INFORMAL SECTOR WORK IN GHANA:

DETERMINANTS AND POVERTY IMPLICATIONS

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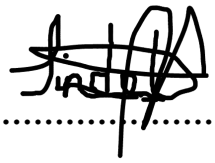
DECLARATION

This is to certify that, I, Betty Baabo Asamoah, have originally conducted this research under the supervision of my supervisors towards the award of the Master of Philosophy (MPhil) degree in the Department of Economics, University of Ghana. The works of other authors have been duly cited and this research has not been presented for another degree elsewhere.



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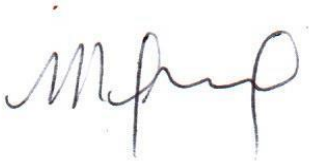

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ABSTRACT

This study adopts a legal definition of informal sector work and studies the determinants of informality, paying particular attention to the gender dynamics with respect to informality and poverty. The study throws more light on the definition and measures of informality, then proceeds to determine the socio-economic factors that influence an individual's decision to work in the informal sector. Particular attention is given to the relationship between informal sector work and poverty – unidimensional and multidimensional poverty. Then the study analyses certain characteristics of informal sector work that contributes to poverty, arguing that these characteristics have different implications on unidimensional poverty and multidimensional poverty.

Employing the simultaneous equation probit model in analyzing the first objective, the study finds that there is a significant impact of poverty on the probability of participation in the informal sector. There is also a form of association between working in the informal sector and the likelihood of being poor. Other factors such as age, education, household size, and location also have significant effects on participation in the informal sector.

The ordinary least squares method is applied to determine the characteristics of the informal sector that is likely to affect the unidimensional and multidimensional poverty of households. The findings corresponding to this objective suggests that an increase in the average hours of informal sector work reduces multidimensional poverty of households. Also, gender has a specific role to play when it comes to reducing poverty, especially in the informal sector.

Based on this, it is recommended that policies be directed towards educating males in the sector and improving the working conditions for the females in the sector.

DEDICATION

I dedicate this work to God Almighty, my parents, my siblings, my friends, and all who have contributed to my academic success.

ACKNOWLEDGEMENT

I am grateful to God almighty for His enormous help throughout this study. I am also very grateful to my parents and siblings who have supported me in diverse ways to bring this study to a successful end. I duly acknowledge my supervisors, Dr. Nkechi S. Owoo and Dr. Monica Lambon-Quayefio for their helpful comments and criticisms, and suggestions that have contributed to the success of this study.

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BECE	Basic Education Certificate Examination
CMP	Conditional Mixed Process
ERP	Economic Recovery Programme
GDHS	Ghana Demographic and Health Survey
GLSS	Ghana Living Standard Survey
GPRS	Growth and Poverty Reduction Strategy
GSS	Ghana Statistical Service
HH	Household
ICI	Import Competing Industrialization
ICLS	International Conference of Labour Statisticians
IEA	Institute of Economic Affairs
ILO	International Labour Organization
LEAP	Livelihood Empowerment Against Poverty
LFR	Labour Force Report
MDG	Millennium Development Goal
MDP	Multidimensional Poverty

MPI	Multidimensional Poverty Index
OECD	Organization for Economic Co-operation and Development
PAMSCAD	Program of Action to Mitigate Social Costs of Adjustment
SAP	Structural Adjustment Programme
SDG	Sustainable Development Goal
SSA	Sub Saharan Africa
SSCE	Senior School Certificate Examination
UDP	Unidimensional Poverty
UNCED	United Nations Conference on Environment and Development Agenda
UNILO	United Nations International Labour Organization
WASSCE	West African Senior School Certificate Examination
WIEGO	Women in Informal Employment: Globalizing and Organizing

CHAPTER ONE

INTRODUCTION

1.1 Background

The informal sector has existed and acted as a source of income for many generations and many households globally. Originally, it was identified as the traditional form of work, and historical evidence suggests that the term "informal sector" was used as a replacement for the traditional sector (Benanav, 2019). This traditional economy was perceived as a low-skill and low technology field. This perception still exists today, hence encouraging many people to venture into it for its simplicity. Consequently, most of the participants working in this sector in developing countries are women who may have attained a low level of education and often possess low skills and training (Chen, 2012).

The international conference of labour statisticians (ICLS) defined the informal sector in terms of the enterprise's characteristics rather than that of the person(s) involved - "The informal sector may be broadly characterized as consisting of units engaged in the production of goods or services with the primary objective of generating employment and incomes to the persons concerned" (ILO, 2003). While some countries (especially in Sub Saharan Africa) restrict the definition of the informal sector to non-agricultural activities as suggested by the ILO, other countries in the Asian and Eastern Europe regions include small-scale and unregistered agricultural activities in their definition (Hussmanns & Mehran, 1999). In Ghana, the definition of the informal sector is restricted to only non-agricultural activities (Ghana Statistical Service, 2014). In the Ghana Statistical Service Business Report (GSS, 2016), an informal establishment is defined as "an establishment that does not have professionals keeping its accounting records". Accordingly, about

62 percent of all commercial enterprises can be found in the informal sector in Ghana, according to the report.

The informal sector provides approximately 61 percent of all employment globally and 81 percent of total employment in developing countries (ILO, 2018). This translates to about 59 percent of total non-agricultural employment (53% men and 66% women) (ILO,2018). However, for emerging and developed countries, there are more men than women in the informal sector according to the international labour organization (ILO, 2018). Just about 10% of the labour force in Sub-Saharan Africa (SSA) is employed by the formal sector or formal economy, leaving the remaining 90% open to finding other means of making a livelihood, which most find in the informal sector (Benjamin, 2014; World Bank, 2018). Medina et al. (2017) report that in SSA countries, there is heterogeneity in the size of the informal economy. As a share of GDP, the size of the informal economy ranges from as low as 20 percent to as high as 65 percent. It also contributes about 55% of Sub-Saharan Africa's GDP while employing about 80% of the workforce in SSA (AfDB, 2013).

Growth in the informal sector has seen an increasing trend over the years and continues to rise. Previous literature attributed the rise in the informal sector to the barriers to entry into the formal sector. However, in recent models and literature, it is because of burdensome tax and regulatory obligations and poor quality of government institutions (Ocran, 2018). The number of females participating in informal sector work across the globe is considerably larger than their male counterparts although, as stated by Chen (2014), women mostly deal in the sale of perishable goods and receive the lowest incomes from working in this sector, creating more inequalities (gender and income disparities are widened). This has been attributed by many studies to the fact that the

qualifications needed for entering this sector's work are not arduous and so encourage many participants into this sector.

However, the decision to participate in the informal sector for some individuals may be put off because of the low wages that this sector mostly offers to its participants. Nonetheless, some argue that an informal sector job has the potential of reducing poverty in a country as much as the formal sector job can (Cichello and Rogan, 2017; Fourier et. al, 2018) while others argue that formalizing the informal sector will contribute to poverty reduction (Moser, 1984). Hussman and Mehran (1999) emphasize the importance of the informal sector, especially in developing countries with high rates of population growth. They argue that the informal sector absorbs the excess labour force in urban areas in these countries, thus playing a major role in employment creation.

