Ghanaian Journal of Economics, Vol. 2, December 2014

Determinants of poverty among male-headed and female-headed households in Ghana

Daniel Kwabena Twerefou[∝], Bernardin Senadza[#] and John Owusu-Afriyie*

[∝#*]Department of Economics, University of Ghana P.O. Box LG 57, Legon, Accra, Ghana
Correspondence to Email: twerefou@yahoo.co.uk , bsenadza@ug.edu.gh or bsenadza@yahoo.com

Abstract

Ghana has made significant progress with the reduction of poverty over the last two decades. Headcount poverty declined from 51.9% in 1991/92 to 39.5% in 1998/99 and to 28.5% in 2005/06. Nonetheless, the extent to which poverty declined varied across the country and amongst different population groups. Analysis of poverty trends in Ghana shows that poverty incidence among Male Headed Households (MHHs) is higher than Female Headed Households (FHHs), which is contrary to the "feminization of poverty" hypothesis. Moreover FHH and MHH have experienced differential rates of decline in poverty incidence over the past two decades. This paper examines empirically the factors that determine poverty among male-headed and female headed households as well as those that explain the gap in the poverty incidence between the two groups using a logistic regression model and a two-fold Blinder-Oaxaca decomposition technique respectively. Results indicate that factors that determine poverty among male-headed and female-headed households are similar but differ in terms of their effects. The two-fold Blinder-Oaxaca decomposition reveals that 61.7% of the poverty incidence gap is explained by differences in socio-economic characteristics of male-headed and female-headed households whilst 38.3% is unexplained by these characteristics. The policy implications are discussed.

Keywords*: poverty, feminization of poverty, male-headed households, female-headed households*

1. Introduction

Globally, reducing poverty has become a major goal for both developed and developing countries. This is because the effects of poverty are multi-faceted and devastating. Thus, in September 2000, world leaders set an ambitious agenda for improving human welfare known as the Millennium Development Goals (MDGs). The first

of the 8 MDGs - to eradicate extreme poverty and hunger - directly seeks to attack the menace of poverty by halving the proportion of people living below US$1 a day. One of the many facets of poverty is its differential incidence amongst males and females. Several estimates indicate that 70 percent of the world's poor are women (UNDP 1995; United Nations 1996). The feminization of poverty - a phenomenon that is said to exist if poverty is more prevalent among female-headed households than among male-headed households - has been the subject of many recent studies on poverty (Anyanwu, 2010).

The pioneering work on the concept of ''feminization of poverty'' was by Pearce (1978). Pearce noted that though many women have achieved economic independence by their participation in the labour force, poverty is rapidly becoming a female problem. According to Pearce (1978), because of earnings and occupational discrimination against women in the labour market, households headed by women suffer from poverty at higher rates than those headed by men. Pearce attributed the prevalence of "feminization of poverty" to two main factors: (1) the role of different sources of income (i.e. earned income, public and private transfer income); and (2) the role of the welfare system in perpetuating women's poverty. Thus, not only do women have limited occupational opportunity but they also earn less income. In addition, welfare systems tend to encourage women to work at poverty level-wages and reinforce the barriers that many women face as they try to get jobs that pay a living wage.

Over the years, empirical works on "feminization of poverty" have focused on the relationship between household headship and poverty (Buvinic and Gupta, 1994). Such studies compare the poverty status of male-headed households (MHHs) and female-headed households (FHHs) as a way of testing the "feminization of poverty" hypothesis due to lack of gender-disaggregated data (Buvinic and Gupta, 1994). For instance, Kossoudji and Mueller (1983) used the Rural Income Distribution Survey (RIDS) conducted in 1974-75 to analyze the demographic and economic status of FHHs in rural Botswana. They showed that in rural Botswana, FHHs are poorer than other households, which is consistent with the ''feminization of poverty'' hypothesis. Rodgers (1990) found similar results for the United States using a sample of 33,608 Texas families from the 1980 US Census of Population and Housing. Other studies that have confirmed the feminization of poverty include Rajaram (2009) for India, Katapa (2005) for Tanzania and Koster (2008) for Rwanda. Other studies have however reached conclusions contrary to the feminization of poverty hypothesis. IFAD (1999) concluded in an assessment of rural poverty in West and Central Africa that, despite women's individual disadvantages, poverty incidence among FHHs is lower than among MHHs. In Uganda, Appleton (1996) showed by OLS and logistic regression technique that when assessed by consumption or income, FHHs are not poorer nor do they appear to be consistently disadvantaged on social indicators. In

Vietnam, Loi (1996) argued that, in terms of living standards index and per capita daily expenditure, FHHs are not significantly worse off than MHHs. Using National Sample Survey (NSS) data for the year 1986-87, Dreze and Srinivasan (1997) found no evidence that FHHs in rural India are significantly poorer compared to MHHs, based on standard headcount ratio, a measure of the number of people living below the poverty line. The strength of their study was that their results were robust to the choice of poverty line.

More recently, Attanasso (2005) investigated the determinants of monetary poverty in rural and urban Benin and found that professional status and age of household head significantly affected poverty in only male-headed households but education of household head and household size are significant determinants of poverty in both male-headed and female-headed households. Anyanwu (2010) examined the determinants of gendered poverty in Nigeria using the 1996 National Consumer Survey dataset. He found that an increase in the female household head's age significantly reduces poverty, although this relationship is nonlinear. He also found that household size is positively and significantly related to poverty for both male-headed and female-headed households, and education significantly reduces the level of poverty in both male-headed and female-headed households, but with greater magnitude for the latter. Javed and Asif's (2011) study on the relationship between gender of household head in Pakistan, found that education, secondary earners, number of children and types of occupation are the significant factors that determine the level of poverty in both female-headed and male-headed households.

