# Private Returns on Education in Ghana: Estimating the Effects of Education on Employability in Ghana

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**Abstract**
*The relevance of education for both individual and social development in Ghana and in many developing societies is generally acknowledged. Human capital theorists identify positive effects of education on labour market outcomes of individuals. It has been argued that education enhances the skills and knowledge of individuals for better employment, higher productivity and improved wages. This paper draws on the latest and most comprehensive survey data in Ghana, the fifth round of the Ghana Living Standards Survey (GLSS 5), to assess the effects of education on employability in Ghana. This paper argues that education has a positive effect on employability in Ghana. Analysis of the GLSS 5 data shows that in the Ghanaian labour market, individuals who have attained basic, secondary and tertiary education have higher probabilities of being employed than those with no education, ceteris paribus. However, the highest private returns on education, in terms of employability is tertiary education. Hence optimal post primary education investment in Ghana is one with a high possibility for tertiary education.*

## Introduction

The critical role education plays in both individual and societal development are widely acknowledged. Education is considered functional for both individual and national progress as investment in education accrues both private and social returns. Psacharopoulos (2007) argued that education is a significant investment which engenders human capital development for enhanced employability, wages and productivity. Research evidence from most countries and across different time periods depicts that better-educated individuals earn higher wages, experience less unemployment, and work in more prestigious occupations than their less-educated counterparts (Card, 1998).

In addition to improving labour market outcomes, education is also essential in promoting the general wellbeing of individuals. Education has been identified with positive non-labour market outcomes. Schultz (2003) argued that educational outcomes of parents affect the welfare of homes by improving home production which enhances

the welbeing of family members. Citing Leigh (1998), Harmon et al. (2000) argued that increased education is positively and strongly correlated with improved health, family stability and environmental benefits.

Social development and harmony as well as economic growth and development have also been linked with education. These are considered as social returns on education as such benefits transcend the educated individual to the society at large. Human capital theorists relate level of education to productivity and for that matter eoncomic growth and development of societies. According to Jajri (2007) manpower development through education and training have proven to be the most efficient way of enhancing productivity around the world. Fasih (2008) corroborates this with the assertion that countries with low levels of education run the risk of being trapped in technological stagnation and low growth.

The above notwithstanding, skepticism about the returns on education, particularly, private returns on education in developing countries of Africa is not rare. It has been argued that private returns on education have been diminishing in recent decades. According to Kuepie et al. (2006) prior to the urban boom and the full force of the structural adjustment, higher education meant low risk of unemployment in Africa. A paper by DIAL (2007) postulates that prior to the structural adjustments in Africa, the active involvement of states in development as well as the growing public sector meant that diplomas were critical in finding jobs particularly in the public sector. However, by the end of the 1980s, the economic crisis and cuts in public expenditure in most African states meant that the labour market outcomes of the educated youth became constrained (ibid). Higher unemployment levels among the educated youth in Africa in recent times have reinforced the skepticism about the private returns on education in terms of employability.

In Ghana, anecdotal evidence suggests that education is still widely held as critical for both individual and national progress. Since political independence in 1957, several educational reform programmes and initiatives aimed at making education relevant for Ghana's economic and social development aspirations have been implemented (Otoo and Asafu-Adjaye 2009). Educational policies in Ghana such as the Free Compulsory Universal Basic Education (FCUBE), the Capitation Grant and the School Feeding Programme have been influenced by the desired private and social returns on education.

Heckman et al. (2008) have argued that social and private returns on education affect both individual and social investments in education. In Ghana both households and public authorities have made substantial investments in education with the expectation that both the private and social returns on education would contribute to individual progress and the attainment of Ghana's development goals. Available data from the World Bank show that in 2004, total government expenditure as a percentage of government spending was 38.6 percent in Ghana.

The desired returns on education as well as public and private investments in education

have engendered estimation of both the social and private returns on education. Using the most nationally representative household surveys data, the Ghana Living Standard Surveys (GLSS) 1987/88, 1988/89, 1991/92, and 1998/99, Schultz (2004) estimated the effects of education on wages in Ghana. In 2005/06, the Ghana Statistical Services conducted the fifth and the latest round of the Ghana Living Standards Survey (GLSS 5). However, there is largely a dearth of literature on estimation of the effects of educaion on employaability in using the latest round of the Ghana Living Standards Survey (GLSS 5). This paper therefore draws on data from the fifth and the latest round of the Ghana Living Standards Survey (GLSS 5), to estimate the effect of education on the probability of being employed in ghana.