This sector has been in existence for many years and has supported many individuals and corporations (both big and small-sized) and may continue to do so. According to Hussman and Mehran (1999), the informal sector acts as a safety net for countries with insecure employment practices including unemployment insurance, low wages, and low pensions. A 'Women in Informal Employment: Globalizing and Organizing' (WIEGO) report on the contribution of the informal economy to growth suggests that the informal sector contributes significantly to growth, especially in high-income countries, whiles it continues to grow in most developing countries (Heintz, 2012). In the advanced market economies, this sector is mostly driven by capitalist structures and processes - the introduction of labour-saving technologies and the emergence of small and medium-scale units as large firms dispersed and widened their market (Portes, 1987). The informal sector is a channel for wide-range distribution for large corporations and organizations. They are also self-reliant and high-frequency stores. For example, the telecommunication network, MTN, has several umbrella-stands where some unregistered vendors

and operators sell their mobile services. This is the medium through which this company and many others use to reach the market. According to the UN International Labour Organization (UNILO, 2018) report, about 93% of informal employment in the world can be found in emerging and developing countries.

Chen (2014) reiterates the importance of informal employment, even though the jobs provided by this sector are most of the time seen as illegal and dangerous. The latter, however, seems to be the case since most workers in this sector work under harsh environmental conditions and are prone to harsh treatments.

There is the conventional view of the informal sector and poverty which suggests a direct relationship between the two, such that informal sector work is associated with poverty – women being the most vulnerable to poverty because of the lower wages they mostly receive in comparison to their male counterparts who deal mostly in higher valued goods and non-perishable items. A report by the UN International Labour Organization (2018) emphasizes the relationship between these two variables – a strong correlation between poverty and informality. With the continuous increase in informal employment globally, an increase in global poverty is set to occur according to a report by OECD Development Center (OECD, 2009).

The issue of poverty has been a general problem that has many international institutions, organizations, and leading world economies involved. This has been a major challenge in most developing countries. In Ghana, a person is considered poor if he falls below the poverty line of GHC1314.0 and extremely poor if he falls below the lower poverty line of GHc792.2 per adult equivalent per year in 2012/2013. In 2016/2017, an individual is considered poor if he falls below the upper poverty line of GHC 1760.8 and extremely poor if he falls below the lower poverty line

of GHC 982.2 per adult equivalent per year. The World Development Report (WDR, 2000) states that there are over 500 million of the world's poor people who are economically active, and these people earn their living by being either self-employed or by working in micro-enterprises (World Bank, 2000). In Sub Saharan Africa for example, more than half of the extreme poor live there (World Bank, 2018) with high corresponding informal sector workers.

Workers in the informal sector are often trapped in poverty because, according to ILO "they lack protection, rights, and representation". Chen (2012) also argues that the informal sector provides low incomes to its participants most of the time. This implies that participants in the informal sector are likely to fall below the poverty line. Other studies also confirm this finding. For instance, an empirical study of the informal sector by Orlando (2001) showed that the informal sector in Venezuela has high poverty levels than the formal sector because of low earnings in the former.

Although there seems to be a consensus on the direct relationship between poverty and the informal sector, it is worth noting that the informal sector could be the engine of growth for countries. Blunch et. al (2001) takes a firm stand in this regard.

There are many opportunities for growth and unlimited potential in the informal sector. However, many factors are affecting the growth of this sector and because of this, the sector consists of many poor people. Pratap & Quintin (2006) suggest that innovation and growth in the informal sector are stunted because of their lack of access to credit facilities, to which Blunch et. al (2001) agree. According to the former, the removal of some policy biases, as well as the recognition of the informal sector's contribution to economic growth, could be a great step towards improving their working conditions. This means that the informal sector is not as "bad" for developing countries as portrayed. However, it could be the gateway to achieving economic growth and sustainable

development in developing countries, that is if the hindrances to productivity in this sector are removed and measures are put in place to augment a pool of their untapped skills and efforts. The assets of the informal sector enterprises are mostly the same as the owners' assets and so gaining access to credit facilities and financial aid becomes increasingly difficult.

With most of the labour force employed in the informal sector in SSA, the rate of extreme poverty in this region keeps increasing, signifying an intertwined relationship between poverty and the informal sector (ILO, 2007). Therefore, addressing the challenge of poverty could be achieved if attention is focused on the informal sector. To achieve this, statistics on the informal sector is very crucial including the determinants of working in this sector. Against this background, this study seeks to find the determinants of participation in informal sector work in Ghana and its poverty implications.

The characteristics of the informal sector in Ghana and the determinants for participation are needed to arrive at tailored solutions for the country in achieving sustainable development goals since many persons are employed in this sector in Ghana. Based on the theories of informality, for every country or region, there can be varied determinants of participation in the informal sector, thus a need for this study to advance policies and solutions based on evidence.

1.2 Research Problem

Despite the efforts made by successive governments to reduce poverty by implementing policies such as Livelihood Empowerment Against Poverty (LEAP), Growth and Poverty Reduction Strategy (GPRS), Program of Action to Mitigate Social Costs of Adjustment (PAMSCAD), etc., there has not been appreciably large decreases in poverty levels. For instance, the current poverty report by the Ghana Statistical Service (GSS, 2017) shows a decline in the poverty incidence from

24.2 percent to 23.4 percent. However, the number of people (in absolute terms) living in extreme poverty has increased to 2.4 million in 2017 from a previous 2.2 million in 2013. The rate of decrease in poverty has also declined from a 1.8 percent decrease in the 1990s to a 1.1 percent decrease in the current millennium (Gallagher, 2017). With this trend, it is unlikely to meet the sustainable development goal of eradicating poverty (in all its forms) by 2030, hence the need for a thorough examination of the drivers of poverty in all its forms in the country.

According to Loayza and Raddatz (2010), a sector's contribution to poverty reduction pivots on the sector's ability to employ most of the unskilled labour force. An empirical study by Koto, (2018) revealed that the informal sector in Ghana is dominated by individuals with low levels of education, usually, because education is used as a yardstick for gaining employment in the formal sector, and increasing wages earned. This implies that individuals with less education are likely to find themselves in the informal sector, which suggests that the informal sector then employs most of the unskilled labour force. But, Dong & Soest (2001) maintain that wage differential is increased by educational level implying that the sector may rather contribute to increasing poverty.

Amuedo-Dorantes (2004) describes employment in the informal sector as driven by "firms' demand for employees and workers' need to find a job, but not by workers' preference for this type of employment". Likewise, Ojo (2018) argues that one major motivation for participating in the informal sector is for the survival of families. Thus, the harsh jobs and poor work safety projected as the conditions of work in the informal sector may lower the level of job satisfaction among young informal sector workers (Gatti et.al., 2014), but may not dissuade the participation, nonetheless as evidenced by the persistent growth in the size of the informal sector.

In developed countries, the informal sector, albeit small, remains a part of the economy and cannot be eradicated. In developing countries nonetheless, this sector makes up a chunk of the employed and is characterized by poor working conditions and environment, low wages, and poverty. Despite this, the sector seems to be growing yearly, with more youth being engaged in services in the informal sector.

