DEMOGRAPHIC FACTORS AS DETERMINANTS OF PRIVATE RETURNS TO INVESTMENT IN EDUCATION AMONG NIGERIAN WORKERS

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ABSTRACT

Earlier studies on private returns to education in Nigeria neither gave adequate attention to the demographic factors nor covered the whole country. Some of them investigated the relationship among years of schooling, experience and earnings that covered one state, while others investigated some of the demographic factors that covered a few states. This study, therefore investigated the contributions of demographic factors to private returns to investment in education across the six geo-political zones in Nigeria.

The study adopted the descriptive survey research design. Data were collected using the 2005 Labour Market Survey of the National Manpower Board covering 19,888 Nigerian workers: 7,032 with no formal education; 4,910 with primary school certificate; 4,873 with secondary school certificate; and 3,073 with first degree. Occupations were categorised into agriculture, information management, commerce and industry, education, health and safety, science and technology, legal and security, and others. Sectors of employment were grouped into private and public across the six national geo-political zones. Nine research questions were answered and four hypotheses tested at 0.05 level of significance. Data were analysed using multiple regression and modified Mincerian earnings function.

There was a significant difference in workers' earnings across the geo-political zones ($R=0.03$, $F_{(5, 19,882)}=4.693$, $p< 0.05$). These accounted for 3.4% of the variance in workers' earnings. The Scheffe post-hoc analysis showed two homogeneous subsets, revealing that North-East, South-South, and South-West salary structures were almost the same, while South-South, South-West, North-Central, North-West, and South-East belonged to the second homogenous group. These results indicated that workers in the North East zone were the least paid, while South East zone workers received the highest earnings. All the independent variables significantly correlated with workers' earnings ($R=0.64$, $F_{(7, 8,021)}=774.80$, $p< 0.05$) and accounted for 40.3% of the variance in workers' earnings. Each demographic factor correlated with workers' earnings as follows: level of education ($r=0.034$); geo-political zone ($r=0.034$); occupation ($r=0.018$); and sector of employment ($r=0.07$). The following variables also predicted earning differentials: work

experience (β =0.61); level of education (β = 0.37); and sector of employment (β = 0.02). 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 model for female workers in the public sector explained 85.5% while that of male explained 84.8% of such variations. The slight difference in the male and female coefficients indicated little difference in earnings based on gender. The coefficients for the private sector workers showed that the model for the female explained 83.5% of the variations in log earnings, while that of the male explained 83.3% of the variations.

Work experience, level of education and sector of employment are important determinants of private returns to investment in education. Private returns differed across the six geo-political zones in Nigeria. Employers of labour, particularly in the North-East zone should ensure that workers' remunerations are commensurate with their level of education so as to minimise earning differentials.

Key words: Demographic factors, Nigerian workers, Private returns, Investment in education

Word count: 495 words

CERTIFICATION

I certify that this study was carried out by **Mrs. Beatrice Ayodeji Fabunmi** in the Department of Educational Management, Faculty of Education, University of Ibadan, Ibadan, Nigeria.

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DEDICATION

THIS STUDY IS DEDICATED TO MY LORD JESUS CHRIST

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INTRODUCTION

1.1 Background to the Study

The private returns to investments in education have been of interest to scholars all over the world. The rise in earnings inequality and the subsequent increase in the returns to schooling experienced during the 1980s and 1990s in many countries led to a renewed interest in estimates of returns to educational investment. Private returns refer to the additional income earned as a result of attaining a particular level of education. 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.

The returns to educational investment can be private or social. According to Todaro (1982), private returns are the gains that accrue to an individual as a result of attaining a particular level of education, whereas social returns refer to the benefits that accrue to the society as a whole. A large body of research, accumulated over decades, has firmly established that education delivers a variety of benefits at many levels. These include benefits for individuals, benefits for companies, and benefits for society as a whole. Individuals profit from investment in education through higher post-tax wages, while firms reap benefits from education via the higher productivity of their employees. Better-educated employees are not only more productive, but also raise the productivity of their less-educated colleagues. Society benefits from investment in education through higher pre-tax wages, among others.

The social returns to an educational investment indicate the desirability of this investment to the societies. The difference between private and social returns to education is the prime motivation for government intervention. Societies benefit from education through the direct effect of higher productivity on growth. A number of additional benefits including better public health and greater social cohesion have also been found. Social returns to education are used to assess the efficiency of public spending on education as a guide on whether to expand or contract a particular level of education. They are based on the costs and benefits of education realised by the state or society as a whole. 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.

Literacy and knowledge have become increasingly valuable relative to basic manual skills since the beginning of the industrial revolution; this has led to wage premiums for educated workers as an educated workforce is the dominant factor in explaining differences in regional growth and prosperity. As a result, economists have extensively researched education's importance in determining individual differences in wages and regional differences in economic growth. 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.

The importance of formal education for economic growth and development and its expected returns to individuals as well as the society at large has attracted great interest in literature both in developed and developing countries. Education plays a major role in the creation and improvement of human capital. Its importance to economic growth and development are now being recognised in development planning, hence the investment in education by different countries of the world.

Private returns are used to explain people's behaviour in seeking different levels of education and as a distributive measure of the use of public resources. There is a strong consensus among economists that formal education is an important determinant of individual earnings as well as economic growth (Schultz, 1961; Becker, 1964; Joint Economic Committee of the United States Congress, 2000; and Card, 2001). Education is known to be an important determinant of earnings in the market economies (Akangbou, 1987; Okuwa, 2004; and Sackey, 2008). Many consider human capital to be the engine for growth of an economy, while others who do not necessarily share this view accept that human capital plays a significant role in the economic growth of a nation.

Palacios (2004) has been able to establish that investments in higher education are based on the assumption that education has an economic value which can be seen in the following ways:

- education permits an individual to make better use of his intelligence;
- individuals can by using of their knowledge increase quality of their lives and the use of their intellectual capacity is rewarded with higher salaries; and
- education is also basement of stability in modern democracies.

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) discovered that for countries in Africa, it is commonly asserted that the private returns to investment in education are highest at primary level and thus primary education should be the number one investment priority.

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. Buttressing the position of UNICEF, Smith (2009) emphasized the importance of education. He noted that the cost of giving a child education 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. The rise in earnings inequality and the subsequent increase in the returns on schooling experienced during the 1980s and 1990s in many countries, led to a renewed interest in estimates of returns on educational investment.

Over the last few decades, most countries within Africa have experienced little economic growth and development despite massive investment in education (Oyelere, 2007). In recent years, there has been an increase in the number of studies that have sought to analyse private returns to investments in education. According to Schultz (1961) and Becker (1964), experience, training, and education are the three main mechanisms for most individuals. Education facilitates the acquisition of new skills and knowledge that increase productivity. The more education individuals acquire, the better they are able to absorb new information, acquire new skills, and familiarize themselves with new technologies. Finally, the less developed the country, the higher the returns to investment in education. However, these results have been criticized as being irrelevant; given the fact that the researchers employed out dated cross sectional data and that the educational expansion over the decade since then must have decreased the returns to investment in education.

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.

Apart from formal education, there are some other demographic factors that determine private returns to investment in education. Such factors include: work experience, year of schooling, gender, sector of employment, occupation and age. Topel (1991) reported that tenure or work experience was a major determinant of wage. He also reported that, other things remaining constant, 10 years of job tenure raise the wage of the typical worker by over 25%. Williams (1991) has found that tenure increases

wages only in the first several years of employment. The strong positive relationship between tenure and wage rates was also assessed by Altonji and Williams (1997). The strong long term employer-employee relationship conditioned by promotion provisions was mentioned by Theodossiou (1996) to specify the significant effect of work experience on earnings. Firms, in order to discourage labour turnover and inter-firm mobility, establish long-term employment relationships with their most highly valued employees. Thus, employees with longer years of work experience with their current employer have higher earnings than other employees with the same total work experience but relatively shorter tenure.

Altonji and Shakotko (1987) disagree with positive relationship between experience and wages. They are of the view that the partial effect of experience on wages was small because the strong relationship between tenure and wages was due primarily to heterogeneity bias across individuals and across job matches. Similarly, Jacobson, Lalonde, and Sullivan (1993) have found that high tenure workers separating from distressed firms suffer long term losses averaging 25% per year.

The occupation in which a worker is employed goes a long way in determining the inequality in earnings. Disparities in earnings between different occupations are noticeable in less developed countries than in developed countries (Kothari 1970). Earning differentials would not indicate compensating differentials but rather signal enlarged inequalities because some individuals not only are denied the possibility of working at high and satisfied job levels but also have to accept lower wages (Hartog, 1986). For this reason the reward for education differs substantially by the type of occupation an individual is engaged in.

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. The provision of the much-needed manpower to accelerate the growth and development of the economy has been said to be the main relevance of university education in Nigeria (Ibukun, 1997). The

Universal Primary Education (UPE) was a particular challenge in Sub-Sahara Africa where 46 million children were out of school that same year. While launching girls' education in Western and Central Africa in 2003, UNICEF encouraged donors and governments in the region to invest far more in education. IIEP has also been involved in educational investment. It has been providing training assistance in the area of education for the different countries in the world. The institute co-founded the Department of Educational Management, University of Ibadan, Nigeria and provided skilled international experts in educational management who re-trained the existing staff. The World Bank has also been involved in educational investment. It plays a leading role in the ranking of world universities and also invests in specific educational projects.

Returns to investment in education based on human capital theory have been estimated since the late 1950s. The human capital theory puts forward the idea that investment in education increases future productivity. The theory suggests that individuals and the society derive economic benefits from investing in people. There have been thousands of estimates, from a wide variety of countries; some based on studies done over time and some based on new econometric techniques. All the studies reaffirm the importance of human capital theory that lay emphasis on how education increases the productivity and efficiency of workers by increasing the level of cognitive skills possessed by the workforce. Although types of human capital investment generally include health and nutrition (Schultz, 1981), education consistently emerges as the prime human capital investment for empirical analysis.

One main reason for this is that education is perceived to contribute to health and nutritional improvements (Schultz, 1963). A second and more empirically important reason is that education may be measured in quantitative dollar costs and years of tenure or experience (Johnes, 1993). Higher education represents an investment decision compared to other investment alternatives such as investment in infrastructure or physical investment. Education must yield a higher rate of return in order to be pursued from an economic point of view.

Human capital development is an integral part of capacity building, which encompasses both human and institutional capacity building. According to Obadan and Adubi (1998), human capital development refers to the process by which a nation develops and increases its human resources capabilities through the inculcation of the relevant general and technical knowledge, skills and effectiveness to realize set goals efficiently. Unfortunately, the quality of education at all levels is on the decline. This calls for a serious attention because of its deleterious effects on national development.

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.

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.

Most governments and even individuals continue to devote 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. Since the Federal Government take-over of universities, she had made different efforts to revert the decision. The 1979 constitution, which listed education on the concurrent legislative list, saw the birth of State universities. The fact remains that the supply of university education in Nigeria has always been limited by the amount of funds that the owners i.e. governments have been willing and capable of giving to the universities as grants.

Okebukola (2002) pointed out that enrolment into universities in Nigeria has been growing steadily over the last 54 years from a take-off enrolment of 210 in 1948 at the University College, Ibadan, to six universities in 1962, enrolling a total of 23,000 students. By 1996, the total number of universities stood at 37 with a student population of 234,581. The total number of students enrolled in all the universities in Nigeria by March 2002 is in excess of 526,780. Before 1960, there was no autonomous university in Nigeria. However, in 1962, four additional universities were established at Nsukka, Lagos, Ife and Zaria.

Another university was established in Benin in 1970. When it became impractical for the existing universities to accommodate the increasing demand for university education, seven additional universities were established at Sokoto, Port Harcourt, Ilorin, Jos, Kano, Maiduguri and Calabar in 1975. Current statistics claim that there are 104 universities in Nigeria, 27 federal including one military, 30 states and 32 private universities in Nigeria. These universities still fail to adequately cater for the demand for university education in the country. None of these universities falls within the World Bank's ranking of the best 200 universities in the world. Europe had 60, United States and Canada had 114, Asia had 15, Oceanic had 6, Latin America had 4, Arab world had one and Africa had no universities within this ranking. This discovery has serious implications for public investment in university education and policy. It implies that adequate public investment is not made in university education in Africa, and thus Nigeria, and that the qualities of these universities are relatively low.

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. 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 since around 1950, higher education world over 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.

According to Amin and Awung (2005), 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.

Alani (2004) examines the gap between the demand for and supply of university places in Nigeria. He points out the fact that the emergence of private universities on the educational scene in Nigeria was targeted at providing more spaces for applicants and also to meet the demand for quality and content in education. The article argues that the establishment and operation of private universities have however raised other issues that can limit access to university education. These among others, include the high fees charged by the institutions and the religious inclination of some of the universities. The excess demand in government owned universities cannot be compared with private university because most people are unable to afford the exorbitant fees charged by these institutions.

Regional disparity is another determinant of private returns to investment in education. In terms of regional disparity in private returns to investment in education, Onphanhdala and Suruga (2006) who categorized their data into the Vientiane Capital, northern, central and southern regions discovered that there are earning differentials in the regions.

Gender is another factor that may affect employment and earnings. While equal access to education for both men and women can be justified on human right and equality grounds, since resources are limited, the choice policy makers are facing everyday is really between investing in girl's education versus investing in boy's education. Investment choice is not the only reason why a comparison of returns to education for men and women is necessary.

According to Aslam (2007), there is a wide gender gap in labour market returns to education in Pakistan. Differential labour market returns to male and female education is one possible reason for large gender gaps in education in Pakistan. Onphanhdala and Suruga (2006) also discovered that gender differences determine returns to schooling. They found out that on the average, a female earn more than a man.

The need to understand the pattern of private returns to education is necessary in order to know whether the existing pattern of private market returns to education can provide an explanation for the observed patterns in primary, secondary and university applications and enrolment rates. Numerous studies have found investment in education to be a strong determinant of economic growth (Adesina, 1981; Akangbou, 1987; Edokat-Tafah, 1998; Aromolaran, 2002; Okuwa, 2004; Amin and Awung, 2005 and Kifle, 2007).

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 more skewed now 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.

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 etc.). 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.

Individuals acquire skills and knowledge to increase their values in the labour market which are being rewarded with higher earnings. According to Psacharopoulos (1994), private return to investment in education is an important factor in educational attainment. This can equally be used to explain people's behaviour in striving for different educational levels. 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. Education is critical in income distribution and economic development. This has led many countries to make public spending on education a priority.

The role of education as an instrument for promoting the socio-economic, political and cultural development of any nation can never be over-emphasised. According to London Economics (2005), human capital accumulation confers benefits to individuals, enterprises and societies which may be in form of higher earnings increase in productivity and economic growth. 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. Unfortunately, employees are not always rewarded according to their level of education. 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.

The variation in earnings of workers in Nigeria necessitated the study. There was a need to provide answer to the question: Why do we have variations in earnings among Nigerian workers? The need to provide explanation for the variations in earnings using essential variables that would make such explanation meaningful necessitated this study. Even though, there is a wide and growing literature on the empirical estimation of returns to schooling in both developing and advanced countries, the estimates for Nigeria are rare. This type of study is necessary in order to justify the differentials in workers' earnings and also to solve the problem of dearth of literature on private returns to investment in education among Nigerian workers. There is a need to improve on previous studies by looking at the extent to which demographic factors such as work experience, years of schooling, level of education, gender, sector of employment, occupation and age determine private returns to investment in education among Nigerian workers by using labour market survey data that covered the whole country, both rural and urban, and also across the six national geo-political zones in Nigeria.

It is against this background that the study investigated the extent to which work experience, years of schooling, level of education, gender, sector of employment, occupation, age and geo-political zone (native ability) determine private returns to investment in education among Nigerian workers in order to find out the variations in private returns as a result of these factors.

1.2 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.

Human capital accumulation confers benefits to individuals, enterprises and societies. The benefits can only be reaped if human resources with the required skills and talents, which are usually acquired through formal education, are gainfully employed and adequately rewarded in order to accelerate growth and development. Education must yield a higher return in order to be pursued from an economic point of view, thus, there was a need to provide answer to the question: Why do we have differential earnings among employees in Nigeria? This study was carried out to provide an empirical estimate of the variations in private returns to education. If this phenomenon is not addressed, the role of education as an instrument for promoting the socio-economic, political, and cultural development of Nigeria may never be achieved. It was in the light of the above that this study was carried out to investigate the extent to which inequality in earnings was determined by work experience, year of schooling, level of education, gender, sector of employment, occupation, age and geo-political zones.

1.3 Research Questions

The study provided answers to the following questions:

1. What are the average monthly earnings by level of education and sector of employment in Nigeria?
2. To what extent are there differences in the average monthly earnings by sector of employment and work experience in Nigeria?
3. To what extent are there variations in the mean monthly earnings by sector of employment and occupation in Nigeria?
4. What are the average monthly earnings by sector of employment and age in Nigeria?
5. To what extent are there differences in the average monthly earnings by sector of employment and gender in Nigeria?
6. What are the average monthly earnings by sector of employment and geo-political zones in Nigeria?

7. What are the composite contributions of level of education, years of schooling, occupation, gender, age, work experience and sector of employment to private earnings in Nigeria?
8. What are the relative contributions of level of education, years of schooling, occupation, gender, age, work experience and sector of employment to private earnings in Nigeria?
9. What are the rates of returns to investment in education in Nigeria?

1.4 Hypotheses

The following null hypotheses were formulated in order to accomplish the objectives of this study.

$HO_{1:}$ There is no significant difference in private returns to education on account of geo-political zone in Nigeria.

$HO_{2:}$ There is no significant difference in private returns to education on account of occupation in Nigeria.

$HO_{3:}$ There is no significant difference in private returns to education on account of sector of employment in Nigeria.

$HO_{4:}$ There is no significant difference in private returns to schooling among the three levels of education in Nigeria.

1.5 Purpose of the Study

The broad purpose of the study is to highlight salient issues on private returns to investment in education with the intention of bringing into the fore pertinent policy issues on the subject matter.

Specifically, the study aimed at:

- identifying the average monthly earnings by level of education and sector of employment;

- computing the average monthly earnings by sector of employment, work experience and gender;
- estimating the average monthly earnings by sector of employment and age;
- calculating the average monthly earnings by sector of employment and occupation;
- identifying the average monthly earnings by sector of employment and geo-political zone;
- calculating the private rates of return to primary, secondary and university
- graduates according to sector of employment;
- ascertaining the extent to which earnings (private returns) are determined by level of education;
- determining the composite contributions of level of education, years of schooling, occupation, gender, age, work experience and sector of employment on private earnings in Nigeria; and
- determining the relative contributions of level of education, years of schooling, occupation, gender, age, work experience and sector of employment on private earnings in Nigeria.

1.6 Significance of the Study

The study will be significant in that the result of the findings will show the useful indicators of the productivity, which entice individuals to invest in their own economic value. Formal education is an important determinant of individual earnings and socio economic status of a society. However, there are earning differentials due to different reasons. Several factors have contributed to differentials in earnings. The study will bring into limelight those demographic factors that predict private returns.

The findings of this study will ensure better understanding of factors responsible for the variations in private returns to investment in education by providing an empirical estimate of the variations in private returns to education. These will be of great importance to policy makers because it will bring the focus of attention to those demographic factors that determine private returns to investment in education thereby helping in the designing of policies and crafting of incentives that promote investment in

education. This study will be significant to both the employers of labour and employees, since it will bring into limelight those sectors of employment and occupation that reward workers. It will shed light on the need to improve earnings of workers by both public and private sectors. Public and private sector employers of labour should ensure that workers' remunerations commensurate with their level of education.

In Nigeria, there is paucity of literature on the determinants of private returns to investment in education among Nigerian workers. The study will assist in solving the problem of dearth of literature on the extent to which the demographic variables like level of education, years of schooling, occupation, gender, age, work experience and sector of employment determine private returns to education among Nigerian workers.

1.7 Scope of the Study

The content scope of the study is in the area of economics of education. It involves analyzing the private returns to education and determining the extent to which demographic factors like level of education, years of schooling, occupation, gender, age, work experience and sector of employment contribute to private returns to investment in education among Nigerian workers.

The geographical scope of the study is Nigeria. Workers in this study are differentiated according to private and public sectors that is, part of the economy that is being run by an individual or groups, and the one being run by the government respectively. The study used the 2005 Labour Market Survey of the National Manpower Board. The study covered the thirty - six states in Nigeria and the Federal Capital Territory (FCT), Abuja. In all, 19,888 Nigerian workers were used for this study. This comprises 7,032 workers with no formal education, 4,910 workers with primary school certificate, 4,873 workers with secondary school certificate and 3,073 workers with first degree. The study investigated the extent to which demographic factors such as level of education, years of schooling, occupation, gender, age, work experience and sector of employment determine private returns to investment in education among Nigerian workers.

1.8 Definition of Terms

The meanings of the following terms are explained as they are used in this study:

Investment in Education refers to paying a price to acquire a form of formal training in a school system. The price might be the number of years that the learner has devoted to that level of education or the amount of money spent on the training. The money outlay may be classified into two: the private cost incurred by the individual or the social cost which is incurred by the government. However, for the purpose of this study, investment in education is used to refer to monetary outlay on education by the individuals. Such investments are often made in anticipation of future benefits.