## The Employment Effects of Education

Education is crucial in the acquisition of functional skills. For the individual, among other factors, knowledge, skills and competencies acquired through education are vital for effective labour market participation. Citing Lau, et al. (1991) Wodaj (2002) espoused that among others, education enhances the ability of an individual to perform standard tasks as well as learn to perform new tasks. The author further indicated that education improves the ability of the individuals to deal with information and communication and higher levels of education has been identified with innovation in production technology. Linking the positive effect of human capital improvement through education to employability, Fasih (2008) argued that education is critical in preparing individuals to enter the labour market, as well as equipping them with the skills to engage in lifelong learning experiences

The literature shows that different levels and kinds of education have different effects on the probability of being employed. A research by Kuepie et al. (2006) in seven major cities of the West African Economic and Monetary Union (WAEMU) - Abidjan, Bamako, Cotonou, Dakar, Lomé, Niamey and Ouagadougou - show that unemployment rates were lower (14.6%) for individuals without minimum level of education. The authors also observed that unemployment rates are higher among individuals (20% to 21%) with completed primary to secondary education. The rate however drops slightly to 19 percent among individuals who have completed at least a year of higher education (Kuepie et al. 2006).

It has been observed that the incidence and duration of unemployment are also influenced by level of education. Riddell and Song (2011) cites a number of studies which show that higher level of education shortens the duration of unemployment by improving re-employment rate. In the European Union (EU) for instance, it is argued that once in the labour market, the more educated have less than half the chance of being unemployed relative to the less educated (Psacharopoulos, 2007).

The above notwithstanding, some arguments have questioned the actual effect of

education on employment. This is typified by the argument by Riddell and Song (2011) that the correlations between education and unemployment incidence and duration are likely to be confounded by the endogeneity of education.

In addition to influencing employability, available literature also suggests that education also affects sector of employment. Thus whether an individual will work in the formal or informal sectors is also partly determined by educational attainment. Kuepie et al. (2006) identified a close link between educational attainment and formal and informal sector employment in a survey of seven WAEMU cities. Kuepie et al. (2006) found that as many as 91 percent of the employed workers who did not start or complete primary school worked in the informal sector. However, informal sector participation appeared to diminish as education attainment increases. The same survey showed that among the employed persons with completed primary schooling, 75 percent are engaged in the informal economy while 50 percent of those with completed middle school are working in the informal sector. For those with some higher education, only 19 percent were engaged in the informal sector.

The above observation by Kuepie et al. (2006) is corroborated by Baah (2007) who stated that there is some association between illiteracy and informality. According to him, people with no formal education are more likely to engage in informal economic activities as a copping mechanism. Low levels of education in Ghana and other African countries partly explain the high level of informality in such countries (ibid).

In addition to the above, the kind of education has also been identified as one of the determinants of formal or informal sector participation. In Abidjan, Bamako, Cotonou, Dakar, Lomé, Niamey and Ouagadougou, Kuepie et al. (2006) observed that although level of education influences formal sector participation, the type of education also has an important effect on formal sector participation. In the seven WAEMU cities the authors observed that while only 37 percent of the individuals who had vocational training worked in the informal sector, about half of their counterparts who attained an equivalent level in the secondary system worked in the informal sector. Similarly, in the Nigerian capital, an estimated 82 percent of the workers with vocational training work in the formal sector (ibid).

The forgoing shows the critical rule that education plays in labour market outcomes of individuals. The above elucidates that not only does education influence the employability of individuals but it also determines the sector of employment. In addition to influencing employability, education is also identified as vital in the determination work earnings.

## The Wage Effects of Education

Generally, education is considered essential in poverty alleviation as it improves the

earning capacities of individuals. However, evidence around the world shows that although the effect of education on earnings is generally acknowledged, such effects are context specific. Schultz (2004) has argued that although the assumption that returns on schooling fall as a student extends his or her education into more advanced levels of schooling is common, in Ghana and in many low-income countries, this appears not to be the case.

