Determinants of wages: Evidence from Nigeria

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ABSTRACT

The structure of the labor market has a significant consequence on employment status which indirectly also serves as an important determinant of household income and welfare. Hence this research work explored the determinants of wages and degree of wage inequality with respect to gender, education, experience, religion, and public versus private and self- employed versus private sectors using a recent survey data of Nigeria General Household Survey (GHS) provided by the National Bureau of statistics (NBS) conducted in 2010-2011 on 5,000 households from all states. Using the Mincer type wage equation on the return to education and experience, our findings show that men earn less than women by 16.1 percent at all levels of education which gave similar results in the extended specifications. The coefficient for experience variable is very small which is 0.35 percent and not significant at conventional levels. This finding means that on-the-job training plays no significant role in wage determination. Similarly, self-employed earn 16.4 percent less than other employment categories in the rural area while the dummy for religion is highly significant showing that Christians earn 23 percent higher than the base category in the model. While the wage differential is constant at all levels of education for the whole country, it waries with level of education for the rural area, gender gap increasing at higher levels of education in favor of females.

Keywords: SAP, wage gap, employment category.

ÖZ

Emek piyasasının yapısı, çalışanın ekonomik durumu ve dolayısı ile hanehalkı gelir ve yaşam standardını belirlemede önemli rol oynamaktadır. Bu çalışmada, Nijerya Ulusal İstatistik Bürosu (NBS) tarafından 2010-2011 döneminde 5,000 hanehalkı için yapılan Nijerya Genel Hanehalkı Anketi (GHS) kullanılarak ücreti belirleyen faktörler ve ayrıca cinsiyet, eğitim, iş tecrübesi, din, kamu sektörü, özel sektör ve iş sahibi emek piyasası kategorilerine göre ücret ayırımcılığı araştırılmıştır.Mincer tipi ücret fonksiyonu tahmin sonuçları, ülke genelinde, erkeklerin kadınlara kıyasla percent 16.1 daha düşük ücret aldıkları saptanmıştır. Diğer yandan, iş tecrübesi değişkeni oldukça düşük, 0.35 percent, olmakla beraber istatistiksel bakımdan anlamlı bulunmamıştır. Hemülke genelinde, hem de kırsal bölgelerde kendi işinde çalıanların daha düşük ücret aldıkları, bu oranın kırsal bölgeler için percent16.4 olduğu saptanmıştır. Ayrıca, yine kırsal bölgelerde, Hıritiyanların percent23 daha fazla ücret aldığı bulunmuştur.Tüm ülke genelinde, kadın erkek arasındaki ücret farkı, eğitim seviyesi ile değişmemekte ancak, kırsal bölgelerde eğitim seviyesi yükseldikçe, farkin erkekler aleyhine arttığı tespit edilmiştir.

Anahtar kelimeler: SAP, ücret farkı, iş, emek piyasası.

DEDICATION

To

The Everlasting God

Through

Prof. Emmanuel Olayiwola Oni, entire family and friends.

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Chapter 1

INTRODUCTION

Since independence in 1960, the Nigerian economy despite its vast number of natural resources such as crude oil has experienced some economic instabilities leading to unemployment and inefficient allocation of resources. Over the years, agriculture which has been the main stay of the economy has been neglected recording no visible development. In 1960's, agriculture contributed about 65-70 percent to the federal government revenue and this was significantly more than what other sectors contributed at the time. In subsequent years, low activity of the agricultural sector has led to decrease in its contribution to the GDP. This can be said to be as a result of discovery of crude oil which now contributes larger share to the country's economy.

Nigeria being the largest economy in Africa with estimated population of about 162 million is ranked the world's seventh most populated country in the world. According to the 2011 Central Bank of Nigeria (CBN) Bulletin, about 38 percent of females lack formal education, increasing the proportion of illiterates and inefficiency in economic activity. An estimate of about 22 percent of the male counterpart lacks formal education. The unemployment rate in Nigeria has been on the increase since the neglect of agricultural sector: the National Bureau of Statistics of Nigeria reported an increase to 23.9 percent in 2011 from 21.1 percent in 2010. Aminu (2011) reported that the Nigerian unemployment rate averaged 14.6 percent

between 2006 and 2011 which reached the highest value of 23.9 percent in December of 2011 and a recorded the lowest of 5.3 percent in December of 2006.

In 1986, the Structural Adjustment Program (SAP) was introduced to restructure and diversify the productive base of the economy in order to reduce dependency on the oil sector, promote the non-inflationary economic growth and finally to achieve fiscal and balance of payments viability Analogbei (2000). Nigeria has opened up trade and has undergone capital market liberalization in parallel to the globalization trend in the world. Like other developing countries, this was expected to affect the Nigerian economy positively. For example as Tokarick (2008) reported, agricultural trade liberalization has positive welfare effects through removal of tariffs and subsidies. Accordingly, while the removal of tariffs leads to increased demand for the product, thus increasing prices, the removal of subsidies would shift resources from the agricultural sector to other sectors that also would affect prices upward leading to welfare gains for the net exporters of agricultural products. However, the Nigerian economy still suffers from wage inequality between the agricultural sector and oil sector which received more attention after adoption of the SAP program. The reasons can be explained by three main factors in summary; first, the positive response of the agricultural sector to the SAP program could not be sustained due to mainly unsatisfactory agricultural financing and small scale of farmers, infrastructure and management problems, also because of the fact that the manufacturing sector was still highly dependent on import of foreign inputs, and the oil sector was mainly owned by foreigners.

After 1986, new policies were implemented by the federal government to improve the labor market as well. This trend was established to improve the wage rate of the public sector and enhance the effectiveness of people Aminu (2011). However, this led to migration into the cities, as government wages are favorable compared with income opportunities in the rural areas. This has led to wage gap between rural and urban, public and private sector and protected and unprotected sectors.

The structure of the labor market has a significant consequence on employment status and it serves as an important determinant of household income and welfare. Like most labor markets in developing countries, the Nigerian labor market is not growing as fast as the population and this has increased poverty over the years. In this respect, it is important to explore the features of the Nigerian labor market to explain wage inequalities with regard to individual characteristics of labour, public and private sector and self-employers. Wage differential with respect to gender is another issue which may be contributing to wage inequality in Nigeria for which a Gender Equality Legislation was enacted by the 2007 Gender Equality Duty Aromolaran (2006), in order to address the issue.

1.1 Aim of the study

So long as agriculture is the highest employer of labor, second largest GDP contributor and the major means of Nigerian people livelihood, the aim of the research is to introduce a model that will investigate the determinants of wages in Nigeria covering 36 states both rural and urban during a recent time in 2011. The wage equation is of Mincerian type, however, in addition will include other individual and regional characteristics such as gender, religion, employment categories and state of residence. In this respect, the paper will explore the degree of

wage inequality with respect to gender, religion, and public versus private and self-employed versus salary workers using the recent survey data of Nigeria General Household Survey (GHS) provided by the National Bureau of statistics (NBS) conducted in 2010-2011 on 5,000 households from all states.

1.2 Structure of the study

First, theoretical literature of wage function is presented in chapter two. Description of the variables used within the human capital theory will be explained in this chapter followed by the empirical literature review showing other researchers contribution. The Nigerian labor market will be analyzed in the third chapter as we proceed. Information on the survey data used and descriptive statistics on key variables and the estimated model will be presented in chapter four. Chapter five will present the estimation results while chapter six will be on conclusion with remarks.