Private Earnings are the monthly incomes of workers. It is the net income, that is, the gross income minus the tax. A number of factors usually determine workers' private earnings. Such factors include level of education, type of occupation, experience, socio-economic background, etc.

Returns to Education can be defined in two ways: (a) the private return (b) the social return. Private return is made up of the costs and benefits to the individual and is clearly net of any transfers from the state and any taxes paid. The social returns highlight any externalities or spill-over effects and include transfers and taxes. A key component of each of these measures is the impact of education on earnings. This is perhaps the aspect of returns to education measurement where statistical methods have been most developed and most fruitfully deployed.

Rate of Returns This refers to the percentage increase in workers' earnings, which might be as a result of the additional educational qualification acquired. It is computed by dividing the difference between the coefficients of adjacent schooling levels by their differences in years of schooling.

Private Returns to Education refers to the benefits received by individuals acquiring education. This can be seen in additional income earned by workers as a result of their additional years of schooling. It is measured by deducting the average monthly earnings

of the immediate preceding educational level from that of the given educational level in the same sector.

University Education refers to the form of training that is provided in universities. Educational programmes provided in universities include certificate, diploma, bachelors' degree, postgraduate diploma, masters' degree and doctoral degree. However, in this study, it is used to refer to first degree only, that is, the Bachelor of Arts (B.A.), Bachelor of Science (B.Sc.), and Bachelor of Education (B.Ed.)

Sectors of Employment are classified into two broad categories in this study, that is, public and private sectors. The private sector is that part of the economy, sometimes referred to as the citizen sector, which is run by private individuals or groups, usually as a means of enterprise for profit and is not controlled by the state. By contrast, enterprises that are part of the state are called the public sector. While private non-profit organizations are also regarded as part of the private sector.

Workers in this study are differentiated according to private and public sectors. Private sector is part of the economy that is being run by private individuals or groups, usually for profit and is not controlled by the state. By contrast, enterprises that are part of the state are called the public sector. While private non-profit organizations are also regarded as part of the private sector.

Geo-political Zones (native abilities) are the geographical zones to which the country was divided for political considerations. Nigeria is divided into the following geo-political zones: North-East, North-West, North-Central, South- East, South-West and South-South. These zones represent the innate potentials of the people in each zone. The geo-political zones have been the basis for sharing social values in Nigeria. The geo-political zone is representing the native ability of the people in each zone.

Level of Education as used in this study refers to three levels of education which are primary school, secondary school, and university.

Occupation: The basic premise of an occupation is a type of work or job that may be found in a number of different types of work or industries. Occupations focus on positions that require skills that may be used in a number of different work settings, allowing the individual with that skill set to move with relative ease from one industry to another as the need arises. In this study, occupation is someone's job. It is a regular activity performed for payment. In other words, it is an activity that serves as one's regular source of livelihood. The activities are categorised into seven: Health and Safety, Education, Agriculture, Science and Technology, Commerce and Industry, Legal and Security and Information management.

Gender refers to the socially constructed roles of and relations between men and women. It refers to the social attributes and opportunities associated with being male and female and the relationships between women and men; and girls and boys, as well as the relations between women and those between men. These attributes, opportunities and relationships are socially constructed and are learned through socialization processes. They are context/time-specific and changeable. In the context of this study however, gender refers to the male-female classification which determines what is expected, allowed and valued in a woman or a man in a given context. In most societies, there are differences and inequalities between women and men in responsibilities assigned, activities undertaken, access to and control over resources, as well as decision-making opportunities.

CHAPTER TWO
REVIEW OF LITERATURE

The literature is reviewed under the following sub-headings:

2.1 Theoretical Framework

The human capital theory is suitable for this study as human capital accumulation confers benefits to individuals, enterprises and societies. According to this approach, education is an investment of resources of time and money in exchange for future benefits which is generally refer to as returns to education. People invest in education in order to increase their stock of human capital. Education has important implications which may be in form of interpersonal and inter-area differences in earnings, age earnings profiles, specialization on skill, etc. Since this study seeks to analyse the influence of schooling and other factors on earnings differentials, the human capital theory provides a firm base.

This theory is of the view that schooling produces skills that enhance productivity in the workplace and make the skilled worker more valuable to the firm. Individuals can affect their economic value in the labour market by choosing whether or not to take advantage of educational opportunities and training. If individuals take advantage of these opportunities, they will increase their human capital which will consequently increase their value to employers. Human capital theory suggests that employees should be treated as individuals with specific sets of skills and abilities which are usually acquired through formal education. The benefit of investing in education can only be reaped if human resources with the required skills and abilities are gainfully employed.

However, it should be noted that, individuals and the society derive economic benefits from investments in people. Although types of human capital investment generally include health and nutrition (Schultz, 1981), education consistently emerges as the prime human capital investment for empirical analysis. One main reason for this is that education is perceived to contribute to health and nutritional improvements (Schultz, 1963). Education must yield a higher return in order to be pursued from an economic point of view. Investing in education will lead to increase in human capital, which in turn will result to increase in individual's value to employers.

According to Babalola (2000), human capital is the stock of economically productive human capabilities, which can be formed by combining innate abilities with investments in human beings. Examples of such investments include expenditures on education, on-the-job-training, health and nutrition. Such expenditures increase future productive capacity at the expense of current consumption. Higher education improves an individual's economic productive ability through his/her systematic acquisition of knowledge and skills; students invest money and time to acquire such knowledge and skills and return on investment is to measure how much a student's investment adds value to his human capital post-graduation.

The Human Capital Theory provides the foundation for empirical analysis on investments in education and the returns to schooling. Mincer and Polachek (1974), writing on family investments in human capital, note that the optimal investment in human capital of any family member calls for a consideration of not only the human and financial capacities in the family, but also the prospective utilization of the capital that is being accumulated.

Consequently, the expectations regarding future family and market activities of individuals wield a great influence on the levels and forms of human capital investment. In other words, family investments in children's education and time allocations are linked, so that while the current distribution of human capital influences the current allocation of time within the family, the prospective allocation of time influences current investments in human capital. The provision of education is seen as a productive

investment in human capital, which the proponents of the human capital theory consider as equally or even more worthwhile than that of physical capital. Human capital theorists have established that basic literacy enhances the productivity of workers in low skill occupations. They further state that an instruction that demands logical or analytical reasoning or provides technical and specialized knowledge increases the marginal productivity of workers in high-skill or professional positions. Moreover, the greater the provision of schooling, the greater the stock of human capital in society and consequently, the greater the increase in national productivity and economic growth.

Returns to years of education in different countries are heavily influenced by the supply of workers with different amount of education (Schultz, 1999). In turn, the supply of workers with different levels of education is influenced by government policy choices. The concept of human capital refers to the fact that human beings invest in themselves to raise their future income by increasing their lifetime earnings. Given that people freely choose to invest, perfect capital markets exist and mobility of labour is not hindered, the human capital framework assumes that wage differentials reflect returns to investment in human capital (Terrell, 1989). Though it might not be true for each and every individual and the correlation is far from perfect, it is true for the average person that the amount of education an individual possesses is positively correlated with personal earnings.

The first model of this kind that was developed by Mincer (1974) assumes a complete absence of environmental inequalities and takes the length of schooling as a basic source of heterogeneity of labour incomes. The theory assumes that in the absence of serious market imperfections, earnings are equivalent to worker's marginal product and that the greater the worker's stock of human capital, the greater is his/her productivity and hence earnings (Shah, 1986). The investigation of the returns to education is relevant following Human Capital Theory (Schultz, 1961; Becker, 1993 and Mincer, 1974). According to Human Capital Theory, education can be considered as an investment project. It requires resources that have a cost in terms of opportunity cost through foregone earnings as well as direct cost, and increases the productivity of the individuals taught.

The most quoted model is Mincer's earnings equation which is empirical approximation of the human capital theoretical framework:

The earnings function can be written in this form:

$Y = f(S, EX)$

and can be estimated using a multiple regression equation specified in semi-logarithmic form:

$LnY = a + bS + cEX + EX^2$

Where:

LnY - natural logarithm of income

S – years of schooling

a - constant

b and c – regression coefficients

EX – the years of work experience

EX^2 – the square of years of work experience

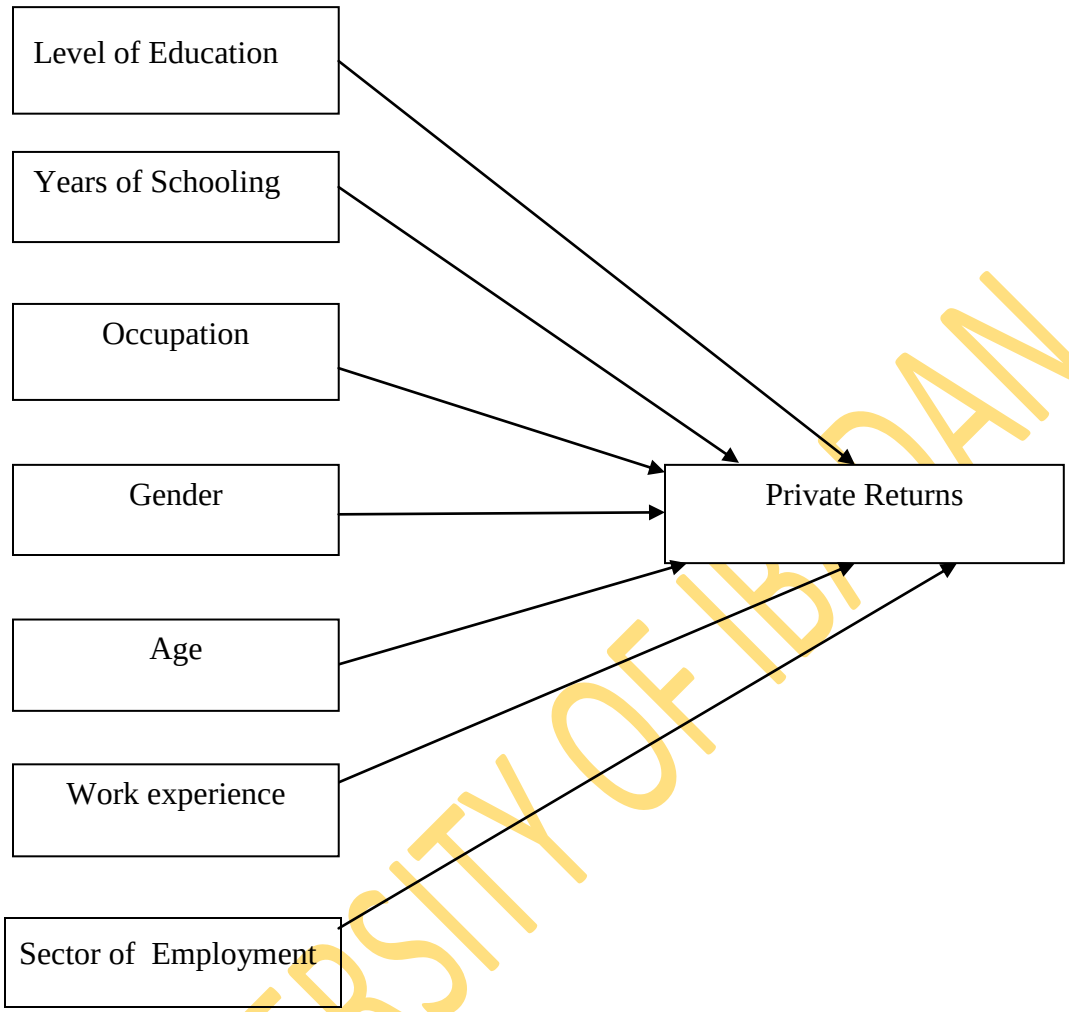

Figure 2.1: Factors determining private returns

There are variations in workers' earnings, even though they have the same educational qualifications. Education plays a central role in modern labour market. Hundreds 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. Despite the overwhelming evidence of a positive correlation between education and labour market status, it is not acceptable to understate the effects of other influential factors on earnings. It is very difficult to know whether the higher earnings observed among the better-educated workers are caused by their higher education, or whether individuals with greater earning capacity have chosen to acquire more schooling. Figure 2.1 shows other factors that

influence private earnings (returns) such as work experience, years of schooling, level of education, gender, sector of employment, occupation and age.

The contribution of education to economic growth and development occurs through its ability to increase the productivity of an existing labour force in various ways. Education plays a great and significant role in the economy of a nation, thus educational expenditures are found to constitute a form of investment. This augments individual's human capital and leads to greater output for the society and enhanced earnings for the individual worker. It increases their chances of employment in the labour market, and allows them to reap pecuniary and non- pecuniary returns and gives them opportunities for job mobility. Education is a source of economic growth and development only if it is anti-traditional to the extent that it liberates, stimulates and informs the individual and teaches him how and why to make demands upon himself.

Many economists consider human capital as the engine of growth of an economy (Romer, 1990; Barro, 1991 and Tallman and Wang, 1994). It is becoming increasingly clear to policy makers that productive employment with sustainable earnings is a key strategy for poverty reduction. Schooling is integral to this approach as it enhances the adaptability and efficiency of workers. Barro and Lee (2000) observed that a greater amount of educational attainment implies more skilled and productive workers, who in turn increase the output of goods and services. According to Harmon and Walker (1995), the rate of returns to schooling plays an important role in the determination of educational attainment and participation and ultimately on earnings received by workers in the labour market. However, there has been concern on how to maintain equilibrium position that is, where there will be no evidence of either shortage or surplus supply of educated people. A shortage of educated people might limit growth, while excess supply of it might create unemployment and thus limits economic growth and development.

The importance of education in a lifelong learning perspective for the knowledge-based society and the achievement of the university goals set by the National Policy on Education increase the overall need for investment in human capital. Investing in human resources is indeed essential to increase employability, economic prosperity and social

welfare. Despite the importance of education to the growth and development of the country, this sector is grossly underfunded, probably due to tight public budgets; there is also a clear pressure to ensure a more efficient use of existing resources and a larger appeal to private investment. This implies the need to make better use of research findings for educative policies.

Several studies have also confirmed that education appears to play a significant role in human capital formation, over and above any role it plays as a screening device (Psacharopoulos, 1994). In an attempt to quantify this relationship, Johnson and Wilkins (2002) estimated that a higher innate ability accounts for only between 15 to 33 per cent of the additional return of higher education accruing to graduates. Literacy can also play a significant role in human capital formation. The effect of literacy is rather indirect, though individuals with higher literacy are likely to have more education and hence higher earnings. Education yields tangible economic benefits for society. However, the precise magnitude of the benefits is unclear, and the quantitative estimates are very sensitive to the choice of model specification and the definition of variables used in the empirical analyses.

2.2 Returns to Education

Individuals educate themselves for a number of reasons. One of such reasons is personal satisfaction; education is seen as consumption good. However, since Becker (1964) and Schultz (1961) introduced the concept of human capital in the 1960s, education has mainly been seen as an investment. Education increases the stock of skills and productive knowledge embodied in people, and is thus considered to be an investment in human capital. As a result of the investment approach to education, return to education has received a lot of attention in the literature. The private return to education drives the individual demand for education. The relevant costs consist of tuition fees (minus grants), teaching materials, and travelling expenses (these are all direct costs) and foregone net earnings (opportunity costs). The relevant benefits consist primarily of higher net lifetime income, although non-pecuniary benefits may also play a role.

According to Blundell, Dearden, and Sianesi (2001), returns to education can be defined in at least three distinct ways:

1. The private return
2. The social return
3. The labour productivity

The private return is made up of the costs and benefits to the individual and is clearly net of any transfers from the state and any taxes paid. The social return highlights any externalities or spill-over effects and includes transfers and taxes. This return to an educational investment indicates the desirability of this investment to society. A difference between the private and social returns to education is a prime motivation for government intervention. The labour productivity relates to the gross increase in labour productivity. A key component of each of these measures is the impact of education on earnings. According to them, the measurement of the education effect on earnings is an area where one might expect agreement with extensive data available. However, a casual look through the literature on the impact of education on earnings reveals a wide range of estimates and an equally wide range of empirical approaches that have been adopted to estimate the return.

The measurement of the individual returns to education that is of the individual income gain from investing in more education has been the object of extensive theoretical and empirical research globally. Returns to education imply the financial returns to education. In a review of the rate-of-return analysis by the labour economists, Babalola (2011a and b) observed that their analyses seem to demonstrate that higher education generated lower private returns when compared with primary education. He observed further that in Latin America, a worker with six years of education earns 50 per cent more than a worker who did not attend any school. The gap increases to 120 per cent for those with 12 years of education (that is secondary school leavers), and exceeds 200 per cent for holders of university diplomas when compared with those with 12 years of education. This observation corroborated that of World Bank (2000).

World Bank (1986) and Babalola (2011a and b) explains that social returns were lower than private returns. While considering the fact that higher education gulps considerably higher investment, it was argued that public interest in higher education should be lower than in primary education. The World Bank (1986) made a strong case against public subsidy in higher education. The World Bank's analyses of the social rates of return suggest that in Africa, primary education should receive the highest investment priority, followed by secondary; and higher education should have the least.

The World Bank's position was that investment arrangement between levels of education in Africa must have accounted for the misallocation of resources in the sense that, the high degree of public subsidization of higher education might have influenced the social demand for higher education. This explains why higher education enrolments consistently grew faster than those of primary education. It was 4.5 times faster during the period 1980-1988. The cost-ratio amongst the three levels: primary, secondary and higher education was approximately 1:4:32. This implies that in Africa, every additional place in higher education could finance an extra class of primary school pupils, using an average class size of 30. However, if private return to primary education is lower than those of secondary and higher education, individuals might not be encouraged to invest in this level of education.

Several studies have estimated the returns to education for a number of different countries. Psacharopoulos (1985), in one of his comprehensive studies, calculated the returns for 61 countries by grouping countries by their level of economic development. He corroborated the earlier findings in which the rate of return follows a declining pattern by level of education. Psacharopoulos (1994) found that the most profitable educational investment opportunity was primary education, and secondary education was second. He attributed this to the low cost of primary education, and the high productivity differential between primary school graduates and those who are illiterate. He found that the returns to any level of education were highest in the least-developed countries, and lowest in the advanced countries of the West. For the United States, he reported a return of 11% for secondary school graduates, and 5.3% for those with a higher level of education in 1976.

Psacharopoulos and Patrinos (2002) concluded that the highest rates of returns are for primary education, most rates of returns to education are above 10 per cent and that rates of returns are on the average higher in developing countries than in industrialised countries.

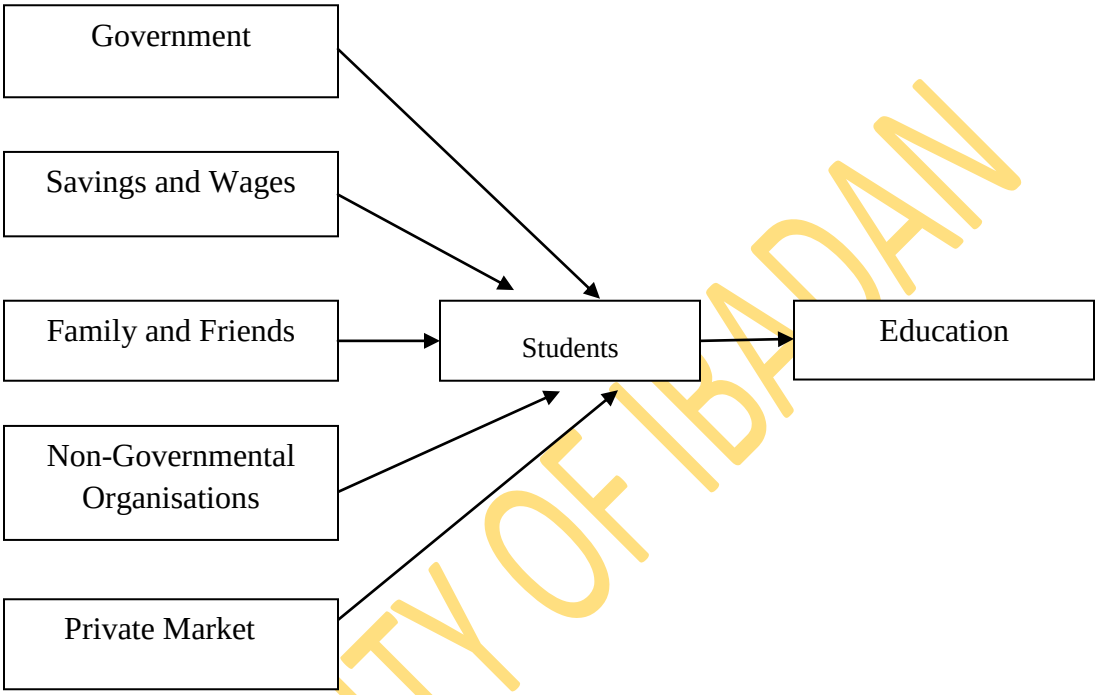

Figure 2.2: System of financial flow to education

Source: Adapted from Marsikova (2004)

Figure 2.2 shows various interest groups that are contributing money to the uplifting of different levels and types of education. Schooling produces skills that enhance productivity in the workplace and makes the skilled worker more valuable to the firm. Individuals and society derive economic benefits from investments in people. Various people contribute financially to education of students because of the expected benefits to an individual, the government as well as the society.