The economy of Ghana is also largely informal (GSS, 2016). On one hand, more than half of commercial enterprises are informal, with many of them evading tax (GSS, 2016), which results in government's loss of additional revenue. On the other hand, the informal sector acts as a livelihood strategy for the poor. A long-standing dilemma of governments relates to deciding to promote the private sector by allowing the informal sector entrepreneurs to operate, or instituting measures to halt their operations. It is important to know what determines participation and how it is linked to the development of the country or its impact on economic growth.

The characteristics of the informal sector in Ghana and the determinants for participation are needed to arrive at tailored solutions for the country in achieving sustainable development goals since many persons are employed in this sector in Ghana. Considering the existing works that have been carried out on the informal sector, few of the studies have been carried out on the determinants of participation in the informal sector in Sub-Saharan Africa, and fewer still in Ghana. Also, most of the studies do not examine the gender effects of participation in the informal sector and the poverty implications – both unidimensional and multidimensional. The multidimensionality of the poverty phenomenon requires that research be directed towards new ways of understanding and measuring poverty. Unidimensional measures – consumption or income approach – only give limited knowledge of this concept.

The overriding problem, therefore, is the inadequate information and practical evidence on the factors that influence people's decision to invest and work in the informal sector in Ghana. Also, the impact of the informal sector work on the level of poverty in Ghana is not conclusively articulated by researchers.

Taking this into account, this study investigates the determinants of participation in the informal sector in Ghana, and the poverty implications based on gender.

Specifically, this study hopes to arrive at the answers to these questions:

- What are the determinants of participation in informal sector work in Ghana, with particular focus on the role of poverty and gender of workers?
- What is the impact of informal sector work on male and female- headed households' unidimensional and multidimensional poverty level in Ghana?

1.3 Objectives of the Study

The general objective of this study is to find the determinants and the poverty implications of work in the informal sector in Ghana.

The specific objectives of the study are:

- To identify and analyze the determinants of participation in informal sector work by gender in Ghana.
- To analyze the implications of labour participation in the informal sector on both unidimensional and multidimensional poverty levels of households in Ghana.

1.4 Methodology and Data

The Ghana Living Standard Survey serves as the main source of information on key informal sector activities in Ghana. All data will be sourced from the seventh round of the Ghana Living Standard Surveys (GLSS 7) from the Ghana Statistical Service. The seventh round was conducted in 2016/2017.

The survey incorporates an additional set of information on the non-farm enterprise and provides essential information on the personal (age, gender, marital status, educational levels), household (household size, poverty levels of the household, etc.), and the non-farm enterprise characteristics needed for this study. The survey also captures information on the economic activities of the members of the household.

For the first and second research questions, the study will employ the use of the simultaneous equation probit model and ordinary least squares respectively, in its estimations. The simultaneous equation probit model will be used because of the dichotomous nature of the first dependent variable which takes a value of one (1) if an individual works in the informal sector, and zero (0) if not, and the simultaneity that exists between the dependent variable (informal sector worker) and the independent variable (poverty status).

Informal sector enterprises will first be identified with questions in the survey like "*which sector are you mainly working in?*" and "*was the enterprise registered with any government organization?*". Subsequently, workers in the informal sector will be identified with their status in the enterprise based on the 15th international conference of labour statisticians (ICLS). Based on the 15th ICLS, questions such as "*do you keep any form of accounting record?*", and "*are formal*

wage contracts issued to employees", can also be used to identify informal sector production units if the previous question asked had not been answered.

The ordinary least squares method will be used because of the continuous nature of the other dependent variables for the second objective – unidimensional poverty level and multidimensional poverty index. The multidimensional poverty index will be calculated following the method of Alkire and Foster (2007) under three broad dimensions– health, education, and standard of living, given equal weights in the respective indicators. The unidimensional poverty will also be measured using consumption expenditure approach. Thus, the per adult equivalent consumption in the year will be derived by dividing the total household consumption per year by the total number of household members in that household.

1.5 The Relevance of the Study

It has been projected that the bulk of economic growth over the next fifteen years is likely to come from emerging economies in the developing world (IMF, 2017). As noted by Haug (2014), "The informal sector is widely seen as the growth engine for internally driven economic transformation". This sector can cause a more egalitarian world if people are given the chance to make money for themselves. The groundbreaking work of De Soto (1989) posits that the informal sector can be used as a tool for eradicating poverty in the developing world when given the necessary attention. The growth of the sector since the early post-independence period shows the relevance of this sector. Chen (2005) argues that "A more integrated approach and research into the informal economy or employment is called for," in that, 'some survival activities [have] very few links to the formal economy some microentrepreneurs choose to avoid taxes and regulations…some face excessive government regulation; other units are subordinated to larger firms; [and] most informal enterprises….' contribute to economic growth.

There have been many studies that have examined the determinants of participation in the informal sector, with few of them examining its link with poverty. However, the findings have been inconclusive. While some studies find a positive relationship between informal sector activities and poverty (Ogunriola, 2010; Sharma, 2017), others find no link with poverty (Timofeyev, 2012). Most of these studies have also focused on the unidimensional poverty, that is, using either income or consumption approach to measure poverty.

The concept of informality varies with countries and as such policies targeted towards informality should be country-specific (Loayza, 2016). Thus, this study focuses on the informal sector in Ghana and makes recommendations as such. Also, few of the previous studies on the informal sector (Amuendo-Dorantes, 2014) take into consideration the gender effect of participation in the informal sector.

Consequently, this study sought to investigate the pertinent factors surrounding work in the informal sector, and its poverty implications in Ghana. The gender-related issues that this study discussed are also very important additions to the literature on the informal sector in Ghana. It also examined the characteristics of the informal sector that affects the unidimensional and multidimensional poverty levels of households in Ghana, a study which to the best of the researcher's knowledge has not been conducted in Ghana. This study is aimed at bridging that gap. The study also proposed ways to mitigate the problems noted above and to identify public policies that are likely to reduce poverty in the informal sector and to shape it into a more productive sector if it cannot be absorbed into the formal sector.

Thus, this study will help policymakers in decision making that will impact on the economic growth and development of the country. It will also contribute to the existing literature on informal sector employment and poverty in all its forms in Ghana.

1.6 Structure of the Study

This study starts with chapter one which entails the background of the study, the research problem and questions, the objectives of the study, the relevance of the study, and the structure of the study. The study continues with chapter two which encompasses the main body of the study. It divulges the nature of the informal sector in Ghana and the poverty levels and trends in Ghana. It also shows the incidence of poverty in the country. The next chapter (chapter three) reviews both theoretical and empirical literature on the subject. Chapter four will contain methodology and empirical analysis. Chapter five summarizes and concludes the work. Graphs and appendices are at the end of the work, as well as references. Meanwhile, the list of tables, figures, and abbreviations precedes the first chapter.

CHAPTER TWO

OVERVIEW OF THE ECONOMY OF GHANA, THE INFORMAL SECTOR AND POVERTY PROFILE IN GHANA

2.0 Introduction

This section encompasses the body of the work. The geography, demographics, and economic history of Ghana are summarized, the informal sector in Ghana is identified and the work in this sector is expounded on. There is also a brief section that describes the educational and health status of the people in Ghana, and employment in Ghana. Also, this section attempts to highlight the incidence and trends of poverty in Ghana and to segregate it by gender, location, and zone.