Chapter 2

THEORETICAL FRAMEWORK

This chapter will present the theoretical framework for wage determinants which is based on an extended version of Mincerian human capital model. Furthermore, major work contributing to the literature with different empirical findings will also be summarized.

2.1 Human Capital Framework

The literature is well established for determining factors contributing to wages through human capital theory. Human capital formation is understood to be productive capabilities of human generating income. Therefore, the determinants of earnings have played a major role in human capital theory. Thus, this formation is related with investment in human and capital development, Thurow (1975). For instance, in (1776), Adam Smith emphasized the importance of education at different points of life. Later, an important pioneering work by Jacob Mincer (1957, 1958, 1962) contributed to the formation of a statistical wage equation which focused on individual characteristics affecting earnings which is simply expressed as

$$lnW_i = \alpha Z_i + \varepsilon_i \qquad \text{eq. (1)}$$

where lnW_i is the natural logarithm of wages or earnings and Z_i is the vector of explanatory variables on individuals' quantitative skills which would basically include education and experience, and ε_i is the disturbance term.

Differences on wage structure and factors influencing wage function have generated different opinions and viewpoints from different researchers over the years. These studies have considered also other factors related with wages such as environment, family background, regional or policy factors in addition to education and experience. (Mincer and Polacheck, 1974 and Mincer, 1974). In this respect, the modern capital theory extends the traditional wage equation to include other personal characteristics such as gender, race, religion, employment and or geographical characteristics providing richer specifications to study discrimination and wage differentials. The theoretical background and their interpretations as contribution to basic determinants of wages will be summarized below.

2.1.1 Schooling as Human Capital Investment

Human capital which is accumulated knowledge and skills of an individual increases his or her productivity. In the literature, education is accepted as the main factor improving productivity of a worker. However, additional schooling involves opportunity costs of foregone earnings plus explicit costs such as tuition fees. In this respect, return to education gains a substantial role for the decision of an individual about the level of education that should be attained. Three propositions are discussed in the literature as supply-side, demand-side and market equilibrium. Considering the labor supply side, in order to be attracted to further schooling and forgo present earnings, an individual must be compensated with increases in life time earnings. Second, on the labor demand side, the marginal productivity of an individual with more schooling must be considered to be more than that of a less schooling individual. Finally in the long-run, market equilibrium of each schooling category must be maintained such that the workers will not alter their education level Berndt, (1991).

Another view developed by Arrow (1973) and Spence (1973, 1974) is the screening hypothesis of education: firms consider diplomas as signals about the capabilities and knowledge of workers rather than education being directly related with their productivity.

2.1.2 On-the- job Training as Experience

Another way of accumulating skills other than formal education is attained by on -the -job training which may include both formal training programs by firms or informal "learning by doing". (Becker; 1962, 1964 and Mincer;1962, 1974). Therefore, according to the human capital theory, human capital can be increased by additional job experience. In other words, years of labor force experience is a measure of a stock of human capital attained by on-the- job training. However, years of labor force experience is not directly observed from survey data and instead, computed as age minus years of schooling minus six years assuming that all individuals start primary school at six years of age. One other important issue regarding experience is that earnings or wages should not be constant after leaving school but peak at about midlife and then start falling representing diminishing returns. Within this setting, the wage equation is formulated by addition of the experience variable in quadratic form as

$$lnW_i = \alpha_0 + \beta_1 ed + \beta_2 X_i + \beta_3 X_i^2 + \varepsilon_i \qquad \text{eq. (2)}$$

where β_2 is expected to be positive while β_3 to be negative. Similarly, returns to both formal education and work experience decline with age. This is because, as argued in the literature the optimal time for investing in education is at early ages as the opportunity cost of foregone income will be lower and likewise, tendency to add to human capital by experience will also fall by age. Also, human capital depreciates as time passes which implies that there is tendency to forget at older ages. Following

this argument some studies use age as an instrument to experience especially for small samples as in Card (1993).

2.1.3 Ability

Another notable aspect of human capital theory involves the differences in abilities of different individuals. Ability is defined as the capacity of accumulating skills prior to education or training which is invariant of time. In this case, the benefit attributed to schooling by an individual who is brilliant will be more than for an individual who spend more time in acquiring the same level of knowledge. In other words, the more brilliant individual is more likely to invest in education as it will have better opportunities such as learning quickly and thus, accumulating human capital rapidly or obtaining scholarships. Also, more educated individual will be trained at less cost. Thus, one implication of schooling in human capital theory is that there exists a correlation between ability and the years of schooling (Becker 1962). This implies that more educated individual should gain more from on-the-job training. This fact can be incorporated into the wage equation by adding an interaction term of the education variable with the experience variable to obtain

$$lnW_i = \alpha_0 + \beta_1 ed + \beta_2 X_i + \beta_3 X_i{}^2 + \beta_4 ed.X_i + \varepsilon_i \qquad \text{eq. (3)}$$

in which $\beta_4 > 0$. Thus marginal return to experience will be given by the first derivative of log wages with respect to experience, $\frac{\partial lnW}{\partial X}$ and ability which cannot be observed directly. In this case, if ability is missing in a wage regression equation, it will lead to omitted variable bias due to the correlation between ability and education where education variable enters into the model to be estimated. One proposal to solve for the problem of omitted variable bias is by Griliches and Mason (1972) who uses IQ tests as a proxy variable for ability. Their findings showed no correlation

between ability and schooling indicating that omitted variable bias was not a problem. Another approach to capture the effects of ability is to introduce other family background information as control variables. (Taubman, 1976a, 1976b; Lam and Schoeni,1993). This issue can also be addressed by using panel with fixed effects in the case when one can assume that individual and family background characteristics do not vary over time.

2.2 Empirical Literature Review

Empirical literature on determinants of earnings is vast. It is worth noting here that various researches found varying results. First of all, empirical findings had shown that the returns to education on wages can vary substantially. For instance, Thurow (1975) using 1972 data found that 28 percent of people with university education had negative returns to education while only 24 percent had positive return. On the other hand, Hanoch (1967), found a decreasing marginal rate of return to education. However, in general, researches have also shown that education reduces unemployment and increases competition resulting in a good wage rate Griliches and Mason (1972). The search for better education and higher wages has caused the neglect of the agricultural sector especially in developing countries Steier (1987). Many people migrate from the rural areas to the urban areas for better educational facility and seek employment in more developed sectors.

Studies of Lindauer et. al. (1988), Bennel (1981) investigated the wage difference in developing countries such as Kenya, Ghana and Nigeria. Their evidence showed the widespread decline of lifetime real earnings in the manufacturing sector of Africa over the last decades casting doubts on the importance of institutional factors causing wage rigidity in this sector.

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Not so many researches have been conducted on developing countries; in fact, the results of estimates from different scholars have not been uniform. This may be due to the unstable pay structure that characterizes the public and private sector income in these countries. Some studies such as Lindauer and Sabot (1983), House (1984), Terell (1993), Filmer and Lindauer (2002); Boudarbat (2004), Hyder ans Reilly (2005) have estimated different levels of income for public sector workers in developing countries. Other studies by Corbo and Stelcner (1983), Van Der Gaag (1989), Bedi (1998) found out that the private sector workers enjoyed higher level of income compared to the public sector. This un-reconcilable difference was the bases of the study by Mohan (1986) in Columbia and Samarrai and Reilly (2005) in Tanzania. According to the finding of these researches it was concluded that there is no statistically significant difference between wage premium of private workers and public workers.

