WORKERS' LEVELS OF EDUCATION AND PRIVATE RETURNS TO INVESTMENT IN EDUCATION IN NIGERIA

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Abstract
The study investigated private returns to investment in education by workers' level of education in Nigeria, using the descriptive survey research design. Data were collected using the 2005 Labour Market Survey of the National Manpower Board covering 18,793 Nigerian workers: 5,937 with no formal education; 4,910 with primary school certificate; 4,873 with secondary school certificate; and 3,073 with first degree. Level of education was grouped into three levels of education which are primary school, secondary school, and university. Data were analysed using descriptive statistics and One-way Analysis of Variance (ANOVA), using the 0.05 level of significance for decision making. Scheffe Post hoc analysis was used to test for differences among the levels of education. Earning equations explained 82.9% of the variations in log earnings for all workers, implying that the higher the level of education of workers within the same sector, the higher the earnings. The differences between level of education account for 3.4% of the variation in private returns. On the basis of findings of this study, it is recommended that earnings of workers in Nigeria should be increased in order to make investment in education an attractive option. Also, policy makers should also formulate policies and craft incentives that will promote investment in education.

Key words: Level of education, Nigerian workers, Private Returns, Investment in Education,
Earning Differentials.

Introduction

The private returns to investments in education have been generating interest all over the world. The returns to education are the reward of

investing in education. This reward can be private or social. Private returns refer to the additional income earned as a result of attaining a particular level of education. According to Todaro (1982), private returns are the gains that accrue to an individual as a result of attaining a particular level of education, while social returns refer to the benefits that accrue to the society. Private returns are used to explain people's behaviour in seeking different educational levels and types and as distributive measures of the use of public resources. Attainment of higher levels of education is related to a greater likelihood of earning higher wages (Nyaga, 2010). Education is of great advantage to individuals, companies, and the society at large. Individuals profit from investment in education through higher post-tax wages, while firms reap benefits from education via the higher productivity of their employees. Attainment of higher levels of education by the employees makes them to be more productive than their less-educated colleagues. Also, society benefits from investment in education through higher pre-tax wages, among others.

There are several measures that can be used to determine whether investment in education, or in any other project, is a worthwhile venture. Both private and social rates of return can be calculated to judge the returns of further investment in education for individuals and governments. It is clear that better educated people typically are better paid, have access to more information, and enjoy greater economic success. Educational attainment serves as a signal for productivity in the labour market and suggests that a person has broader knowledge in a particular area. It also implies that an individual is more productive than persons without a completed education. Education indicates that an individual has enough self-motivation and persistence to complete studies and to achieve goals.

There is a global concern for investment in education. Virtually all international and supra-national organizations encourage educational investment. The United Nations Organization's agencies like International Institute for Educational Planning (IIEP), United Nations Development Programme (UNDP), World Bank, United Nations Educational, Scientific and Cultural Organisation (UNESCO) and United Nations Children's Fund (UNICEF) invest and also encourage investment in education. UNICEF (2001) asserts that "No nation has ever emerged from poverty without giving priority to education", hence its massive

campaign for investment in education. Education is the bedrock of any society, hence the investment in education by different countries of the world. In fact, education is a form of investment in human capital. It is expected to contribute to growth by improving the productivity of the labour force, reduce income inequality and poverty.

Corroborating the opinion of UNICEF on importance of education, Smith (2009) noted that the cost of educating a child is far less than dealing with the consequences of ignorance. According to him, in 2007, 101 million children of primary school age, out of whom 53 million were girls and 48 million boys, were not attending schools. Amin and Awung (2005) reported that the mid 60s witnessed a huge investment in education by the African governments. The heavy investment was done because of expected benefits which include acceleration of economic growth and development. In fact, education with investment in human capital was expected to contribute to growth by improving the productivity of the labour force, reduce income inequality and poverty. According to Abdulkareem (2001), a nation's growth and development is determined by its human resources. The belief in the efficacy of education as a powerful instrument of development has led many nations to commit much of their wealth to the establishment of educational institutions at various levels.