Corroborating Schultz (2004), Patrinos et al. (2006) argued that wage returns on education are higher in developing countries compared to developed countries. In most cases, developing countries exhibit high returns to primary education while returns on tertiary education are higher in developed countries. Globally, the average return to schooling is about 10 percent but there are considerable differences between developed and developing countries with the latter showing about 11 percent compared to about 7.5 percent for OECD countries (Patrinos et al. 2006).

In Ghana, Cộte d'Ivoire, Kenya, South Africa, Nigeria and Burkina Faso, Patrinos et al. (2006) indicated that wage gains associated with each year of higher education are between 10 and 15 percent. In West Africa, the literature suggests that earning premium associated with education increases with levels of education. Kuepie et al. (2006) found that in Abidjan, Bamako, Cotonou, Dakar, Lomé, Niamey and Ouagadougou, incomes range from 39,000 CFA francs for individuals lacking minimum basic knowledge to 122,000 CFA francs for those who have completed secondary education. In addition, entry into higher education results in a huge quantitative leap with earnings virtually doubling from 122,000 to 228,000 CFA francs (Kuepie et al. 2006).

Comparatively in Africa, wage returns on education in Nigeria is relatively low. Oyelere (2007) asserts that returns on education in Nigeria is within the range of 2-5 percent in contrast with what earlier studies have estimated for returns on education, in the range of 5-15 percent, for other African countries. The estimated returns on primary and secondary education in Nigeria for an extra year of primary and secondary education were 1.9 percent and 1.7 percent respectively while the returns on tertiary education was 9.8 percent (Oyelere 2008). In Namibia, it is estimated that in relation to no education, primary education increases wages by 4.9 percent, secondary education by 14.9 percent, technical education by 29.1 percent, and higher education by 67.2 percent (Castel et al. 2010).

In Ghana, it has been identified that wage premium of education increases as level of education increases. According to Fasih (2008) higher wage returns on education are apparent only at the highest level of education and hence the big payoff in wage employment in Ghana is tertiary education. Primary to middle school enrolment in Ghana yields wage returns averaging about 4 percent per year whereas between middle and secondary school yields an average returns of about 10 percent (Schultz, 2004). The estimated private wage returns for university degree was about 16 percent per year (Ibid).

In Ghana's public sector, higher qualification is identified with higher wage premium.

Baah (2006) shows that public sector workers in Ghana with basic education earn 72 percent higher wages relative to those with no formal education all other things being equal. The estimated wage premium associated with medium and higher levels of education in Ghana's public sector are 146 and 332 percent respectively (ibid).

Corroborating the education effect on wages in Ghana, a recent survey of the wage and working conditions of media workers in Ghana found a close link between educational attainment and wages. Otoo and Asafu-Adjaye (2011) reported that monthly gross median pay of media workers in Ghana with secondary, diploma, bachelor degree and postgraduate educational attainments were GH¢140, GH¢200, GH¢300 and GH¢350 respectively.

In Europe Psacharopoulos (2007) asserts that persons with tertiary education earn nearly twice as much as those with lower secondary education. According to Tansel and Bircan (2010) in Turkey, the returns on education increase over different levels of education so that highest returns are achieved at the university level. The Turkish wage returns on education reported by Tansel and Bircan (2010) compares with what Schultz (2004) observed in Ghana.

In the developing world, there is some evidence which suggest some variation in wage returns on education for different groups. The literature shows that in some cases, there are differences in the wage returns on education among the sexes. These differences are context specific as the wage premium on education may be higher for males or females depending on the context. Kuepie et al. (2006) observed in a survey in Abidjan, Bamako, Cotonou, Dakar, Lomé**,** Niamey and Ouagadougou that with the exception of Abidjan (n Abidjan, return on schooling is equal for both males and females), returns on schooling are higher for males than females. Similarly, Fasih (2008) observed that in Ghana, earnings premium is not as high for women compared with men.

Contrary to the above, in Pakistan, Fasih (2008) posits that the marginal returns on education are generally much lower for men than women. Like in Pakistan, in the Nigerian labour market, Schultz (2003) observed that among wage earners, hourly wage rates increase by 10 percent and 12 percent per year of post-secondary schooling, for men and women respectively. Contest-specific and unobserved factors may contribute to the variation in the wage returns on education.