Besides this three classes of studies, another important study that contributed enormously to wage earning determinant was by Steier (1987), conducted in Venezuela who concluded that the average income of public sector workers were higher at all levels of education except post-secondary in 1975 and in addition, the public wage was lower at all educational levels in 1984. In 1975, income contribution by additional schooling and experience were said to be higher in private sectors.

Less work investigated the wage determinants in developing countries. One important study by Psacharopoulos (1985) which studies return to education for 60 countries which included both advanced and developing countries reported that

return to education is highest for primary education, the education of women and countries with lowest income per capita confirming earlier findings. He also reported that especially in developing countries, the average rate of return to education for women exceeded that for men which were estimated using Mincerian type wage equation. He explains this being due to the fact that more educated women participate in the labor force. This study will investigate the determinants of wages in Nigeria.

Chapter 3

NIGERIAN LABOUR MARKET

3.1 Structure of the Nigerian Labor Market

Based on the labor market statistics, in 2010, about 57.43 percent of labor force in Nigeria comprises of the males while the other 42.6 percent represents females. In 2011, these figures are 42.48 percent for female category and 57.52 percent for males respectively. The labor force participation rate as percent of female population between ages 15 and 64 is 48.1 percent for 2010 is almost the same in 2011 which was recorded as 48.2 percent. These statistics are presented in Table 1 below.

Table 1: Basic Labor Market Indicators in Nigeria

	Men	Women	Total
Labor Force (2010)	28,546,479	21,160,084	49,706,564
Percentage Labour Force (2010)	57.43	42.57	
Labor Force (2011)	29,446,016	21,746,640	51,192,657
Percentage Labour Force (2011)	57.52	42.48	
Labor force participation rate percent (ages 15-64) (2010)	51.9	48.1	55.7
Labor force participation rate percent (ages 15-64) (2011)	51.8	48.2	55.9

Source: World Bank data base; World Development indicators.

Similar in many developing countries, the Nigerian labour market is observed to be heterogeneous in nature with a given wage differences across various sectors of the economy, Ogwumike, et. al. (2006). Based on World Bank data base, world development indicators, in 2010, about 49 percent and 51 percent are living in the urban and rural areas respectively. Similarly, for 2011 this data is 49.6 percent and 50.4 percent respectively.

Regarding public sectors, out of about 1.1 million jobs created in 2010, of which about 9.4 percent was seen in the public sector while 53.6 percent in the informal sector and 0.37 percent due to the formal sector, (World Bank 2010). This confirms ILO estimates on the burgeoning and increasing number of the informal settlements in the developing countries. According to the National Manpower Board (1998), the Nigerian labour market is classified into seven different categories which include: the employer, self-employed (in the agricultural sector), self-employed as a trader, self-employed in other sectors, employed wage earners in the private firms, employed wage earners in the public sector and paid apprentice see Ogwumike, et. al. (2006). In addition, Federal Office of statistics (2001) included the informal sectoral employment comprising of the unpaid family worker and own business enterprises. This is further classified as one of the greatest sources of risk and one of the channels into the poverty trap Ogwumike et. al. (2002). This is basically seen from those paid employees or low skilled individuals who are easily susceptible and disadvantaged in the event of a shock.

At the same time Nigerian labor market has been characterized as being regional and highly immobile. Okigbo (1991) argued that, Nigeria's labor market is similar to

other developing countries which consist of formal and informal sectors. These dualistic characteristics are the basis of the segmentation theory, Leontarridi (1998). Here, private and public sectors makes up the formal sector while the informal sector consists of urban informal, rural oriented including unpaid family workers. According to Becker, (1993), informal labour market is unregulated and often called the underground economy which absorbs retrenched workers due to downsizing and economic adjustment policies.

In 1986, the introduction of Structural Adjustment Program (SAP) in Nigerian labor market led to several structural changes. Noticeable among these introduced policies are the large scale reduction of public sector workers and the encouragement of the growth of private sector which was an alternative employment choice for the unemployed, Nwabugo (2011). The private labor market is a collection of privately owned mostly multinational companies and national entrepreneurs. Macroeconomic policies have been introduced to contain these changes especially the problem of unemployment. In line with this policy framework, some of the programs introduced include National Poverty Eradication Program (NAPEP), Loan Scheme and National Directorate of Employment (NDE), Small and Medium Enterprises (SMS), (CBN Bulletin 2011).

The public sector downsizing program has been fundamentally the latest development in the Nigerian labor market. In 2001, the Nigerian government reduced the amount of government workforce to ensure efficiency among public sector workers. This reduction at federal level in public sector workforce has not been easy to implement due to its fiscal implication problems, that is, such a program can

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wreck the country. In order to improve the policy, a number of strong policies were made to confirm the need to reduce the federal workforce. The implementation and execution of this policy has been successful according to Aminu (2011).

3.2 Nigerian Wage Review Policies

Wage policy in Nigeria has been reviewed by different commissions dating back to the first Hunts commission in 1934 and last in Justice Alfa Belgore committee in 2009/2010. The minimum wage rate in 1981 was fixed at 125 Naira per month by an Act or Parliament but at the introduction of the SAP in 1986, the government issued the National Minimum Wage (amendment) order, which bridged the 1981 Minimum Wage Act. In 1987, this amendment was rescinded owing to labour protest against it in major cities across the country. The aftermath of the implementation of the recommendation of the committees led to an increase in general price level, causing a jump in the nominal wage rate. This also led to a reduction in workers' purchasing power. Minimum wages are also set in Nigeria through Government Decrees (this was used during military regimes), Acts and Legislation. For example, in 1992, President Ibrahim Babangida approved a 45 percent increase in wages for Federal Civil Servants.

In September 1998, the Federal Government of Nigeria issued a directive to increase the nation's minimum monthly wage from 363 Naira to 3,000 Naira. This also raised earning of all other categories of employees. Furthermore, in 2000, the Federal Government again raised the minimum wage rate from 3,000 Naira to 5,500 Naira per month. Also it aided a lot in sustaining the employees of the civil service compared to that obtainable in 1991. Again, President Goodluck Jonathan in August 2010 set the minimum wage at 18,000 Naira which was implemented from January

2011. Nigerian workers have fought and struggled for improved wages and national minimum wage legislation Aromolaran (2006).

3.2.1 Wage Inequality in Nigeria

The United Nations Development Program (UNDP (2009) reveal that inequality in Nigeria remained high, one of the highest in the world (0.49) which is 65 percent of assets in the hands of 20 percent of population. Nigeria was rated as the most wage unequal country in the world despite all the vast resources. Even the high level of poverty in the country is partly a feature of the high rate of wage inequality and differential access of the basic infrastructure, jobs and training opportunities, and education. The UNDP (2009) indicates that Nigeria's gender earning is one of the highest in the world and that the females are in the higher paid jobs and more powerful positions. Yet, it seems that Nigeria still has a lot to do in order to correct the problems of wage inequality.