There are several measures that can be used to determine whether investment in education, or in any other project, is a worthwhile venture. Both private and social rates of return can be calculated to judge the returns of further investment in education for individuals and governments. It is clear that better educated people typically are better paid, have access to more information, and enjoy greater economic success. Educational attainment serves as a signal for productivity in the labour market and suggests that a person has broader knowledge in a particular area. It also implies that an individual is more productive than persons without a completed education. Education indicates that an individual has enough self-motivation and persistence to complete studies and to achieve goals.

Most countries place a lot of emphasis on education, perhaps because the beneficiaries are needed for the management of the different sectors of the economy. The same reason might have informed the commissioning of a high-level commission to investigate the post-independence manpower needs of Nigeria for a period of

twenty years, 1960-1980. This commission was led by Sir Eric Ashby and it was reported that there was inequality between one level of education and the other; limited admission opportunities for primary school leavers; small number of school teachers were qualified and certificated; that the Nigerian education was narrow and literary; and that there was imbalance in the development of education between the North and South. Governments and individuals allocate increasing proportions of their annual income to education, because of the belief that, a positive relationship exists between investment in education to an individual, national productivity and development. It is for this same reason that education requires adequate financial provision from all tiers of government for successful implementation of education programmes (Federal Republic of Nigeria, 2004). The private sector and individuals are also encouraged to finance education because of the heavy burden of ever-increasing government expenditure on higher education in both developed and developing nations.

The commission recommended that primary and secondary education should be expanded and improved; the University College at Ibadan should be upgraded to a full-fledged university; three additional universities should be established at Nsukka, Ife and Zaria; the University Commission should be established in Nigeria in order to maintain uniform academic standard in all the universities; and that the post-secondary school system should produce the post-independence high-level manpower needs of Nigeria. There was a shortfall in the projection and the Federal Government had to establish additional universities to produce additional manpower needs of the country. Hence, government and international donor agencies expand educational facilities to meet the growing demand. Also, situations where government and private employers up-grade formal education entry requirements for jobs previously filled by those who were less educated, there is bound to be a rigid downward adjustment. Blaug (1974) observes that all over the world, since 1950, higher education is said to have been the fastest growing sector of all the levels of education in the educational system, either in terms of enrolments or financial outlays.

The motivating factor for the urge to have university education might be the perceived improved earnings. Many studies carried out on investment in education found out that individuals demand for

education to improve their status and prestige, which is derived from economic opportunities. Another motivating factor is the fact that the more unprofitable a given level of education becomes as a terminal point, the more the increase in the demand for it as an intermediate state of the next level of education. The moment it is no longer profitable to acquire certain level of education, the more the quest to acquire higher education in other to make it more profitable. Manda and Bigsten (1998) analysed the impact of educational expansion and returns to schooling in Kenya over a period. They found that private returns to secondary and tertiary education are high, while it is close to zero for primary education. However, Kifle (2007) reported that the general assertion for African countries is that the private returns to investment in education are highest at primary level and thus primary education should be the number one investment priority.

It has been observed that adequate resources are not devoted to education in developing countries. Amaghionyeodiwe and Osinubi (2006), report that despite the importance of and need for education, many low-income countries, especially in Africa, still give it less attention and lack appropriate policies to promote educational expansion. Policies are often adopted without due consideration for the particular nature of the developing countries. Also, it is widely observed that education is desired by families and by society for reasons other than simply its capacity to raise worker productivity.

Edokat-Tafah (1998) in his study on private returns to investments in education in Cameroon found that returns to education are positive and in some cases higher than returns to investment in other sectors of the economy. Primary education gives the highest returns, followed by secondary and tertiary education. He concluded that the investment in primary education should be emphasized and that individuals willing to pursue further education should be made to bear a higher proportion of the cost of such education. However, Tansel and Bircan (2010) disagree with primary education having the highest returns. In their study, it was discovered that the returns on education increase over different levels of education with university level achieving the highest returns in Turkey.

According to Levy and Murname (1992), returns to education are evaluated in order to find out whether education perpetuates inequality in income. Income distribution in the world is now more

skewed than ever before. This implies that as the education premium rises, the difference between the incomes of those with first school level education and those with higher education is likely to increase, thus making worse the income inequality. Level of education attained by an individual affects worker's earnings. Cosca (2000) confirms the finding of many economists that, in general, bachelor, master, doctoral, or professional degrees have higher average incomes and lower unemployment rates than do employees with less education. This implies that earnings vary with the educational level.