High education leads to an increase in earning capacity, a broader range of opportunity, and a more rewarding career. Most employers target university graduates in their recruitment campaigns. A graduate has a better prospect of being selected for a job

than an individual who did not attend university. Employers prefer highly educated people, because a highly educated person generally demonstrates the skills and qualities valued by them. Education allows the freedom to decide on a line of work or career and also provides a whole range of courses ranging from well-known academic subjects to less familiar ones. It also provides opportunities to select career-specific courses. Education not only allows you to choose a career or implement a career change, but also enhances career advancements.

A higher qualification becomes useful to get on with work at good times and boost employability in bad times. Research has shown that a higher qualification reflects on career progress not only in terms of climbing the ladder faster, but also in making bank accounts fatter. Not all the students in universities are those that walked in straight after school. The reasons to return could vary from a long-held ambition to simply a desire to change career path. Whatever the reasons, universities allow you to pursue your education at any time in your life. Universities also provide opportunity for personal growth by exposing students to a rich cultural and social milieu. University education is what remains with and help one to make a living. It is not just a means to earn a living, but also a means to better living.

According to London Economics (2005), several studies have analysed the way human capital accumulation confers benefits to individuals, enterprises and societies. Some of the benefits take the form of higher earnings, productivity or economic growth. In addition, investment in human capital has also been related to a wide range of non-economic benefits arising from better-educated people and higher knowledge in society. Investment in human capital is an important determinant of individuals' earning capacity and employment prospects, and therefore plays an important role in determining the level and distribution of income in society, firms' productivity and economic growth.

Education has equally been associated with various non-economic benefits, including greater social cohesion, lower crime and better health. Research shows that human capital accumulation, through education provides employees with productivity-enhancing skills, and their wages and employment conditions typically reflect their

increase in productivity. The benefit of education to an individual can be categorised into three. In the first place, education enables an individual to participate in the labour market; secondly, education enables an individual to experience less unemployment and, finally, higher skills means that workers earn, on average, higher wages than those with lower skills.

Education enables people to participate in the labour market. The higher an individual's educational level, the more likely it is that he or she will participate in the labour market. The likelihood of being unemployed over the course of a working life is also related to education. Education does not only increase the probability of being employed, once in employment, better-educated individuals earn considerably more than their less-educated peers. Mincer (1974) estimated the effects of schooling on wages to be around 10% using US census data.

Investment in education confers a number of benefits in addition to higher wages. The interaction at the firm level between workers with different education levels can produce spill over effects. These are involuntary effects from better-educated employees likely to take place within firms when workers benefit from interacting with better-qualified staff. Hence, the effects of higher education would be observed not only in higher productivity of the educated workers, but also in the form of increases in the productivity of other workers as a result of learning by imitation and improving their skills from working with them. Lucas (1988) asserts that a number of studies have related the wages of individuals not only to their own education, but also to the education level of their co-workers.

This approach is meant to capture productivity spilling over from educated workers to less educated ones. However, the empirical research so far has yielded ambiguous results. For example, Acemoglu and Angrist (2000) find that the effect of average schooling levels on average wages is insignificant at a US state level, whereas Moretti (2002) finds a significant impact of the share of graduates in the workforce on the wages of workers with less education.

2.3 Factors Determining Private Returns to Education

Education plays a central role in modern labour markets. Hundreds of studies in different countries have confirmed that better educated individuals earn higher wages, experience less unemployment, and work in more prestigious occupations than their less educated counterparts. Despite the overwhelming evidence of a positive correlation between education and labour market status, social scientists have been cautious to draw strong inferences about the causal effect of schooling. In the absence of experimental evidence, it is very difficult to know whether the higher earnings observed among the better-educated workers are caused by their higher education, or whether individuals with greater earning capacity have chosen to acquire more schooling.

According to Card (1999), the emergence of large-scale microeconomic datasets in the 1960s lead to an outpouring of research on education and earnings, much of it focused on the issue of "ability bias" in the earnings differentials between more and less educated. The concept of the rate of return on investment in education is very similar to that for any other investment. It is a summary of the costs and benefits of the investment incurred at different points in time, and it is expressed in an annual (percentage) yield, similar to that quoted for savings accounts or government bonds.

Level of education attained by an individual affects his/her 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 as well as occupation, thus, stressing the importance of subject of study and, consequently, the importance of occupation.

Gender influences returns to investment in education. Psacharopoulos (2002) found that the returns to an additional year of education is marginally higher for girls (12.4 per cent) than for boys (11.1 per cent). Neuman (1991), using Israeli data, found that the returns to female education are higher than those for males. The reason might be be the nature of the respondents used for the study, because such calculations are based on the observed wages of women who are working in the labour market. Several other

women have chosen to work at home, tacitly placing a higher value on their household activities time than on market wages. In addition, the truncation of women's earnings' samples leads to classic econometric biases documented by Heckman (1979).

In recent work, correction for selectivity bias does not appear to change significantly the returns on investment in women's education (Psacharopoulos and Tzannatos 1992). However, the fact remains that rates of return for women do not take into account household production. It is rather difficult to answer the question of whether wage differences across genders are due to labour market discrimination or to differences in career choices and quality of education. However, most of the studies, argue that factors such as career choices or school quality, are ignored and, consequently, the estimated differences in returns to education between gender can be biased.

Aslam (2007) finds out that in Pakistan, there is a wide gender gap in labour market returns to education. Differential labour market returns to male and female education is one possible reason for large gender gaps in education in Pakistan. Earnings function estimates reveal a sizeable gender irregularity in economic returns to education, with returns to women's education being substantially and statistically significantly higher than men's. However, a breakdown of the gender wage gap suggests that there is highly differentiated treatment by employers. He however concludes that the total labour market returns are much higher for men, despite returns to education being higher for women. This suggests that parents may have an investment motive in allocating more resources to boys than to girls within households.

Onphanhdala and Suruga (2006) also discovered that gender differences determine returns to schooling. According to them, on the average a female earn more than a male. A more detailed categorization of data into the northern, central and southern regions has confirmed our expectation, that employment outside Vientiane Capital would yield a lower wage income.

Regional disparity is another determinant of private returns to investment in education. In terms of regional disparity in private returns to investment in education,

Onphanhdala and Suruga (2006) who categorized their data into the Vientiane Capital, northern, central and southern regions discovered that there are earning differentials in the regions. It was discovered that a worker in the northern, central and southern regions earn about 28%, 16%, and 21% lower than his/her counterpart in the Vientiane capital. This means that employment outside Vientiane capital would yield lower earnings.

According to Schultz (1961) and Becker (1964), experience, training, and education are the three main mechanisms for most individuals, and that education acquired by individuals determines their level of absorption of new information, acquisition of new skills as well familiarization with new technologies. In recent years, there has been an increase in the number of studies that have sought to analyse private returns to investments in education.

Another study carried out on the relationship between wages and experience shows that initial wages rise with experience and then begin to fall because the data were based on a cross-section. Earnings rise during the early working years of employment. It was also observed that individuals with more experience are generally older and less educated than younger people. Again, skills depreciate over an individual's lifespan. The standard model relating education, experience, and age is based largely on the work of Mincer (1974). Optimal investment in human capital is based on a maximization problem that compares the net present value for an additional year of schooling, for example, to that of no additional investment.

Opposing the significant effect of tenure on wages, Altonji and Shakotko (1987) argue that the partial effect of tenure on wages was small because the strong relationship between tenure and wages was due primarily to heterogeneity bias across individuals and across job matches. Similarly, Jacobson, Lalonde, and Sullivan (1993) have found that high tenure workers separating from distressed firms suffer long term losses averaging 25% per year. Re-examining the wage-tenure relationship, Williams (1991) has found that tenure increases wages only in the first several years of employment

The occupation in which a worker is employed has an important effect on the level of his/her wages and salaries. Disparities in earnings between different occupations have been often noticed in less developed countries than in developed countries (Kothari1970). Earnings differentials would not indicate compensating differentials but rather signal enlarged inequalities because some individuals not only are denied the possibility of working at high and satisfied job levels, but also have to accept lower wages (Hartog, 1986). For that reason, the reward for education differs substantially by the job level at which an individual is occupied. The argument against the above assertion is that occupation and jobs are irrelevant entities in explaining earnings differentials because market forces tend to equate rates of return throughout and thus equilibrium situation will exist in the long-run.

The partial cause of earnings differentials may also be a sector of employment. Mann and Kapoor (1988) have explored that, on the average, public sector workers are paid much higher wages than the private and joint sector workers. Rees and Shah (1995) have reasoned that the private wage determination is subject to profit constraint, whereas the public sector wage determination is subject to an ultimate political constraint. Thus, wages in the public sector are higher than in the private sector. Pritchett (1999) highlights the situation in which governments are taking resources away from non-governmental activities in the form of taxes so as to pay additional workers whose marginal product in the public sector is very low but are paid much higher wages than workers in the private sector. According to Onphanhdala and Suruga (2006), government salaries appear to be well below the market level and salary increases are largely given as administrative rewards rather than as adjustments to market conditions. It was also discovered that salaries in state-owned enterprises and the private sector are substantially above those in the government, and that these salaries increased substantially faster than those in the public sector. The salary scale in the government is quite flat, with the salary of top officials about twice that of the low paid individuals. A top government official might earn only one tenth of the salary paid for a similar position in a private enterprise. This means that there are earnings differentials in public and private sectors.

The precise channel through which education impacts on earnings has been a matter of controversy, as it has proved difficult to isolate its effect from other factors. Although many studies find evidence of a strong positive relationship between educational attainment and labour market outcomes, some authors have argued that such effects are overestimated as they do not include unobserved factors, such as individuals' innate ability, family background or other social factors.

Ashenfelter and Krueger (1994) in a study of identical twins showed that the effects of controlling for ability, race, social class and family background could lower estimated returns to education by about 25 per cent. However, in another study, Ashenfelter and Rouse (1998) showed that error in the measurement of human capital acquired may lead to an under-estimation of rates of return by as much as 30 per cent, which may arise as a result of omission of the quality of education. Ashenfelter, Harmon, and Oosterbeek (2001) find that returns to education are higher in the United States compared to other countries, and they continue to increase; and that differences due to estimation method are considerably smaller than is sometimes reported.

A human capital enhancing function of education is not completely incompatible with theories that see the role of education primarily as a device to signal desirable personal attributes to employers. Arrow (1973) and Spence (1973) put forward the theory that it is not education in isolation which yields higher wages, but rather that education is used by employers as a screening device to identify better workers and likewise by workers to signal their potential high productivity. A worker's level of education is thus correlated with, but not the cause of high productivity.

It is observed that better educated people typically are better paid, have access to more information, and enjoy greater economic success. Educational attainment serves as a signal of 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 also implies that an individual has enough self-motivation and persistence to complete studies and to achieve goals.

Years of schooling increase the return to education. According to Altonji (1998), the wage level rises by 8 per cent in response to each additional year of academic postsecondary education. Ashenfelter and Krueger (1994) find that each year of schooling increases wage rate by 12 –16 per cent. Card and Krueger (1992) find that being educated in a higher-quality school positively affects the return to additional years of schooling. Linear returns to the individual suggest that extra years of schooling increase wages, but at a constant rate. Increasing returns suggest that wages increase an increasing rate. This matters because income inequality in the present generations may be affected by increasing returns. Increasing returns potentially indicate a widening income gap, while decreasing returns would imply a declining income gap as education levels increase.

2.4 Methodological Issues in Estimating Private Returns to Education

There are several methods of calculating rates of returns to education in literature. According to Woodhall (2004), elaborate method, earnings functions and short-cut methods can be used to calculate rates of returns. Historically, the elaborate method was used in the beginning of the economics of education in the early sixties, followed by the Mincerian method in the seventies. Both methods try to map observed data to a rate of return formula. The discounting of actual net age-earnings profiles is the most appropriate method of estimating the returns to education because it takes into account the most important part of the early earnings history of the individual. However, this method requires comprehensive data – one must have a sufficient number of observations in a given age-educational level cell for constructing "well-behaved" age-earnings profiles (that is, not intersecting with each other). However, the choice of method to use depends on available data.

One of the practical problems of calculating rates of returns in developing countries is data collection. The data needed in an ideal situation to calculate rates of returns are:

1. Data on earnings of workers classified by age, qualification, years of schooling, occupation, discipline, gender, socio background, location of

employment, and some measure of natural ability.

2. Data on current expenditure of educational institutions by level.
3. Estimates of the capital value of buildings and equipment.
4. Estimates of private expenditure on fees, books, stationery, feeding, etc.
5. Public expenditure on scholarships.
6. Average income tax rates.
7. Data on labour market conditions, including unemployment rates, labour force participation by age, gender and educational level.

One of the methods of calculating rates of return is complete method. If the required data are available, they can be used to construct age-earnings profile before and after tax, which are needed for both the cost and the benefit aspects of the calculation, and to provide estimates of the direct private and social costs of education. In practice, detailed information needed is rarely available. In many cases, data are not available showing the earnings of workers of different ages and different levels of education that are necessary for calculations of age earning profiles.

Another method developed in several studies for estimating the rate of returns is earnings function. A variety of methods have been used to explore the education-earnings link. The most widely accepted method relates individuals' wages to the number of years they spent in education. Under this approach, the measured impact of schooling is the average increase in wages accruing to an individual as a result of one additional year of education. The estimates of the returns to education obtained this way are called Mincerian returns. This concept was used by Mincer in 1974 to explain the pattern of individual earnings in the United States of America (USA). He opined that earnings may be influenced by different factors including not only age, education, on-the-job training, occupation, the number of hours or weeks worked, urban or rural location, but also, in many cases, personal characteristics such as sex, race, or ethnic origins, social class or family background, language, ability and motivation. He used an earnings function to analyse the relationship between formal education, experience and earnings of male workers in USA. This involved testing hypothesis that an individual worker's earnings

are a function of variables including years of schooling (S) and the number of years of work experience (EX).

The earnings function can be written in this form:

$Y = f(S, EX)$

and can be estimated using a multiple regression equation specified in semi-logarithmic form:

$LnY = a + bS + cEX + EX^2$

Where:

LnY - natural logarithm of income

S – years of schooling

a - constant

b and c – regression coefficients

EX – the years of work experience

EX^2 – the square of years of work experience

This form of an earnings function sometimes also known as a Mincerian Function Method, which is being used to analyse the pattern and determinants of earnings was first developed by Mincer in 1974. In this semi-log specification, the coefficient on years of schooling b can be interpreted as the average private rate of return to one additional year of schooling, regardless of the educational level this year of schooling refers to. The methodology adopted is fairly standard and has been applied widely in the empirical literature on returns to schooling.

In ascertaining the returns to schooling over time, the earnings function proposed by Mincer (1974) is used. The advantage of the Mincerian way of estimating the returns to education is that it can smooth out and handle incomplete cells in an age-earnings profile matrix by level of education. The disadvantage, of course, is that it requires a sample of individual observations, rather than pre-tabulated mean earnings by level of education. Also many researchers have modified the Mincerian method by incorporating schooling dummy variables in order to capture different levels of school attainment and how they affect earnings.

The number of years required to complete primary schooling is six; six more years are needed to complete secondary school (ordinary level); and an average of four years is needed to complete a bachelor degree at the university level. Thus, calculations of the private returns to an additional year of schooling at the primary, secondary and tertiary levels involve a system of six, six and four years, that is, 6-6-4 respectively. It must be pointed out that the statutory number of years for the completion of any given level of schooling may differ from the actual number of years spent to attain a particular level. This may be due to the possibility of grade repetition, entry examination failures, temporary school dropout and re-entry, among other factors. Unfortunately, these are not usually accounted for. As a result, statutory number of years is often used in calculations.

Short-cut method is another method that is sometimes used to calculate rates of returns to education. This method is used when data required for full calculation of earnings functions are not available. However, if there are data showing the average earnings at one point in time of workers with primary, secondary and higher education schooling, as well as estimates of the annual costs of primary, secondary and higher education, this method can be used.

The formula for the short- cut method is:

$$R = \frac{E(High) - E(Sec)}{n(E(Sec) + C)}$$

where:

E (High) – average earnings of university graduates.

E (Sec) – average earnings of secondary school certificate holders.

n – normal years of schooling.

C – annual cost of higher education.

The internal rate of return to investment in university education can be calculated both for an individual student (private returns) and for the whole economy (total returns). Ideally, a rate of return on investment in education should be based on a representative sample of a country's population. But in reality this is the exception rather than the rule. It is problematic when the estimated rates of return are based on a survey of firms (rather than households), because firm-based samples are highly selective. In order to control survey costs, such samples focus on large firms with many employees. Second, the questionnaire is typically filled out by the payroll department rather than by the individual employee.

This approach leads to the use of samples concentrated only in urban areas. Another problem occurs when rate-of-return estimates are based on samples that include civil servants, since public-sector wages, in most cases, do not reflect market wages. In many countries, the majority of graduates end up in public-sector employment. The concentration of graduates in public-sector employment is identified as a problem in major growth studies. However, rate-of-return estimates based on civil-service pay are useful in private calculations regarding the incentives set by the state to invest in education. A less serious problem occurs when wage effects are confused for returns on investment.

Another methodological limitation is that many researchers feel obliged to include in the regression whatever independent variables they seem to have in the data set, including occupation. In effect, this procedure leads to those other variables taking away

a significant part of the effect of education on earnings that comes from occupational mobility.

According to Psacharopoulos 1994, the elaborate method follows an algebraic definition of the rate of return, which is the rate that equates a stream of benefit to a stream of costs for a given period. In this method of private rate of return calculation, the only cost of the education project under evaluation is the opportunity cost of staying on in school beyond the age of 18 instead of working in the labour market. The data requirement of this method is quite demanding and is usually not available for most developing countries. The shortcut method estimates in an explicit way what the earnings method estimates does implicitly. In this method, one can use tabulated earnings of workers to estimate private returns to education. Also, it is easy to add the resource cost of schooling to arrive at the social returns. Hence, it is of great advantage where earnings of individuals are not available.

The basic earnings function is due to Mincer (1974) and involves the fitting of a semi-log ordinary square regression using the natural logarithm of earnings as the dependent variables, and then the years of schooling, potential years of labour market experience and its square as independent variables. In this semi-log earnings functions specification also used by Appleton, Hoddinott and Krishnan (1999), the coefficient on years of schooling can be interpreted as the average private rate of return to one additional year of education, regardless of the education level to which this year of schooling refers.

2.5 Empirical Studies on Private Returns to Education

Sackey, (2008) examines private returns to schooling in Ghana over a seven year period and the implication for schooling and migration. He used data from the 1992 and 1999 Ghana living standards surveys and ordinary least squares technique and finds that the private returns to schooling at higher levels of education have increased for both male and female workers. The results shows that the return to an additional year of secondary schooling for female workers have increased from 7.3 per cent in 1992 to 12.3 per cent in 1999, while that of tertiary education increased from 11.4 per cent in 1992 to 18.4 per

cent in 1999. For male workers, the return to an additional year of secondary education decreased from 7 per cent to 6 per cent, while the return to tertiary education increased from about 13 per cent to 19 per cent. He suggests that to sustain the gains realized in educational attainment, lingering issues of gender equity need to be addressed by policy makers so as not to leave females behind in the intergenerational race for improvements in quality life.

Keswell and Poswell (2004), estimating the returns to schooling in South Africa for the periods 1995, 1997 and 2000, found that after accounting for censoring (via the use of tobit models), the range for the private returns to schooling was 15.26%. Their study showed a decline in the returns to an additional year of schooling from 23.2% in 1993 to 18.2% in 2000. The variables used in their analysis were the years of schooling, age and its quadratic terms. In their alternative uncensored models (based on OLS regression), the authors found the returns to an additional year of schooling to be between 17% and 26%. In this framework, the returns to schooling had fallen from 24.5% in 1993 to 20.2% in 2000. The authors noted, however, that controlling for race in their models altered the results remarkably: including race dummies, the estimated Mincerian rate of return in all years considered is less than half of that indicated (Keswell and Poswell, 2004: 839).

Marsikova (2004) uses the short-cut method to calculate private rate of return. He made comparisons of the private returns between private and public universities in Czech Republic and comes out with the findings that students expect higher rate of returns from higher education. It has become clear that educational attainment is not only vital to the economic well-being of individuals but also for that of nations. Access to and completions of education are determinants in the accumulation of human capital and economic growth. Education is a force that develops well-rounded and engaged citizens, and builds more cohesive and participatory societies.

Pritchett (1999) uses standard econometric studies to suggest that the growth of educational capital per worker seems to show no correlation with the growth of output per worker. He attributes the negative impact of education in developing countries to a

combination of defective schooling i.e. school quality might have been too low to raise cognitive skills productivity, greater supply than demand for educational labour may have caused the rate of returns on education to fall, and the demand for educated labour may become individually remunerative but socially wasteful or counterproductive activities. He recommends investment in "basic" education as a merit good, but concludes that higher education in developing countries could lead to the persistence of damaging policies.