3.3 Nigerian Educational System

The educational system in Nigeria is viewed as a tool to achieve economic development and thus reflects government policies so far in repositioning the sector Amaghionyeodiwe (2006). As from 1985, the primary education was free called the 6-3-3-4 system reflecting primary education of 6 years, post primary education for 3 years of junior secondary school, 3 years of senior secondary school and 4 years of tertiary education level. In 1999, a Universal Basic Education (UBE) scheme was launched by the Obasanjo's administration which targeted to increase adult literacy rate from 57percent in 2003 to 70percent by 2010, (FRN, 2000) and provide education by all by 2015, Edho (2009). The program was to make the primary education free and compulsory for 9 years of primary and junior secondary education

which was also referred to as 9-3-4 system of education. The system was monitored by Universal Basic Education Commission (UBEC) therefore, the UBEC law section 15 defines UBE as early childhood care and education.

The secondary years of schooling is spent in the duration of six years, which are 3 years of JSS (Junior Secondary School) and 6 years of SSS (Senior Secondary School). The Federal Republic of Nigeria consists of 36 states and Federal capital territory. There are about two Federal Government secondary schools in each of the states. These colleges are funded and managed by the Ministry of Education by the Federal Government. The other secondary schools are owned and governed by state government private institutes. State-owned secondary schools are funded and controlled by each state government and are not the same as the Federal government colleges. Although education is supposed to be "free" in the majority of the state owned institutions, here, students are required to purchase books, uniforms and pay for miscellaneous things costing them an average of thirty thousand naira ($200) in an academic year (US Embassy, 2012).

One of the main problems that are faced is the "closeness to school". Most students that cannot afford to go to a private school and leaving far from the Federal Government Colleges and State-owned secondary schools eventually doesn't have the opportunity to attend school. Most of the tertiary education is government owned. Nigeria has a total number of 128 universities registered by NUC (Nigerian University Commission) among which state government and federal own 38 and 40 respectively while the rest are owned privately. The minimum university age of entering the university is 18 years.

3.4 Empirical Literature on Nigeria

Using data from the GHS of 1996 -1999, Aromolaran (2006) analyzed the returns to schooling using the Mincer wage equation. Comparing wage earners across both private returns and self-employed, findings show that, the average years of schooling for women in the private sector was quite higher than that of the males. However, while using the self-employment regression model, it was observed that male had higher levels of schooling. This results is consistent with that of Schultz (2001), and Psacharopolous and Patrinos (2002).

Ogwumike et. al. (2006) studies the determinants and distribution of earnings including income inequality in Nigeria using GHS for Nigeria. Their study applied several econometric and descriptive methodologies such as Gini coefficient, Theil's Entropy Index, ordinary least squares technique, Heckman's two-stage selectivity bias correction procedure and Tobit model for estimating labor force participation. Their findings show that inequality exists in paid employment than in self-employed in Nigerian labour force. Also, paid employed women earn higher than men in the same employment segment, while men in self-employed sector earn higher than their female counterpart. They further concluded that earnings in the rural areas are greater than that of the urban agricultural workers.

Ikhizama and Lawal (2008) examined the role of woman scientists in agricultural development in the southwestern part of Nigerian using job related attributes of women. A sample was drawn randomly on 73 woman scientists while the sampled data was analyzed using frequency distribution and percentages. Their findings show that women are highly integrated into various agricultural fields. However, they

recommend that such findings can be improved on if more women are actively involved in various research fields.

Temesgen (2008) investigated the major determinants of establishment levels and gender pay gap with a particular focus on analyzing the effects of labor market institutions. He used two-stage regression model on analyzing the varying impacts of labor market institutions and firm level characteristics on gender wage gaps in the Nigerian urban labor market using information from worker and establishment levels through an administered survey data. Findings show that labor market institutions such as unions, and firm characteristics such as ownership, affect the level of gender wage inequality at the firm level. It was also found that unions have significant influence on firm level gender wage gaps in Nigeria, where they are historically known to be strong.

Aminu's (2010) research was based on determinants of earnings in wage employment in Nigeria. Using probit model he found that the level of education attained by employed household members either male or female is the main determinant of labour market participation. He, therefore, concludes that the main determinant of wages includes the educational levels of the labour force, geographical location and experience of the individuals in the household. Return to education and experience is not the same for male and female and the vary across his model findings.

Fabusoro et. al. (2010) analyzed the "Forms and Determinates of Rural Livelihoods Diversification in Ogun State, Nigeria" among 320 rural households. Their data were

all placed on hierarchical regression and a Simpson Index for diversification. Findings show that nonfarm activities contribute about 63percent to income of the households, while, the Simpson Index indicates a moderate diversification where farm and nonfarm activities complements each other. Also education, size of households and income were significant in predicting diversification.

Aminu (2011) while using Mincerian human capital model, investigated the effects of the wage review process of 1998 on private and public pay differentials. His empirical finding on urban male employees shows that, public sector was disadvantaged in pay-gap at 6.78percent, but however enjoyed a higher wage of 35.07percent after the wage review process. Overall, public sector workers had higher earnings after the wage review process than their private counterpart.

Ugochukwu and Chijioke (2011), examined the prospects and challenges of productive employment in Nigeria within the macroeconomic policy framework. By using a recursive structural Vector Autoregressive model, they found that any increases in monetary policy rate to cut down on inflation have a depressing impact on the economy. The study suggested that a more flexible inflation rate increased money supply, access to credit and a modest but upward adjustment to capital and recurrent expenditure have greater potential in accelerating GDP growth and for the attainment of full employment and poverty reduction in Nigeria.

Jonah and Yousuo (2013), in their study analyzed the impacts of wage differentials on labour turnover by using a logit model. Their analysis comprised 840 employees of both private and public workers. Their findings supported the standard inverse

relationship between wage differential and the labour turnover. Hence, as state workers' wages increased, the probability of a State worker leaving to Federal civil service indicated to fall by 0.29. They therefore recommended for a unified salary structure with no disparity in the country.

Matthew and Azuh (2013) examined whether or not the trade liberalization process has any effect on both the reduction in the wage differential between registered and non-registered workers while using secondary and primary data in Nigeria. Findings confirmed that the fall in the wage gap between registered and non-registered workers in the manufacturing sector was affected by trade-related variables, particularly, by the import penetration ratio. However, no robust evidence was provided that trade liberalization had a substantial effect on the decrease in the proportion of registered workers.

Also in a co-authored paper, Ogundari and Aromolaran (2014) used the Double Hurdle (DH) model and Quantile regression (QR) to estimate the effects of education on household welfare in Nigeria. Their findings showed that return to education was more pronounced in the tertiary level of education than in both the primary and secondary levels. They found that the impacts of education in the labour market earnings at primary, secondary, graduate and post-graduate levels were explained by about 3.1 percent, 1.7 percent, 8.5 percent and 1.7 percent respectively in the urban areas.

Chapter 4

DATA AND METHODOLOGY

4.1 Data and Descriptive Statistics

The data used was sourced from the most recent General Household Survey (GHS) conducted in 2010/11 by the Nigerian Bureau for Statistics (NBS), Nigeria. This comprises of 22,000 individuals including household head, spouse, relatives and dependents of the same household. Total number of households interviewed was 5,000.