Since the early 1990s, Ghana has made substantial progress towards poverty reduction. The national poverty incidence declined from 51.7% in 1991/92 to 39.5% in 1998/99 and further to 28.5% in 2005/06 (Ghana Statistical Service (GSS), 2007). In view of the decline in the national poverty incidence, Coulombe and Wodon (2007) simulated the future share of the population in poverty under various growth scenarios and predicted that if real Gross Domestic Product (GDP) per capita grows by at least 1% per annum, Ghana would be able to meet the Millennium Development Goal of halving poverty by the year 2015.

One striking feature about Ghana's national poverty trends over the years is the relatively higher incidence of poverty among male-headed households (MHHs) compared to female-headed households (FHHs), a situation that is contrary to the feminization of poverty hypothesis. Poverty incidences among MHHs and FHHs were 55% and 43% in 1991/92, 41% and 35% in 1998/99 and 31% and 19% in 2005/06 respectively (GSS, 2007). This shows a poverty incidence gap between MHHs and FHHs of 12% in 1991/92, 6% in 1998/99 and 12% in 2005/06. There have been some earlier studies that have attempted to investigate the differential levels of poverty in male-headed and female-headed households in Ghana. For instance, Ewusi (1976) analyzed income data from the 1974/75 Household Budget Survey

and found that 73 per cent of FHHs fell below his chosen poverty line (US$100 per capita household income) compared to 76 per cent for MHHs, which is an indication that FHHs are not poorer than MHHs. Kyereme and Thorbecke (1987), analyzing the same income data as Ewusi (1976), found that FHHs accounted for disproportionately higher levels of food poverty compared to MHHs. The different conclusions reached by the two studies using the same data shows that the results are sensitive to the poverty measure used. Codjoe (2010) also examined the population-food crop production nexus and within it assessed the differences between MHHs and FHHs. He found that FHHs in the transitional agro-ecological zone produced more maize, owned more land and earned more from the sale of maize relative to MHHs, an indication that FHHs in the transitional agro-ecological zone are less likely to be poor relative to MHHs. Moreover, Coulombe and Wodon (2007), using the third round of the Ghana Living Standards Survey (GLSS 3) found a significant relationship between the sex of household head and consumption per adult equivalent. They found that in the rural areas, FHHs have higher consumption per adult equivalent than MHHs. A related study on the "feminization of poverty" hypothesis is Awumbila (2006), which explored the gender dimension of poverty in Ghana, and how gender inequalities are manifested and implicated in the reproduction of poverty. Adjasi and Osei (2007), using the Foster–Greer–Thorbecke (FGT) poverty indicators and probit regression, found that a household is less likely to be poor if the head is educated and lives in the urban area. They also found that that most households in Ghana depend on firewood, do not have access to pipe-borne water and live in rooms other than full apartments.

The survey of the literature on feminization of poverty indicates that not many studies have been conducted on the subject, following its introduction by Pearce (1978). The literature on Ghana, in particular, indicates an attempt to describe the data without accounting for the factors explaining the differential poverty incidences between MHHs and FHHs. The present study attempts to fill this research gap. Thus, from the observed trend in poverty incidence among MHHs and FHHs in Ghana over the last two decades, questions emerging are: 1) Why is the poverty incidence higher among MHHs than among FHHS? 2) What factors determine poverty incidence among MHHs and FHHs? 3) What factors explain the gap in poverty incidence between MHHs and FHHs? The novelty of this paper is that it not only estimates the determinants of poverty in male-headed and female-headed households but goes a step further by identifying the factors that account for the differential levels of poverty between MHHs and FHHs in Ghana. Thus, the objective of this paper is two-fold. The first is to estimate the determinants of poverty among MHHs and FHHs in Ghana using the binomial logistic regression; and second, to determine the factors that explain the gap in poverty incidence between MHHs and FHHs in Ghana using the two-fold Blinder-Oaxaca decomposition technique.

The paper has four sections. The next section discusses the methodology and data. Section three presents and discusses the results, while concluding remarks are offered in section four.

2. Methodology and data

2.1 Empirical model

We employ the binomial logit model to investigate the factors that determine poverty among MHHs and FHHs in Ghana. Let the underlying response or unobserved variable, P^* be defined by the regression relationship:

$$P_i^* = \sum X_i' \beta + \varepsilon_i \quad (1)$$

But what is observed is an event represented by a binary variable, and can be defined as:

$P = 1$ if $P^* > 0$ (poor)

$P = 0$ if otherwise (Non-Poor)

Probability ($P = 1$)=Probability= $(\varepsilon_i > -\sum X_i' \beta)$ 1F $(-\sum X_i' \beta)$ (2)

Where F is the cumulative distribution function for (See Green, 2008). Thus, we specify the logit model as:

Probability $(P = 1 \setminus X) = \dfrac{\exp(X_i' \beta)}{1 + \exp(X_i' \beta)}$ (3)

The odds ratio = $\dfrac{P}{1-P} = \exp(X_i' \beta)$ (4)

Log odds ratio = In $\left[\dfrac{P}{1-P}\right] = X_i' \beta$ (5)

The parameters obtained from the equation above represent the coefficients of the index function, which cannot be interpreted as the partial effects (marginal effects). For policy making, we need to estimate the marginal effects to show how each outcome changes with respect to changes in the explanatory variable (Green, 2008). The study estimates logistic regressions for both MHHs and FHHs separately.