An individual academic qualification plays an important role in establishing the salary he or she receives. Individuals invest in education for a number of reasons. One of such reasons includes higher earnings, personal satisfaction; improve the status of their jobs, social prestige, etc. Several studies have confirmed that highly educated individuals earn high wages, experience less unemployment and work in more prestigious occupations than their less educated counterparts (Adesina, 1981; Akangbou, 1987, Edokat- Tafah, 1998, Aromolaran, 2002; Okuwa, 2004; Kifle, 2007; Asafu-Adjaye, 2012; etc.).

According to Harberger, and Guillermo-Peon (2012), it is a known fact that successive steps of education typically add to the student's future earning power and thus have the characteristics of an investment. Filer et al (1996), report that private investment in education theoretically provides an individual with the higher lifetime income level, social status and personal freedom. This is recognized by the students themselves as well as by their families, and serves as one important motivation for pursuing higher levels of schooling. Social returns can be used to set order in future investments in education. Blaug (1972) opines that education and earnings are positively linked. The universality of this positive association between education and earnings is one of the most striking findings of modern social science.

Many people invest in education because of the expected returns in terms of higher earnings, while government invest in education because of the need to accelerate economic growth and development and this is only possible when human resources are educated, gainfully employed and adequately rewarded. According to Kifle (2007), there are several studies carried out in some countries in Sub-Sahara Africa which show that returns to education rise with educational attainment. Unfortunately, employees are not always

rewarded according to their level of education in Nigeria. People who may not possess the required skills and ability to perform at some jobs are employed due to favouritism, godfatherism, corruption, ethnicity, quota system, religion, race, native ability, family background, gender, etc. While some of the factors responsible for this are measurable, some are not. Education must yield a higher return in order to be pursued from an economic point of view. If investment in education is not a worthwhile venture, there is likely to be shortage of talents and skills needed for development and this can decisively retard economic progress in the society. Analyzing these benefits not only would improve our understanding of the full effects of education but also would improve the informal basis for considering policies related to education.

It is against this background that the study investigated the extent to which level of education determines private returns to investment in education and also to solve the problem of a dearth of literature. Thus there is the need for a study of this nature to help policy makers in articulating and making well-informed policies to help sustain and improve the quality of education in our country, especially those of higher education. Also, given that there is a wide and growing literature on the empirical estimation of returns to schooling in both developing and advanced countries, estimates for Nigeria are rare.

Statement of the Problem

A very important benefit of formal education is increased earnings in the person's future. The higher the level of education, the higher tend to be the expected returns, implying that a positive correlation exist between education and labour market earnings. A number of studies in different countries have confirmed that highly educated individuals earn high wages, experience less unemployment, and work in more prestigious occupations than their less educated counterparts. However, the situation is not so in Nigeria. Employees ought to be rewarded based on their educational attainment, but, it was observed that employees in Nigeria seem not to be rewarded based on their level of education, thus making it difficult to believe that education still determines earnings. This study was carried out to provide an empirical estimate of the variations in private returns to education by different levels of education and also to suggest some policy options. It was in

the light of the above that this study was carried out to investigate the extent to which there are variations in earnings as a result of the three levels of education.

Research Question

What are the rates of returns to investment in education by workers' levels of education in Nigeria?

Hypothesis

There is no significant difference in private returns to schooling among the three levels of education in Nigeria.

Methodology

This study adopted the descriptive survey design. The population of this study comprised 36,458 workers in the 2005 National Manpower Board Labour Market Survey. The survey used all the working class subjects enumerated in all the 36 states including the Federal Capital Territory, Abuja, by the defunct National Manpower Board survey in 2005. Purposive sampling technique was used to select 18,793 workers from the population of 36,458 workers who participated in the study. The purposive sampling technique was used to select 5,937 workers with no formal educational qualification, the 4,910 workers with primary school certificate, 4,873 workers with secondary school certificate and 3,073 workers with university first degrees; thus making a total of 18, 793.