However, for the main aim of this study the sample size was restricted to individuals between ages of 17 to 60 of the working age population. Further to this, the sample was restricted to include only the household head and spouse reporting positive earnings rather than all family members with positive earnings. The reason is to avoid including part time workers, if any, which most probably are children at school who might be employed only temporarily in support of family income. On the other hand, the justification for excluding none-wage earners is to avoid missing observations in the sample data set. After these adjustments, the sample consisted of 2,469 observations which were 1,364 females and 1,105 males who have been strictly household head and/or spouse reporting positive earnings by the time of the survey conducted.
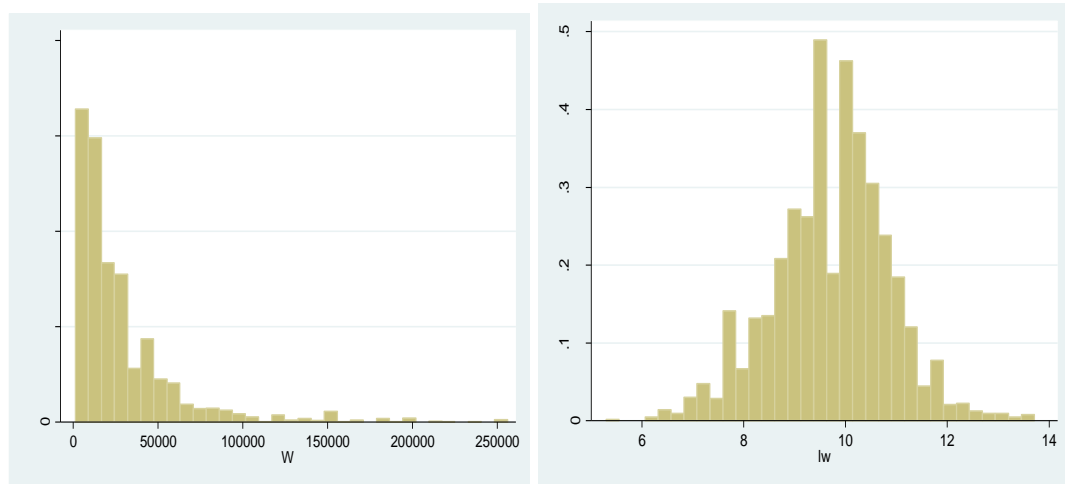
Figure 1: Histogram of wages and logarithmic wages.

Figure 1 presents the histogram of wages on the left and logarithmic wages on the right which is relatively normal, only mildly negatively skewed, as compared with the distribution of wages which is highly positively skewed as expected. The detailed summary statistics for logarithmic wages are provided in Table 2 below.

Table 2: Detailed Summary Statistics of logarithmic wages.

	Percentiles	Smallest
1%	6.9078	5.2983
5%	7.6009	6.2146
10%	8.2940	6.2146
25%	9.012	6.2146
50%	9.798127	
		Largest
75%	10.4631	13.4871
90%	11.0349	13.6693
99%	12.5426	13.7101
Std. Dev.	1.1535	
Mean	9.7249	
Variance	1.3305	
Skewness	-0.1483	
Kurtosis	3.4236	
No. obs.	2469	

As seen from Table 2, the log wages vary substantially across individuals, minimum being 5.29 and maximum of 13.71. The median value is 9.798 greater than the mean of 9.72 which shows that the data is negatively skewed as confirmed by the skewness coefficient of -0.148. Kurtosis is greater than 3. The distribution of the dependent variable in logarithms is thick tailed and only slightly left skewed.

Figure 2 displays the box plot for the logarithmic wage data where the box represents the interquartile range from the first and the third quartile representing the majority of wages. The horizontal lines are the whiskers calculated as upper (lower) quartile plus (minus) 1.5 times the interquartile range or the maximum (minimum) value of the data if smaller (larger). Therefore, data falling outside the whiskers that are shown by dots represent the outliers within the sample data.
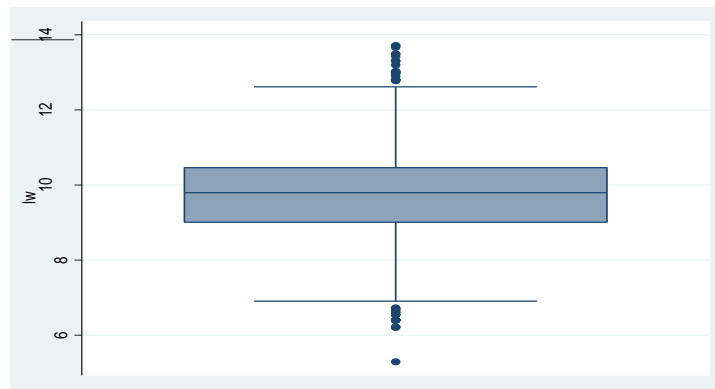

Figure 2: Box Plot for logarithmic wages

As observed from the box plot in Figure 2, there are extreme values for the logarithmic wages taking values slightly above 12.6 and below 6.9 approximately. The outliers can be identified specifically as;

Outlier above Quartile 3: $10.46 + 1.5(10.46 - 9.01) = 12.64$

Outlier below Quartile 1: $9.01 - 1.5(10.46 - 9.01) = 6.84$

Therefore, log wage values above 12.64 and below 6.84 are identified to be outliers within the sample which can distort estimations since they are not representative of the whole sample data. In this respect, a trimming process is further needed to take out the individuals with extreme log wage values. These include individuals earning approximately 1,000 and less than 1,000 Naira and 300,000 and above 300,000 Naira per month.

For the whole sample data, the box plot of males versus females with regard to log wages are presented in Figure 3 where the gender dummy variable is defined as taking the value of 1 for males and zero otherwise.
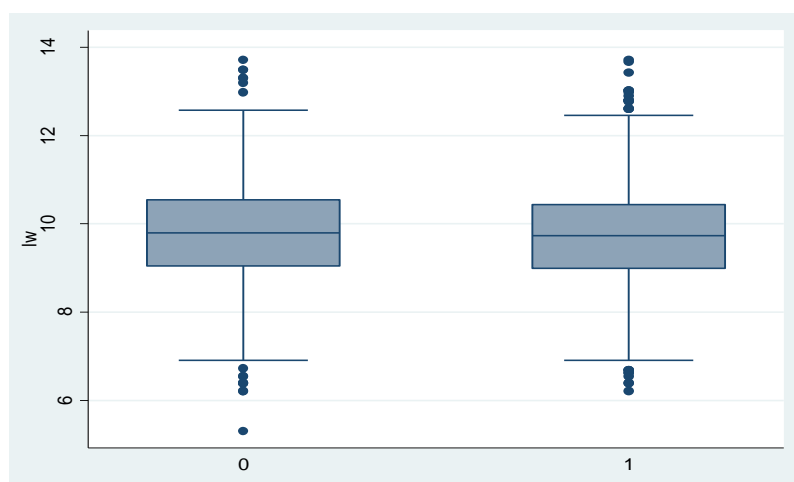
Figure 3: Logarithmic Wages for Males against Females

The box plot in Figure 3 clearly indicates that males earn less than females, in general, while the extreme values on the lower bound for females are more than those for males. However, the extreme values on the upper bound are more for males than females.