According to Haughton and Khandker (2009), household socio-economic characteristics also determine the optimal consumption level specified in equation (3). Based on the forgoing, we formulate the following empirical logit model;

$$\Pr ob(P = 1 \setminus X) = \beta_0 + \sum_{i=1}^{26} \beta_i X_i + \varepsilon \quad (6)$$

where X_i is a set of explanatory variables such as household size, age of the household

head, household employment income and remittances, number of dependents within the household, work experience of the household head and members, education level of the household head, marital status of the head, location and ecological zone of the household, migration status of the household head, average years of schooling of individual members of the household and employment status of the household head (see Table 1 for details). P is a binary variable, which takes a value of one (1) for a poor household and zero (0) for a non-poor household. It is measured by the consumption per adult equivalent expressed in constant prices of Accra in January 2006 to capture differences in household composition. ε is the stochastic error term. Definition of the variables is presented in Table 1.

Table 1: Definition of variables

Description	Variable	Description	Variable
household size	X_1	Household remittances income	X_{13}
Household size squared	X_2	Number of dependents	X_{14}
Age of household head	X_3	Work experience of head	X_{15}
Age of household head squared	X_4	Work experience of members	X_{16}
Household employment income	X_5	Years of schooling of members	X_{17}
Educational level of household head:		Employment status of head:	
Basic education	X_6	Public employment	X_{18}
Secondary education	X_7	Wage-private-formal	X_{19}
Tertiary education	X_8	Wage-private-informal	X_{20}
Other form of education	X_9	Self-agro-export	X_{21}
No education*		Self-agro-crop	X_{22}
		Self business	X_{23}
		Non-working*	
Migration status of head :		Location of household:	
Migrate	X_{10}	Urban	X_{24}
Not migrate*		Rural*	
Ecological zone:		Marital status of head:	
Coastal zone	X_{11}	Separated/divorced/widowed	X_{25}
Forest zone	X_{12}	Married	X_{26}
Savannah zone*		Never married*	

*Denotes reference category

Source: Authors

Secondly, the study employs the Blinder-Oaxaca decomposition technique to investigate the factors that account for the gap in the poverty incidence between MHHs and FHHs. Specifically, this technique is applied by the study to explain why MHHs have a higher poverty incidence than FHHs in Ghana). Thus, we specify empirically the Blinder- Oaxaca decomposition as:

$$\overline{y_1} - \overline{y_0} = (\overline{X_1} - \overline{X_0})\beta_1 + \overline{X_0}(\beta_1 - \beta_0) \quad (7)$$

The subscripts 1 and 0 denote FHHs and MHHs respectively. y_1 is an outcome variable for FHHs and it is measured as the ratio of consumption per adult equivalent to the poverty line. y_0 is an outcome variable for MHHs and it is measured as the ratio of consumption per adult equivalent to the poverty line. X_1 is a vector of observable socio-economic characteristics of FHHs whilst X_0 is a vector of observable socio-economic characteristics of MHHs (see Table 1). β_1 is a vector of coefficients of FHHs' socio-economic characteristics whilst β_0 is a vector of coefficients of MHHs' socio-economic characteristics. The over-bars denote means or averages. In equation (7), the first and second terms on the right hand side denote the explained and unexplained components of the difference in mean outcomes, respectively (see Blinder, 1973 and Oaxaca, 1973). Furthermore, equation (7) implies that the gap or difference in the average poverty outcomes of FHHs and MHHs is due to a gap in their observable socio-economic characteristics (explained gap) and a gap in coefficients (unexplained gap).

2.2. Data

This study uses data from the fifth round of the Ghana Living Standards Survey (GLSS5) conducted in 2005/06 by the Ghana Statistical Service since it is the most recent survey data available. It covers a sample of 8,687 households (consisting of 2,421 FHHs and 6,266 MHHs) in 580 enumeration areas that contain 37,128 household members. The survey data also contain detailed information on a variety of issues, including community level characteristics, the demographic characteristics of households, education etc.

3. Results and discussion

This section presents the descriptive statistics of the variables. The section also analyses the determinants of poverty among FHHs and MHHs using the logistic regression. Lastly, the section examines the factors that account for the gap in the poverty incidence between FHHs and MHHs using the two-fold Blinder-Oaxaca decomposition technique.

3.1. Descriptive statistics

Table 2 shows a summary of deterministic statistics of explanatory variables for FHHs and MHHs. From the table, FHHs on the average have smaller household size (2.4) relative to MHHs (3.5). Mean of household employment income for FHHs is lower (GH¢161.0)[6] than MHHs (GH¢429.8) indicating that FHHs on the average have smaller employment income relative to MHHs.