Ashenfelter, Harmon, and Oosterbeek (2001) conducted a meta-analysis of 27 studies in 9 countries with data ranging from 1974 to 1995. They found that the average returns to education vary from 7 per cent to 9 per cent annually. They also found that rates of return to education seem to be the highest in the U.S. This is due to many factors, but most importantly perhaps due to rapid increases in returns over the last two decades. Their analysis indicates that investments in education provide considerable economic returns. These findings suggest that understanding the benefits of education to individuals is an important area of exploration for both individuals and policymakers.

Based on a Mincerian earnings function method, a number of studies on education and earnings in Africa found that the private rate of return to an additional year of schooling was quite high. For countries in Africa, it is commonly asserted that the private returns to investment in education are highest at primary level and thus, primary education should be the number one investment priority (Psacharopoulos, 1985, 1994). However, a number of recent studies on education in Africa have found that the private rates of return not only are relatively lower than suggested in the conventional pattern but also increase with the level of education. Challenging the view expressed by Psacharopoulos, Bennell (1996) argues that the conventional rate of return on education patterns almost certainly do not prevail in Sub-Sahara Africa (SSA) under current labour market conditions.

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. Such studies include; surveys of estimates for Botswana by Siphambe (2000),

Cameroon, Ghana, Kenya, Zambia and Zimbabwe by Bigsten, Isaksson, Soderbom, Collier, Zeufack, Dercon et al. (2000), South Africa by Mwabu and Schultz (2000), Ghana by Jones (2001), Kenya by Wambugu (2001), Nigeria by Aromolaran (2002) and Okuwa (2004), Burkina Faso, Cote d'Ivoire, Ghana, Kenya, Nigeria and South Africa by Schultz (2003), Kenya and Tanzania by Soderbom, Teal, Wambugu, and Kahyarara (2004), Burkina Faso by Kazianga (2004), Cameroon by Amin and Awung (2005), and Rwanda by Lassibille and Tan (2005).

According to Aromolaran (2002), in the last two decades, primary and secondary school enrolment rates have declined in Nigeria, while enrolment rates in post-secondary school have increased. Using household survey data from 1996/97 to 1998/99 for Nigeria, and ordinary least squares method finds the returns to an additional year of schooling at the post-secondary to be 10.4% for male and 12.2% for female wage earners, and 13.7% for self-employed male and 15.4% for self-employed females. Generally, the wage returns to an additional year of post-secondary education were found to be between10% and 15% for workers in the labour market in Nigeria. At the primary and secondary levels, however, these returns were quite low, ranging between 2% and 4%. On the basis of his empirical results, the author concludes that increasing public investment to encourage increased attendance in basic education is not justifiable on grounds of private efficiency, unless investments to increase school quality have higher private returns.

In a different study on the Nigerian economy, Okuwa (2004) used data from the 1995 Nigerian labour market survey to examine the private returns to higher education. She used descriptive and earnings function methods to suggest that for all levels of education, the returns to schooling were higher for private sector workers than public sector workers. The returns to schooling also increased as higher levels of schooling are attained. The return to an additional year of secondary schooling was -0.5% for males and 3.5% for females. At the university level, schooling returns were16.3% for males and 10.7% for females. In the private sector, the returns to additional year of university education brought returns of 16.8%, while in the public sector this was 12.6%. On the bases of these findings, the author provides a policy recommendation that the university,

which attracts the highest magnitude of returns, should be properly funded and equipped with modern technology, especially the laboratory, library, information system and infrastructure.

Kimenyi et al. (2006) examined human capital externalities and private returns to education in Kenya using 1994 data sets from a national welfare monitoring survey. They found a positive relationship between the level of education and the associated returns. Taking into account human externalities, the returns to an additional year of schooling increased from about 8% for primary school to 23% for secondary school, and then to 25% for university level of education. At the university level, the returns to schooling were higher in urban than rural areas (about 61% for urban females versus 21% for rural females, and 35% for urban males versus 17% for rural males). Typically, returns on educational investment are higher at lower levels of schooling and also higher for countries at lower levels of economic development.

The scarcity of human capital in low income countries provides a significant premium to investing in education. The high returns on primary education provide an added justification for making education a priority in developing countries. In low income countries, the returns are high. Private rates of return are higher than social returns. This is because of the public subsidization of education and the fact that typical social rate of return estimates are not able to include social benefits. Nevertheless, the degree of public subsidization increases with the level of education, which has regressive policy implications. Higher education remains a profitable investment for individuals in high-income countries, as represented by the private rate of return.

Psacharopoulos (1973), reported estimates of private returns to primary, secondary and tertiary education from a 1966 pre-tax survey data from western Nigeria to be 30 per cent, 14 per cent and 34 per cent, respectively. Akangbou (1977) used data from Mid-western Nigeria to estimate private rates of return on education of 13.4 per cent for lower secondary school, 11.9 per cent for secondary-technical, 11.2 per cent for upper secondary school and 17.2% for university levels.

2.6 Appraisal of Reviewed Literature

All the reviewed literature agreed that education and earnings are positively linked (Akangbou (1987), Card (2001), Okuwa (2004), and Sackey (2008)). Education is known to be an important determinant of earnings in the market economies. Numerous contributions to the field of economics of education have shown for different countries and time periods, that an individual's academic qualifications play an important role in establishing the salary he or she receives.

Universities are important industries in the economy. Investment in education yield high returns to individuals, society and the government. This assertion is supported by Harmon and Walker (1995) and Barro and Lee (2000) who observe that a greater amount of educational attainment implies more skilled and productive workers, who in turn increase the output of goods and services in the society. The rate of return to schooling plays an important role in the determination of educational attainment. This could be seen in the dramatic increase in the number of students seeking admission into universities because of the importance attached to university education by the entire populace. The literature also agreed that even though education plays an important role in the labour markets by having better educated people earning higher wages, experience less unemployment, and work in reputable occupations than their less educated counterparts, there are other demographic factors that determine earnings.

In Nigeria, reports on empirical studies on the variation in the returns to different levels of education in general and university education in particular are still scanty. Going through the available literature, one may conclude that private returns are yet to be critically examined in Nigeria. Most studies already carried out in this area in Nigeria are limited in scope. It appears the present study is the only one that covers the whole country using the 2005 labour market survey data. There is no study that investigated the contribution of all the variables used in this study, which are years of schooling, level of education, occupation, gender, age, sector of employment, and work experience on private returns to university education in Nigeria.

CHAPTER THREE
METHODOLOGY

The chapter is discussed under the following sub-headings: research design, variables used in the study, population, sample and sampling techniques, instrumentation, validation of instruments, test for reliability of instruments, data collection procedure, method of data analysis and test of hypotheses.

3.1 Research Design

This study used both descriptive survey and non-experimental research designs. The survey made it possible to establish the sex, age, educational background, experience and earnings among workers in Nigeria. The non-experimental research design was used to determine the direction and magnitude of relationships among age, experience, gender, occupation, level of education and years of schooling on private returns; and in the process of testing research hypotheses.

3.2 Variables used in the Study

The variables used in the study can be classified into two categories, namely independent and dependent variables. The independent variables are level of education, years of schooling, occupation, gender, age, work experience and sector of employment, while the dependent variable is the private returns.

3.3 Population of the Study

The population of this study comprises 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. This represents the most recent and comprehensive data on labour market characteristics. The survey covered all the 36 States and the Federal Capital Territory, Abuja, as well as the 774 Local Government Areas in the country. Table 1 shows how the study arrived at a total of 36,458 comprising the population of the study.

Table 3.1: Study population by age-group and sex

Age Group	Sex of Respondent					
	Male		Female		Both Sexes	
	No	%	No	%	No	%
0 - 4 Years	**2993**	**10.04**	**3022**	**10.97**	**6015**	**10.48**
5 - 14 Years	7877	26.41	7022	25.49	14899	25.97
Below15 Years	*10870*	*36.45*	*10044*	*36.46*	*20914*	*36.45*
15 - 24 Years	6369	21.35	6175	22.42	12544	21.86
25 - 34 Years	4660	15.62	4768	17.31	9428	16.43
35 - 44 Years	2968	9.95	2958	10.74	5926	10.33
45 - 54 Years	2661	8.92	2216	8.04	4877	8.50
55 - 64 Years	1274	4.27	827	3.00	2101	3.66
65 - 70 Years	597	2.00	336	1.22	933	1.63
15 - 70 Years	*18529*	*62.13*	*17280*	*62.73*	*35809*	*62.42*
Above70Years	426	1.43	223	0.81	649	1.13
Total	29825	100.00	27547	100.00	57372	100.00
% of Grand-Total		51.99		48.01		100.00

Source: Kadejo (2005)

3.4 Sample and Sampling Techniques

Purposive sampling technique was used to select 19, 888 workers from the population of 36,458 workers who participated in the study. The total sample size from this study is 19,888 workers, made up of 14, 375 workers in the private sector while, 2,822workers are in the public sector. The purposive sampling technique was used to select 7,032 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 19,888.

3.5 Research Instruments

No research instrument was developed for this study as it made use of secondary data by the National Manpower Board. However, the board constructed and used a structured questionnaire. The National Manpower Board was merged with Nigerian Institute of Social and Economic Research (NISER) in 2006. It was a Nigerian labour market survey carried out in 2005. The data represent respondents from all the sectors of the economy. The survey yielded information on earnings, age, sex, marital status, highest educational qualification, specialized education, employment experience and other personal information that suited this research. Only relevant data to this study were extracted from the data set for this study.

3.6 Validation of Instrument

The National Manpower Board validated their instrument before using them by drawing experts from selected organisations such as National Manpower Board, State Manpower Committees (SMCs), Federal Office of Statistics (FOS) now National Bureau of Statistics (NBS), Local Government Manpower Units (LOGMUs), National Population Commission (NpopC) and National Planning Commission(NPC).

3.7 Data Collection Procedure

The defunct National Manpower Board used the staff of the State Manpower Committees (SMCs), Federal Office of Statistics (FOS), Local Government Manpower Units (LOGMUs) and National Population Commission (NpopC) as field assistants. Very senior officials of National Manpower Board and National Planning Commission conducted training for supervisors and enumerators at each state headquarters and also carried out the general supervisory and quality control services throughout the period of field operations.

3.8 Method of Data Analysis

The data collected were analyzed using multiple regression and Mincerian model of earnings which is widely used in empirical labour economics to estimate returns to education. Research questions 1-6 were answered using descriptive statistics to highlight

the earnings of primary and secondary school holders as well as university graduates. Multiple Regression analysis was used to analyse research questions 7 and 8. This was used to provide information on the composite and relative contributions of the independent variables (level of education, years of schooling, occupation, gender, age, work experience and sector of employment) to the dependent variable (private returns).

Research question 9 was answered using Modified Mincerian equation. While One-way Analysis of Variance (ANOVA) and Scheffe Post hoc analyses were used to test for differences in each of the variables in hypothesis 1 among the different geo-political zones, and in hypothesis 2 among occupational groups, and also in hypothesis 4 among the levels of education. Multiple comparative tests (Scheffe Post- hoc analysis) were used to show the magnitude of effects across the various categories. ANOVA was used to test hypothesis 3. All the hypotheses formulated were tested at a minimum of 0.05 level of significance.

CHAPTER FOUR
RESULTS AND DISCUSSION

This chapter contains the results of analyses and discussion of findings.

4.1 Results

Research Question 1: What are the average monthly earnings by level of education and sector of employment in Nigeria?

Table 4.1: Average monthly earnings by level of education for private and public sectors

Sector of Employment	Level of Education				Group Total
	No Education Mean (N)	Primary Mean(N)	Secondary Mean(N)	University Mean(N)	Mean (N)
Private	11,239.12	12,156.18	13,865.43	25,341.98	13,368.54
Public	18,473.01	12,719.18	16,425.16	26,168.41	21,558.64
Group Total	11,459.81	12,201.15	14,288.07	25,798.85	14,692.39

Presented in Table 4.1 are the mean earnings by level of education and sector of employment. Level of education has been classified into four categories. These are those without education, primary school certificate holders, secondary school certificate holders and university degree holders. Sector of employment was classified into private and public sectors.

While the total sample mean earning turned out to be N14,692.39, it was observed that it does not only vary across the level of education but also differs across the sector in which the respondent is employed. Generally, the earning in the public sector is higher than what obtains in the private sector for all levels of education, which means higher wages are paid in the public sector. As would be expected, those with no

education were least paid in private sectors and total sample, while the highest paid categories are those with University education. Those with no education in the private sector earns N11,239.12, while those with secondary and tertiary education slightly earn above this amount of N12,156.18 and N13,865.43, respectively. However, earning with university education significantly increased to an average of N25,341.98, being more than double the earnings of those with no education and primary education, and almost double the earning of those with secondary education.

However, a seemingly different picture is depicted by the structure of earning along educational qualification in the public sector. Contrary to expectation, the earnings of those with no education are found to be higher than the earnings of those with primary and secondary education. While the average earnings of those with no education is N18,473.01, both respondents with primary education and secondary education earns on the average N12,719.18 and N16,425.16, respectively. This difference might be due to the relatively insignificant difference in the starting point on pay schedule between these three categories, such that the time spent acquiring primary and secondary education is more than enough for the person who started with no education to have been promoted in earnings beyond the starting points for these two education categories. Nonetheless, the results show that the mean monthly earnings of workers increase by level of education regardless of the sector of employment.

Table 4.2: Monthly earnings differentials associated with level of education and sector of employment

Level of education %			
Variable	Primary	Secondary	University
Private	8.2	14.1	82.8
Public	-31.1	29.1	59.3
Total	6.5	17.1	80.6

Source: Computed from Table 4.1

Table 4.2 was computed from Table 4.1 using the formula below:

- The column titled primary is the difference between the average earnings of a worker with primary school education and average earnings of a worker with no education, as a percentage of the average earnings of no education workers.
- The column titled secondary is the difference between average earnings of a worker with secondary school education and average earnings of workers with primary education as a percentage of the earnings of the primary school graduate.
- The column titled university is the difference between the average earnings of a worker with university education and the average earnings of a worker with secondary education as a percentage of the average earnings of secondary school graduates.

Table 4.2 shows that the sector in which a worker is employed affects earnings. The Table reveals that public sector workers earned more than their counterparts in the private sector. The income differentials associated with schooling is very high.

Research Question 2: To what extent are there differences in the average monthly earnings by sector of employment and work experience in Nigeria?

Table 4.3: Mean earnings by work experience and sector of employment (in Naira)

Sector of Employment	Work experience in years				Group Total Mean (N)
	5 – 9 Mean (N)	10 - 14 Mean (N)	15 - 19 Mean (N)	20+ Mean (N)	
Private	9,564.4	31,410.8	25,297.7	83,384.3	14,743.3
Public	12,473.4	29,981.7	31,274.1	116,036.4	21,769.7
Group Total	10,106.2	30,588.5	26,382.5	91,776.2	16,352.1

Presented in Table 4.3 are the mean earnings by experience groups and sectors. These enabled the study to assess the relationship between labour market experience and

earnings. Work experience has been classified into 5-9, 10-14, 15-19, and 20+ (years) categories, while sector of employment was classified into private and public sectors. The private sector had a mean of N9,564.4 and public sector had N12,473.4 for the 5-9 years, while the private sector had a mean of N31,410.8 and public sector had N29,981.7 for the 10-14 years. For workers within the category of 15-19 years work experience, the private sector had a mean of N25,297.7, while that of public sector had a mean of N31,274.1. The private sector had a mean of N83,384.3 and public sector had N116,036.4 for the 20+ years. The private sector had a group total mean of N14,743.3, while the public sector had a group total mean of N21,769.7.

The results reveal that mean earnings grow with increased years of labour market experience in the public sector. It means that earnings in the public sector increase with increase in labour market experience, unlike in the private sector where the mean earnings of workers grow with increased labour market experience up to 14 years and start decreasing for workers that fall within fifteen and nineteen years of experience.

There is a striking result on this table, which is the earning of workers with 10-14years of labour market experience being higher than earnings of workers with 15-19 years work experience in the private sector. The reason might be that the workers are in their productive years, that is, when they are economically active and are being exploited by making them to work extra ordinarily hard with little incentives such as paying them for overtime, rewarding the best worker, setting of target which must be met etc. Since workers in this category are still young and energetic, they will strive hard to retain their jobs by working round the clock in order to earn more, and this usually leads to increase in earnings. While workers with 15-19 years experience earn less because of the advancement in age, which may not permit them to take part in overtime work, etc thus leading to a decrease in earnings. Moreover, private sector emphasizes competence-based pay as an effective remuneration system.

Research Question 3: To what extent are there variations in the mean monthly earnings by sector of employment and occupation in Nigeria?

Table 4.4: Mean monthly earnings by sector of employment and occupation (in Naira)

Sector of Employ-ment	Occupation									Group Total
	Not Stated	Health & Safety	Educ.	Agric.	Sc. & Tech.	Comm. & Indus.	Legal & Secu.	Infor. Mgt.	Others	Mean (N)
	Mean (N)	Mean (N)	Mean (N)	Mean (N)	Mean (N)	Mean (N)	Mean (N)	Mean (N)	Mean (N)	
Private	11,103	18,962	14,460	12,898	20,541	14,942	21,294	11,194	14,404	14,089
Public	12,852	26,696	20,241	16,616	26,213	21,598	24,688	21,761	29,641	22,097
Group Total	11,496	22,230	18,473	12,993	22,309	15,992	23,156	15,379	16,440	15,324

Table 4.4 contains the mean earnings by sector of employment and occupation. Sector of employment was classified into private and public sectors, while occupation was categorised into seven namely: health and safety; education; agriculture; science and technology; commerce and industry; legal and security workers; and information management.

The private sector workers in health and safety had a mean of N11,103, while those in public sector had N12,852. Workers in the private sector working in education sector had a mean of N14,460, while those in public sector had a mean of N20,241. Agricultural workers in private sector had a mean of N12,898, while those in the public sector had a mean of N16,616. Workers in science and technology working in the private sector had a mean of N20,541, while those in public sector had a mean of N26,213. The private sector workers in commerce and industry had a mean of N14,942, while those in public sector had N21,598. The private sector workers in legal and security had a mean of N21,294, while those in public sector had N24,688. The information management

workers in private sector had a mean of N11,194, while those in public sector had N21,761. The private sector had a group total mean of N14,089, while the public sector had a group total mean of N22,097.

Among the different occupations identified in this study, the highest earning occupation for the total sample is in the legal and security, while the least earning occupation is Agriculture. While the structure of earnings by occupation across the private sector has a resemblance of the total sample structure, the public appears to be different. In the private sector, the highest earnings is in the legal and security occupation with an average of N21,294, while the least earnings is also among those whose occupation is in the agriculture. For the public sector, earnings in the health and safety is highest with an average of N26,696, but also lowest in the agriculture sector, with an average of N16,616. On the whole, earnings across different occupational categories remain relatively higher in the public sector than in the private sector.

Research Question 4: What are the average monthly earnings by sector of employment and age in Nigeria?

Table 4.5: Mean monthly earnings by sector of employment and age

Sector of Employment	Age Group of Respondents							Group Total
	<20yrs.	20-29yrs.	30-39yrs.	40-49yrs.	50-59yrs.	60-69yrs.	70 & Above	Mean (N)
	Mean(N)	Mean(N)	Mean(N)	Mean (N)	Mean (N)	Mean(N)	Mean(N)	
Private	14,098	13,107	13,402	15,625	14,577	14,169	11,992	14,034
Public	11,842	14,893	17,669	26,763	28,734	26,451	15,063	21,475
Group Total	13,910	13,416	14,070	17,731	16,996	15,318	12,045	15,216

Table 4.5 shows the mean monthly earnings of workers on account of age in both private and public sectors. Age has been classified into <20, 20-29, 30-39, 40-49, 50-59, 60-69 and 70+ (years) categories, while sector of employment was classified into private and public sectors. The private sector had a mean of N14,098, and public sector had N11, 842 for the workers below the age of 20 years, while the private sector had a mean of

N13,107 and public sector had N14,893 for workers that fall within 20-29years of age. For workers within the category of 30-39 years of age, the private sector had a mean of N13,402, while that of public sector had a mean of N17,669.

The private sector had a mean of N15,625 and public sector had N26,763 for those within 40-49years of age. For workers within the category of 50-59 years of age, the private sector had a mean of N14, 557, while that of public sector had a mean of N28, 734. The private sector had a mean of N14,169 and public sector had N26,451for those within 60-69years of age. Those 70years and above in the private sector had a mean of N11,992, while those in the public sector had a mean of N15,063. The private sector had a group total mean of N14,034, while the public sector had a group total mean of N21,475.

Our results on the age distribution of earnings are in line with the age pattern of productivity-wage equalization concept in economics. The lifetime productivity trend of an individual is quadratic in nature. At the early stage in life, individuals are only able to contribute to production minimally, which is why individuals at the beginning of life usually have negative savings, consuming more than they earn. As one progresses in life, productivity increases with age, but reach a peak around 40-50 years, and then start to decline until old age, when he/she becomes unproductive.