The logarithmic wages of individuals sampled with respect to educational level is displayed in Figure 4 below where education is categorized as primary education, secondary education and university education.
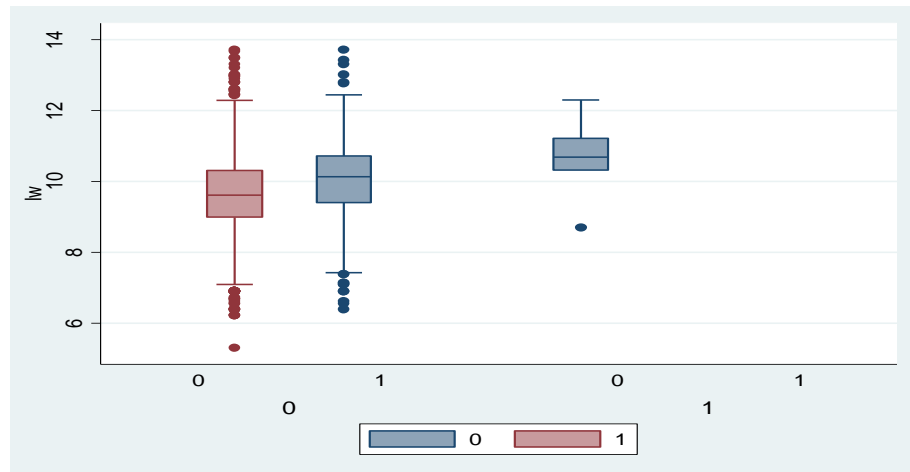
Figure 4: Logarithmic Wages with respect to Educational Level Attained

Figure 4 indicates that higher the level of education is, higher the salaries are and a large wage gap occurs especially between university graduates and non-university graduates. Also, it is observed that only minority of the sampled individuals have university education. In order to analyze the distribution of education by gender, the statistics for educational levels of individuals as primary (6 years) secondary (12 years) and tertiary (14 years) and university level of education (16 years) and post university (more than 16 years) are presented by gender in Table 3.

Table 3: Distribution of Education by Gender.

Educational Level	Male		Female		Total	
	Freq.	%	Freq.	%	Freq.	percent
Illiterate	42	1.7	30	1.2	72	2.9
Primary (6 yrs.)	342	13.9	339	13.7	681	27.6
Secondary (12 yrs.)	388	15.7	258	10.5	646	26.2
Tertiary (14 yrs.)	196	7.94	143	5.80	339	13.7
Tertiary-Univ. (16 yrs.)	156	6.32	79	3.20	235	9.5
Post University	38	1.54	12	0.48	50	2.0
Total	1,162	29.8	861	24.31	2,023	68.5

Table 3 shows that almost 54 percent of all sampled individuals attained primary and secondary education of whom 29.6 percent are males and 24.2 percent females. People having tertiary and university level education are only about 24.72 percent of whom about 14.6 percent are males and 9 percent are females. The numbers of individuals who have no education at all or have post university education are very few which make up about 5 percent of the sample. This means that only 63.5 percent of the sample has attained either primary, secondary, tertiary or university education. In this respect, Table 4 presents the detailed years of education of the sampled individuals. Accordingly, some individuals have some years of education although they do not earn a diploma. The mean years of schooling is computed as 9.9 years with a standard deviation of 4.4 years for the sample of 2,469 individuals.

Table 4: Years of Education

Education (Years)	Females (Average)	Males (Average)	Total (Average)
0	30	42	72
1 – 6	73	73	146
7- 12	65	80	145
13 – 21	35	58	93
Total	203	253	456

Table 5 summarizes information regarding regional distribution of wage earners of household head and or spouse by gender. Accordingly, 1,938 individuals are employed in the rural area of whom 1,111 are males and 827 are females. These statistics indicate that most of the sampled individuals are in the rural area most of which are males.

Table 5: Wage Earners by Region and Gender

Gender	Rural	Urban	Total
Male	1,111	253	1,364
Female	827	278	1,105
Total	1,938	531	2,469

Table 6 presents data summarized by gender and category of employment as public, private and self-employed. Other categories are ignored as their proportion is negligibly small as can be derived from the table which constitutes merely 7 percent of the sample. Table 4 clearly shows that most of the sampled individuals are self-employed; being 67.3 percent and the distribution by gender is almost equal. However, the public sector which appears as the next popular category of employment with about 25 percent of employment in total constitutes of 402 male

employees that is twice as much as females. The share of the private sector is small in which the majority are males.

Table 6: Wage Earners by Category of Employment and Gender

Gender	Public	Private	Self-employed	Total
Male	402	177	802	1,381
Female	215	57	746	1,018
Total	617	234	1,548	2,399

In summary, the descriptive statistics indicate that most sampled individuals have primary and secondary education, mostly living in the rural area and working as self-employed. Also, the higher the level of education is higher the level of wages earned and thus, females, in general, earn more than males. However, these results are only based on descriptive statistics and have to be formally modelled by a wage equation to identify the determinants of wages for the sample data. As explained earlier, the data is trimmed further to delete the outliers on the logarithmic wage data; individuals with extreme log wage values. These include individuals earning approximately 1,000 and less than 1,000 Naira and 300,000 and above 300,000 Naira per month that reduced the sample size to 2,408 number of observations of which 1,079 were females and 1,329 males.

4.1.1 Chi-square Goodness-of-Fit Test

Before proceeding further, we need to check whether the sampled data represents the population proportions of males and females in the labor force. This issue plays an important role at the stage of modeling the wage equation. In order to look into the question, we applied a nonparametric goodness-of-fit test using chi-square distribution. Our motivation for applying the chi-square test is to compare the

distribution of the original labour force by gender at the national level with the distribution in our sample. The ratios of males and females in the labor force for 2010 and 2011 have been used as an indicator in calculating the expected frequencies for males and females in the restricted sample after deleting the outliers. The chi-square test statistic is computed using the equation below

$$\chi^2 = \sum ((fo - fe)^2 / fe) \qquad\qquad\qquad \text{eq. (4)}$$

where f_o is the observed frequency and f_e is the expected frequency. The ratio of women in the labor force was recorded as 42.57 percent in 2010 and 42.48 percent in 2011. Accordingly, the expected frequencies for 2010 are computed as 1,025.09 for females and 1,329.91 for males which gave a chi-square value of 4.94 for 2010. On the other hand, the expected frequencies have been calculated as 1022.92 for females and 1385.08 for males yielding a chi- square test statistic of 5.34 for 2011. The degrees of freedom is 1 for which the critical values at 0.02 level of significance are 5.412 and at 0.01 level of significance is 6.635. The test is conducted under the null hypothesis that the population and sample proportions are same against the alternative that they are not the same Therefore, for both years, the computed values of the test statistics which are less than the critical values at both levels of significance shows that one cannot reject the null hypothesis that the sample and national proportions are same.

According to the test results, at the 0.01 level of significance, one cannot reject the null hypothesis that the proportions are same. This would imply that the distribution according to the observed values in the trimmed sample reflects the national level proportions of males and females in the labor force. Our finding supports the information provided on Figure 4 in Chapter 4 that outliers would distort the

estimations in the sense that the extreme values on the upper bound for males would bias the estimates upward and those on the lower bound for females would bias the estimates downward. This confirms that the trimmed data is appropriate to reflect the actual proportions of males and females in the labor force.

4.2 Methodology

The econometric methodology applied in this research is cross-sectional Ordinary Least Square (OLS) technique, based on Mincerian-type wage equation (Mincer, 1958 and 1974) which is logarithmic wages being a function of basically level of education, experience and other variables represented by Z which may include several variables such as gender, regional dummies, employment status categories and geographical zones and various interaction terms as discussed in chapter two.

$$lnW_i = f(ed, X, Z) \qquad \text{eq. (5)}$$

The regional dummy is identified as 1 for rural area and zero otherwise. The level of employment categories are represented by binary dummy variables as self-employed (ds), working for the government (dg) representing those employed in the public sector and private sector (dp) to represent those employed in the private sector. The geographical zone is made up of six geographical locations named as north west (nw), north central (nc), north east (ne), south west (sw), south south (ss), and south east (se).