The research question for this study was answered using descriptive statistics to highlight the earnings of primary and secondary school holders as well as university graduates. While One-way Analysis of Variance (ANOVA) and Scheffe Post hoc analyses were used to test for differences among the levels of education in the only hypothesis formulated for the study, using the 0.05 level of significance.

Discussion of Results

This section is presented under the research question and hypothesis that were formulated to guide the study.

Research Question: What are the rates of returns to investment in education by workers' level of education in Nigeria?

In order to shed more light to the relationship between education and earnings, modified Mincerian earnings function was specified and estimated by regressing the natural logarithm of the monthly income on education and experience, with education broken into a set of dummy variables representing different educational levels. The model is specified thus:

$$LnY = \alpha_o + \alpha_1 Pry + \alpha_2 Sec + \alpha_3 Uni + \alpha_4 Exp + \alpha_5 Exp^2 + E \quad (1)$$

Where:

LnY = natural logarithm of the monthly earnings
Pry. = dummy for primary school graduate
Sec. = dummy for secondary school graduate
Uni. = dummy for University graduate
Exp = labour market experience
Exp^2 = Square of labour market experience
E = Stochastic error terms

The estimated rate of return to an additional year of schooling is obtained by dividing the difference between the coefficients of adjacent groups by their differences in years of schooling. To arrive at these rates of returns, we concentrate on equation 1, thus:

$$R_{pry} = \frac{\alpha_1}{Spry} \quad (2)$$

$$R_{sec} = \frac{\alpha_2 - \alpha_1}{Ssec - Spry} \quad (3)$$

$$R_{uni} = \frac{\alpha_3 - \alpha_2}{Suni - Ssec} \quad (4)$$

Where: S = number of years of schooling of the subscripted educational level.

Results from Earnings Equations

Table 1: Estimated earnings coefficients for all workers

Model	**All Samples**	
	Coefficients	
	B	t-value
Constant	7.948045	649.6390
Primary	-0.131286	-12.02394
Secondary	0.269101	25.22151
University	0.775344	66.32353
Exp.	0.179967	104.6218
Exp^2	-0.002733	-45.85726
Adj.R^2	0.829441	
F Stat.	12504.00	

Table 1 contains the coefficients of the education dummies and experience variables for all workers from the earnings equations estimated with ordinary least square (OLS). The model for all workers explains about 82.9% of the variations in log earnings. It also shows that the coefficient on education dummy grows with higher level of education for all samples. This is in agreement with the findings of Cohen and House (1994) who examines the relevance of the human capital approach to explaining the disparity in workers' productivity and earnings in the labour market for urban Khartoum. He discovers that there are variations in workers' earnings. This implies that earnings increase with level of education. The more education a worker acquires, the more the earnings.

Table 2: Private rates of returns to level of education (%)

Level of Education	All Samples	Private Sector		Public Sector	
		Rates of Return (%)		Rates of Return (%)	
		Female	Male	Female	Male
Primary	-2.2	-2.6	- 2.4	-3.1	-2.6
Secondary	6.6	8.7	14.3	8.5	8.3
University	8.4	8.2	8.3	8.7	8.0

Estimates of private rates of returns accruing to private investment in education in Nigeria derived from the modified

Mincerian earnings functions for primary, secondary and university education are shown in Table 2. Private return to primary education is negative. This shows that most people further their education after primary school. This agrees with the findings of Aromolaran (2006) and Okuwa (2004), who report that returns to primary school were low, but is in contrast with Psacharopoulos (1973), who concludes that the highest rates of returns in developing countries are to primary education. The rate of return is quite high for secondary school holders in both private and public sectors for male and female, even though, return to male working in the private sector (14.3%) is higher than that of female (8.7%) in the same sector. Males and females in public sector have returns of 8.3% and 8.5% respectively.

Figure 1: Bar-chart of private rates of return to levels of education

Figure 1 illustrates the private rates of returns to primary, secondary and university education. The return to primary education is negative. The reason is likely to be that primary school leaving certificate holders' starting income is low and is nothing to write home about. It is no

longer profitable to be working with the First School Leaving Certificate with the present economic situation in the country. This has made most primary school leavers further their education immediately after completion in order to start at a higher level. The private sector males with secondary education had the tallest bar. It means that male workers working in private sector receives highest returns to investment in education.