According to Patrinos et al. (2006) although common, but particular in developing countries, heterogeneity in abilities which affect higher earnings also relate to education attainment. This and other unobserved variables such as family connections, government imposed controls, and political allocation of jobs in the civil service and public enterprises may sort individuals into better paying jobs (Ibid).

The above private returns on education; employment and wage effects of education depict the relevance of education. In addition to the private returns on education, there are social returns on education which benefit the entire society.

## Social Returns on Education

Social returns on education are the benefits of education which accrue to the society at large. Investment in education engenders both economic and non-economic social returns which are essential for collective progress.

Economically, improvement in education is identified with a rise in aggregate labour productivity and consequently real output growth. In addition to physical investment, Jajri (2007) asserted that higher investment in human capital is essential for faster economic growth. Essentially, education enhances human development, economic productivity and competitiveness (Agüero, 2009). On the other hand, low level of education has been identified with underdevelopment. Fasih (2008) has argued that countries with low levels of education run the risk of being trapped in technological stagnation and low growth.

Lau et al. (1993) in asserting the relevance of that human capital development and for that matter education for economic growth stated that in the 1970s and 1980s, human capital came second only to technology and accounted for approximately 25 percent of growth in Brazilian states. According to Psacharopoulos (2007) in OECD countries, each year of schooling is statistically significantly associated with a 0.3 higher rate of economic growth. Voon (2001) also indicated that in Hong Kong, the huge increase in higher education spending over the previous decade resulted in an increase in the quality and productivity of the country's aggregate labour force. Improvement in labour force productivity implies that aggregate output can be increased using the same workforce size and hence the contribution of skilled workers and educated people to real GDP growth may be over and above that which is captured in their increment in wage earnings (Ibid).

In addition to the direct effect of higher educaiton on agregate productivity of a country's labourforce, improvement in the eduction of the labour force has fiscal returns, particularly through improvement in personal income tax. Also, improvement in education of the citizenry also has redistribution effects. Harmon et al. (2000) asserted that a proportion of private gross returns on education goes to the government through taxation and also through reduced welfare entitlements. This is corroborated by Psacharopoulos (2007) who indicated that public expenditure on education generates fiscal returns as a part of this expenditure is later recouped by the state through higher taxation of the more educated.

Apart from the direct economic returns on education for societies, education also produces unintended consequences which are essential in creating good conditions for economic grwoth and developmenmt. These unintended consequences include behavioural and attitudnal changes which engenders welbeing. Education is necessary in building social cohesion which is an essential condition for economic growth and development. Agüero, (2009) argued that education builds a conscious citizenship with

right entitlements, better social equality and participation citizenship. Fasih, (2008) supports this view with the assertion that education empowers people and helps reduce inequality. In Peru, Agüero (2009) indicated that rural Peruvians consider education critical in providing the opportunities and a means to escape poverty and discrimination.

It has also been argued that education influeces social cohesion and stability. According to Riddell and Song (2011) and Psacharopoulos (2007), education also affects non-market outcomes such as civic participation and reduces criminal activity. These non-market outcomes create the necessary conditions for economic growth and development.

Another social externality of education is improvement in health. Education influences lifestyle and health-seeking behaviour of individuals. Among other factors, child health has been linked to the level of education of parents. Schultz (2004) pointed out that most micro-empirical studies of child development observe that increases in the schooling of the mother are associated with improvements in child developmental outcomes using development indicators such as birth weight, child survival, good nutritional status as proxied by height or weight-for-height at a given age, age of entry into school and school enrolment. Also Psacharopoulos (2007) posits that another channel through which education affects socioeconomic development apart for labour market outcomes of participants is by improving health of the citizenry. This view is also corroborated by Riddell and Song (2011) with the assertion that education has effects on non-market outcomes such as health and longevity. Citing Leigh (1998), Harmon et al. (2000) asserted that increased education is positively and strongly correlated with improved health, family stability and environmental benefits.

Given the forgoing private and social returns on education, social scientists have theorized about education. One of such theories is the human capital theory. The human capital theory which asserts that human capital accounts for much of the observed variations in labour market outcomes of individuals provides perspectives in estimating the effects of education on employment in Ghana.

## The Human Capital Theory

The theoretical basis of this paper is the human capital theory. Human capital encompasses intangible skills, abilities and attributes which are imbedded in the individual and are developed through schooling, training courses, expenditures on medical care and other forms of social learning. The demand for and supply of labour in given a labour market are among other factors affected by human capital of the labour force.