The results for the total sample as well as the private sector reveal that the peak of earnings is attained at age 40-49, which is when an average individual is most economically active. At this age bracket, an average of N15,625 and N17,731 are earned in the private sector and the total sample, respectively. However, the peak of earnings in the public sector is attained at age 50-59 years, earning an average of N28,734. This difference is explained by the fact that earnings in the public sector progresses with work experience (number of years in service) rather than productivity per se. This age bracket also represents the retirement age, in which the earning of an individual significantly falls, as pensioners are paid only a fraction of their regular earnings. This shows that productivity plays a significant role in earnings determination in the private sector than in the public sector.

Research Question 5: To what extent are there differences in the average monthly earnings by sector of employment and gender in Nigeria?

Table 4.6: Mean monthly earnings by gender for private and public sectors

Sector of Employment	Gender of Respondents		Group Total Mean (N)
	Male Mean (N)	Female Mean (N)	
Private	15,756	11,629	14,034
Public	23,951	17,778	21,475
Group Total	7,088	12,573	15,216

Presented in Table 4.6 are the mean earnings by sector of employment and gender. Gender has been classified into male and female, while sector of employment was classified into private and public sectors. Male workers in the private sector had a mean of N15,756, while female workers in the same sector of employment had N11,629. In the public sector, male workers had a mean of N23,951, while female workers in the same public sector had a mean of N17, 778. The private sector had a group total mean of N14,034, while the public sector had a group total mean of N21,475. The implication of the results presented in Table 4.6, is that the mean monthly earning of male workers is more than that of female workers in both private and public sectors.

Research Question 6: What are the average monthly earnings by sector of employment and geo-political zones in Nigeria?

Table 4.7: Mean monthly earnings by geo-political zones for private and public sectors

Sector of Employment	Geo-Political Zone						Group Total
	North East	North West	North Central	South East	South South	South West	Mean (N)
	Mean(N)	Mean(N)	Mean(N)	Mean(N)	Mean(N)	Mean(N)	
Private	10,915	14,116	16,642	14,123	12,204	14,780	14,043
Public	29,061	17,392	18,707	26,194	20,921	21,832	21,452
Group Total	13,585	14,722	16,985	15,406	13,889	15,902	15,222

Table 4.7 contains the averages of income of workers in the six geo-political zones in Nigeria by sector of employment. Sector of employment was classified into private and public sectors, while the geo-political zones are classified into six namely: North East, North West, North Central, South East, South- South and South West.

The private sector workers in North East had a mean of N10,915; North West had N14,116; North Central had N16,642; South East had N14,123; South-South had N12,204 and South West had N14,780. The private sector had a group total mean of N14,043. Workers in the public sector working in North East had a mean of N29,061; North West had N17,392; North Central had N18,707; South East had N26,194; South-South had N20,921 and South West had N21,832. The public sector had a group total mean of N21,452.

These results give us insight into the differences in income based on the geo-political zones which are being referred to as the native abilities of workers. There are slight differences in income of workers on account of geo-political zones. However, there is a big difference between private sector and public sector mean in all the geo-political zones. This implies that public sector pays higher than private sector in all the

six geo-political zones. The innate potential of an individual signified by the geo-political zones variable appears to explain some differences in earnings in Nigeria. The administrative and commercial centers of the country appear to contribute to the differences observed. The highest earning was found to be in the North Central, which also include Abuja, the Federal Capital Territory, with an average of N16,985, followed by South West, which includes Lagos, with an average of N15,902. It is well established that the cost of living is highest in Abuja, while Lagos harbors more than two-third of economic activities in the country. North West and North East have the least earnings of N14,722 and N13,585, respectively.

Research Question 7: What are the composite contributions of level of education, years of schooling, occupation, gender, age, work experience and sector of employment to private earnings in Nigeria?

Table 4.8: Regression summary of composite contributions of independent variables to private earnings in Nigeria

Multiple R = 0.635 **R Square = 0.403** **Adjusted R Square = 0.403**					
Source of Variance	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.74317E+12	7	2.49024E+11	774.804	0.000*
Residual	2.57797E+12	8021	321403038.5		
Total	4.32114E+12	8028			

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

The result presented in Table 4.8 reveals that the independent variables (level of education, years of schooling, occupation, gender, age, work experience and sector of employment) have a multiple correlation of 0.635 with workers' private earnings. Equally, the combination of these variables also accounted for 40.3% of the variance in workers' private earnings as shown by the coefficient of determination of $R^2 = 0.403$. Coefficient of determination (R^2 x 100) is the percentage contribution. The significance

of F implies that the R value is not due to chance. Further verification using the ANOVA component of multiple regression produced $F_{(7,\ 8021)}$ value of 774.804, which is significant at 0.05 level of confidence. This implies that there is significant joint contribution of demographic factors (level of education, years of schooling, occupation, gender, age, work experience and sector of employment) to private return to investment in education among Nigerian workers.

Research Question 8: What are the relative contributions of level of education, years of schooling, occupation, gender, age, work experience and sector of employment to private earnings in Nigeria?

Table 4.9: Estimate of the relative contributions of the independent variables to private earnings in Nigeria

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig.
Constant	-27783.743	1320.991		-21.033	0.000
Level of Education	13219.914	2843.382	0.372	4.649	0.000*
Years of Schooling	-332.563	541.026	-0.049	-0.615	0.539
Occupation	-0.07	0.065	-0.009	-1.078	0.281
Gender	551.831	424.047	0.012	1.301	0.193
Age	25.405	16.173	0.014	1.571	0.116
Work Experience	2909.932	42.768	0.611	68.039	0.000*
Sector of Employment	-1290.022	590.494	-0.02	-2.185	0.029*

***Significant at 0.05 alpha level**

Table 4.9 gives a summary of the degree of relative contributions of the independent variables, which are level of education, years of schooling, occupation, gender, age, work experience, and sector of employment to the prediction of dependent variable, that is, private earnings in Nigeria. The result presented in Table 4.9 is a presentation of the individual contribution of each independent variable relative to all other variables. Level of education contributed more ($\beta = 0.372$; $t = 4.649$; $p < 0.05$), which means that level of education contributed 37.2% to private earnings. Also, the sector of employment contributed to private earnings with $\beta = -0.02$ and $t = -2.185$; $p < 0.05$. Next is the contribution of years of schooling with $\beta = -0.049$ and $t = -0.615$; $p > 0.05$. This shows that the degree of contribution of years of schooling to earnings cannot be reckoned with because it is not significant. Occupation is equally not significant ($\beta = -0.009$; $t = -1.078$; $p > 0.05$). Gender ($\beta = 0.012$; $t = 1.301$; $p > 0.05$ and Age ($\beta = 0.014$; $t = 1.571$; $p > 0.05$). These show that the degree of contribution of gender and age cannot be reckoned with on earnings because they are not significant. Work experience contributed most ($\beta = 0.611$; $t = 68.039$; $p < 0.05$). This means that 61.1% of private monthly earning is due to years of work experience. It means that the longer the number of years put in, the more the earnings.

The multiple regression analysis therefore clearly shows that work experience has the highest prediction of 61.1% on earnings of workers. This means that 61.1% of workers' earning is due to work experience. Next is the influence level of education on earnings which is 37.2%. Sector of employment though significant, contributed 2% negatively to earnings.

Level of education, years of schooling, occupation, gender, age, work experience, and sector of employment will not significantly predict private earnings in Nigeria.

X_1 = Level of Education ($\beta_1 = 13219.914$)

X_2 = Years of Schooling ($\beta_2 = -332.563$)

X_3 = Occupation ($\beta_3 = -0.07$)

X_4 = Gender ($\beta_4 = 551.831$)

X_5 = Age ($\beta_5 = 25.405$)

X_6 = Work experience (β_6 =2909.932)

X_7 = Sector of employment (β_7 = -1290.022)

Constant = (β_o = -27783.743)

Hypothesised model of private earnings:

$$\hat{Y} = \beta_o + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + e$$

$$\hat{Y} = -27783.743 + 13219.914X1 - 332.563X_2 - 0.07X_3 + 551.831X_4 + 25.405X_5 + 2909.932X_6 - 1290.022X_7$$

Hence predictive model of private earnings becomes:

$$\hat{Y} = -27783.743 + 13219.914x_1 + 2909.932x_6 - 1290.022x_7$$

Where: x_1 = Level of education; x_6 = Work experience and x_7 = Sector of employment

X_1, X_6 and X_7 are predictors of Y.

Research Question 9: What are the rates of returns to investment in 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 4.10: 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 4.10 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 agrees with the findings of Cohen and House (1994) who examines the relevance of the human capital approach to explaining the variance in workers' productivity and earnings in the labour market for urban Khartoum. He discovers that there are variations in workers' earnings and that returns to primary education are lower than that of college education. This implies that earnings increase with level of education. The more education a worker acquires, the more the earnings.

Table 4.11: Estimated earnings coefficients for male and female workers in public sector

Model	**Female Workers**		**Male Workers**	
	Coefficients		**Coefficients**	
	B	t-value	B	t-value
Constant	8.073671	92.37366	8.088974	114.1892
Primary	- 0.186416	-2.224771	-0.161983	- 2.400403
Secondary	0.321540	3.863746	0.334152	4.965521
University	0.844748	9.913634	0.812847	11.74656
Exp.	0.146908	19.16818	0.143861	22.64419
Exp^2	-0.001146	-4.370401	- 0.001149	-5.157088
Adj.R^2	0.855296		0.847935	
F Stat.	819.0348		1132.956	

Table 4.11 shows the results of the specification of earnings equation taking into consideration the various levels of education (primary, secondary, and university) and gender (males and females) for public sector workers. The results show that there are slight differences in coefficients of male and female workers in the public sector. The model for female explains about 85.5% of the variations in log earnings, while that of male explains about 84.8% of the variations in log earnings.

Table 4.12: Estimated earnings coefficients for male and female workers in private sector

Model	**Female Workers**		**Male Workers**	
	Coefficients		**Coefficients**	
	B	t-value	B	t-value
Constant	8.002401	228.6322	8.023183	257.8332
Primary	-0.155460	-4.667012	-0.145886	-4.936210
Secondary	0.364174	11.03925	0.356024	12.15291
University	0.857869	24.62354	0.854914	27.41594
Exp.	0.165379	49.81610	0.160557	53.79897
Exp^2	-0.001990	-16.97039	-0.001856	-17.42625
Adj.R^2	0.835007		0.832963	
F Stat.	3931.273		4716.419	

Presented in Table 4.12 are the coefficients of the education dummies and experience variable for private sector workers. The model for female explains about 83.5% of the variations in log earnings, while that of male explains about 83.3% of the variations in log earnings. The results show that there are slight differences in coefficients of male and female workers in the private sector.

Table 4.13: 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 4.13. 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 4.1: Bar-chart of private rates of return to levels of education

Figure 4.1 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 education on account of geo-political zone in Nigeria.

Table 4.14: Descriptive statistics of differences in earnings across the six geo-political zones

Code	Geo-Political Zone	No. of Cases	Mean(N)	Standard Deviation
1	North-East	2,297	11,783.28	36,570.382
2	North-West	2,967	14,685.24	28,186.874
3	North- Central	3,714	14,358.04	42,680.323
4	South-East	3,448	14,917.39	23,496.902
5	South-South	3,088	12,853.40	13,176.937
6	South-West	4,374	13,722.99	22,593.577
Total		19,888	13,833.16	29,135.883

The result of test for differences in private returns to education across the six geo-political zones is presented in Table 4.14. The table shows the mean and standard deviation of earnings across the six geo-political zones. There are six geo-political zones in Nigeria namely: North East, North-West, North- Central, South-East, South-South and South-West. The 2,297 respondents in North East had a mean of N11,783.28, while 2,967 in North West had N14,685.24. North Central with 3,714 respondents had N14,358.04, while 3,448 respondents in the South East had N14,917.39. South-South respondents of 3,088 had a mean of N12,853.40, while South West with 4,374 had N13,722.99, thus having a total of 19, 888 respondents and group total mean of N13,833.16. These enable the study to assess the differences in earnings across the six geo-political zones in Nigeria.

Table 4.15: Results of Analysis of Variance on private returns to education on account of geo-political zone

R = 0.003

R square = 0.000

Eta = 0.034

Eta square = 0.001

		Sum of Squares	df	Mean Square	F	Sig.
Between Groups	(Combined)	19899989618	5	3979997924	4.693	0.000
	Linearity	175899469.5	1	175899469.5	0.207	0.649
	Deviation from Linearity	19724090149	4	4931022537	5.814	0.000
Within Group		1.68622E+13	19882	848112232.9		
Total		1.68821E+13	19887			

The result of one-way analysis of variance in Table 4.15 has confirmed that there is significant difference in the private returns to education on account of the geo-political zone in Nigeria. This shows that the significant level for private returns to education is less than 0.05 level of significant. This indicates that the six geo-political zones differed. Therefore, the null hypothesis is rejected.

In this study, no linear relationship existed between the six geo-political zones and private returns to university. Table 4.15 shows that the measures of association (R) indicating the relationship between the six geo-political zones and private returns to education is 0.003 i.e. 0.3% of the variation in private returns to education. Estimated R square equals 0.000, while eta equals 0.034 and eta square is 0.001. These indicate that differences between the states account for 3.4% of the variation in private returns.

Since null hypothesis is rejected, it means there is earning difference among the zones. This therefore called for multiple comparative test (Scheffe Post-hoc analysis) to show the magnitude of effects across the geo-political zones. This further revealed the extent of differences as shown in Table 4.16.

Table 4.16: Results of Scheffe post-hoc test showing homogeneous subsets across the six geo-political zones

Geo-Political Zone	N	Subset for alpha = .05	
		1	2
North-East	2297	11783.28	
South-South	3088	12853.40	12853.40
South-West	4374	13722.99	13722.99
North-Central	3714		14358.04
North-West	2967		14685.24
South-East	3448		14917.39
Sig.		.216	.156

Table 4.16 shows the direction of significant differences across the six geo-political zones among the 19,888 workers observed. Out of this total observation, 2,297 are from the North-East; 3,088 are from the South-South, 4,374 are from the South-West, North-Central has 3,714, North-West has 2,967, while 3448 represents South-East. It grouped the geo-political zones into two homogeneous subsets. The three geo-political zones that fall into group 1 do not have significant difference in earnings. It means that their salary structures are almost the same. North-East, South-South, and South-West fall into the same homogenous group, while South-South, South-West, North-Central, North-West, and South-East belong to the second homogenous group. It is observable that

private return in North East is significantly lower in comparison with South-East and that of neighbouring zones—North Central and North West.

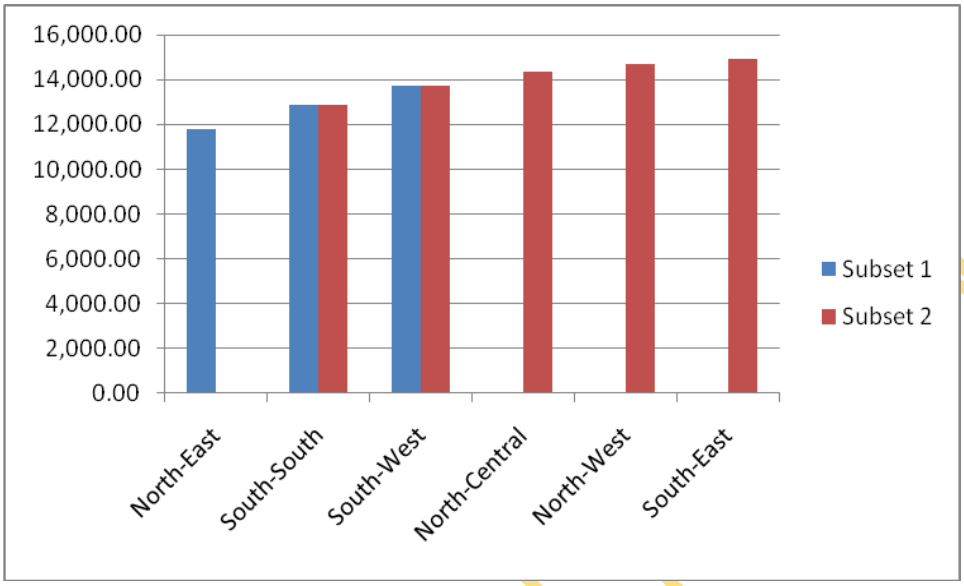

Figure 4.2: Bar-chart of private earnings differences across the six geo-political zones

Figure 4.2 illustrates the homogeneity of geo-political zones. The six geo-political zones have been classified into two homogeneous sub-sets. The private returns to subset "2"is higher than those of sub-set "1".

Table 4.17: Results of Scheffe post-hoc test of significant differences in earnings across the six geo-political zones

Mean(N)	Geo-Political Zone	North East	North West	North Central	South East	South South	South West
11,783.28	North-East		*	*	*		
14,685.24	North-West	*					
14,358.04	North- Central	*					
14,917.39	South-East	*					
12,853.40	South-South		*	*	*		
13,722.99	South-West		*	*	*		

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

The asterisked columns and rows in Table 4.17 show the direction of significant differences across the six geo-political zones. The result of Scheffe Post hoc test of significant differences among the different zones showed significant differences between North-East and North-West, North-Central and South-East; North-West and North-East, South-South and South-West; North-Central and North-East, South-South and South-West; South-East and North-East, South-South and South-West.

Hypothesis 2: There is no significant difference in private returns to education on the account of occupation in Nigeria.

Table 4.18: Descriptive statistics of differences in earnings across the different occupational categories

Code	Occupation	No. of Cases	Mean(N)	Standard Deviation
0	Not Stated	3,279	6,747.01	3256.248
1	Health & Safety Workers	312	21,670.03	37988.282
2	Education	1,084	18,525.65	17852.989
3	Agriculture	6,387	12,994.58	36205.939
4	Science & Technology	470	22,662.87	22534.919
5	Commerce & Industry	5,478	15,928.91	31403.476
6	Legal & Security Workers	179	23,096.66	20198.578
7	Information Management	102	15,292.5	11987.465
9999	Others	1,598	16,384.37	29670.581
Total		18,889	13,857.23	29673.607

The result of difference in private earnings to education on account of occupation is presented in Table 4.18. This Table shows the magnitude of significant differences across the seven categories in which occupation is grouped. The total number of observations across the different occupational categories is 18,889 workers, comprising 3,279 who did not state their occupation, Health and Safety workers with 312, Education has 1,084, Agriculture has 6,387, Science and Technology has 470, Commerce and Industry has 5,478, Legal and Security has 179, Information Management has 102 and

others has 1,598. It shows the mean and standard deviation of earnings across the different occupational groups. Occupation was grouped into seven, which are health and safety, education, agriculture, science and technology, commerce and industry, legal and security, and information management. The 3,279 respondents who did not state their occupation had a mean of N6,747.01, Health and Safety category had N21,670.03, Education had N18,525.65, Agriculture had N12,994.58, Science and Technology had N22,662.87, Commerce and Industry had N15,928.91, Legal and Security workers had N23,096.66, Information Management had N15,292.5 and Others had N16,384.37, thus having a total of N13,857.23.

Table 4.19: Results of Analysis of Variance - comparing private returns to education on account of occupation

R = 0.026

R square = 0.001

Eta = 0.134

Eta square = 0.018

		Sum of Squares	df	Mean Square	F	Sig.
Between groups	Combined	2.98843E+11	8	37355426116.901	43.182	0.000
	Linearity	11199921104.570	1	11199921104.570	12.947	0.000
	Dev. from Linearity	2.87643E+11	7	41091926832.948	71.945	0.000
Within groups		1.63325E+13	18880	865067478.686		
Total		1.66313E+13	18888			

Table 4.19 shows that there are significant differences in private earnings on account of occupation. It shows that earnings vary on account of occupation. Hence, hypothesis 2 is rejected. The significant level for private returns to education is less than 0.05, indicating that there is a linear relationship between private returns to education and occupational category. R square reflects the proportion of variation in the dependent

variable accounted for by the linear model. In this study, a linear relationship with occupation accounts for 0.1% of the variation in private returns to university education. Eta and Eta square do not assume that a linear relationship exists between the variables. Eta square represents the proportion of variation accounted for by the differences among the groups. In this study, differences between the occupation account for 1.8% of the variation in private returns. However, Scheffe Post- hoc analysis was done to show the direction of effects across the occupational categories. This further revealed the extent of differences as shown in Table 4.20.

Table 4.20: Results of Scheffe post-hoc test showing homogeneous subsets of occupational categories

Occupation	N	Subset for alpha = .05		
		1	2	3
Not Stated	3279	6747.01		
Agriculture	6387	12994.58	12994.58	
Information Management	102		15292.50	15292.50
Commerce & Industry	5478		15928.91	15928.91
Others	1598		16384.37	16384.37
Education	1084		18525.65	18525.65
Health & Safety	312			21670.03
Science & Technology	470			22662.87
Legal & Security	179			23096.66
Sig.		.354	.543	.087

Table 4.20 classifies the occupational categories into three homogeneous subsets. Occupation that falls into the same category does not show any significant difference. Agriculture, Information Management, Commerce and Industry, Others, and Education follow the same pattern in terms of private earnings. While Agriculture, Information

Management, Commerce and Industry, Others, Education, Health and Safety, Science and Technology and Legal and Security are equally not significant. However, it is observable that private return to Agriculture is significantly lower in comparison with Legal and Security. This implies that it does not pay to work in this type of occupational sector.