[6] *GH¢ is the symbol representing the local currency unit; the Ghana cedi. The exchange rate is approximately GH¢3 to US$1 at December 2014.*

In terms of income from remittances, FHHs have higher incomes (GH¢192.80) compared to that of MHHs (GH¢78.3). On average, MHHs have larger numbers of dependents (2.0) compared to FHHs (1.5). Also, on average, MHHs have a greater number of years of work experience (14.5 years) compared to FHHs, while members in MHHs have more years of work experience and schooling than members in FHHs. A test for multicollinearity suggests it is not a problem (see Appendix A2).[7]

Table 2: Summary statistics of explanatory variables

		FHHs			MHHs		
Variable	Expected Sign	Mean	Min	Max	Mean	Min	Max
Household size	+/-	2.4	0.7	11.5	3.5	0.8	21.4
Household employment income	-	161.0	0.0	13500.0	429.8	0.0	43800.0
Household income from remittances	-	192.8	0.0	24000.0	78.3	0.0	52600.0
Number of dependents	+	1.5	0.0	8.0	2.0	10.0	16.0
Work experience of household head	-	12.0	0.0	70.0	14.5	0.0	98.0
Work experience of household members	-	2.4	0.0	132.0	12.6	0.0	186.0
Average years of schooling of household members	-	13.3	0.0	110.0	15.8	0.0	160.0
Age of household head	+/-	48.4	15.0	99.0	44.2	15.0	99.0
Education of head (No education=0, 1=Basic, 2=Secondary, 3=Tertiary)	+/-	1.2	0.0	4.0	1.4	0.0	4.0
Location of household (1=Urban; 0=Rural)	+/-	1.5	0.0	1.0	1.6	0.0	1.0
Ecological zone of household (0=Savannah zone, 1=Coastal, 2=Forest)	+/-	4.4	0.0	2.0	2.1	0.0	2.0
Marital status of household head (0=never married, 1=married, 2=divorced/separated/ widow)	+/-	1.4	0.0	1.0	1.0	0.0	1.0
Migration status of head (0=Never migrated, 1=Ever migrated)	+/-	1.6	0.0	1.0	1.6	0.0	1.0
Employment status of household head (0=non-working, 1=Public, 2=Wage-private-formal, 3=Wage-private-informal, 4=Self-agro-export, 5=Self-agro-crop, 6=Self business)	+/-	4.4	0.0	6.0	3.8	0.0	6.0

Source: Constructed by Authors from GLSS 5 (2005/6)

[7] *Multicollinearity is an econometric problem which arises when the explanatory variables in the model are highly correlated with one another (Greene, 2011). We therefore tested for the presence of multicollinearity using the Variance Inflation Factor (VIF). The VIF shows the extent to which the variance of an estimator is inflated by the presence of multi-collinearity (Greene, 2011). A VIF greater than 5 suggest a problem with multicollinearity. Results from Table A2 indicates no problem with multicollinearity.*

3.2. Determinants of poverty among MHH and FHH

The marginal effects of the logistic regression are provided as Table 3. The goodness of fit measured by the Pseudo R^2 is 0.2891 and 0.3392 for FHHs and MHHs respectively indicating that the logit regressions for the two types of household are good for prediction (see Greene, 2011).

From Table 3, it could be seen that all other factors held constant, an increase in household size by one person significantly increases the probability of poverty more in MHHs (0.1314) than FHHs (0.1005), thus confirming the findings of Attanasso (2005), Anyanwu (2010) and Javed and Asif (2011). An increase in the number of persons within the household puts pressure on household resources thereby making fewer resources available to each member. The effect of increase in household size on poverty is more pronounced in MHHs than FHHs because in Ghana MHHs are more populated than FHHs. Economics of scale from joint consumption (household size squared), however, significantly reduces the probability of being poor in FHHs and MHHs.

Age of head is a significant determinant of poverty only in FHHs and its effect is non-linear as expected, which is consistent with the findings of Anyanwu (2010) but contrary to the findings of Attanasso (2005). This means that all other factors held constant, if the age of a female head increases by one year, it significantly reduces the probability of being poor by 0.0034 but as she gets older, the probability of being poor significantly increases by 0.0000362 if her age increases by one year (Table 3). This may be due to the fact that females are more represented in unpaid family work than males. Baah-Boateng (2009) found that in 2005/2006, the share of men in unpaid family work was 17.7% whilst that of women was 32.3%. Since women are highly engaged in unpaid family work, they find it difficult to save for future consumption. Also, females generally work in the informal sector during their youth, which makes it difficult for them to have a social security account for old age security. Therefore, at the youthful stage of female heads, the probability of being poor reduces but as they get older, the probability of being poor increases.

Employment income of the household is a significant determinant of poverty for both FHHs and MHHs and its effect is negative as expected, confirming the findings of Javed & Asif (2011). More specifically, if household income from employment increases by one currency unit, it significantly reduces the probability of being poor in FHHs and MHHs. Higher household income gives the household greater command over goods and services and thus, household welfare improves.

Remittances significantly reduce the probability of being poor only in FHHs, which is consistent with the findings of Gyimah-Brempong and Asiedu (2009).

However, remittances play no significant role in poverty reduction among MHHs. This is because female heads use household resources more productively than male heads (IFAD, 1999) and as such, any inflow of remittances is more likely to be used effectively to improve welfare in FHHs than in MHHs. Number of dependents is not a significant determinant of poverty in both FHHs and MHHs, which is inconsistent with the findings of Rodgers (1990). Work experience of household head is a significant determinant of poverty only in MHHs, which is inconsistent with the findings of Rodgers (1990). Specifically, as work experience of the male head increases by one more year, the probability of being poor significantly reduces by 0.0021 (Table 3). This is because males on the average spend more years in market production compared to their female counterparts. Females normally spend most of their time in non-market production thereby losing experience needed to function in market production.

Similarly, work experience of members in MHHs is a significant determinant of poverty whereas that of members in FHHs is not a significant determinant of poverty. In the classic labour market, earnings depend on experience. Hence the greater work experience of members of MHHs reduces their probability of being poor.