Human capital theorists see education as an essential investment in the development of human capital. Education, training and health are critical investments in human capital development. These investments stimulate productivity growth and earnings of individuals as well as improved health (Becker, 2008). Education equips individuals

with the knowledge and skills required in the labour market. Human capital theorists perceive education as an investment in the short run for higher benefits in the long (Wodaj, 2002).

Skills and knowledge acquired through education enhances the employability of individuals. The crux of the human capital theory is that the level of investment in human capital accounts for much of the observed variations in wage or income of individuals (Wodaj, 2002). The emphasis on education stems from the fact that not only does it engender higher wage premium and better employment (private returns) but it also has social returns.

The above notwithstanding, some perspectives have called into question some of the assumptions underlying the human capital theory. One of such perspectives is the signalling/screening hypothesis. Spence (1973) has argued that in most job markets, the employer is not sure of the productive capabilities of the prospective employee at the time the employer hires him or her and neither would such information be available immediately after employment. Since the productive capabilities of prospective employees are unknown to the employer prior to former being hired, hiring becomes an investment decision made under uncertainty. What therefore guides such investment decisions, are what Spence (1973) terms *indices* – referring to observable and unalterable attributes and *signals* – referring to those observable characteristics attached to the individual that are subject to manipulation by the individual.

This perspective posits that education is a signal which points to a person's capabilities and productivity. However, education may not necessarily lead to actual productivity enhancement. Following Spence, Wodaj (2002) argues that education affects earnings, not primarily by changing the labour market productivity of individuals but by grading and labelling them in such a way as to determine their job placement and thereby their earnings. Hence education provides signals for screening and sorting individuals for employment, job allocation and wage allocation.

The above criticism notwithstanding, the assumptions of the human capital theory; education investments positively affecting productivity, employment, job allocation and wages, provides a basis for analysing the private returns on education in Ghana. Reviewed literature has suggested a strong effect of education on labour market outcomes of individuals.

## Methodology

The analysis contained in this paper draws on data from the fifth round of the Ghana Living Standard Survey (GLSS 5). The GLSS 5 is the latest of the series of customized Living Standards Measurement Survey (LSMS) conducted by the Ghana Statistical Service (GSS). The GLSS 5 was conducted in 2005/2006. Among other objectives, the GLSS 5 aimed at providing data on total earnings, hours of work and other labour

market information for in-depth study of differentials among branches of industry, sectors of employment, occupations at geographic areas and between women and men (Ghana Statistical Service, 2008). The following were the scope of the GLSS 5:

- Household: Housing characteristics, agricultural inputs, crop production, expenditure on food items consumed, assets, savings and loans
- Individuals: Demographic characteristics like education, health, economic activity, migration and tourism of individuals in the household
- Community: Demographic characteristics of rural communities, economy and infrastructure, education, health and agriculture.

The GLSS 5 had a nationwide coverage and covered all de jure household members who had not been absent for more than six (6) month prior to the survey. In all, 580 Enumeration Areas (EA) and 8,700 households were planned to be part of the survey. However, at the end of the survey, 8,687 households were successfully interviewed representing a 99.85 percent response rate. A total of 37,128 households members were covered in the 580 enumeration areas (Ghana Statistical Service, 2008).

## Constructing the Employment Variable

This paper defined the employed as persons who during the reference period of the survey, the last seven days, did some work for pay, profit or family gain.

The employment equation for this paper is: $\mathbf{Prob\ [Y_i = 1] = \phi\ (X_i\beta)}$

Where: -

Y is the dependent variable which captures whether an individual is employed or not (Y= 1 if an individual in the sample is employed and zero otherwise)

$\phi$ (.) is the cumulative distribution function

X represents the vector of explanatory variables included in the equation

$\beta$ represents the vector of coefficients of the explanatory variables.

The explanatory variables included in the regression are; level of Education, age, sex, interaction between male and urban and location. Age and location are used as controls. The controls are to address the tendency for the education effect on the probability of being employed to be over or underestimated.

However, some unobserved and therefore omitted variables such as the kind of education (vocational or technical) could affect the estimation of the effect of education

on the probability of being employed in Ghana. In addition, due to the lack of panel data and the non-use of fixed-effect econometric modelling unobserved heterogeneity was not addressed in this paper.

