/SSCE



Graph showing Pre-tax Earnings Differential (DEGREE/SSCE)



Graph showing Post-tax Earnings Differential (DEGREE/SSCE)

The pre-tax and post-tax earnings differential of university graduate and SSCE holder in Southwestern Nigeria were ₦ 38,016,855.80 and ₦ 35,961,852.40 respectively. The pre-tax and

post-tax earnings of university graduate were 335.3% and 338% greater than that of SSCE holder. The pre-tax earnings of university graduate across different age groups ranged between ₦ 5,502,392.40 and ₦ 9,330,861.40. Also, the post-tax earnings ranged between ₦ 5,307,042 and ₦ 8,577,852. The earnings increased with increase in age except age groups 46-50 and 51-55, where the earnings were lower than that of age group 41-45. The post-tax earnings also exhibited the same characteristics. Further, the pre-tax earnings of SSCE across different age groups ranged between ₦ 446,400 and ₦ 5,010,689.40. Also, the post-tax earnings ranged between ₦ 446,400 and ₦4, 688,706.60. The earnings increased with increase in age, except age group 46-50, where the earnings were lower than that of age group 41-45. The post-tax earnings also showed the same pattern. This shows inconsistency in the earning stream of university graduate and SSCE holder in Southwestern Nigeria. It revealed that earnings do not increase as age increases.

This study revealed that earnings increases as the level of education increases. The findings of this study are in agreement with human capital theory which states that an increase in the level of education will result in increase in the stock of human capital in a society and, consequently, increase in national productivity and economic growth. The findings of this study also agree with the findings of some researchers like Peter (2014), Mohammed and Abdul Hakim (2014), Christian and Roger (2013), Zahoor and Nafeesa (2013), Fabunmi (2012), Afzal (2011), Shahar (2008), Sackey (2008), Amin and Awung (2005), Okuwa (2004) and Aromolaran (2002) that increase in the level of education engenders increase in earnings.

Psacharopoulos (2004) findings on returns to investment in education (a global update) and Tafah-Edokat (1998) on private returns to investment in education in Cameroon disagreed with the findings of this study. Psacharopoulos found 24%, 18% and 11% as the rates of returns to primary, secondary and higher education in many sub-Saharan African (SSA) countries. Tafah-Edokat (1998) found that primary education produced the highest return followed by secondary and tertiary education.

Summary of the findings

The average private cost of university education varied according to the ownership of the institution and field of study. Wesley University of Science and Technology had the highest average private cost being a private university followed by Osun State University and Federal University of Agriculture Abeokuta. Faculty of Applied and Natural Sciences had the highest average private cost followed by Faculty of Engineering.

Policy Implications of Findings

The average private costs of government owned institutions was very high especially in state-owned institutions due to non-provision of boarding facility. Accommodation and transportation took a substantial share of the cost. Also, institutions owned by the Federal government charged high acceptance fee from newly-admitted students, making the private cost extremely high in the first year of admission. Further, the private cost in the faculties of Engineering and Science is much higher than that of Management Sciences especially in public institutions. This may affect prospective candidates seeking admission to these faculties to think otherwise when considering the cost element. This may affect the output of these institutions in these faculties and have adverse effect on the nation's technological development. This suggests that governments should subsidise higher education (science and technological education) and provide facilities to encourage prospective admission seekers. Also, average private cost of private institutions was about 500% higher than government-owned institutions. The implication is that returns to education in those institutions are far below public institutions since there is no wage differential on the basis of institution attended in the labour market. Also, acquisition of higher education through private institutions will be unaffordable to many prospective admission seekers in Nigeria.

The private returns to university education in the South-West, Nigeria suggest the need for further funding of tertiary education in Nigeria. The fluctuating pattern of private returns to education especially at university level suggests that government should bear more of the burdens of educational cost. The findings suggest that workers' remunerations are not commensurate with their qualifications. It showed that many workers are underemployed. This

may lead to low productivity and brain drain from Nigeria. The findings also revealed that earnings disparity could be due to sector of employment. Civil servants in state service earn less than their counterparts in federal service, financial institutions and telecommunication companies. Workers in the unorganised private sector earn much below their colleagues in the civil service, financial institutions and telecommunication companies. Secondary school certificate holders are not securing jobs commensurate with their qualification as they are commonly employed in unorganised private sectors.

Conclusion

This study discovered variations in private costs of university education due to institutional ownership (federal state and private), location, duration of academic programme and field of study/area of specialisation. The findings of the study revealed that investment in human capital enhances individual productivity and earning. As well, increase in years of schooling brings significant rise in earnings and higher earnings was found to be associated with higher level of education. Hence, higher earning is found to influence the demand for higher education.

This study found significant differences in the private economic benefits and returns to education due to increase in the level of education, sector of employment and work experience. This shows that private investment in education is worthwhile.

Recommendations

Based on the findings of the study, the following recommendations are made:

Governments and private owners of institutions should introduce measures that will reduce private cost of university education. This will increase the returns to investment in university education and other types of education. Such measure could include:

i. Reduction of school fee as this will increase private returns to education.
ii. Provision of adequate boarding facility to cater for the students as accommodation cost accounts for about 25% of the average private cost especially in public institutions. Acceptance fee should be removed from the institutional cost as this also forms a significant part of the private cost.

iii. There is earnings differential due to sector of employment, and at later working life, earning does not correspond with work experience.

iv. Government and employers of labour should institute measures that will harmonise salary structure. Increase in working experience should be complemented with increase in salaries and allowances.

v. Employers of labour in public and private sectors should ensure that workers' remunerations are commensurate with their educational attainment to make investment in education a profitable venture.

vi. Comparing workers' earnings in Nigeria with other countries, it is low, showing that private returns to education are low. The implication is that investment in education will not be encouraging as it could demotivate investment in education by future generations. Also it can lead to brain drain as younger generations will seek employment where earnings are better.

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