Table 3: Marginal effects for FHHs and MHHs

Variables	FHHs			MHHs		
	dy/dx	Std. Error	z-stat	dy/dx	Std. Error	z-stat
Household size	0.1005***	0.0146	6.93	0.1314***	0.0102	12.94
Household size squared	-0.0053***	0.0014	-3.64	-0.0049***	0.0006	-8.41
Age of household head	-0.0034*	0.0018	-1.95	0.0026	0.0021	1.19
Age of household head squared	0.0000**	0.0000	2.29	-0.0000	0.0000	-0.38
Employment income	-0.0000**	0.0000	-2.53	-0.0000***	0.0000	-2.83
Remittances	-0.0000***	0.0000	-4.93	0.0000	0.0000	0.11
Number of dependents	-0.0075	0.0052	-1.47	-0.0077	0.0050	-1.54
Work experience of household head	-0.0005	0.0004	-1.46	-0.0021***	0.0005	-4.49
Work experience of household members	0.0009	0.0005	1.61	-0.0007**	0.0003	-2.04
Education level of household head:						
Basic	-0.0329***	0.0110	-2.86	-0.0479***	0.0128	-3.68
Secondary/Tertiary	-0.0422**	0.0174	-2.39	-----	----	----
Tertiary	-----	----	----	-0.0985***	0.0160	-5.84
Other	-----	----	----	-0.0638	0.0811	-0.79
Years of schooling of household members	-0.0027***	0.0007	-3.98	-0.0035***	0.0006	-6.24
Marital status of household head:						
Married	0.0389	0.0303	1.29	-0.0031	0.0260	-0.12
Divorced	0.0372	0.0273	1.37	0.0390	0.0333	1.19
Location (urban=1)	-0.0534***	0.0117	-4.59	-0.1205***	0.0131	-9.25
Ecological Zone						
Coastal	-0.0691***	0.0118	-5.88	-0.1185***	0.0124	-9.59
Forest	-0.0660***	0.0130	-5.11	-0.1378***	0.0121	11.45
Household head ever migrated (yes=1)	-0.0199**	0.0094	-2.13	0.0396***	0.0129	3.06
Employment Status of household head:						
Public	-0.0518**	0.0206	-2.53	-0.0980***	0.0265	-3.72
Wage-private-formal	-0.0136	0.0287	-0.48	-0.1047***	0.0248	-4.23
Wage-private-informal	-0.0305*	0.01785	-1.72	-0.0620**	0.0302	-2.00
Self-agro-export	-0.0574***	0.0105	-5.46	-0.1072***	0.0208	-5.13
Self-agro-crop	-0.0254	0.0170	-1.50	-0.0457	0.0342	-1.31
Self-business	-0.0798***	0.0164	-4.89	-0.1195***	0.0235	-5.08

*Note: Pseudo R-squared is 0.2891for FHHs' logistic regression and 0.3392 for MHHs' logistic regression. *** significant at 1%, ** significant 5%, * significant at 10%. Log likelihood for FHHs is -2425.7621 and for FHHs is -752.57228*

Education is a determinant of poverty in both FHHs and MHHs and as such, reduces the probability of being poor in an increasing order of magnitude. This is because education affords the individual the ability to earn a high income, which in turn improves welfare. This confirms the findings of Anyanwu (2010) and Rodgers (1990) but contradicts that of Attanasso (2005).

Location is a significant determinant of poverty for both FHHs and MHHs, which is consistent with the findings of Rodgers (1990). More specifically, being in the rural areas relative to urban areas statistically increases the risk of poverty for both FHHs and MHHs. From the results, it could be seen that if a FHH moves from the rural area to settle in the urban area, it significantly reduces the probability of being poor by 0.0533 whereas if a MHH moves from the rural area to settle in the urban area, it significantly reduces the probability of being poor by 0.1205. This is because the rural areas are mostly deprived of social services and amenities, which are crucial to reducing poverty.

Ecological zone is also a significant determinant of poverty for both FHHs and MHHs. FHHs and MHHs in coastal and forest zones compared to those in the savannah zone are less likely to be poor, which is consistent with the findings of Ennin et al (2011). For instance, moving from the savannah zone to the coastal zone reduces the probability of being poor by 0.0691 for FHHs whereas the corresponding figure for MHH is 0.1185. The effect on poverty of moving from the savannah zone to either the forest or coastal zone is more pronounced for MHHs than FHHs.

Migration status of household head is also a significant determinant of poverty for both FHHs and MHHs but this effect is different in the respective households. All other things constant, if a female head migrates, the probability of the household being poor significantly reduces by 0.0199, which is similar to the results of Sabates-Wheeler et al (2005). On the other hand, if a male head migrates, the probability of the household being poor significantly increases by 0.0396, which is contrary to the results of Sabates-Wheeler et al (2005). As indicated in Appendix 1, after other family reasons, the majority of female heads (14.5%) migrate to marry whereas the majority of male heads (32.4%) migrate to seek employment. Therefore, migration of female heads reduces the probability of being poor which may be due to the reason that marriage makes them economically powerful and as such, are able to contribute resources to their households of origin. Moreover, in Ghana, this has a socio-cultural antecedent. For instance, an adage in the 'Akan' (an ethnic group in Ghana) tradition says "*A woman sends every fortune to her household of origin but if she incurs a debt, she saddles her husband with it*". Conversely, male heads migrate in search of employment, which increases the probability of being poor. This could mean that male heads are either unable to secure employment or find themselves in vulnerable employment at the place of destination.