The results of the probit model used to estimate the effects of education on employment in Ghana are presented below (see table 1). Controlling for age, sex and location, the probability of being employed given an individual's level of education – basic education, secondary education, tertiary education and other (referring to intermediate courses) educational attainments – were estimated using no education as the omitted dummy.

## The Effects of Education on Employability in Ghana

The results of the probit estimation show that generally, education has a positive effect on the probability of being employed in Ghana. The GLSS 5 data show that basic education, secondary education and tertiary education have statistically significant positive effect on employment in Ghana.

As shown by the table below, in Ghana, individuals with basic education are 11.1 percent more likely to be employed than individuals with no education *ceteris paribus*. In Ghana, although basic education does not necessarily equip individuals with skills demanded in the labour market, it is mostly the minimum requirement for most paid jobs, particularly elementary jobs in the formal sector.

Comparatively, in Abidjan, Bamako, Cotonou, Dakar, Lomé, Niamey and Ouagadougou, Kuepie et al. (2006) found that unemployment rates were lower (14.6%) for individuals without minimum level of education compared with those with completed primary education (20%). However, although unemployment rate is lower for persons without minimum level of education in the Kuepie et al. (2006) sampled cities in West Africa, it does not necessarily mean that employment rate is higher for such individuals. The authors did not capture the employment rate of persons without minimum level of education. It is possible for a proportion of the economically active individuals without minimum level of education in these cities to be outside of the labour market due to a number of factors such as discouragement which was not captured by the authors.

This paper found that secondary education also has a significant positive effect on the employability in Ghana. Analysis of the GLSS 5 data show that all other things being equal, in the Ghanaian labour market, individuals with secondary education are 8.2 percent more likely to be employed than those with no education (see table 1). This is slightly lower than the estimated probability of being employed for those with only basic education. This find can partly be explained by the fact that in Ghana, apart from individuals who had vocational education to a level equivalent to secondary education, completion of secondary education does not necessarily equip individuals with the skills required in the formal sector. In addition, non-vocational secondary education is seen more as a transition from basic to tertiary education and not necessarily a preparation

for labour market entry. Notice that the effect of secondary education on the probability of being employed is lower, but not so strongly from a statistical point of view, than basic education (see table 3)

The "reduction" in the effects of secondary education on employment in Ghana compares with what Kuepie et al. (2006) observed in Abidjan, Bamako, Cotonou, Dakar, Lomé, Niamey and Ouagadougou. In these WAEMU cities, unemployment rate was slightly lower for person with completed primary education compared with those with secondary education.

In Ghana, the highest private return on education in terms of employment is at the tertiary level. The estimated probability of being employed is 14.3 percent higher for individuals with tertiary education compared with those with no education *ceteris paribus.*

The above to some extent compares with what Kuepie et al. (2006) found in Abidjan, Bamako, Cotonou, Dakar, Lomé, Niamey and Ouagadougou where unemployment rates among individuals who have completed at least a year of higher education were slightly lower than those with primary and secondary education.

The estimated effect of tertiary education on employment in Ghana to some extent reflects the sorting model. Flores-Lagunes & Light (2009) asserted that proponents of the sorting model expouse that employers use credentials to identify workers with desired traits which are not directly observed. In Ghana, tertiary education is deemed achievable mostly by high ability individuals. This in part explains the highest effect of tertiary education on the probability in of being employed in Ghana in comparison with basic and secondary education.

The forgoing analysis of the effects of education on employment in Ghana shows that given resource constraints, optimal post basic education investment decision in education in Ghana must take into account the possibility acquiring of tertiary education. This is because labour market outcomes, specifically the chance of being employed is lower for individuals with completed secondary education but who are unable to acquire tertiary education.

One would expect that the probability of being employed would be much higher than 14.3 percent for individuals with tertiary education comparing with those with no education. However, Ghana's economy is less modern and the agric sector which employs majority of Ghanaians, 55.8 percent according to Asafu-Adjaye & Otoo (2009), is predominantly traditional and subsistence. Ghana's economy is also characterized by high level of informality (these characteristics of Ghana's agric sector make it less attractive to persons who have attained secondary education and tertiary). These features of the Ghanaian economy are better suited for persons with lower education. It is therefore not surprising that the findings of this survey do not show very huge differences in the probability of being employed between individuals with no education and those with tertiary education.