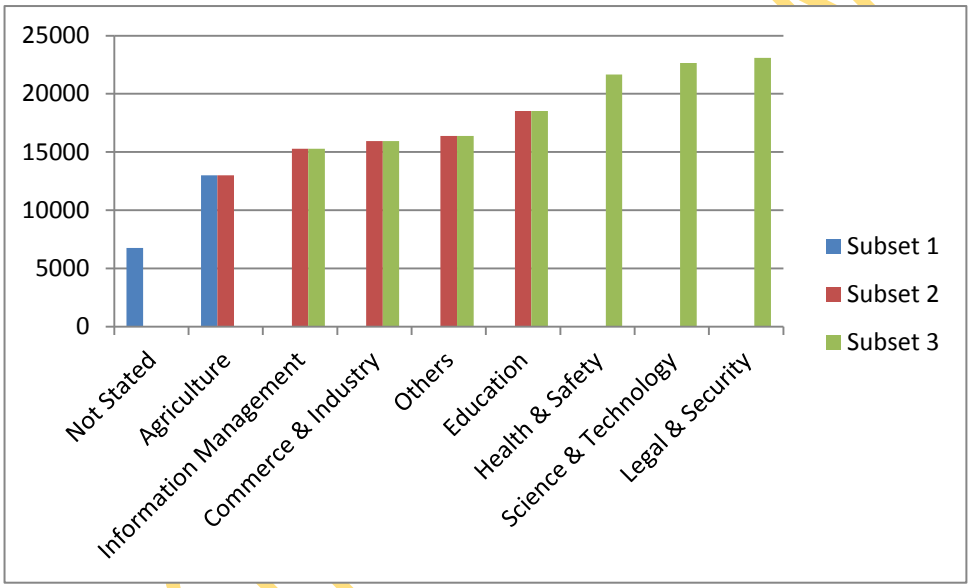

Figure 4.3: Bar-chart of private earnings differences among occupational categories

Figure 4.3 illustrates the private returns to education on account of occupational categories, which have been classified into three sub-sets or homogenous groups.

Table 4.21: Results of Scheffe post-hoc test of significant differences in earnings across the different occupational categories

Mean (N)	Occupation	Not Stated	Health & Safety	Educ.	Agric.	Sc. & Tech.	Com. & Indu.	Legal & Secu.	Infor. Mgt.	Others
6,747.01	Not Stated									
21,670.03	Health & Safety	*			*					
18,525.65	Education	*	*			*		*		
12,994.58	Agriculture		*			*		*		
22,662.87	Science & Technology	*			*					
15,928.91	Commerce & Industry	*	*			*		*		
23,096.66	Legal & Security	*			*					
15,292.50	Information Management	*	*			*		*		
16,384.37	Others	*		*		*		*		

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

Table 4.21 reveals that the asterisked columns and rows show the magnitude of significant differences across the different occupations. The result of Scheffe Post hoc test of significant differences among the different occupational categories shows significant differences between each pair of the following categories: Health and Safety and Education; Health and Safety and Agriculture; Health and Safety and Commerce and Industry; and Information Management.

Hypothesis 3: There is no significant difference in private returns to education on account of sector of employment in Nigeria.

Table 4.22: Results of analysis of variance on private returns to education on account of sector of employment

Eta = 0.085

Eta Square = 0.007

Model	Sum of Squares	df	Mean Square	F	Sig.
Between group (Combined)	119300184407.792	1	119300184407.792	117.558	0.000
Within Groups	16359962465705.070	16121	1014823054.755		
Total	16479262650112.860	16122			

Table 4.22 shows that the significant level for private returns to education on account of employment sector is less than 0.05. This implies that the two sectors: private and public differ. Eta square represents the proportion of variation accounted for by the differences among the groups. In this study, differences between the sector of employment account for 0.7% of the variation in private returns. The null hypothesis is therefore rejected.

Hypothesis 4: There is no significant difference in private returns to schooling among the three levels of education in Nigeria.

Table 4.23: 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 4.23. 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.

Table 4.24: 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 4.24 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.

Table 4.25: 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	5937	11,063.24		
Primary	4910	11,256.78		
Secondary	4873		12,905.25	
University	3073			23,437.90
Sig.		.985	1.000	1.000

In Table 4.25, 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.

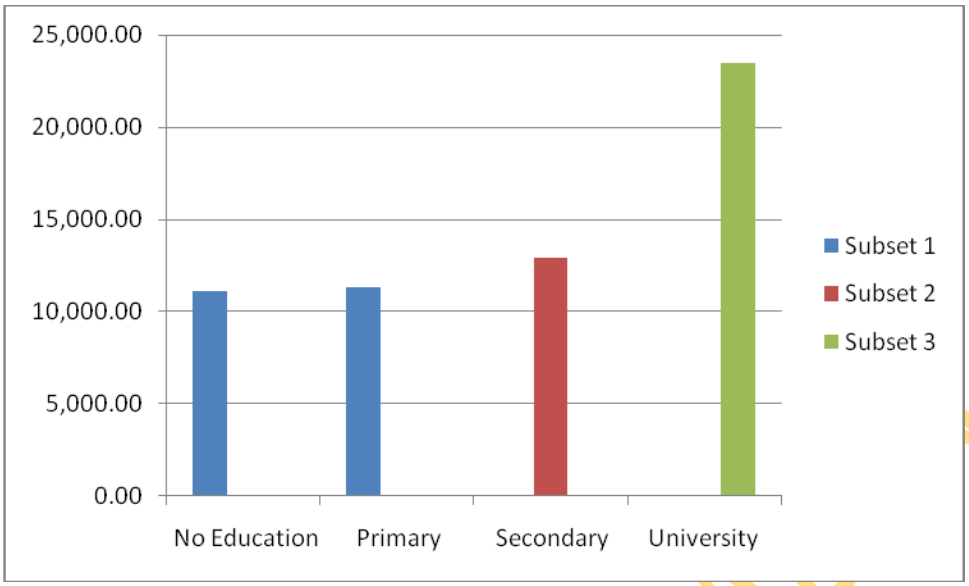

Figure 4.4: Bar-chart of private earnings differences among the educational levels

Figure 4.4 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 4.26: 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 4.26 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.

4.2 Discussion of Findings

The findings of the study are presented under the following sub-headings:

1) Contributions of demographic factors to private returns
2) Differences in private returns to education on account of the six geo-political zones.
3) Differences in private returns to education on account of occupation.
4) Differences in private returns to education on account of sector of employment.
5) Differences in private returns to schooling among the three levels of education.

1. Contributions of Demographic Factors to Private Returns

In this study, the multiple regression correlation coefficient (R) indicating the relationship between the demographic factors (level of education, years of schooling, occupation, gender, age, work experience and sector of employment) and private returns to investment in education is 0.635 with workers' private earnings. Estimated R^2 = 0.403, while adjusted R^2 = 0.403. This implies that demographic factors compositely accounted for 40.3% of the variance in workers' earnings. Further verification using the ANOVA component of multiple regression produced $F_{(7, 8021)}$ value of 774.804 which is significant at 0.05 level of confidence. This implies that there is significant joint contribution of demographic factors to private return to investment in education among Nigerian workers. The implication of this is that private return to investment in education is jointly determined by level of education, years of schooling, occupation, gender, age, work experience and sector of employment.

Even though, no earlier study has taken all these demographic factors together, a few studies have investigated the contributions of some of these factors to private returns to investment in education. The finding of this study corroborates the findings of some of the earlier studies that have investigated the contributions of some of the demographic factors examined in this study. Among them are the findings of Schultz (1961), Becker (1964), Blaug (1972), and Joint Economic Committee of the United States Congress (2000), who discovered that formal education is a strong determinant of individual earnings as well as economic growth, and that experience, training, and education are the three main mechanisms for most individuals. It was also discovered that education acquired by individuals determine their level of absorption of new information, acquisition of new skills as well familiarization with new technologies. This implies that level of education and experience are determinants of private returns to investment in education.

This finding agrees with the findings of Neuman (1991), Psacharopoulos (1994), Aslam (2007) and Sackey, (2008), who discovered that there is a wide gender gap in labour market returns to education. Differential labour market returns to male and female education are observed. This means that there is disparity in earnings on account of gender.

In support of this finding is the work of Okuwa (2004), who observed that there is earning disparity based on years of labour market experience and sector of employment. Also in agreement with this study's finding are those of Topel (1991), Williams (1991), Theodossiou (1996), and Altonji and Williams (1997), who discovered that work experience increases earnings only in the initial years of employment, due to promotion provisions, and also through the establishment of long-term employment relationships of the employers with their most highly valued employees etc. These are done in order to discourage labour turnover and inter-firm mobility. Thus, employees with longer years of experience with their current employer have higher earnings than other employees with the same total work experience but relatively shorter years with their present employee.

In consonance with the findings of this study, are the findings of Kothari (1970), Hartog (1986), Cosca (2000), and Onphanhdala and Suruga (2006), who discovered that there are disparities in earnings on account of occupation. This has made the reward for education to differ substantially by the job level at which an individual is occupying. This implies that the type of occupation one engages in determines private return to investment in education.

In the same vein, the finding of this study is in consonance with the finding of Card (2001) who opines that the higher earnings observed among the better-educated workers may not be determined by their higher education alone. It then implies that there are other demographic factors apart from level of education that determine private returns to investment in education. Equally in agreement with this study's finding is that of Arrow (1973) and Spence (1973), who put forward the theory that, it is not education in isolation which yields higher wages, but rather, that education is used by employers as a screening device to identify better workers and likewise by workers to signal their potential high productivity. A worker's level of education is thus correlated with, but not the cause of high productivity. This means that level of education is not the only determinant of private returns to investment in education.

In this study, level of education, work experience and sector of employment made significant relative contributions to private returns to investment in education. Work experience contributed most ($\beta = 0.611$; $t = 68.039$; $p < 0.05$). This means that 61.1% of earnings are due to years of work experience. It means that the longer the years of working in an organisation, the more the earnings. This finding agrees with the findings of Topel (1991), who reported that work experience was a major determinant of wages. However, this disagrees with the finding of Altonji and Shakotko (1987), who are of the opinion that there is no positive relationship between experience and wages.

Level of education contributed more ($\beta = 0.372$; $t = 4.649$; $p < 0.05$), which means that level of education contributed 37.2% relatively to private earnings. This implies that, the higher the level of education, the higher the earnings. This finding agrees with Blaug (1972), Cosca (2000), Palacios (2004), and Kifle (2007) who discovered that education

and earnings are positively linked and that investment in education has an economic value. This means that the level of education attained by an individual affects his/her earnings.

Sector of employment with β = - 0.02; t = -2.185; p< 0.05 made significant relative contributions to earnings. This implies that, there are variations in earnings on account of sector of employment. The finding of this study corroborates the findings of Mann and Kapoor (1988), Rees and Shah (1995), and Pritchett (1999) who asserted that public sector workers are paid much higher wages than the private sector workers. Even though, the finding of Okuwa (2004) and Onphanhdala and Suruga (2006), who discovered that private sector workers are paid higher than the public sector workers disagrees with some of the earlier studies, the most important fact emerging from the finding is that disparity occur in earnings as a result of the sector of employment. The implication of this is that private return to investment in education is being determined by sector of employment.

Years of schooling, occupation, gender and age made no significant relative contributions to private returns to investment in education among Nigerian workers. Years of schooling made no significant relative contribution to earnings (β = -0.049 and t = -0.615; p> 0.05). This shows that the degree of contribution of years of schooling to earnings cannot be reckoned with because it is not significant. Occupation is equally not significant (β = -0.009; t = -1.078; p> 0.05). Gender (β = 0.012; t = 1.301; p>0.05 and Age (β = 0.014; t = 1.571; p> 0.05) made no significant contributions to earnings. These findings imply that years of schooling, occupation, gender and age made no significant relative contributions to disparities in earnings. Even though this finding is at variance with earlier studies, however, it is good to note that the method of analysis used in the earlier study is different from that of this study. None of the earlier studies tested for the relative contributions of the demographic variables to private returns to investment in education.

2. Differences in Private Returns to Education on Account of the Six Geo-political Zones.

In this study, the differences in private returns to education on account of the six geo-political zones in Nigeria accounted for 3.4% of the variation in private returns. These manifest in the results of analysis of variance which show that the significant level for private returns to education is less than 0.05. This indicates that the six geo-political zones differ as there are significant differences in the six geo-political zones. The geo-political zone is representing the native ability. This implies that earnings differ across the six geo-political zones in Nigeria.

The innate potential of an individual signified by the geo-political zones variable appears to explain some differences in earnings in Nigeria. The administrative and commercial centres of the country appear to contribute to the variation in earnings. In addition, people in the geo-political zones differ in terms of their native abilities, while some are noted for being excellent in commerce; some rely on the government work alone. While some geo-political zones are having strong economic base, some zones' economies are weak. These go a long way in determining the earnings of the workers in the zones.

This finding corroborates the finding of Onphanhdala and Suruga (2006), who discovered that there are significant differences in the returns to schooling among regions in Lao People's Democratic Republic (Lao PDR). Earnings disparities were observed in the northern, central and southern regions as well as the Vientiane capital, where a worker in the northern, central and southern regions would earn lower than his/her counterpart in the capital.

3. Differences in Private Returns to Education on Account of Occupation.

Also revealed in the study is that private return is irregular across all occupational categories. In this study, differences among occupational categories accounted for 1.8% of the variation in private returns. Results of analysis of variance on private returns to education on account of occupation reveal that there are significant differences in private

returns to education on account of occupational categories. The mean earnings by type of occupation and sector of employment results reveal that, legal and security workers are the highest paid, followed by health and safety, while education is the least paid in the public sector. In the private sector, results reveal that mean earnings of legal and security workers is the highest paid, followed by health and safety, while information management are the least paid in the public sector. This means that type of occupation and sector of employment are determinants of workers' earnings.

This finding corroborates the findings of Kothari (1970) and Hartog (1986), who found out that the occupation in which a worker is employed has an important effect on the level of his/her wages and salaries. They also noticed that there are disparities in earnings between different occupations in less developed countries than in developed countries. The reward for education differs substantially by the job level at which an individual is occupied.

4. Difference in Private Returns to Education on Account of sector of employment.

In this study, the difference between the sector of employment accounted for 0.7% of the variation in private returns. This means that, there are significant differences in the private returns to education between public and private sector workers. Sector of employment is another demographic factor that determines private returns to investment in education among Nigerian workers. The results of descriptive statistics show that public sector workers earn more than their counterparts in private sector. Generally, the earnings in the public sector are higher than what obtains in the private sector.

This finding agrees with the findings of Mann and Kapoor (1988), who discovered that on the average, public sector workers are paid much higher wages than the private sector workers. In the same vein, Rees and Shah (1995) and Pritchett (1999) have reasoned that the private wage determination is subject to profit constraint, whereas the public sector wage determination is subject to an ultimate political constraint. Thus, wages in the public sector are higher than wages in the private sector. Pritchett (1999) highlighted the situation in which governments are taking resources away from non-

governmental activity in the form of taxes so as to pay additional workers whose marginal product in the public sector is very low but are paid much higher wages than workers in the private sector.

However, the finding of this study disagrees with the findings of Okuwa (2004) and Onphanhdala and Suruga (2006), which revealed that private sector workers earn more than their counterparts in the public sector. It was also discovered that salaries in state-owned enterprises and the private sector are substantially above those in the government and that these salaries increased substantially faster than those in the public sector. The reason might be the nature of the data used in the study which covered only Lagos state, Okuwa (2004). Lagos state is highly industrialized. It is a state with high concentration of large scale industries, the salary structure of which cannot be compared with the private sectors in other parts of the country. It is even a state where we have public sector workers receiving the highest pay compared to other public sector workers in the country due to the peculiarity of the state. Another reason for the disagreement with earlier findings is that this present study covered the whole country including urban and rural areas. More than 75% of Nigerian population lives in rural areas, Fabunmi, (1997). In such rural areas, majority of the people either work in small scale industries or work as peasants and thus earn relatively low wages. This explains why returns to education might be low for workers in such places.

In addition, public sector workers earn more than private sector workers in this study because of the salary increments enjoyed by the public sectors in the country in the last few years. This has made the public sector to be more competitive and attractive because of the salary package and remuneration offered. When the earlier study was conducted, the public sector's salary structure was low. The present salary structure of the public sector is higher than most of the private sectors' salary structure. This made the returns to education for public sector workers to be higher than that of the private sector workers in this study.

5. Differences in Private Returns to Schooling among the Three Levels of Education.

In this study, a linear relationship with level of education accounted for 2.2% of the variation in private returns to education. The differences among the three levels of education accounted for 3.4% of the variation in private returns. The study reveals that there are significant differences in private returns to education among the three levels of education, that is, primary, secondary, and university education.

It was observed in this study that, the mean monthly earnings of workers increase by level of education. This is true for all workers regardless of the sector of employment. However, it was observed that workers with no education earned more in public sector than their counterparts in private sector. The results show that the sector in which a worker is employed determines earnings. Public sector workers earned more than their counterparts in the private sector. The income differentials associated with schooling is high. In this study, primary education workers' earnings and the earnings of workers with no formal education follow the same pattern. The implication of this is that, primary education workers in both public and private sectors have the same starting point, that is why the private return to primary school is negative. This finding is in consonance with the findings of Aromolaran (2004, 2006) and Okuwa (2004) who discovered that returns to primary school were low in Nigeria. However, the finding of this study is contrary to Psacharopoulos (1973) and Edokat-Tafah (1998) who in their studies reported that primary education had the highest private returns.

This study reveals that the mean monthly earnings of workers increase by level of education. In line with findings in the literature, the result of this study shows that earnings rise with higher levels of schooling. 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 opines 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 is a determinant of workers' earnings.

4.3 Summary of Findings

The findings of this study are summarised below:

- In this study, the results revealed that demographic factors such as level of education, years of schooling, occupation, gender, age, work experience and sector of employment jointly made significant contribution to private returns to investment in education with a multiple correlation of 0.635 and coefficient of determination of 0.403. This implies that the demographic factors jointly accounted for 40.3 per cent of the variation in workers private earnings. A major fact arising from the findings of this study is that variation in earnings or returns to investment in education is a function of many factors and not the level of education alone.
- In terms of the relative contributions of the demographic factor variables, the result revealed that only three independent variables – work experience, level of education, and sector of employment contributed significantly to private returns to investment in education. Work experience, level of education, and sector of employment relatively predicted differentials in earnings. However, a seemingly different picture is depicted by the relative contributions of these three variables that are significant. Contrary to expectation, work experience relatively contributed more to earning variations than level of education.
- Years of schooling, occupation, gender and age made no significant relative contributions to private returns to investment in education among Nigerian workers.
- Equally revealed in the study is the result of ANOVA, which confirms that there are significant differences in the private returns to investment in education among workers in Nigeria on account of the six geo-political zones. The measure of association R indicating the relationship among the geo-political zones and private returns to education is 0.003 that is 0.3% of the variation in private returns

to education. Estimated R square equals 0.000 while eta equals 0.034 and eta square is 0.001. These indicate that differences among the zones accounted for 3.4% of the variation in private returns.

- In this study, in terms of significant differences in private returns to education on account of type of occupation, the result of ANOVA confirms that there are significant differences in the private returns to investment in education among Nigerian workers on account of occupation. The measure of association R indicating the relationship among occupational categories and private returns to education is 0.026, that is, 2.6% of the variation in private returns to education. Estimated R square equals 0.000, while eta equals 0.134 and eta square is 0.018. These indicate that differences among the occupational categories accounted for 1.8% of the variation in private returns.
- Sector of employment have a significant relationship with private returns to education. In this study, the difference between sectors of employment accounted for 0.7% of the variation in private returns. This implies that the two sectors: public and private earnings differ.
- In this study, differences between levels of education accounted for 3.4% of the variation in private returns. 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.

CHAPTER FIVE
SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter contains summary of the study, implications of the findings, conclusion, recommendations, limitations to the study and suggestions for further studies.

5.1 Summary of the study

The study was designed to evaluate the nature of private returns to education in Nigeria with a view to accounting for the demographic factors that determine variations in the private returns to primary, secondary and university education. In this study, the 2005 Labour market survey data were applied as a bench mark to examine the determinants of returns to investment in education in Nigeria among workers with formal education, that work with any of the primary, secondary and university certificates. The study focussed on the extent to which level of education, years of schooling, occupation, gender, age, work experience and sector of employment determined private returns to investment in education in Nigeria. It involved making geo-political comparison of private returns to investment in education in the country.

This was accomplished through the use of survey and non-experimental research designs. This was used to describe in a systematic manner, the characteristics and facts about the population of this study. While under non-experimental research design, Multiple Regression and One Way Analysis of Variance (ANOVA) were used to establish the extent to which the independent variables had significant effects on the dependent variable. Multiple comparative tests (Scheffe Post- hoc analysis) were also done to show the direction of significance across the groups.