Employment status of household heads is a significant determinant of poverty for both FHHs and MHHs. If a female head moves from the non-working category to public employment, the probability of poverty significantly reduces by 0.0518, whereas if a male head moves from the non-working category to public employment, the probability of poverty significantly reduces by 0.0980. Furthermore, if a female head moves from the non-working category to wage-private-informal, the probability of poverty significantly reduces by 0.0305 whereas if a male head moves from the non-working category to wage-private-informal, the probability of poverty significantly reduces by 0.0620.

Similarly, if a female head moves from the non-working category to self-agro-export, the probability of being poor significantly reduces by 0.0574 whereas if a male head moves from the non-working category to self-agro-export, the probability of being poor significantly reduces by 0.1072. Moreover, if a female head moves from the non-working category to self-business category, the probability of poverty significantly reduces by 0.0798 whereas if a male head moves from the non-working category to self-business category, the probability of poverty significantly reduces by 0.1195. Thus, the effect of the employment status of the head on poverty reduction is more pronounced among MHHs than FHHs. This may be attributed to the existence of wage discrimination against women in the Ghanaian labour market (see Heinz, 2005).

On the contrary, if the head moves from the non-working category to the wage-private-formal category, the probability of poverty significantly reduces only for MHHs whilst movement from the non-working category to self-agro-crop category is not a significant determinant of poverty for both FHHs and MHHs.

3.3 Blinder-Oaxaca Decomposition of poverty

According to Gang et al (2004), there are two broad approaches to explaining the gap in poverty rates. These are the characteristics and the coefficients effects. The characteristics effect relies on the possibility that the characteristics of individuals which give rise to poverty differ among groups whereas the coefficients effect relies on the possibility that the effectiveness of individual characteristics or returns to individual characteristics may vary among groups (Gang et al, 2004). For the purpose of this study, the approach used to explain the poverty incidence gap between MHHs and FHHs is the characteristics effect, which is the explained gap.

Results from the decomposition in Table 4 indicate that 61.7% of the gap in poverty incidence between MHHs and FHHs is explained by differences in socio-economic characteristics whilst 38.3% is explained by differences in coefficients or

differences in the returns to these characteristics. In view of this, adjusting MHHs' socio-economic characteristics to those of FHHs closes 61.7% of the poverty incidence gap whereas adjusting MHHs' coefficients to those of FHHs closes 38.3% of the poverty incidence gap. Thus, the poverty incidence gap is mainly due to differences in household socio-economic characteristics.

Table 4: Results of the Blinder-Oaxaca Decomposition

	Characteristics Effect (Explained Gap)		Coefficient Effect (Unexplained Gap)	
	Estimate	Share (%)	Estimate	Share (%)
Overall Effects	0.1553***	61.7	0.0963***	38.3
Intercept	-	-	0.1854	73.7
Household size	0.2264***	90.0	-0.3767***	-149.7
Number of dependents	-0.0039	-1.5	0.0320	12.7
Age of head	-0.0083***	-3.3	-0.0703	-27.9
Employment income	-0.0154***	-6.1	0.0107**	4.3
Remittances	0.0055	2.1	0.0139	5.5
Work experience of Household Head	-0.0083***	-3.3	-0.0277*	-11.0
Work experience of Household Members	-0.0249***	-9.9	-0.0085	-3.4
Employment status of head	0.0058	2.3	0.0802	31.9
Average Years of Schooling of Household Members	-0.0170***	-6.7	0.0839***	33.4
Education level of Head	-0.0468***	-18.6	0.0064	2.5
Marital status of Head	-0.0213***	-8.5	0.0256	10.2
Location	0.0361***	14.3	0.0843*	33.5
Ecological zone	0.0320***	12.7	0.0108	4.3
Migration status of Head	-0.0049***	-1.9	0.0462***	18.4

**** significant at 1%, ** significant at 5%, * significant at 10%. Note: Share is calculated as a proportion to the mean Log difference of the ratio of consumption per adult equivalent to upper poverty line (0.2515679) .p-values are in parenthesis*

Specifically, differences in household socio-economic characteristics that significantly account for the 61.7% of the poverty incidence gap between MHHs and FHHs are household size, age of head, marital status of head, employment income, work experience of head, work experience of household members, total years of schooling of household members, education level of head, location, ecological zone and migration status of head. However, differences in employment status of household head, number of dependents and remittances do not significantly explain the gap in poverty incidence between FHHs and MHHs.

Furthermore, the characteristics effect of household size contributes 90.0% to the poverty incidence gap. This means that difference in household size between FHHs and MHHs increases the poverty incidence gap by 90.0%. This is because MHHs on the average have a larger household size relative to FHHs (see Table 2). On the contrary, characteristics effect of age of household head contributes -3.3% to the poverty incidence gap, which means that difference in age of household head between MHHs and FHHs reduces the poverty incidence gap by 3.3%.This may be attributed to the fact that female heads on average are older than their male counterparts as indicated in Table 2.

Moreover, characteristic effect of employment income contributes -6.1% to the poverty incidence gap, which means that difference in employment income of FHHs and MHHs reduces the poverty incidence gap by 6.1%, a situation that is plausibly explained by the fact that MHHs earn higher income from employment than their female counterparts (see Table 2). Similarly, the characteristic effect of work experience of a household head contributes -3.3% to the poverty incidence gap, which means that difference in work experience of household head reduces the poverty incidence gap by 3.3%. This is because in relation to female heads, male heads on the average have more years of work experience as indicated in Table 2, which reduces their poverty incidence, thereby narrowing the poverty incidence gap.