The findings of this paper to a large extent supports the claims by human capital theorist that investment in education are essential in enhancing the labour market chances of the individual. Basic, secondary and tertiary education in Ghana are statistically significantly related to higher employability compared with no education. The estimated effect of education on the probability of being employed by this paper supports Card's (1998) assertion that in most countries, several studies across different time periods show that better educated individuals experience less unemployment in addition to other better labour market outcomes.

In addition to education other determinates of employment in Ghana observed by this paper are age, location and sex. This paper finds that age has a significant positive effect on the probability of being employed in Ghana. The probabilities of being employed for person within the 25-35 years, 36-50 years and 51-60 years age cohorts are 25.6 percent, 31.2 percent and 27.6 percent respectively higher than that of those within the 15-24 years age cohort, *ceteris paribus*. Also when all observed variables are controlled, the probability of being employed is 24.9 percent higher for persons above 65 years compared with persons within the 15 – 24 years age cohort. This finding compares with Otoo and Torgbe (2011) and Baah (2009) who observed that the youth in Ghana suffers disproportionately higher unemployment compared with the other age cohorts.

The performance of the youth in the Ghanaian labour market in terms of employment can be partly explained by the fact that in Ghana it is expected that persons within the youth age cohort would be in school and therefore be economically inactive. Hence economic activity rate among persons 15-24 years in Ghana is estimated at 39 percent. This much lower comparing with persons 24-44 years, 45-64 years and above 65 years whose estimated economic activity rate are 85.9 percent, 87.6 percent and 53.5 percent respectively (Otoo and Torgbe, 2011).

In addition to age, the GLSS 5 data also show that in Ghana, location is a significant determinant of employment. The findings of this paper show that urban location has negative effect on the probability of being employed. The table below shows that urban dwellers in Ghana are 8.3 percent less likely to be employed compared with individuals in rural areas, *ceteris paribus*. This compares with the findings from a descriptive analysis of the GLSS 5 data by Otoo et al. (2009) which showed that in Ghana among the working age population, unemployment rate is higher in urban areas (6.3%) than in rural areas (1.6%). What in part explains the higher employment rate in rural areas relative to urban areas in Ghana is the nature of the rural economy and access to land which is the main productive resource in rural communities. Given that agriculture is the mainstay of rural communities in Ghana and access to rural land is easier in rural areas, agricultural productive activities are higher in rural areas leading to higher employment rates in rural areas in Ghana.

Table 1 below shows that sex is an important determinant of the probability of being employed in Ghana. Controlling for observed variables, males in Ghana are 6.4 percent

more likely to be employed then females. This finding corroborates the findings from a descriptive analysis of the GLSS 5 data by Otoo et al. (2009) which shows that in Ghana, the rate of economic activity is slightly higher among males (54.9%) than among females (53.4%). This can be explained in part by gender norms in Ghana which, in some parts of the country, restricts women's access and ownership of productive resources. Also, the gender division of household chores sometimes constraints the working time of women and in some cases affect their labour market participation.

The findings of this paper shows that the sex effect on employability does not depend on location neither does it depend on level of education. Table 1 shows that the marginal effects of the interactions between male and urban and male and tertiary education are not statistically significant. Similarly, the effects of tertiary education on employability in Ghana does not depend on location. As shown by the table 1, the marginal effect of the interaction between urban and tertiary education is not statistically significant. Also, the estimates of the marginal effects of the other control variables are not affected with the introduction of the interaction terms (compare tables 1 and 2 below)