Chapter 5

EMPIRICAL FINDINGS

This chapter will present empirical findings of Nigerian wage function based on 2010-2011 cross section data estimated by ordinary least squares (OLS) method. Various specifications of the model are estimated starting with a simple model for return to education and experience following Mincer (1974) but included gender distinction. The model is then extended further by including regional, zonal and employment status category variables in analyzing the determinants of wages in Nigeria for the sample period.

5.1 The Basic Model: Return to Education and Experience

The estimated model is

$$lnW_i = \alpha_0 + \beta_1 ed + \beta_2 X_i + \beta_3 d_m + \varepsilon_i \qquad \text{eq. (6)}$$

where the dummy variable takes the value of 1 for males and 0 otherwise, education variable (ed) is the number of years of schooling and X is the number of years of experience as defined in chapter 4. The dependent variable is logarithmic value of wages. The regression results are displayed in Table 7 below.

Table 7: Return to Education and Experience

Variable	Coefficient	Robust $s.e$	t-stat.	p-value	95% Conf. interval	
constant	9.1347	0.0886	103.13	0.000	8.9610	9.3084
ed	0.0616	0.0536	11.50	0.000	0.0511	0.0721
X	0.0034	0.0021	1.61	0.107	-0.0007	0.0076
d_m	-0.1595	0.0432	-3.70	0.000	-0.2441	-0.0749
Obs.	2407					
F(3,2403)	48.71					
p-value	0.0000					
R^2	0.0608					

The annual return to education for females is 6.15 percent and is statistically highly significant while return to experience is 0.35 percent and is marginally significant only at 10 percent level of significance. On the other hand, the binary variable for males is also highly significant and indicates that males earn 15.9 percent less than females for the same level of education and experience. This finding is in line with the descriptive statistics as shown by the box-plot in Figure 3 which shows females earning more than males. Although the F statistics is highly significant, the coefficient of determination is however 6.08 percent. From the above regression results, education variable is found to play a major role in determining wages. Moreover, the gender differential in wages is substantially large which requires further investigation. In this respect, the model is extended to investigate whether return to education is same for men and women given a constant wage differential as evidenced in Table 7. Therefore, the male dummy variable is interacted with the education variable. The estimation results are presented in Table 8.

Table 8: Return to Education by Gender

Variable	Coefficient	Robust s.e	t-stat.	p- value	95% Conf. interval	
constant	9.0948	0.1034	87.88	0.000	8.8919	9.2978
ed	0.0658	0.0078	8.42	0.000	0.0505	0.0812
X	0.0034	0.0021	1.60	0.110	-0.0007	0.0076
male	-0.0855	0.1070	-0.80	0.425	-0.2955	0.1244
$maleed$	-0.0075	0.0098	-0.77	0.444	-0.0269	0.0118
Obs.	2407					
F(4,2402)	36.63					
p-value	0.0000					
R^2	0.0611					

The inclusion of the interaction term to the model resulted in insignificant coefficient estimates for male dummy variable and the interaction term of male dummy with education (*maleed*) which is due to the multicollinearity problem, as *male* and *maleed* are highly correlated. Since the coefficient of male is the estimate of gender differential when education is zero and since number of people with zero education is only a few in the sample, it is more logical to estimate the gender differential at average years of education. Therefore, the interaction term, instead, is calculated by subtracting the average years of education which is about 10 years in the sample Wooldridge, (2003). The estimated model is presented in Table 10 below where now the coefficient for the male dummy variable has become highly significant indicating that males earn 16.1 percent less than females. However, since the interaction term (male with education) is not significant at the conventional levels, it means that as education increases, wage differential between man and women does not change. In this respect, the conclusion is that men earn less than women by 16.1 percent at all levels of education which is the specification used in the extended models.

Table 9: Return to Education by Gender at Average Education Level

Variable	Coefficient	Robust *s.e*	*t*-stat.	*p*-value	95% Conf. interval	
Constant	9.0948	0.1034	87.88	0.000	8.8919	9.2978
Ed	0.0658	0.0078	8.42	0.000	0.0505	0.0812
X	0.0034	0.0021	1.60	0.110	-0.0007	0.0076
male	-0.1611	0.0431	-3.74	0.000	-0.2457	-0.0766
maleedav	-0.0075	0.0098	-0.77	0.444	-.0269	0.0118
Obs.	2407					
F(4,2402)	36.63					
p-value	0.0000					
R^2	0.0611					

One note is worth mentioning here that based on human capital theory diminishing returns to experience and also to education are estimated by incorporating squared values for experience and education respectively. However, the estimated coefficients have been found to be negligibly small and statistically insignificant and thus not reported.

5.2 Extended Model

After specifying the appropriate basic model, the variables regarding sectors as rural versus urban, employment categories, as well as zones are added. The variable named rural is a dummy variable given a value of 1 for those individuals living in the rural area and 0 for individuals living in the urban area. The breakdown of the employment can be summarized in six main groups as government (public sector), self-employed, private sector including paid apprentice, international organization, religious organization and others. As Table 6 in Chapter 4 indicates that most individuals in the sample are self-employed, and the second highest share belongs to the public sector and private sector comes as the third. Since remaining categories are small the employment dummies are constructed for self-employed (ds)

government (dg) and private (dp). Zones are based on six geographical locations named North West (ns), North Central (nc), North East (ne), South West (sw), South South (ss), and South East (se). Moreover, one more variable is a dummy variable for Christians (dc). Table 10 presents the results of the extended model.

Table 10: Extended Model compared with Basic Model

Independent variable	Extended Model	Basic Model
ed	0.0501	0.0790
	(0.0062)	(0.0098)
	[0.000]	[0.000]
X	0.0034	0.0029
	(0.0021)	(0.0025)
	[0.110]	[0.261]
dm	-0.1766	-0.1858
	(0.0435)	(0.0522)
	[0.000]	[0.000]
edmaleav		-0.0260
		(0.0118)
		[0.029]
dc	0.0901	
	(0.0678)	
	[0.184]	
dg	0.0469	
	(0.0646)	
	[0.468]	
ds	-0.1558	
	(0.0510)	
	[0.002]	
dp	0.1044	
	(0.0741)	
	[0.159]	
nc	-0.2043	
	(0.1093)	
	[0.062]	
ne	-0.2167	
	(0.0661)	
	[0.001]	
nw	-0.0754	
	(0.0852)	
	[0.376]	
se	-0.0871	
	(0.0596)	
	[0.144]	
ss	-0.2240	
	(0.0740)	
	[0.002]	
rural	0.1016	
	(0.0545)	
	[0.062]	
constant	9.2859	9.0147
	(0.1411)	(0.1317)
	[0.000]	[0.000]
Observations	2403	1937
R-squared	0.0808	0.0601
Ramsey	0.63[0.5980]	0.29[0.8316]

According to the estimation results, years of education, male dummy variable are highly significant as before and the annual return to education is now 5 percent and males earn 17.7 percent less than females. The dummy variable for self-employed is also highly significant indicating that individuals who are self-employed most of which are engaged in agriculture earn 15.6 percent less than others. The rural dummy variable is significant at 6 percent level of significances and that those in the rural are earn 10 percent higher than individuals in the urban area. North East and the South South zone-dummy variables are highly significant with negative coefficient estimates which show lowest wages earned in these zones, 21.6 percent and 22.4 percent less than the base category. The coefficient for experience variable is very small which is 0.35 percent and is only significant at 11 percent. This finding means that on-the-job training plays no significant role in wages determination which may be due to the reason that most individuals are self-employed who work mostly in rural areas. The p-value for the F statistics is zero which indicates that the variables are jointly significant and the coefficient of determination increased to 8.1 percent as compared to the basic model. The Ramsey test for omitted variables cannot reject the null hypothesis of no omitted variables. The conclusion derived from the estimates indicates the importance of education, gender and sector variables which leads to the specification of a wage function for the rural sector. Table 11 presents the estimated wage function model for the rural sector with and without the zone variables.