The survey made it possible to establish the gender, age, sector of employment, educational background, occupational profile, experience and earnings among workers in Nigeria. The study established significant differences in the private returns to education on account of educational level; and that level of education, occupation, gender, work

experience, sector of employment and geo-political zone made significant contributions to private returns to education.

5.2 Conclusion

This study has detailed the enormous benefits associated with increased education. Investment in human capital enables individuals to increase their future earnings and enhance their experience in the labour market. The knowledge that education benefits the individual student in terms of increased earnings is widespread, but information is incomplete about other demographic factors that determine the benefits that increased education has on an individual. Additional year of schooling causes a significant rise in earnings but higher rates of return are found to be associated with higher levels of education, hence, education is still a valuable investment from the private point of view. Also, the estimated private returns can be used to explain the demand for education and assess the equity or poverty alleviation effects of public education expenditures.

The study established significant differences in the private returns to education on account of educational level; and that work experience, level of education and sector of employment are important towards the determination of private returns to investment in education. Private investment in education is a worthwhile investment. The results show that earnings increase by level of education. In line with findings in the literature, this assertion is supported by Blaug (1972), who opines that education and earnings are positively linked and that highly educated workers receive higher earnings than those that are less educated. This position was confirmed by the findings of Psacharopoulos (1994); Okuwa (2004); and Sackey (2008), who discovered that earnings increase by level of education. This finding corroborates the results of Schultz (1961), Becker (1964), Joint Economic Committee of the United States Congress (2000), and Card (2001), who found out that an individual's academic qualification plays an important role in determining the income he or she receives. This implies that, level of education is a determinant of private returns to investment in education among Nigerian workers.

5.3 Recommendations

Based on the findings and implications of this study, the following recommendations are made to improve private returns to investment in education:

- Policy makers should take note of the demographic factors, which contribute to the variations in private returns to investment in education as this will go a long way in helping them to address human capital policy in Nigeria.
- The size of the private returns to education means that part of the increased funding could come from private sources, such as increased student fees. This statement is reinforced by the regressive incidence of public financing of higher education systems.
- There is earning differential on account of sector of employment. The salary for both public and private sectors should be harmonized. Government should encourage more private investors in the economy by providing an enabling environment and good policies for private investors to invest in the country. This will go a long way in improving private sector earnings through increase in salary and attractive remuneration, which will in turn induce workers in this sector to be more productive. This will increase the productivity and efficiency of the sector.
- 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. Every effort is needed to make investment in education an attractive option.
- Public and private sector employers of labour should ensure that workers' remunerations are commensurate with their level of education in order to make education a worthwhile investment since education facilitates the acquisition of new skills and knowledge that increase productivity. This increase in productivity frees up resources to create new technologies, new businesses, and new wealth, which will eventually result in increased economic growth.
- Stakeholders in education such as the three tiers of government, non-governmental organisations, 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. These resources will go a long way in maintaining and improving the quality of the educational institutions in the country. Education plays a great and significant role in the economy of a nation. It is a source of economic growth and development, thus educational expenditures are found to constitute a form of investment. This augments individual's human capital and leads to greater output for society and enhanced earnings for the individual worker.

- Government should make Agricultural sector more productive.

5.4 Implications of the Findings

Based on the findings of this study, the following implications arise:

- The private economic return to education in Nigeria suggests the further need for public expenditure on education.
- The increasing pattern of private return to education by level of education also suggests that part of the education cost burdens, especially at the university level, should be shifted from the government to the individuals acquiring the education
- The findings suggest that workers remunerations are not commensurate with their academic qualifications. It means that many workers in Nigeria are not gainfully employed, implying that there is disguised unemployment. This is a situation in which people are doing jobs that are completely unproductive, that is, they get paid but they don't have a job.
- There is earning differentials on account of sector of employment. This implies that public sector workers receive higher wages than private sector workers.
- The longer the work experience, the higher the earnings of public sector workers. This means that earnings of public sector workers grow with labour market experience.
- Type of occupation also accounts for variations in earnings. The implication of this is that there are earning differentials across the different types of occupation. The private return to education differs substantially by the job level at which an individual is occupied.

- There are variations in private returns to investment in education on account of geo-political zones. This implies that earnings differ across the six geo-political zones.

5.5 Contributions to Knowledge

The contributions of this study to knowledge include the following:

1. Contrary to the previous findings that education and earnings are positively linked, this study established that work experience is the major determinant of earnings among Nigerian workers.
2. The study established that the innate potential, otherwise known as the native ability of an individual signified by the geo-political zone, determines differentials in earnings among workers in Nigeria.
3. The study established that workers earnings in Nigeria are still low.
4. It was established that the least paid occupation is Agriculture both in public and private sectors.
5. The study contributed to the literature on determinants of private returns to investment in education. There is a paucity of literature on determinants of earnings among Nigerian workers.
6. There was no previous study on the demographic factors that determine private returns to investment in education among Nigerian workers.
7. This study established that workers productivity plays a significant role in earnings determination in the private sector than in the public sector.

5.6 Limitations to the Study

All earnings do not depend on investment in education; there are other factors that determine earnings such as corruption, favouritism, godfatherism, ethnicity, quota system, religion, native ability, gender, race, family background etc. But in this study, level of education was used as the basis for determining earnings. Measurement of earnings of workers based on investment in education is a limitation because there are other non-economic or social factors that determine earnings.

Another limitation is the use of earnings of workers at a particular point in time as against using cumulative earnings, which are their life time earnings.

The Mincerian method used is another limitation because it does not take into account the cost associated with each level of education. Primary school children, mostly aged 6-12 years, do not forgo earnings during the entire length of their studies. This factor is not taken into account in the Mincerian method. Despite these weaknesses of the Mincerian method, it had to be used for this analysis primarily because of the nature of the available data.

5.7 Suggestions for Further Studies

i. The study covered 36,458 respondents; further studies could be carried out with larger population;

ii. A more advance methodologies for obtaining estimates of private returns to investment in education could be used in future study;

iii. The effect of other demographic factors such as the school quality and socio-economic background on the returns to education should be investigated; and

iv. This study could also be carried out in the developed part of the world for comparative analyses, and to understand how these countries progressed with the demand and supply of education as well as funding of these institutions.

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APPENDICES

Mean Monthly Earnings by Age Group for Private & Public Sector

			Age group of Respondents							Group Total
			1 Less than 20yrs	2 (20 - 29)yrs	3 (30 - 39)yrs	4 (40 - 49)yrs	5 (50 - 59)yrs	6 (60 - 69)yrs	7 70yrs & above	Mean
			Mean	Mean	Mean	Mean	Mean	Mean	Mean	
Sector of employment	**1 Private**	**Private Returns (in Naira)**	14098	13107	13402	15625	14577	14169	11992	14034
	2 Public		11842	14893	17669	26763	28734	26451	15063	21475
Group Total			13910	13416	14070	17731	16996	15318	12045	15216

Mean Monthly Earnings by Gender for Private and Public Sector

			GENDER OF RESPONDENT		Group Total
			1 MALE	2 FEMALE	Mean
			Mean	Mean	
Sector of employment	**1 Private**	**Private Returns (in Naira)**	15756	11629	14034
	2 Public		23951	17778	21475
Group Total			17088	12573	15216

Mean Monthly Earnings by Geo-Political Zone for Private & Public Sector

			Geo-Political Zone						Group Total
			1 North-East	2 North-West	3 North-Central	4 South-East	5 South-South	6 South-West	Mean
			Mean	Mean	Mean	Mean	Mean	Mean	
Sector of employment	1 Private	Private Returns (in Naira)	10915	14116	16642	14123	12204	14780	14043
	2 Public		29061	17392	18707	26194	20921	21832	21452
Group Total			13585	14722	16985	15406	13889	15902	15222

Report
salar_22r Private Returns (in Naira)

geo_zone Geo-Political Zone	st_ori_4 STATE OF ORIGIN	Mean	N	Std. Deviation
1 North-East	2 Adamawa	7917.09	844	14103.100
	5 Bauchi	16348.77	349	47841.672
	8 Borno	9587.30	569	8831.831
	15 Gombe	13577.82	142	12245.257
	34 Taraba	20913.38	205	95574.442
	35 Yobe	15999.94	188	26775.947
	Total	11783.28	2297	36570.382
2 North-West	17 Jigawa	12061.92	418	11346.019
	19 Kano	16412.95	837	33685.734
	20 Katsina	15290.64	548	34204.270
	21 Kebbi	11544.46	223	8988.964
	26 Niger	15549.81	259	16542.017
	33 Sokoto	15882.98	376	39398.075
	36 Zamfara	12544.09	306	10510.430
	Total	14685.24	2967	28186.874
3 North-Central	7 Benue	15040.86	590	17238.151

	18 Kaduna	22061.32	826	85849.039
	22 Kogi	10759.67	438	7647.136
	23 Kwara	13098.05	589	11852.452
	25 Nasarawa	7903.12	610	5808.226
	31 Plateau	13384.73	630	20628.156
	37 Abuja	17684.74	31	31468.801
	Total	14358.04	3714	42680.323
4 South-East	**1 Abia**	16712.74	607	14786.462
	4 Anambra	14158.44	736	16250.985
	11 Ebonyi	16666.00	577	22328.724
	14 Enugu	16509.26	700	39717.715
	16 Imo	11711.54	828	14430.876
	Total	14917.39	3448	23496.902
5 South-South	**3 Akwa Ibom**	12343.41	910	10515.072
	6 Bayelsa	15322.30	185	11948.611
	9 Cross River	11476.19	507	17304.479
	10 Delta	11730.25	518	11352.103
	12 Edo	12557.57	552	10871.974
	32 Rivers	16340.65	416	16852.756
	Total	12853.40	3088	13176.937
6 South-West	**13 Ekiti**	14465.80	373	17101.348
	24 Lagos	11705.75	421	16067.995
	27 Ogun	11030.31	914	11869.012
	28 Ondo	12466.07	681	13321.905
	29 Osun	16807.24	898	21936.134
	30 Oyo	14753.00	1087	34794.940
	Total	13722.99	4374	22593.577
Total	**1 Abia**	16712.74	607	14786.462
	2 Adamawa	7917.09	844	14103.100
	3 Akwa Ibom	12343.41	910	10515.072
	4 Anambra	14158.44	736	16250.985
	5 Bauchi	16348.77	349	47841.672
	6 Bayelsa	15322.30	185	11948.611

	7 Benue	15040.86	590	17238.151
	8 Borno	9587.30	569	8831.831
	9 Cross River	11476.19	507	17304.479
	10 Delta	11730.25	518	11352.103
	11 Ebonyi	16666.00	577	22328.724
	12 Edo	12557.57	552	10871.974
	13 Ekiti	14465.80	373	17101.348
	14 Enugu	16509.26	700	39717.715
	15 Gombe	13577.82	142	12245.257
	16 Imo	11711.54	828	14430.876
	17 Jigawa	12061.92	418	11346.019
	18 Kaduna	22061.32	826	85849.039
	19 Kano	16412.95	837	33685.734
	20 Katsina	15290.64	548	34204.270
	21 Kebbi	11544.46	223	8988.964
	22 Kogi	10759.67	438	7647.136
	23 Kwara	13098.05	589	11852.452
	24 Lagos	11705.75	421	16067.995
	25 Nasarawa	7903.12	610	5808.226
	26 Niger	15549.81	259	16542.017
	27 Ogun	11030.31	914	11869.012
	28 Ondo	12466.07	681	13321.905
	29 Osun	16807.24	898	21936.134
	30 Oyo	14753.00	1087	34794.940
	31 Plateau	13384.73	630	20628.156
	32 Rivers	16340.65	416	16852.756
	33 Sokoto	15882.98	376	39398.075
	34 Taraba	20913.38	205	95574.442
	35 Yobe	15999.94	188	26775.947
	36 Zamfara	12544.09	306	10510.430
	37 Abuja	17684.74	31	31468.801
	Total	13833.16	19888	29135.883

ANOVA Table							
			Sum of Squares	df	Mean Square	F	Sig.
salar_22r Private Returns (in Naira) * geo_zone Geo-Political Zone	Between Groups	(Combined)	19899989618.071	5	3979997923.614	4.693	.000
	Within Groups		16862167414781.180	19882	848112232.913		
	Total		16882067404399.250	19887			

Measures of Association		
	Eta	Eta Squared
salar_22r Private Returns (in Naira) * geo_zone Geo-Political Zone	.034	.001

Means

Report salar_22r Private Returns (in Naira)			
occup_18r1 Occupation	Mean	N	Std. Deviation
0 Not Stated	6747.01	3279	3256.248
1 Health & Safety Workers	21670.03	312	37988.282
2 Education	18525.65	1084	17852.989
3 Agriculture	12994.58	6387	36205.939
4 Science & Technology	22662.87	470	22534.919
5 Commerce & Industry	15928.91	5478	31403.476
6 Legal & Security Workers	23096.66	179	20198.578
7 Information Management	15292.50	102	11987.465
8 Others	16384.37	1598	29670.581
Total	13857.23	18889	29673.607

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
salar_22r Private Returns (in Naira) * occup_18r1 Occupation	Between Groups	(Combined)	298843408935.205	8	37355426116.901	43.182	.000
	Within Groups		16332473997596.270	18880	865067478.686		
	Total		16631317406531.470	18888			

Measures of Association		
	Eta	Eta Squared
salar_22r Private Returns (in Naira) * occup_18r1 Occupation	.134	.018

Average monthly Earnings by level of Education for Private& Public Sector

			Level of Education				Group Total
			1 No Education	2 Primary	3 Secondary	4 Tertiary	Mean
			Mean	Mean	Mean	Mean	
Sector of employment	1 Private	Private Returns (in Naira)	11239.12	12156.18	13865.43	25341.98	13368.54
	2 Public		18473.01	12719.18	16425.16	26168.41	21558.64
Group Total			11459.81	12201.15	14288.07	25798.85	14692.39

Descriptives
salar_22r Private Returns (in Naira)

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1 North-East	2297	11783.28	36570.382	763.043	10286.96	13279.61	6500	960000
2 North-West	2967	14685.24	28186.874	517.474	13670.59	15699.88	6500	800000
3 North-Central	3714	14358.04	42680.323	700.336	12984.96	15731.12	6500	970000
4 South-East	3448	14917.39	23496.902	400.154	14132.83	15701.95	6500	500000
5 South-South	3088	12853.40	13176.937	237.124	12388.47	13318.34	6500	345000
6 South-West	4374	13722.99	22593.577	341.622	13053.24	14392.75	6500	720000
Total	19888	13833.16	29135.883	206.601	13428.21	14238.12	6500	970000

ANOVA
salar_22r Private Returns (in Naira)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	19899989618.071	5	3979997923.614	4.693	.000
Within Groups	16862167414781.160	19882	848112232.913		
Total	16882067404399.230	19887			

Mean Earnings by Occupation in Public and Private Sector

			Occupation (Type of work done in place of work)									Group Total
			0 Not Stated	1 Health & Safety	2 Educ.	3 Agriculture	4 Sci. & Tech.	5 Comm. & Industry	6 Legal & Security	7 Infor. Mgt.	8 Others	Mean
			Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	

Sector of employ-ment	**1 Private**	**Private Returns (in Naira)**	11103	18962	14460	12898	20541	14942	21294	11195	14404	14089
	2 Public		12852	26696	20240	16616	26213	21598	24688	21762	29641	22097
Group Total			11496	22300	18473	12993	22309	15992	23156	15380	16440	15324

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.026(a)	.001	.001	2780.932

a Predictors: (Constant), salar_22r Private Returns (in Naira)

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	**Regression**	98429378.986	1	98429378.986	12.728	.000(a)
	Residual	146064229157.022	18887	7733585.490		
	Total	146162658536.007	18888			

a Predictors: (Constant), salar_22r Private Returns (in Naira)

b Dependent Variable: occup_18r1 Occupation

ANOVA on Private Returns to Education on account of Occupation

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
salar_22r Private Returns (in Naira) * occup_18r1 Occupation	**Between Groups**	**(Combined)**	298843408935.205	8	37355426116.901	43.182	.000
		Linearity	11199921104.570	1	11199921104.570	12.947	.000
		Deviation from Linearity	287643487830.636	7	41091926832.948	47.501	.000

	Within Groups	16332473997596.270	18880	865067478.686		
	Total	16631317406531.470	18888			

Measures of Association

	R	R Squared	Eta	Eta Squared
salar_22r Private Returns (in Naira) * occup_18r1 Occupation (Type of work done in place of work)	.026	.001	.134	.018

ANOVA on Private Returns to Education on account of Sector

Report

salar_22r Private Returns (in Naira)

Stat_19r Sector of employment	Mean	N	Std. Deviation
1 Private	14033.67	13562	30897.838
2 Public	21475.45	2561	36516.239
Total	15215.73	16123	31971.236

ANOVA Table(a)

			Sum of Squares	df	Mean Square	F	Sig.
salar_22r Private Returns (in Naira) * Stat_19r Sector of employment	**Between Groups**	**(Combined)**	119300184407.792	1	119300184407.792	117.558	.000
	Within Groups		16359962465705.070	16121	1014823054.755		
	Total		16479262650112.860	16122			

a With fewer than three groups, linearity measures for salar_22r Private Returns (in Naira) * Stat_19r Type of Sector (Industrial) cannot be computed.

Measures of Association

	Eta	Eta Squared
salar_22r Private Returns (in Naira) * Stat_19r Type of Sector (Industrial)	.085	.007

ANOVA on Private Returns to Education among the three levels of education

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.148(a)	.022	.022	1.063
a Predictors: (Constant), salar_22r Private Returns (in Naira)				

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	477.000	1	477.000	421.788	.000(a)
	Residual	21250.727	18791	1.131		
	Total	21727.726	18792			
a Predictors: (Constant), salar_22r Private Returns (in Naira)						
b Dependent Variable: highe_13r4 Level of Education						

Report

salar_22r Private Returns (in Naira)

highe_13r4 Level of Education	Mean	N	Std. Deviation
1 No Education	11063.24	5937	27851.479
2 Primary	11256.78	4910	15901.404
3 Secondary	12905.25	4873	21465.006
4 Tertiary	23437.90	3073	28133.372
Total	13614.92	18793	24069.510

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
salar_22r Private Returns (in Naira) * highe_13r4 Level of Education	Between Groups	(Combined)	364930355636.947	3	121643451878.983	217.216	.000
		Linearity	239007427558.653	1	239007427558.653	426.790	.000
		Deviation from Linearity	125922928078.295	2	62961464039.148	112.429	.000
	Within Groups		10522051275637.950	18789	560011244.645		
	Total		10886981631274.900	18792			

Measures of Association

	R	R Squared	Eta	Eta Squared

salar_22r Private Returns (in Naira) * highe_13r4 Level of Education	.148	.022	.183	.034

Result of Scheffe Post Hoc Test of significant difference in Private Returns to Education by Geo-Political Zone

Descriptives
salar_22r Private Returns (in Naira)

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1 North-East	2297	11783.28	36570.382	763.043	10286.96	13279.61	6500	960000
2 North-West	2967	14685.24	28186.874	517.474	13670.59	15699.88	6500	800000
3 North-Central	3714	14358.04	42680.323	700.336	12984.96	15731.12	6500	970000
4 South-East	3448	14917.39	23496.902	400.154	14132.83	15701.95	6500	500000
5 South-South	3088	12853.40	13176.937	237.124	12388.47	13318.34	6500	345000
6 South-West	4374	13722.99	22593.577	341.622	13053.24	14392.75	6500	720000
Total	19888	13833.16	29135.883	206.601	13428.21	14238.12	6500	970000

ANOVA
salar_22r Private Returns (in Naira)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	19899989618.071	5	3979997923.614	4.693	.000
Within Groups	16862167414781.160	19882	848112232.913		
Total	16882067404399.230	19887			

Post Hoc Tests

Multiple Comparisons
Dependent Variable: salar_22r Private Returns (in Naira)
Scheffe

(I) geo_zone Geo-Political Zone	(J) geo_zone Geo-Political Zone	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1 North-East	2 North-West	-2901.954(*)	809.367	.025	-5595.18	-208.73
	3 North-Central	-2574.758(*)	773.034	.050	-5147.09	-2.43
	4 South-East	-3134.109(*)	784.346	.007	-5744.08	-524.14
	5 South-South	-1070.121	802.417	.879	-3740.22	1599.98
	6 South-West	-1939.712	750.416	.245	-4436.78	557.35
2 North-West	1 North-East	2901.954(*)	809.367	.025	208.73	5595.18
	3 North-Central	327.196	717.080	.999	-2058.94	2713.33
	4 South-East	-232.154	729.260	1.000	-2658.82	2194.51
	5 South-South	1831.833	748.663	.308	-659.40	4323.06
	6 South-West	962.242	692.638	.859	-1342.56	3267.04
3 North-Central	1 North-East	2574.758(*)	773.034	.050	2.43	5147.09
	2 North-West	-327.196	717.080	.999	-2713.33	2058.94
	4 South-East	-559.350	688.715	.985	-2851.10	1732.40
	5 South-South	1504.637	709.227	.480	-855.37	3864.64
	6 South-West	635.046	649.811	.966	-1527.25	2797.34
4 South-East	1 North-East	3134.109(*)	784.346	.007	524.14	5744.08
	2 North-West	232.154	729.260	1.000	-2194.51	2658.82
	3 North-Central	559.350	688.715	.985	-1732.40	2851.10
	5 South-South	2063.988	721.540	.147	-336.99	4464.97
	6 South-West	1194.396	663.228	.663	-1012.54	3401.33
5 South-South	1 North-East	1070.121	802.417	.879	-1599.98	3740.22
	2 North-West	-1831.833	748.663	.308	-4323.06	659.40
	3 North-Central	-1504.637	709.227	.480	-3864.64	855.37
	4 South-East	-2063.988	721.540	.147	-4464.97	336.99
	6 South-West	-869.591	684.504	.900	-3147.33	1408.15
6 South-West	1 North-East	1939.712	750.416	.245	-557.35	4436.78

	2 North-West	-962.242	692.638	.859	-3267.04	1342.56
	3 North-Central	-635.046	649.811	.966	-2797.34	1527.25
	4 South-East	-1194.396	663.228	.663	-3401.33	1012.54
	5 South-South	869.591	684.504	.900	-1408.15	3147.33

* The mean difference is significant at the .05 level.