**Table 1:** Probit Regression Results (with interaction variables)
**Dependent Variable: Employed**

| *(No education is omitted category )* | **Coefficient** | **Marginal Effects** |
|---|---|---|
| Basic education | 0.305*** | 0. 111*** |
| | (11.19) | (11.52) |
| Secondary education | 0.230*** | 0. 082*** |
| | (5.29) | (5.56) |
| Tertiary education | 0.558*** | 0. 140*** |
| | (4.01) | (4.81) |
| Other education | 0.241 | 0. 084 |
| | (1.06) | (1.13) |
| Male | 0.188*** | 0.069*** |
| | (5.65) | (5.67) |
| Urban | -0.208*** | -0.076*** |
| | (-6.15) | (-6.17) |
| 25-35 yrs | 0.775*** | 0.256*** |
| | (24.81) | (28.54) |
| 36-50 yrs | 0.982*** | 0.312*** |
| | (30.48) | (37.09) |
| 51-60 yrs | 0.947*** | 0.276*** |
| | (20.92) | (29.51) |
| 61-64 yrs | 1.303*** | 0.310*** |
| | (12.04) | (26.81) |
| 65 yrs and above | 0.836*** | 0.249*** |
| | (17.04) | (23.24) |
| MaleUrban | -0.026 | -.009 |
| | (-0.56) | (-0.56) |
| MaleTertiary | -0.009 | -.0034 |
| | (-0.09) | (-0.09) |
| UrbanTertiary | -0.159 | -.060 |
| | (-1.16) | (-1.13) |
| Constant | -0.348 | |
| | (-12.24) | |
| Pseudo R-squared | 0.11 | |
| Observations | 13008 | |

Standard errors are reported in parentheses: *, ** and *** indicates significance at the 90%, 95%, and 99% level, respectively.

**Table 2:** Probit Regression Results (without interaction variables)

| *(No education is omitted category )* | **Coefficient** | **Marginal Effects** |
|---|---|---|
| Basic education | 0.307*** | 0. 111*** |
| | (11.23) | (11.52) |
| Secondary education | 0.232*** | 0. 082*** |
| | (5.35) | (5.63) |
| Tertiary education | 0.425*** | 0. 143*** |
| | (7.75) | (8.57) |
| Other education | 0.243 | 0. 085 |
| | (1.07) | (1.14) |
| Male | 0.175*** | 0.064*** |
| | (7.39) | (7.41) |
| Urban | -0.226*** | -0.083*** |
| | (-9.6) | (-9.19) |
| 25-35 yrs | 0.775*** | 0.256*** |
| | (24.81) | (28.54) |
| 36-50 yrs | 0.982*** | 0.312*** |
| | (30.48) | (37.09) |
| 51-60 yrs | 0.947*** | 0.276*** |
| | (20.92) | (29.51) |
| 61-64 yrs | 1.303*** | 0.310*** |
| | (12.04) | (26.81) |
| 65 yrs and above | 0.836*** | 0.249*** |
| | (17.04) | (23.24) |
| Constant | -0.348 | |
| | (-12.24) | |
| Pseudo R-squared | 0.11 | |
| Observations | 13008 | |

Standard errors are reported in parentheses: *, ** and *** indicates significance at the 90%, 95%, and 99% level, respectively.

**Table 3:** Chi Square Test Results

| | |
|---|---|
| test basic education = secondary education | |
| chi2( 1) = | 2.89 |
| Prob > chi2 = | 0.0894 |

## Conclusion

The relevance of education to the achievement of the individual's labour market expectations and socioeconomic development is universally acknowledged. Although evidence around the world on private returns on education vary, generally, returns on higher education are higher in developing countries in comparison with developed countries. This paper sought to estimate the effects of education on employment in Ghana using the most comprehensive survey data in Ghana, the GLSS 5. The results from the GLSS 5 data analysis show that education generally positively influence employability in Ghana.

In the Ghanaian labour market, individuals with primary, secondary and tertiary education have higher probabilities of being employed compared with those with no education, *ceteris paribus*. Tertiary education gives the highest private returns on education in terms of the probability to be employed.

This paper argues that for the individual, optimum post basic education investment decision is one which considers the possibility of tertiary education. This is because the analysis shows a reduction in the probability of being employed for persons with completed secondary education. For the primary, secondary and tertiary education levels, secondary education has the lowest effect on employment in Ghana.

In Ghana. recent educational policies and programmes have emphasized basic education with aim of achieving universal coverage. Consequently, while there is Free Compulsory Basic Education (FCUBE) in Ghana, efforts are being made to achieve full cost recovery in tertiary education in Ghana.

However, tertiary education has the highest positive effect on the labour market outcomes of individuals. Given that secondary education does not equip individuals with the requisite labour market skills, it is important that efforts are made to encourage post secondary education in Ghana in order to improve the chances of individuals with completed secondary education in getting jobs. Also given that not many people are able to attain tertiary education, there is the need to redesign the secondary education curriculum in Ghana in order to make it more relevant to the labour market demands to improve the employability of persons with secondary education.

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