Hypothesis 1: There is no significant difference in private returns to schooling among the three levels of education in Nigeria.

Table 3: Descriptive statistics of differences in earnings across the educational levels

Code	Level of Education	No. of Cases	Mean(N)	Standard Deviation
1	No Education	5,937	11,063.24	27851.479
2	Primary	4,910	11,256.78	15901.404
3	Secondary	4,873	12,905.25	21465.006
4	University	3,073	23,437.90	28133.372
Total		18,793	13,614.92	24069.510

The results of differences in private earnings to education on account of levels of education are presented in Table 3. This Table shows the magnitude of significant differences across the four categories in which level of education was grouped observing 18,793 Nigerian workers comprising: 5,937 with no formal education, 4,910 with primary school certificate, 4,873 with secondary education and 3,073 with first degree. It contains the mean and standard deviation of earnings across the three educational levels. Educational level was classified into four, which are those without formal education, primary school, secondary school and university. The 5,937 respondents who did not have formal education had a mean of N11,063.24, while 4,910 respondents who had primary education had a mean of N11,256.78. Also, secondary school holders which comprised 4,873 respondents had a mean of N12,905.25, while 3,073 respondents with university degree had a mean of N23,437.90, thus having a total of 18,793 respondents with a total group mean of N13,614.92.

This finding confirms the claim of Okuwa (2004) and Sackey (2008) in which descriptive statistics and ordinary least squares were used to estimate the effect of level of education on earnings of an individual. This finding equally corroborates that of Blaug (1972), Psacharopoulos (1994), and Harmon and Walker (1995), who opine that education and earnings are positively linked and that private return to investments in education is an important factor in determining educational attainment. The implication of this is that level of education determines workers' earnings. In consonance with the finding is that of Amaghionyeodiwe and Osinubi (2006) who reported that wage returns to additional years of schooling completed increased as the level of education increases, that is, returns to primary education are the lowest while those of post-secondary or higher education were the highest. In line with findings in the literature, the result of this study shows that earnings rise with higher levels of schooling. The implication of this is that, the higher the level of education the higher the rate of return to the individual.

Table 4: Results of analysis of variance on private returns to education among the different levels of education

R = 0.148
R^2 = 0.022
Eta = 0.183
Eta Square = 0.034

		Sum of Squares	Df	Mean Square	F	Sig.
Between group	Combined	3.6493E+11	3	1.2164E+11	217.216	0.000
	Linearity	2.3900E+11	1	2.3900E+11	426.790	0.000
	Deviation from Linearity	1.2592E+11	2	6.2962E+10	112.429	0.000
Within Groups		1.0522E+13	18789	5.6001E+8		
Total		1.0887E+13	18792			

Table 4 indicates that there is a linear relationship between private returns to schooling and level of education. The test for linearity has a significant probability value smaller than 0.05. The null hypothesis is therefore rejected. R square reflects the proportion of variation in the dependent variable accounted for by the linear model.

In this study, a linear relationship with level of education accounts for 2.2% of the variation in private returns to education, while the differences between level of education account for 3.4% of the variation in private returns. In this study, differences among the three levels of education accounted for 3.4% of the variation in private returns. This finding is in agreement with the finding of Amaghionyeodiwe and Osinubi (2006) who discovered that the higher the level of education the higher the rate of return to the individual.

Table 5: Results of Scheffe post-hoc test showing homogeneous subsets of levels of education.

Level of Education	N	Subset for alpha = .05		
		1	2	3
No Education	5,937	11,063.24		
Primary	4,910	11,256.78		
Secondary	4,873		12,905.25	
University	3,073			23,437.90
Sig.		.985	1.000	1.000

In Table 5, level of education is classified into three homogeneous subsets. Level of education that falls into the same subset does not show any significant difference. No Education and Primary education workers' earnings follow the same pattern, while the two of them are significantly different from those using secondary and university certificates to work. This implies that the more education one gets, the better the return. There is a significant difference in earnings between secondary school certificate holder and university graduate. This explains the reason why there is excess demand for university education in Nigeria.