2.1 Geography and Demographic Characteristics of Ghana

Ghana is in the center of the West African Coast with a land area of about 238,537 square kilometers. The country shares borders with three French-speaking countries (Togo to the East, Burkina Faso to the North, and Cote D'Ivoire to the West), and the Gulf of Guinea to the South. The usual temperature is around 26˚C (79˚F). However, the temperature and rainfall patterns may fluctuate according to the distance from the coast (Asante and Amuakwa-Mensah, 2015). Until the early parts of 2019, Ghana had ten regions. However, Ghana currently has sixteen (16) regions following the creation of six new regions in December 2018 (see figure 2.1).

On 6 March 1957, Ghana gained independence from British colonial rule and became a republic on 1 July 1960. The population of Ghana is projected to be about 30.28 million in 2019 (Ghana Statistical Service). More than 40% of the Ghanaian population is under age 15 (GDHS,2014). The sex ratio declined from 102.2 males per 100 females in 1960 to 95.2 males per 100 females in 2010. According to the 2010 population and housing census report, the proportion of the

population living in the urban centers also increased from 23% in 1960 to 51% in 2010. The life expectancy of birth also increased to 63.32 years in 2018 from 62.45 years in 2015, although it is still below the world's average of 72.56 in 2018 (World Development Indicators). About one-third (34%) of households are headed by women (GSS, 2012).

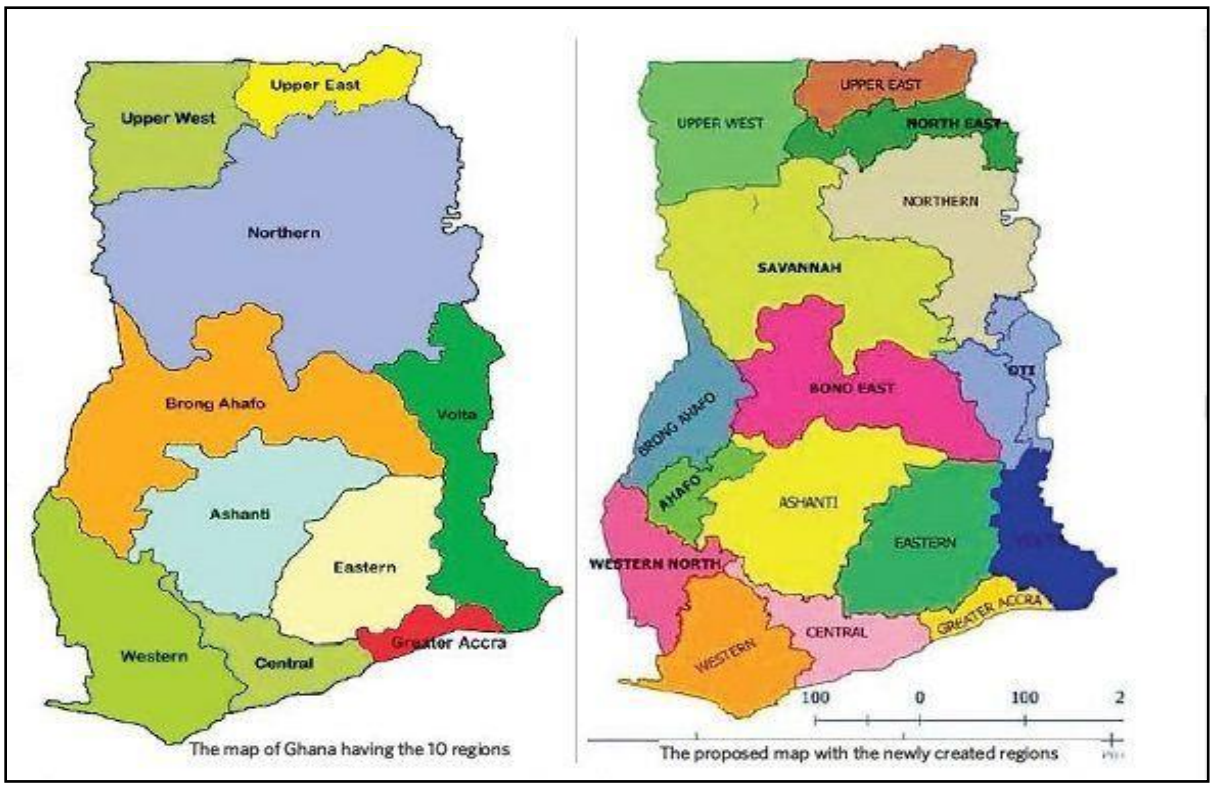

Figure 2 1: Old and New Administrative Regions of Ghana

2.2 Economy of Ghana and the Informal Sector

Ghana gained independence on the 6th of March, 1957, and has been through many phases of development ever since. Before independence, however, the then Gold Coast was mainly an agrarian economy – exporting mainly cocoa and other (mostly) raw materials. To promote development in the country, attention was focused on trading with non-African countries, ignoring

trade within the country and within the African bloc (Aryeetey et.al, 2017). It was a time where many Ghanaians were engaged in the agricultural sector – working in plantation farms, fishing and small scale farming - to feed the colonial government (Settles, 1996), and others were engaged in informal sector activities like trading, small-scale manufacturing and providing services (producing raw materials and services for the European firms.

In the period 1957 to 1958, Arthur Lewis (also known to be the one to propound the labour pull hypothesis), the first chief economic advisor in Ghana, advised the government then to be patient with import-substitution industrialization (ISI) which was to be the very thing to bring about development in the economy and boost the economic performance of the country (Lewis, 1954). Instead, Lewis recommended a shift in focus towards developing the human capital and setting up infrastructure while increasing the productivity in the agricultural sector, thus laying up the groundwork for future industrialization (labour push approach). This was because of the vast agricultural land that was still available (cost of moving labour into the industrial sector will be high) and the fact that there were more unskilled and low-skilled labour than high skilled labour in the country (Jedwab & Osei, 2012).

However, there were relatively more educated people (more educated males than females) in Ghana than in the other African countries (Aryeetey et.al, 2017). The country had a higher opportunity for growth and development if the right policies were implemented at the right time. The era of colonization however generated gender differences in the employment sector as men were given high positions in the colonial government while women (with their relatively low educational level) found themselves in the informal sector. Mupanduki (2007) reports that the era of colonization, characterized by an increase in the mining and agricultural sectors, promoted the gender differences in employment as men were employed in the agricultural and mining sectors

while women were left to work in the informal sector, pursuing activities like petty trading, petty commodity production, sex work, and manufacturing and retailing food and liquor.

Kwame Nkrumah in 1957, when he took power, pushed for the strategy of industrialization (ISI) as the main factor for development in the country, although Lewis objected based on the wrong timing argument. This idea was carried out nonetheless leading to an increase in government spending due to the increase in the government-paid workers, with no significant change in the GDP per capita. This was partly attributable to mismanagement, wrong decisions in investment and spikes in prices arising from restrictions on imports. The government focused on specific areas of the country since it perceived them to be the engine of growth in achieving its developmental objectives. As a result, there was a significant amount of investment in those areas. According to Songsore (2002), these areas witnessed massive industrialization and expansion in economic activities like manufacturing. This had an impact on the incidence of poverty in those areas.