The characteristic effect of work experience of household members contributes -9.9% to the poverty incidence gap, which implies that difference in work experience of household members reduces the poverty incidence gap by 9.9%. This is simply because in relation to members within FHHs, those within MHHs have more years of work experience, which reduces their poverty incidence thereby narrowing the poverty incidence gap. Similarly, the characteristic effect of total or aggregate years of schooling of household members contributes -6.7% to the poverty incidence gap, which implies that difference in total or aggregate years of schooling of household members reduces the poverty incidence gap by 6.7%. This is because members in MHHs have more years of schooling than those in FHHs (see Table 2), which can be read as an indication that MHHs have greater human capital resources than FHHs. This characteristic thus narrows the poverty incidence gap.

Furthermore, the characteristic effect of educational level of a head contributes-18.6% to the poverty incidence gap, which implies that difference in educational level of a head, reduces the poverty incidence gap by 18.6%. This is attributed to the reason that male heads on the average have higher levels of education than their female counterparts (see Table 2), which reduces their poverty incidence thereby narrowing the poverty incidence gap. Similarly, the characteristic effect of marital status of a head contributes -8.5% to the poverty incidence gap, which implies that differences in marital status of head reduce the poverty incidence gap by 8.5%. On

the contrary, the characteristic effect of location of household contributes 14.3% to the poverty incidence gap, which implies that difference in location of household increases the poverty incidence gap by 14.3%.

The characteristic effect of ecological zone of household contributes 12.7% to the poverty incidence gap, which implies that difference in ecological zone of household increases the poverty incidence gap by 12.7%. This is because in relation to MHHs, FHHs constitute a higher percentage in the savannah zone, which has benefited little from Ghana's economic growth and poverty reduction experience (Canagarajah and Pörtner, 2003). On the contrary, characteristics effect of migration status of head contributes -1.9% to the poverty incidence gap, which implies that difference in migration status of a head reduces the poverty incidence gap by 1.9%. In general, the decomposition results imply that MHHs are poorer relative to FHHs mainly because of differences in household size, location and ecological zone.

4. Conclusion

The study primarily investigates empirically the factors that determine poverty among MHHs and FHHs in Ghana by applying the logit model. Specifically, the study seeks to find out the factors which account for the poverty incidence gap between MHHs and FHHs and explains why MHHs are poorer relative to their female-headed counterparts. Results of the study indicate that factors that determine poverty among MHHs and FHH are similar but differ in terms of the direction of their signs and magnitudes. The results from the two-fold Blinder-Oaxaca decomposition indicates that 62% of the poverty incidence gap between MHH and FHHs is due to their differences in socio-economic characteristics whilst 38.3% of the gap is due to differences in coefficients or returns to these characteristics. Thus, the poverty incidence gap is mainly due to differences in household socio-economic characteristics. The study also finds that MHHs are poorer relative to FHHs because on the average, they have larger household size, constitute a higher percentage in rural areas and savannah zones, which have benefited little from Ghana's economic growth and poverty reduction experience (Canagarajah and Pörtner, 2003**).**

The findings of the study have a number of important policy implications. First, it could be seen from the marginal effects that if both female and male heads move from the non-working category to the self-employment category, it significantly reduces the probability of being poor by a greater magnitude as compared to moving to the other employment categories. Therefore, policy makers can reduce poverty among households by organizing entrepreneurship training programmes for household heads in order to induce them into the self-business employment category.

The non-linear effect of age of female heads on poverty indicates that if the age

of female heads increases by one more year, the probability of household poverty reduces but as they grow old, a further increase in age increases the probability of household poverty. In view of this, government social safety net programmes such as the Livelihood Empowerment Against Poverty (LEAP) should target mainly aged female heads in order to reduce poverty. Also, since migration of male heads increases the probability of being poor, the opportunity cost of migration to male heads should be increased by creating job opportunities in communities where MHHs reside.

From the findings, female and male heads with at least basic educational experience reduce the probability of being poor. In view of this, adult education programmes with at least basic educational content should be made available and accessible to male and female heads with no education background in order to reduce poverty. In terms of narrowing the poverty incidence gap between FHHs and MHHs, the study recommends that anti-poverty programmes should be designed to bridge differences in household socio-economic characteristics such as household size, location and ecological zone.

One evident limitation of this study is that each individual is represented as having the poverty status of the household to which they belong. Hence, it is not possible to allow for intra-household variations in poverty status using the consumption poverty measure, even though some other indicators do take some account of intra-household variations (GSS, 2007).

References

Adjasi, C.K.D. and Osei, K. A. 2007. Poverty Profile and Correlates of Poverty in Ghana. *International Journal of Social Economics* 34 (7), 449-471.

Anyanwu, J. C. (2010), Poverty in Nigeria: A Gendered Analysis. *The African Statistical Journal*, Vol. 11, 38-61.

Appleton, S. 1996. Women-Headed Households and Household Welfare: An Empirical Deconstruction for Uganda. *World Development.* 24 (12), 181 l-1827.

Attanasso, M. O. 2005. Determinants of Monetary poverty Among Female-headed Households in Benin, *Poverty and Economic Policy Research Network Working Paper No. PMMA- 2005-06*.

Awumbila, M. 2006. Gender Equality and Poverty in Ghana: Implications for Poverty Reduction Strategies. *Geojournal*, 67, 149-161.

Blinder, A. S. 1973.Wage Discrimination: Reduced Form and Structural Estimates. *The Journal of Human Resources* 8 (4), 436–455.

Buvinic, M. and Gupta, G. R., 1994. *Targeting poor women – headed households and women maintained families in developing countries: views on a policy dilemma*, ICRW/The population Council, Family Structure, Female Headship and Poverty Projects.