Table 11: Determinants of Wages for the Rural Sector

Independent variable	Model 1	Model 2	Model 3
ed	0.0790	0.0741	0.0720
	(0.0098)	(0.0102)	(0.0102)
	[0.000]	[0.000]	[0.000]
X	0.0029	0.0034	0.0031
	(0.0025)	(0.0026)	(0.0026)
	[0.261]	[0.184]	[0.235]
male	-0.1858	-0.2025	-0.1903
	(0.0522)	(0.0531)	(0.0525)
	[0.000]	[0.000]	[0.000]
edmaleav	-0.0260	-0.0228	-0.0234
	(0.0118)	(0.0117)	(0.0117)
	[0.029]	[0.052]	[0.047]
dc		0.2291	0.1516
		(0.0636)	(0.0811)
		[0.000]	[0.062]
dg		-0.0532	-0.0613
		(0.0731)	(0.0694)
		[0.466]	[0.377]
ds		-0.1644	-0.1846
		(0.0593)	(0.0585)
		[0.006]	[0.002]
nc			-0.1891
			(0.1346)
			[0.160]
ne			-0.1669
			(0.0790)
			[0.035]
nw			-0.1225
			(0.1075)
			[0.255]
se			-0.1645
			(0.0746)
			[0.028]
ss			-0.1742
			(0.0919)
			[0.058]
dp		0.1013	
		(0.0829)	
		[0.222]	
constant	9.0147	8.9759	9.1862
	(0.1317)	(0.1492)	(0.1689)
	[0.000]	[0.000]	[0.000]
Observations	1937	1934	1934
R-squared	0.0601	0.0723	0.0759
Ramsey	0.29[0.8316]		

Basic model (Model 1), without zones (Model 2) and with zones (Model 3)

For the rural area first, the basic model is estimated where, however, also included the interaction variable of male with education (edmaleav) which is highly significant. All variables are significant except the experience variable. Regarding the effect of education on log-wages is given by the first derivative of log-wages with respect to the education variable as:

$$\frac{\partial lnW}{\partial ed} = 0.079 - 0.0260 male$$

Accordingly, the marginal rate of return to education for males (when male = 1) is 5.3 percent while for females is 7.9 percent in the rural area that is larger than the coefficient for the whole country as seen in Table 10. The coefficient of determination for this regression function is 6.01 percent. The model is extended by adding the employment categories where the employment in the government sector and private sector are not significant, however, the binary variable for self-employed is highly significant with a negative large coefficient indicating that the self-employed earn 16.4 percent less than other employment categories in the rural area. Another interesting point is that the dummy varibles for the religion has become highly significant with a large positive coefficient meaning that in the rural area, christians earn 23 percent higher than the base category. The coefficient of determinion has increased from 6.01 percent to 7.23 percent by inclusion of the employment categories and relion variable. When the zone variables are added, the regression coefficients and their statistical significance do not change much while only two of the zone binary variables, North Central (nc) and North West (nw) are not statistically significant. However, the coefficient of determination only slightly increased to 7.6 percent from 7.2 percent by the addition of the zone variables.

The estimation results indicate that years of scooling representing various levels of education has a substantial role in wage determination in comparison to employment category, zones and rural versus urban sectors. Gender gap is another important factor for the Nigerian wage function where males earn significantly lower than females. However, the wage differential betwen men and women is constant which means that men earn less than females at all levels of education for the wage function estimated countrywise whereas, the return to education is not same for males and females at all levels of education for the rural area. In Table 11, the interaction term, *male.ed* is highly significant and negative in all the models (basic model and the extended models) indicating that the gap increases as the education gets larger in the rural area. This may indicate negative return to education in the rural area. However, in all the regressions, the coefficient of determination is between about 6 percent and 8 percent which is rather low. This indicates that in the Nigerian labor market there are other factors influencing wages rather than personal characteristics and employment and geographical factors. This finding supports the report of Aminu (2011) that Nigerian government wage review policies, ad hoc wage commissions play an important role in wage determination rather than demand and supply forces in the labor market.

Chapter 6

SUMMARY AND CONCLUSION

This chapter shall present the general overview of this research work, conclusions and remarks. Further we will itemize some policy suggestions including suggestions for further research in this area.

6.1 Conclusions

So far, the main aim of this study is to investigate and empirically examine the various determinants of wages using a cross-sectional data for Nigeria. In particular, this study was targeted towards individual households across the regions of Nigeria and within the agricultural sector. Through this research, we were able to contribute to the literature on labour market analysis for a typical developing country such as Nigeria. Hence our lick-off point in the empirical analysis is the introduction of the Mincerian-type wage equation of Mincer (1974) incorporating individual attributes, region, gender and other employment categories in the analysis.

Considering the return to education and experience, our findings have shown that females earn quite higher than the males even across the same level of education and experience. Even when the model was further extended so as to investigate if earnings across gender would change at constant wages, our observation also presents similar results. Also while including both regional and employment characteristics of individuals, males were observed to earn about 17percent lower

than female folks. In the regional basis, both North East and South-South zones showed less in earnings compared to the base category and on-the-job training plays little or no significance on wages. Similarly by including sectorial employment status, we have been able to show that self-employed individuals earn lower than other employment status in the rural areas.

Overall, education which is one of the basic components of human capital theory has a positive effect in wage determination in rural Nigeria. These findings correlate well with other similar findings for Nigeria such as Aminu (2010 and 2011), and Ogwumike (2006).

It is our view that the Nigerian labour market is heterogeneous in nature due to its large population including multi-ethnic and religious orientations. However, education which has been made free especially at the primary and secondary levels is indeed one of the crucial elements of wage determination across the regions of the country. Since education is productivity augmenting, major policy frameworks should actually be directed towards implementing various educational and job-training programs to encourage productivity especially within the informal agricultural sectors of Nigeria. It is also surprising that the South-South part of Nigeria which is the beehive of the Nigeria's rich oil resources has shown lower earnings than other categories, in the region.

6.2 Recommendations for Further Studies

It has become obvious that the gender differential in wages appears to be quite large, further studies should possibly be directed towards determining the actual cause of such differences in wages and comparing such findings with the next wave of the

data. Similarly, regional wage differences should studied especially within the South-South regions of Nigeria. It is expected that this region should show a considerable high wage structure given their contributions to the Nations' economy. Finally, it will usher in a new and a strong comparative stance of the labour market of Nigeria, if a panel study is carried out using the most recent wave of the GHS data.

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