World Bank (1995) reports that poverty in Accra was the lowest while the highest was in the Northern part of Ghana. It was argued that some policies that Kwame Nkrumah implemented were not developmentally driven but politically driven (Aryeetey and Kanbur, 2007). In 1965, the prices of cocoa dropped in the world market causing the government to print more money and borrow from the public to finance its activities. The reduction in the export prices thwarted the government's objective of developing the country – there was less money to develop the other non-targeted areas. This caused labour to move from the non-targeted areas to the targeted areas to seek greener pastures. However, due to the minimal employment opportunities in the targeted area, unemployment increased, forcing many of the migrants to fall on the informal sector as a means of survival (Songsore 2002). Kwame Nkrumah was overthrown in 1966.

This regime was followed by a series of military coups and other weak governments, leaving the economy worse off than before – declining per capita income caused by accumulating debt, increase in inflation, and declining private investment. Between 1974 and 1983, the per capita income declined by 34.9% (Jedwab and Osei, 2012).

Flight Lt. Jerry John Rawlings took over by coup in 1979 and 1981. In these periods, he realized that the economic woes of the country were not primarily caused by mismanagement per se, rather, poor policies. The economy was in very bad shape by then; with the collapse of cocoa production, non-performing manufacturing sector, poor infrastructure, coupled with the severe drought in 1983. This hurt the country's per capita income.

The Economic Recovery Programme (ERP) and Structural Adjustment Programme (SAP) were implemented in 1983 and 1987 respectively by the government, following the downturn in the economy of Ghana. These policies were to ensure that the country was able to pay its debt, and embark on a journey towards economic recovery, sustainable growth, and development of the country. Eventually, the economy began to recover, but the effect on households and individuals was not positive: the standard of living was low (Watch Report, 2010; Obeng-Odoom, 2017). The ERP encouraged trade liberalization policies which when adopted, led to the fall of many formal home-based industries. Accordingly, many workers in the collapsed industries fell on the informal sector as a livelihood strategy (Overa, 2007).

In 1992, a successful democratic election took place which made Flight Lt. Jerry John Rawlings the first elected president of Ghana in the Fourth Republic. To date, governments are democratically elected. This has in some way accounted for the creation of a stable business environment in the country. However, the issue of corruption and bribery is still prevalent in the

economy. Productivity is still low even though the country can boast of many natural resources including gold, bauxite, etc., and economic progress is hindered because of factors such as cumbersome bureaucracy, corruption and bribery, and political favoritism (Aryeetey, 2017). According to the world index, Ghana ranks 109th with an economic freedom score of 57.5 in 2019.

Poverty and unemployment in Ghana have been a major problem that has persisted for several decades. A report by the Ghana Statistical Service in 2000 reported a general decrease in poverty for the entire country, although certain areas were left out. According to a World Bank report in 1995, the incidence of poverty in Accra increased to 22% in 1989 from a previous 9%. The unemployment rate increased from 4.7% in 1991 to 8.2% in 1999 (GSS, 1999).

In an attempt to solve the poverty and unemployment issue, several policies and strategies have been adopted by subsequent governments since independence. Some social intervention programs include the National Poverty Reduction Strategy (1997-2000) aimed at building the capacities of the people; Ghana Poverty Reduction Strategy phases 1 and 2 (2002-2005; 2006-2009) aimed at eradicating poverty; Livelihood Empowerment against Poverty; school feeding program; and capitation grant. With these policies and strategies targeted towards reducing poverty and unemployment, Aryeetey and Kanbur (2017) report that, steady results have not been yielded. Mckay and Osei-Assibey (2017) however opine that there has been significant progress made in the field of poverty reduction because Ghana achieved the Millennium Development Goal (MDG) of poverty reduction before the targeted time. Some of these policies adopted encouraged the growth of the informal sector (Wrigley-Asante, 2007). The strategy adopted for the implementation of the MDGs (whose main aim was to reduce poverty and hunger (UN, 2013)) for example, was to give small scheme loans for people to operate their own business in Ghana.

SUMMARY

Table 2 1: Summary of The Effect of Political Regimes and Policies on The Informal Sector

Year or Era	**Major Happenings and Policies**	**Effect on Informal Sector**
Colonial-era (1947 – 1957)	Focus on the production and exportation of raw materials to the colonial rulers' countries.	There was a large informal sector with many women engaged in informal sector activities relative to men.
Independence era and First Republic (1957 – 1966)	Import substitution industrialization policies adopted. The development of more state-owned enterprises in selected areas. Fall in cocoa prices, affecting the developmental projects of the country.	The public sector employed most of the labour force. Migration of labour to the industrialized areas in search of better employment opportunities. The supply of labour in those areas exceeds the demand, causing unemployment. Labour finds work in the informal sector.
Post Nkrumah era (1966 – 1978)	Successive military governments Near collapse of the economy as the economy almost went bankrupt.	The influx of labour into the informal sector as a livelihood strategy.
Rawlings era (1979 – 1992)	Drought The return of the nearly one million Ghanaians sacked from Nigeria. Economic Recovery Programs	Retrenchment from the public sector; labour resorted to the private sector and the informal sector, increasing the number of self-employed.

Year or Era	Major Happenings and Policies	Effect on Informal Sector
Constitutional rule/ Fourth Republic (1992 till date)	Poverty reduction strategies	Some poverty reduction policies encourage the growth of the informal sector. For example, Ghana Shared Growth and Development Agenda (GSGDA).

2.3 Informal Sector and Informal Sector Work in Ghana

The International Labour Conference used the term 'informal economy' to refer to "all economic activities by workers and economic units that are – in law or practice – not covered or insufficiently covered by formal arrangements" (ILO, 2002b). This conclusion was adopted following the 90th session of the meeting of the General Conference of the International Labour Organization, in 2002.

The 15th session of the International Conference of Labour Statisticians agreed to define the informal sector in terms of characteristics of the enterprises (production units) in which the activities take place, rather than in terms of the characteristics of the persons involved or of their jobs. Accordingly, persons employed in the informal sector were defined as comprising all persons who, during a given reference period, were employed in at least one production unit of the informal sector, irrespective of their status in employment and whether it was their main or a secondary job.

Paragraph 5 (1) of the 15th ICLS resolution states:

> "the informal sector may be broadly characterized as consisting of units engaged in the production of goods or services with the primary objective of generating employment and incomes to the persons concerned. These units typically operate at a low level of organization, with little or no division between labour and capital as factors of production and on a small scale. Labour relations – where they exist –

> are based mostly on casual employment, kinship or personal and social relations rather than contractual arrangements with formal guarantees."

Production units of the informal sector were defined by the International Labour Statisticians (17th ICLS) as a "subset of unincorporated enterprises owned by households, i.e. as a subset of production units which are not constituted as separate legal entities independently of the households or household members who own them, and for which no complete sets of accounts (including balance sheets of assets and liabilities) are available which would permit a clear distinction of the production activities of the enterprises from the other activities of their owners and the identification of any flows of income and capital between the enterprises and the owners".