Results of Scheffe post-hoc test classified level of education into three homogeneous subsets. Level of education that falls into the same subset does not show any significant difference. No education and primary education workers' earnings follow the same pattern, while the two of them are significantly different from those using secondary and university certificates to work. The more education one has, the better the return. The private return to education increases with the level of educational attainment. Thus meaning that, level of

education is a determinant of private returns to investment in education.

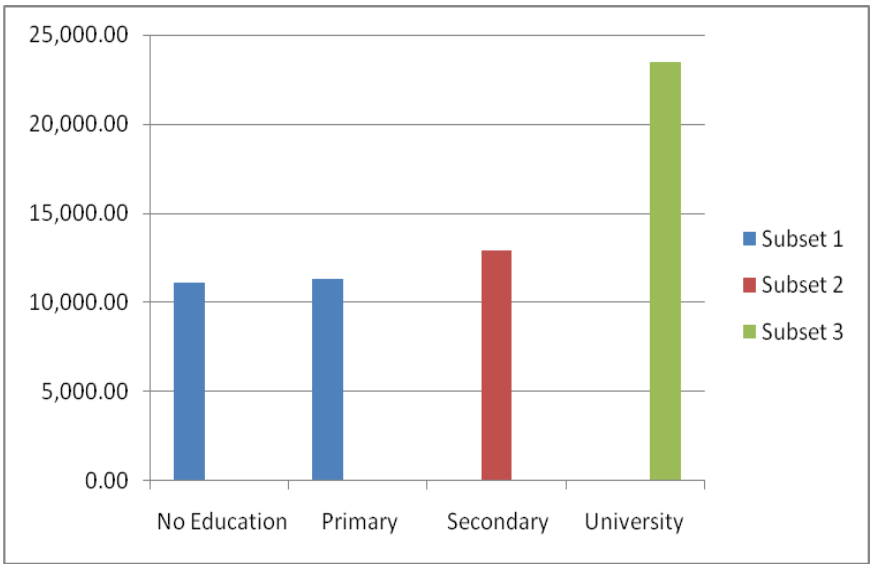

Figure 2: Bar-chart of private earnings differences among the educational levels

Figure 2 illustrates the classification of levels of education into three homogeneous sub-sets. The private returns to the third subset (subset3), that is, university education is the highest; followed by secondary education; and primary education had the least.

Table 6: Results of Scheffe post-hoc test of significant differences in earnings across the different educational categories

Mean	Level of Educ.	No Educ.	Pry.	Sec.	Uni.
11,063.24	No Education			*	*
11,256.78	Primary			*	*
12,905.25	Secondary	*	*		*
23,437.90	University	*	*	*	

***Significant difference at P<0.05 alpha level**

In Table 6 the asterisked columns and rows show the direction of significant differences across the different levels of education. The results of Scheffe Post hoc test show significant differences in earnings between no education and secondary; no education and university; secondary; primary and secondary; primary and university; secondary and no education; secondary and primary; secondary and university; university and no education; university and primary; and university and secondary certificate holders.

Conclusion and Recommendations

Education plays an important role in the creation and improvement of human capital. Investment in human capital enables individuals to increase their future earnings and enhance their marketability in the labour market. This study establishes that returns to additional years of schooling increases as the level of education increases, this implies that highly educated individuals earn high wages. Returns to primary education are the lowest while that of the university was the highest. The implication of these is that the higher the level of education the higher the private return to the individual, thus making education to still be a worthwhile venture from the private point of view.

Based on the findings of this study, it was recommended that policy makers should ensure that policies are made to make investment in education an attractive option. The earnings of workers in Nigeria is still low, meaning that, the returns to investment in education is low. The implication of this is that, low returns could signal a dangerous path for future generations. Policy makers should formulate policies and craft incentives that will promote investment in education.

Stakeholders in education such as the three tiers of government, non-governmental organisation, private market, parents as well as family and friends should earmark more resources to education because of the benefits to individuals and the society in general. Public and private sector employers of labour should ensure that workers' remunerations are commensurate with their level of education.

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