Canagarajah, S. and Pörtner, C. C. 2003. Evolution of Poverty and Welfare in Ghana in the 1990s: Achievements and Challenges .*Africa Region Working Paper Series No. 61*

Codjoe, S. N. A. 2010. Population and food crop production in male- and female-headed households in Ghana. *International Journal of Development Issues* 9(1), 68–85.

Coulombe, H., and Quentin, W. 2007.. *Poverty, livelihoods, and access to basic services in Ghana*. Ghana CEM: Meeting the Challenge of Accelerated and Shared Growth. Washington, DC: World Bank.

Dreze, J. and Srinivasan, P. V. 1997. Widowhood and Poverty in Rural India: Some Inferences from Household Survey Data. *Journal of Development Economics* 54(2), 217-234.

Ewusi, K. 1976. Disparities in levels of regional development in Ghana. *Social Indicators Research*, 3(1), 75–100.

Gang, I.N., Sen, K. and Yun, M.S. 2004. *Caste, Ethnicity and Poverty in Rural India*. Institute for the Study of Labour (IZA) Discussion Paper No. 629, Bonn.

Ghana Statistical Service 2007. *Pattern and Trends of Poverty in Ghana* (1991-2006). Available at www.statsghana.gov.gh/docfiles/glss5_report.pdf (Accessed 11 March 2012)

Green, W. H. (ed.) 2008. *Econometric Analysis*. New Jersey, Prentice Hall.

Gyimah-Brempong, K., and Asiedu, E. 2009. *Remittances and poverty in Ghana*, 4th African Economic Conference (AEC), Department of Economics, University of South Florida and Department of Economics, University of Kansas.

IFAD 1999. *Assessment of Rural Poverty in West and Central Africa*. Rome. Available at www.ifad.org/poverty/region/pa/english.pdf. (accessed 28 June 2014).

Javed, Z. H. and Asif, A. 2011. Female households and poverty: A case study of Faisalabad District**,** *International Journal of Peace and Development Studies* 2(2), 7-44.

Katapa, R.S. 2005. A comparison of female- and male-headed households in Tanzania and poverty implications. *Journal of Biosocial Science 38*(3), 327–339.

Koster, M. 2008. *Linking poverty and household headship in post-genocide Rwanda*. A Paper selected for presentation at the HiCN's Fourth Annual Workshop, Yale University, New Haven, USA.

Kossoudji, S. and Mueller, E. 1983. The Economic and Demographic Status of Female-Headed Households in Rural Botswana. *Economic Development and Cultural Change* 31 (4), 831-859.

Kyereme, S. and Thorbecke, E. 1987. Food Poverty Profile and Decomposition Applied to Ghana, *World Development*, 15(9), 1189-1199.

Loi, Vu M**.** (1996). *Female headed households in Vietnam*, (URL: http://www.csde.washington.edu/pubs/wps/96_11.pdf).

Oaxaca, R. 1973. Male-Female Wage Differentials in Urban Labor Markets. *International Economic Review* 14 (3), 693–709.

Pearce, D. 1978. The feminization of poverty: Women, work, and welfare.

Urban and Social Change Review, 11(1 & 2), 28–36.

Rajaram, R. 2009. Female-Headed Households and Poverty: Evidence from the National Family Health Survey. In *3rd Southeastern International/Development Economics Workshop—Agenda & Papers, Atlanta* (Vol. 4).

Rodgers, R. J. 1990. *Poverty and household Composition*. Department of Economics working paper No. 39, University of North Carolina, Greensboro, UNDP. 1995, *Human Development Report*. New York: Oxford University Press.

United Nations. 1996. *Food security for all, food security for rural women.* Geneva: International Steering Committee on the Economic Advancement of Rural Women.

Wright, R. E. 1992. A Feminization of Poverty in Great Britain? *Review of Income and Wealth Series,* 38 **(**1**),** 17-25.

APPENDICES

Appendix 1: Descriptive Statistics on the Reasons Why FHHs and MHHs Migrate

Reasons	Frequency		Percent (%)	
	FH	MH	FH	MH
Job Transfer	47	257	4.28	8.89
Seeking Employment	82	681	11.75	32.43
Own Business	52	338	4.74	11.69
Spouse Employment	29	8	2.64	0.28
Accompanying Parents	114	183	10.38	6.33
Marriage	159	66	14.48	2.28
Other Family reasons	501	1,011	45.63	34.96
Political/Religious reasons	6	24	0.55	0.83
Education	15	46	1.37	1.59
War	10	20	0.91	0.69
Fire	3	2	0.27	0.07
Flood/Famine/Drought	5	30	0.46	1.04
Other	75	226	6.83	7.81

Source: Constructed by Authors from GLSS 5 (2005/6)

*Appendix 2***:** *Test for Multicollinearity*

Table A2: Variance Inflation Factor (VIF)-Multicollinearity Test

Variable	**VIF**	**1/VIF**
Household size	5.02	0.20
Number of dependents	4.14	0.24
Work Experience: Head	3.54	0.28
Household members	4.02	0.25
Employment Income	1.78	0.56
Remittances	1.02	0.98
Education level of Head	1.69	0.59
Years of schooling of Household members	1.76	0.57
Age of Head	1.53	0.65
Employment status of head	1.35	0.74
Marital status of Head	1.32	0.76
Location of Household	1.30	0.77
Ecological zone of Household	1.13	0.88
Mean VIF	**2.28**	