Like all informal sector work in most developing countries, informality in Ghana is not any different in terms of its heterogeneous nature. Likewise, the perception of informality in Ghana is outright brutal and damning even though it contributes greatly to the GDP and helps the most vulnerable in the society – women, the youth, and the poor in the rural areas - by providing them with work that sustains them. The informal sector in Ghana has existed even in the early ages of then Gold Coast, with its heterogeneous nature characterized by a range of workers from peasant agricultural workers to small scale transport owners and employees, porters, etc. (Osei-Boateng and Ampratwum, 2011).

In the early 1970s, Keith Hart in his research in Accra found this sector as providing a source of livelihood for most of the unskilled labours who migrated from the North to the South to seek greener pastures but could not find wage employment. The revelation of this sector and its activities opened a way for diverse definitions of the informal sector, and more comprehensive research into the "shadow economy".

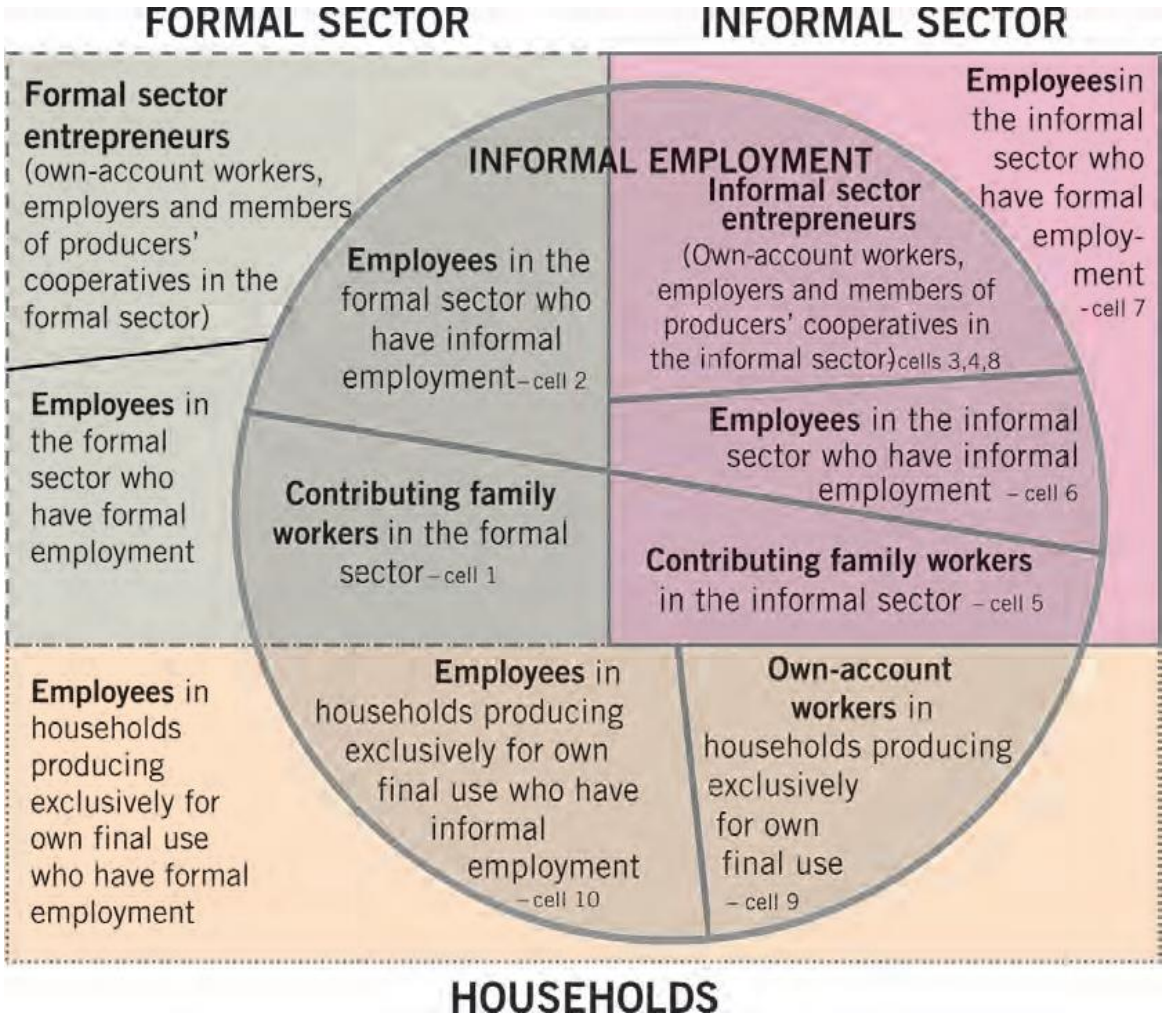

Figure 2 2: Components of Informal Employment (17th ICLS guidelines)

Source: ILO

The concept of employment in the informal sector is different from the concept of informal employment, that is, persons employed in informal jobs (See figure 2.2). Informal employment can occur in both the formal and informal sector. The items within the circle of fig 2.2 describe informal employment. Informal employment encompasses employment in the informal sector and informal employment outside the informal sector but excludes formal jobs in the informal sector (ILO, 2003). Thus, almost all employment in the informal sector can be found in the informal employment bracket but not all informal employment is employment in the informal sector.

Employment in the informal sector includes:

- Informal own account workers in informal sector enterprises
- Informal employers in informal sector enterprises
- Contributing family workers in informal sector enterprises
- Informal employees in informal sector enterprises
- Formal employees in informal sector enterprises (this rarely exists)
- Informal members of producers' cooperatives in informal sector enterprises

As part of the numerous researches carried out, many researchers agreed that the informal sector would disappear as the modern economy expanded, as suggested by the Lewis model. However, in Ghana and most developing countries, this conclusion seems to have been proven a fallacy. Irrespective of the meager wages that the sector mostly provides to its participants, it is still a source of income to the poor, especially women, who would otherwise not have enough to provide for their basic needs. Nonetheless, some participants in the informal sector, employers mostly, also find a way to make more money from their activities in the sector. Thus, a few researchers have concluded that this sector could be a means of eradicating poverty in developing countries if the potentials are adequately exploited.

Despite the increasing possibility of the informal sector's positive contribution to the economy, this sector faces severe challenges with regards to the workers' human and legal rights and their social and economic benefits. They face many challenges and disadvantages including insecure income, no social protection, and bad working conditions, among others. Also, the issue of gender inequality and child labour predominates in the informal sector (ILO, 2009). Alagidede et.al (2013) report the gap that exists in the literature on the extent to which the informal sector operators are

denied the benefits of public wage policies and the implications for poverty reduction in Ghana. In their study, they find that formal employment responds slowly to strong economic growth and for this reason, disappointed workers will seek refuge in the informal sector, which is characterized by low wages. It is no wonder then that the sector continues to grow in Ghana. Labour (both skilled and unskilled) can find work to do in this sector because of its flexibility. Most of the studies done on the informal sector targets the urban informal sector, leaving the rural informal sector.