Homogeneous Subsets

salar_22r Private Returns (in Naira)
Scheffe

geo_zone Geo-Political Zone	**N**	**Subset for alpha = .05**	
		1	**2**
1 North-East	2297	11783.28	
5 South-South	3088	12853.40	12853.40
6 South-West	4374	13722.99	13722.99
3 North-Central	3714		14358.04
2 North-West	2967		14685.24
4 South-East	3448		14917.39
Sig.		.216	.156

Means for groups in homogeneous subsets are displayed.

a Uses Harmonic Mean Sample Size = 3184.504.

b The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Result of Scheffe Post Hoc Test of significant difference in Private Returns to Education by Occupation

Descriptives
salar_22r Private Returns (in Naira)

	N	**Mean**	**Std. Deviation**	**Std. Error**	**95% Confidence Interval for Mean**		**Minimum**	**Maximum**
					Lower Bound	**Upper Bound**		
0 Not Stated	3279	6747.01	3256.248	56.865	6635.52	6858.51	6500	120000

1 Health & Safety	312	21670.03	37988.282	2150.663	17438.34	25901.72	6500	400000
2 Educ.	1084	18525.65	17852.989	542.246	17461.68	19589.62	6500	360000
3 Agric.	6387	12994.58	36205.939	453.035	12106.48	13882.68	6500	950000
4 Science & Tech.	470	22662.87	22534.919	1039.458	20620.30	24705.44	6500	300000
5 Comm. & Industry	5478	15928.91	31403.476	424.294	15097.12	16760.69	6500	970000
6 Legal & Security	179	23096.66	20198.578	1509.713	20117.42	26075.90	6500	130000
7 Infor. Mgt.	102	15292.50	11987.465	1186.936	12937.94	17647.06	6500	72000
9999 Others	1598	16384.37	29670.581	742.229	14928.53	17840.22	6500	520000
Total	18889	13857.23	29673.607	215.907	13434.03	14280.42	6500	970000

ANOVA
salar_22r Private Returns (in Naira)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	298843408935.204	8	37355426116.901	43.182	.000
Within Groups	16332473997596.270	18880	865067478.686		
Total	16631317406531.470	18888			

Post Hoc Tests

Multiple Comparisons
Dependent Variable: salar_22r Private Returns (in Naira)
Scheffe

(I) occup_18r1 Occupation (Type of work done in place of work)	(J) occup_18r1 Occupation (Type of work done in place of work)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
0 Not Stated	**1 Health & Safety**	-14923.021(*)	1742.548	.000	-21785.92	-8060.12
	2 Education	-11778.642(*)	1030.463	.000	-15837.05	-7720.24
	3 Agriculture	-6247.573(*)	631.872	.000	-8736.16	-3758.99
	4 Science & Technology	-15915.859(*)	1450.651	.000	-21629.15	-10202.57
	5 Commerce & Industry	-9181.898(*)	649.413	.000	-11739.56	-6624.23
	6 Legal & Security	-16349.648(*)	2257.565	.000	-25240.91	-7458.39

	7 Information Management	-8545.489	2957.173	.400	-20192.10	3101.13
	9999 Others	-9637.360(*)	897.310	.000	-13171.35	-6103.37
1 Health & Safety	**0 Not Stated**	14923.021(*)	1742.548	.000	8060.12	21785.92
	2 Education	3144.379	1889.626	.948	-4297.78	10586.53
	3 Agriculture	8675.448(*)	1705.313	.001	1959.19	15391.70
	4 Science & Technology	-992.838	2147.841	1.000	-9451.96	7466.28
	5 Commerce & Industry	5741.123	1711.890	.188	-1001.03	12483.28
	6 Legal & Security	-1426.627	2757.795	1.000	-12288.00	9434.75
	7 Information Management	6377.532	3354.654	.890	-6834.53	19589.60
	9999 Others	5285.660	1820.438	.393	-1884.01	12455.33
2 Education	**0 Not Stated**	11778.642(*)	1030.463	.000	7720.24	15837.05
	1 Health & Safety	-3144.379	1889.626	.948	-10586.53	4297.78
	3 Agriculture	5531.069(*)	966.165	.000	1725.90	9336.24
	4 Science & Technology	-4137.217	1624.377	.593	-10534.71	2260.28
	5 Commerce & Industry	2596.744	977.727	.531	-1253.96	6447.45
	6 Legal & Security	-4571.006	2372.933	.882	-13916.63	4774.62
	7 Information Management	3233.153	3046.159	.997	-8763.93	15230.23
	9999 Others	2141.281	1157.314	.905	-2416.72	6699.28
3 Agriculture	**0 Not Stated**	6247.573(*)	631.872	.000	3758.99	8736.16
	1 Health & Safety	-8675.448(*)	1705.313	.001	-15391.70	-1959.19
	2 Education	-5531.069(*)	966.165	.000	-9336.24	-1725.90
	4 Science & Technology	-9668.286(*)	1405.707	.000	-15204.56	-4132.01
	5 Commerce & Industry	-2934.325(*)	541.626	.000	-5067.48	-801.17
	6 Legal & Security	-10102.075(*)	2228.951	.008	-18880.64	-1323.51
	7 Information Management	-2297.916	2935.387	1.000	-13858.73	9262.89
	9999 Others	-3389.788(*)	822.670	.030	-6629.81	-149.76
4 Science & Technology	**0 Not Stated**	15915.859(*)	1450.651	.000	10202.57	21629.15
	1 Health & Safety	992.838	2147.841	1.000	-7466.28	9451.96
	2 Education	4137.217	1624.377	.593	-2260.28	10534.71
	3 Agriculture	9668.286(*)	1405.707	.000	4132.01	15204.56

	5 Commerce & Industry	6733.961(*)	1413.678	.004	1166.29	12301.63
	6 Legal & Security	-433.789	2583.282	1.000	-10607.86	9740.28
	7 Information Management	7370.370	3212.728	.729	-5282.73	20023.47
	9999 Others	6278.498(*)	1543.345	.035	200.15	12356.85
5 Commerce & Industry	**0 Not Stated**	9181.898(*)	649.413	.000	6624.23	11739.56
	1 Health & Safety	-5741.123	1711.890	.188	-12483.28	1001.03
	2 Education	-2596.744	977.727	.531	-6447.45	1253.96
	3 Agriculture	2934.325(*)	541.626	.000	801.17	5067.48
	4 Science & Technology	-6733.961(*)	1413.678	.004	-12301.63	-1166.29
	6 Legal & Security	-7167.750	2233.987	.245	-15966.15	1630.65
	7 Information Management	636.409	2939.213	1.000	-10939.47	12212.29
	9999 Others	-455.463	836.218	1.000	-3748.85	2837.92
6 Legal & Security	**0 Not Stated**	16349.648(*)	2257.565	.000	7458.39	25240.91
	1 Health & Safety	1426.627	2757.795	1.000	-9434.75	12288.00
	2 Education	4571.006	2372.933	.882	-4774.62	13916.63
	3 Agriculture	10102.075(*)	2228.951	.008	1323.51	18880.64
	4 Science & Technology	433.789	2583.282	1.000	-9740.28	10607.86
	5 Commerce & Industry	7167.750	2233.987	.245	-1630.65	15966.15
	7 Information Management	7804.159	3648.813	.802	-6566.43	22174.75
	9999 Others	6712.288	2318.215	.397	-2417.84	15842.41
7 Information Management	**0 Not Stated**	8545.489	2957.173	.400	-3101.13	20192.10
	1 Health & Safety	-6377.532	3354.654	.890	-19589.60	6834.53
	2 Education	-3233.153	3046.159	.997	-15230.23	8763.93
	3 Agriculture	2297.916	2935.387	1.000	-9262.89	13858.73
	4 Science & Technology	-7370.370	3212.728	.729	-20023.47	5282.73
	5 Commerce & Industry	-636.409	2939.213	1.000	-12212.29	10939.47
	6 Legal & Security	-7804.159	3648.813	.802	-22174.75	6566.43
	9999 Others	-1091.872	3003.731	1.000	-12921.85	10738.11
9999 Others	**0 Not Stated**	9637.360(*)	897.310	.000	6103.37	13171.35
	1 Health & Safety	-5285.660	1820.438	.393	-12455.33	1884.01
	2 Education	-2141.281	1157.314	.905	-6699.28	2416.72

	3 Agriculture	3389.788(*)	822.670	.030	149.76	6629.81
	4 Science & Technology	-6278.498(*)	1543.345	.035	-12356.85	-200.15
	5 Commerce & Industry	455.463	836.218	1.000	-2837.92	3748.85
	6 Legal & Security	-6712.288	2318.215	.397	-15842.41	2417.84
	7 Information Management	1091.872	3003.731	1.000	-10738.11	12921.85
* The mean difference is significant at the .05 level.						

Homogeneous Subsets

salar_22r Private Returns (in Naira)
Scheffe

occup_18r1 Occupation (Type of work done in place of work)	**N**	**Subset for alpha = .05**		
		1	**2**	**3**
0 Not Stated	3279	6747.01		
3 Agriculture	6387	12994.58	12994.58	
7 Information Management	102		15292.50	15292.50
5 Commerce & Industry	5478		15928.91	15928.91
9999 Others	1598		16384.37	16384.37
2 Education	1084		18525.65	18525.65
1 Health & Safety Workers	312			21670.03
4 Science & Technology	470			22662.87
6 Legal & Security Workers	179			23096.66
Sig.		.354	.543	.087

Means for groups in homogeneous subsets are displayed.

a Uses Harmonic Mean Sample Size = 392.744.

b The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Result of Scheffe Post Hoc Test of significant difference in Private Returns to Education by Level

Descriptives
salar_22r Private Returns (in Naira)

	N	**Mean**	**Std.**	**Std.**	**95% Confidence Interval for**	**Minimum**	**Maximum**

			Deviation	Error	Mean			
					Lower Bound	Upper Bound		
1 No Education	5937	11063.24	27851.479	361.464	10354.64	11771.84	6500	960000
2 Primary	4910	11256.78	15901.404	226.931	10811.90	11701.67	6500	500000
3 Secondary	4873	12905.25	21465.006	307.491	12302.43	13508.07	6500	960000
4 Tertiary	3073	23437.90	28133.372	507.505	22442.81	24432.98	6500	520000
Total	18793	13614.92	24069.510	175.578	13270.77	13959.07	6500	960000

ANOVA
salar_22r Private Returns (in Naira)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	364930355636.947	3	121643451878.983	217.216	.000
Within Groups	10522051275637.960	18789	560011244.645		
Total	10886981631274.900	18792			

Post Hoc Tests

Multiple Comparisons
Dependent Variable: salar_22r Private Returns (in Naira)
Scheffe

(I) highe_13r4 Level of Education	(J) highe_13r4 Level of Education	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1 No Education	**2 Primary**	-193.538	456.488	.981	-1469.76	1082.68
	3 Secondary	-1842.005(*)	457.435	.001	-3120.87	-563.14
	4 Tertiary	-12374.653(*)	525.891	.000	-13844.91	-10904.40
2 Primary	**1 No Education**	193.538	456.488	.981	-1082.68	1469.76
	3 Secondary	-1648.467(*)	478.515	.008	-2986.27	-310.67
	4 Tertiary	-12181.115(*)	544.326	.000	-13702.91	-10659.32
3 Secondary	**1 No Education**	1842.005(*)	457.435	.001	563.14	3120.87
	2 Primary	1648.467(*)	478.515	.008	310.67	2986.27

	4 Tertiary	-10532.648(*)	545.121	.000	-12056.66	-9008.63
4 Tertiary	**1 No Education**	12374.653(*)	525.891	.000	10904.40	13844.91
	2 Primary	12181.115(*)	544.326	.000	10659.32	13702.91
	3 Secondary	10532.648(*)	545.121	.000	9008.63	12056.66

* The mean difference is significant at the .05 level.

Homogeneous Subsets

salar_22r Private Returns (in Naira)
Scheffe

highe_13r4 Level of Education	**N**	**Subset for alpha = .05**		
		1	**2**	**3**
1 No Education	5937	11063.24		
2 Primary	4910	11256.78		
3 Secondary	4873		12905.25	
4 Tertiary	3073			23437.90
Sig.		.985	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a Uses Harmonic Mean Sample Size = 4431.011.

b The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Average Earnings by Work Experience on account of Private Returns to Education for Public & Private Sectors

			Work Experience (in yrs.)				**Group Total**
			2 (5 - 9)yrs	**3 (10 - 14)yrs**	**4 (15 - 19)yrs**	**5 (20yrs & above**	**Mean**
			Mean	**Mean**	**Mean**	**Mean**	
Sector of employment	**1 Private**	**Private Returns (in Naira)**	9564	31411	25298	83384	14743
	2 Public		12473	29982	31274	116036	21770
Group Total			10106	30588	26382	91776	16352

All Workers in Public & Private Sector

Dependent Variable: LOG(PRIV_RETURNS)
Method: Least Squares

Date: 04/04/11 Time: 12:37
Sample(adjusted): 2 57371
Included observations: 12856
Excluded observations: 44514 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXP2	-0.002733	5.96E-05	-45.85726	0.0000
EXP	0.179967	0.001720	104.6218	0.0000
SEC_EDU	0.269101	0.010670	25.22151	0.0000
UNI_EDU	0.775344	0.011690	66.32353	0.0000
PRY_EDU	-0.131286	0.010919	-12.02394	0.0000
C	7.948045	0.012235	649.6390	0.0000

R-squared	0.829508	Mean dependent var	9.310369
Adjusted R-squared	0.829441	S.D. dependent var	0.654102
S.E. of regression	0.270136	Akaike info criterion	0.220684
Sum squared resid	937.7088	Schwarz criterion	0.224166
Log likelihood	-1412.556	F-statistic	12504.00
Durbin-Watson stat	1.147619	Prob(F-statistic)	0.000000

Male Workers in Private Sector

Dependent Variable: LOG(PRIV_RETURNS)
Method: Least Squares
Date: 04/04/11 Time: 12:41
Sample(adjusted): 2 8607
Included observations: 4729
Excluded observations: 3877 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PRY_EDU	-0.145886	0.029554	-4.936210	0.0000
EXP2	-0.001856	0.000107	-17.42625	0.0000
EXP	0.160557	0.002984	53.79897	0.0000
SEC_EDU	0.356024	0.029295	12.15291	0.0000
UNI_EDU	0.854914	0.031183	27.41594	0.0000
C	8.023183	0.031118	257.8332	0.0000

R-squared	0.833140	Mean dependent var	9.386600
Adjusted R-squared	0.832963	S.D. dependent var	0.666314
S.E. of regression	0.272324	Akaike info criterion	0.237618
Sum squared resid	350.2590	Schwarz criterion	0.245816
Log likelihood	-555.8484	F-statistic	4716.419
Durbin-Watson stat	1.426307	Prob(F-statistic)	0.000000

Female Workers in Private

Dependent Variable: LOG(PRIV_RETURNS)
Method: Least Squares
Date: 04/04/11 Time: 12:43
Sample(adjusted): 2 6239
Included observations: 3884
Excluded observations: 2354 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PRY_EDU	-0.155460	0.033310	-4.667012	0.0000
EXP2	-0.001990	0.000117	-16.97039	0.0000
SEC_EDU	0.364174	0.032989	11.03925	0.0000
EXP	0.165379	0.003320	49.81610	0.0000
UNI_EDU	0.857869	0.034839	24.62354	0.0000
C	8.002401	0.035001	228.6322	0.0000

R-squared	0.835220	Mean dependent var	9.410054
Adjusted R-squared	0.835007	S.D. dependent var	0.681127
S.E. of regression	0.276669	Akaike info criterion	0.269555
Sum squared resid	296.8447	Schwarz criterion	0.279232
Log likelihood	-517.4754	F-statistic	3931.273
Durbin-Watson stat	1.445718	Prob(F-statistic)	0.000000

Male Workers in Public Sector

Dependent Variable: LOG(PRIV_RETURNS)
Method: Least Squares
Date: 04/04/11 Time: 12:45
Sample(adjusted): 2 1677
Included observations: 1016
Excluded observations: 660 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PRY_EDU	-0.161983	0.067481	-2.400403	0.0166
EXP2	-0.001149	0.000223	-5.157088	0.0000
EXP	0.143861	0.006353	22.64419	0.0000
SEC_EDU	0.334152	0.067294	4.965521	0.0000
UNI_EDU	0.812847	0.069199	11.74656	0.0000
C	8.088974	0.070838	114.1892	0.0000

R-squared	0.848684	Mean dependent var	9.337179
Adjusted R-squared	0.847935	S.D. dependent var	0.674090
S.E. of regression	0.262865	Akaike info criterion	0.171534
Sum squared resid	69.78891	Schwarz criterion	0.200611
Log likelihood	-81.13953	F-statistic	1132.956
Durbin-Watson stat	1.572467	Prob(F-statistic)	0.000000

Female Workers in Public

Dependent Variable: LOG(PRIV_RETURNS)
Method: Least Squares
Date: 04/04/11 Time: 12:47
Sample(adjusted): 2 1038
Included observations: 693
Excluded observations: 344 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PRY_EDU	-0.186416	0.083791	-2.224771	0.0264
EXP2	-0.001146	0.000262	-4.370401	0.0000
SEC_EDU	0.321540	0.083220	3.863746	0.0001
EXP	0.146908	0.007664	19.16818	0.0000
UNI_EDU	0.844748	0.085211	9.913634	0.0000
C	8.073671	0.087402	92.37366	0.0000

R-squared	0.856341	Mean dependent var	9.394618
Adjusted R-squared	0.855296	S.D. dependent var	0.708881
S.E. of regression	0.269658	Akaike info criterion	0.225299
Sum squared resid	49.95565	Schwarz criterion	0.264615
Log likelihood	-72.06600	F-statistic	819.0348
Durbin-Watson stat	1.626693	Prob(F-statistic)	0.000000

Composite contribution of level of Education, Year of Schooling, Occupation, Gender, Age, Work Experience and Sector of employment on Earnings in Nigeria

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.635(a)	0.403	0.403	17927.717

a Predictors: (Constant), Stat_19r Type of Sector (Industrial), occup_18r1 Occupation (Type of work done in place of work), age_7 AGE OF RESPONDENT, Exp Work Experience (in yrs), sex_8 SEX OF RESPONDENT, highe_13rr Years of Schooling, highe_13r1 Level of

Model		Sum of Squares	df	Mean Square	F	
1	Regression	1.74317E+12	7	2.49024E+11	774.804	.000(a)
	Residual	2.57797E+12	8021	321403038.5		
	Total	4.32114E+12	8028			

a Predictors: (Constant), Stat_19r Type of Sector (Industrial), occup_18r1 Occupation (Type of work done in place of work), age_7 AGE OF RESPONDENT, Exp Work Experience (in yrs), sex_8 SEX OF RESPONDENT, highe_13rr Years of Schooling, highe_13r1 Level of

Relative contribution of level of Education, Year of Schooling, Occupation, Gender, Age, Work Experience and Sector of employment on Earnings in Nigeria

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-27783.743	1320.991		-21.033	0
	age_7 AGE OF RESPONDENT	25.405	16.173	0.014	1.571	0.116
	sex_8 Gender of respondent	551.831	424.047	0.012	1.301	0.193
	highe_13rr Years of Schooling	-332.563	541.026	-0.049	-0.615	0.539
	highe_13r1 Level of Education	13219.914	2843.382	0.372	4.649	0
	occup_18r1 Occupation (Type of work done in place of work)	-0.07	0.065	-0.009	-1.078	0.281
	Exp Work Experience (in yrs)	2909.932	42.768	0.611	68.039	0
	Stat_19r Type of Sector (Industrial)	-1290.022	590.494	-0.02	-2.185	0.029

a Dependent Variable: salar_22r Private Returns (in Naira)