Chen et.al (2005) analyzed data in six developing countries including Ghana and came up with this segmentation of informal sector workers by sex and their poverty risk:

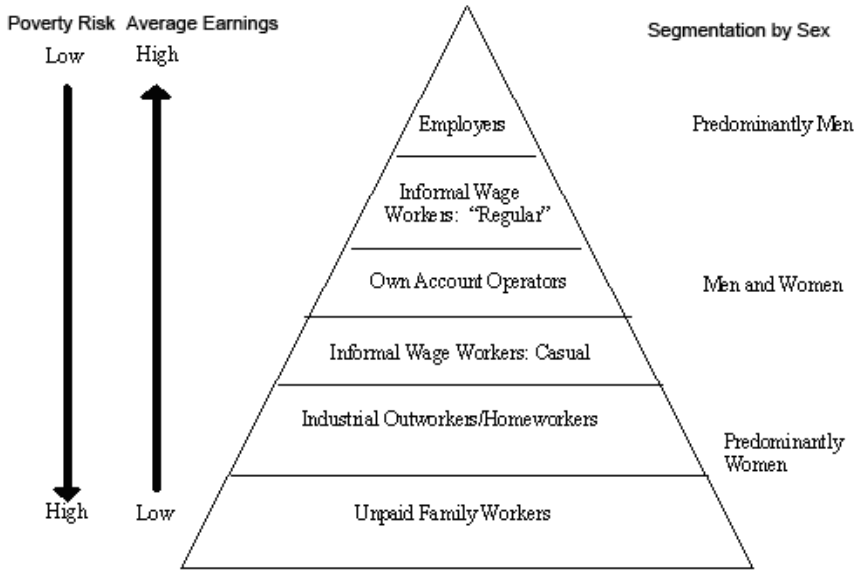

Figure 2 3: Segmentation of Informal Sector Workers by Sex and Their Poverty Risk

This categorization gives a clear picture of those susceptible to the risk of poverty – women. On the other hand, employers in the informal sector tend to be high earners and they are predominantly men.

The popularity of the informal sector can stem from many factors – sparing costs, tedious registration processes, or stagnating formal sector. In Ghana, it takes an average of 4 weeks to be able to register a company while in the developed world, the average is three days.

2.3.1 Working Conditions in the Informal Sector

> "Concerning the evictions, we know we are a part of Accra, we pay taxes, some of us keep our receipts, we are doing our best but with evictions our policy makers don't include us, they make their decisions without us and then come and chase us out. You will see 'remove' written on your booth. We are pleading, we are all playing a part in building our mother Ghana, just find us a place where we can go before evictions take place. Most of us take loans before we start trading, but then when evictions take place we cannot pay. Where are we going to sell? And where will we make the income to settle our debts?"

This was a part of a speech given by the Vice President of Informal Hawkers and Vendors Association of Ghana (IHVAG) on January 31, 2018, in a multi-stakeholder dialogue on evictions of street vendors from public space in Accra's city center between WIEGO and the Informal Hawkers and Vendors Association of Ghana (IHVAG). StreetNet Ghana, now, Informal Hawkers and Vendors Association of Ghana (IHVAG) formed in 2003 and registered in 2005 boasts of about 6000 members who work in 'street and market trading'. Workers in the informal sector have been working hard for decades to make their voices heard and so the formation of trade unions was a big step and the inauguration of the informal sector trade union into the TUC was also a big step towards making their voices heard and incorporating their fears and concerns into the policies made by the government for them.

Since the inception of the sector, there have been several government activities and policies that have excluded them from benefiting or gaining from policies aimed at improving the lives and working conditions of workers in general. Aside the harsh conditions – bad weather conditions, bribery, and corruption from top officials, beatings and ceasing of goods by government officials

- under which economic units in the informal sector work, lack of regulations and rules set by the government to govern their activities. Wages in this sector are not fixed and do not follow a pattern and as such, they do not enjoy the minimum wages. Because of this fluctuation in wages received and income gained (which is considerably lower than their counterparts in the formal sector) by those who work in this sector, they are likely to be more susceptible to poverty. Street vendors, for example, go to the extent of exchanging sexual favors to be safe or secure their street 'workspace'. Most of them also sleep in the streets and are often hit by vehicles (FES, 2011).

The constitution of Ghana (Article 24), however, states that it is the economic right of every person to work under satisfactory, safe, and healthy conditions. It also allows workers to join any trade union if they so desire.

> Every worker shall be assured of rest, leisure and reasonable limitation of working hours and periods of holidays with pay, as well as remuneration for public holidays.
> Every worker has a right to for or join a trade union of his choice for the promotion and protection of his economic and social interests.

The informal sector is known to be a sector that condones child labour. Because of the lack of laws regulating their activities and the lack of attention paid to their activities, there are more cases or incidence of child labour. According to Baksi and Bote (2016), there exist sweatshops in most developing countries that employ children, which of course violates the laws of some countries. In Ghana, it is unlawful for a child to be engaged in work that is harmful to him or that would prevent a child of school-going age from being in school. However, an estimated 12.6% of children (aged 5 to 14) were in the labour force, with 88.6% of them economically active in 2016. A majority (78%) could be found working in the agricultural, forestry and fishing (GLSS 7). Also, data from world development indicators showed that in 2012, there was about 28.76% employed children

between the ages of 7 and 14, 78.05% of economically active children in agricultural employment, 3.32% in manufacturing, 18.12% in services, and 1.47% self-employed in Ghana. The constitution of Ghana states that:

> Every child has the right to be protected from engaging in work that constitutes a threat to his health, education, or development.
> For the purpose of this article, "child" means a person below the age of eighteen years. (Article 28)

According to the constitution of Ghana (Article 36),

> The state shall, in particular, take all necessary steps to establish a sound and healthy economy whose underlying principles shall include:
> (a) the guarantee of a fair and realistic remuneration for production and productivity in order to encourage continued production and bigger- productivity.
>
> Affording ample opportunity for individual initiative and creativity in economic activities and fostering an enabling environment for a pronounced role of the private sector in the economy
>
> Article 37: The state shall -
> (a) Ensure that contributory schemes are instituted and maintained that will guarantee economic security for self-employed and other citizens of Ghana
> (b) Special care shall be accorded to mothers during a reasonable period before and after child-birth; and during those periods, working mothers shall be accorded paid leave.
> (2) facilities shall be provided for the care of children below school-going. Age to enable women, who have the traditional care for children, realize their full potential.

The legally prescribed working conditions for workers in Ghana are summarized in the table below.

Table 2 2: Legally Prescribed Working Conditions of Work in Ghana

	WORKING CONDITIONS	LEGAL PROVISION
1	Hours of work	Five days or 40-44 hours in a week is prescribed by law
2	Wages	National minimum wage is GH₵ 10.65 per day
3	Overtime	Overtime is allowed in Ghana for mostly emergency cases without pay. However, most enterprises do not pay for overtime.
4	Annual leave	Two days per month or a full month per year
5	Sick leave	Entitled to paid sick leave
6	Maternity leave	Entitled to at least 12 weeks of paid maternity leave. (Labour Act 2003, Act 651)
7	Paternity leave	Not in the laws of Ghana
8	Trade Unions	Freedom to join and form a union
9	Protective clothing	An employer is mandated to provide protective clothing to the worker at no cost, otherwise, the employer will be fined or jailed. (Section 118 of the Labour Act)
11	Minimum Age	The minimum age is 15 years to be able to enter the labour market in Ghana (The Children's Act, Act 560, 1998)

	WORKING CONDITIONS	LEGAL PROVISION
10	Severance Benefits	No severance benefits for dismissals based on the individuals' conduct. However, if the dismissal is based on economic reasons, then the individual is entitled to severance benefit subject to negotiations between the employer and the employee or trade unions. (Labour Act [LA], Act No. 651 of 2003)

Source: Constitute project, 2018

According to the 2019 World Development Report (WDR), four out of five people in developing countries have never known what it means to live with social protection. Working conditions keep worsening according to WDR (2019) in developing countries because of rising inequality and the development of casual employment and contract short term employments.

2.3.2 Issues of Gender

"Women should be as free as men to travel. They should be paid the same as men for work of equal value. They shouldn't face gender discrimination when applying for a loan or starting a business, and they should have the same rights to property and inheritance as men" (World Bank, 2020). In Ghana, although women make up the majority, they are marginalized and underprivileged in all economic sectors, limiting their participation in the formal economy (IEA report, 2016). A study by Horn (2008) reveals that about 84% of women in Sub Saharan Africa in the nonagricultural sector can be found in the informal economy and about 60% of informal traders are women at the borders of West and Central African countries (Afrika; & Ajumbo, 2012).

Chen (2014) concludes that women generally take the less demanding jobs, and this is seen in even formal organizations – more women can be found in the jobs that require low skills and less workload and are thus more likely to be laid off.

According to GLSS 6, there are higher proportions of males who are employees than females in both the urban and rural areas. In the same way, there are more male employers than female employers (6.9% for males and 5.5% for females). On the contrary, males are less likely to be own-account workers than females. This difference is more pronounced in the urban areas – females are almost twice more likely to be own-account workers than males.

Also, the proportion of males is always higher than females in public service, the formal private sector, NGOs, Cooperatives, and Agri-Business. However, females make up the majority in the private informal sector in both urban and rural areas (GSS, 2012).

From the occupation of managers to professionals to skilled Agric/fishery workers, males make up a higher proportion in both rural and urban areas. As expected, females hardly take up occupations as plant machine operators and assemblers. However, the proportion of females (37.2%) in the service and sales occupation is over three times that of males (10.8%) (GSS, 2012).

2.4 Poverty Trends in Ghana

In Ghana, numerous social intervention programs have been implemented over the years to alleviate poverty among the exposed and socially helpless in the country. According to the GLSS7 poverty profile report, the incidence of extreme poverty has reduced, even though it remains prevalent in rural areas. However, the number of people (in absolute terms) living in extreme poverty has increased to 2.4 million in 2017 from a previous 2.2 million in 2013. Previous poverty reports also showed the same trend where most of the population living under the poverty line

were concentrated in the rural areas (GSS 1998/99; GSS 2005/06; GSS 2012/13). This trend is based on the unidimensional approach to poverty with a defined upper poverty line of GHC1,760.8 per adult equivalent per year and a lower poverty line of GHC982.2 per adult equivalent per year for 2016/2017.

Poverty is prevalent in the Northern parts of Ghana than the Southern parts. Regions in the south (e.g. Greater Accra, Ashanti) had levels of poverty lower than the average poverty rate (23.4%) in the country. The Western, Volta, Northern, Upper East, and Upper West regions, however, had their poverty incidence worsened. The rate of poverty in the three Northern regions increased from 36.6% in 2012/13 to 44.4% in 2016/2017, and from 52.7% in 2012/13 to 67.2% in 2016/17.

According to the current poverty profile report (GSS, 2018), public sector employees have lower poverty incidence (4.8%) than non-agricultural self-employed (8.9%) and private employees (11.4%). Agricultural self-employed have the highest incidence of poverty at 42.7%. The self-employed in Ghana are mostly located in the southern parts of Ghana. According to the 2010 Population and Housing Census, most internal migrants from the North come to the South (especially Accra) to seek greener pastures, and end up in self-employed occupations in the non-agricultural sector – wholesale and retail trade (14.1%) and manufacturing (11.3%) – (2015 Labour Force Report). Seeing that the greater percentage of the non-agricultural self-employed fall above the poverty line, it can be inferred that, the level of poverty in most of the southern part is low, partly because most household heads are engaged in the retail and manufacturing sector.

The report also indicates that there has been a 0.8% decrease in the incidence of poverty for household heads, with female heads (2.5% decrease) faring better than male heads (0.1% decrease) from 2012/13 to 2016/17. The 2016 Ghana Poverty Report (GSS, 2016) also indicates that the

poverty rates in female-headed households are lower (17.6%) than their male counterparts (25.8%). The incidence of poverty also declined with a high level of educational attainment: 37% for those with no education, 12.4% and 7.5% for BECE and SSCE/WASSCE certificate holders, and 0.9% for those with tertiary education.

CHAPTER THREE

REVIEW OF LITERATURE

3.0 Introduction

This section highlights some concepts and definitions and reviews both theoretical and empirical literature on the subject. The theoretical literature follows chronologically, beginning with the early theories of unemployment.

3.1 Theoretical Review of Literature

The concept of the "informal sector" began at a time when the ILO was struggling to develop a general framework to describe the concept of unemployment in developing countries. In the 1950s and 1960s, developing countries were mostly characterized by high levels of underemployment. The term ‘disguised unemployment' was used to describe this situation. This categorization was because there were persons who were employed, but mostly in the agricultural sector or low productive sectors who were generally not earning enough income. In a sense, they were unemployed but still ‘active'. Thus, identifying them as typically employed or unemployed did not make sense, hence the term underemployed.

In the late 1960s, the ‘disguised unemployment' framework adopted by the ILO was also boycotted. ILO reasoned that wage employment was not prevalent in developing countries making it impossible to construct an accurate measure for ‘disguised unemployment'. The attempt to generate such a globally accepted operational definition in the early 1940s was in hopes of designing policies aimed at achieving and sustaining ‘full employment' among ‘all people everywhere'(Benanav, 2019).

The term ‘informal sector' was adopted by the ILO as a better substitute for the ‘disguised unemployment' framework. Although, this concept also faced similar problems as that of the former. The ILO intended to develop a global accurate measure for reporting on employment and unemployment in different countries. This was to ensure that the correct policies were implemented, especially in the least developing countries where the issue of unemployment was overwhelming. The concept, however, had different meanings to different groups of people – economists, sociologists, etc. (Peattie, 1987).

Joan Robinson's empirical work in 1936, ‘Disguised Unemployment', followed Keynes' general theory of employment. Her work was centered around the increase in unemployment that resulted from the great depression in the late 1929s. Labour was forced out of the regular wage employment (mostly industry workers) into taking other low productivity jobs. Robinson's report follows the Keynes theory of ‘downward stickiness of money wages' and incorporates an alternative model where incomes are flexible in an easily accessible self-employment sector. Consequently, a fall in aggregate demand (lower than the full employment level) leads to a fall in employment – labour is pushed out of the rigid wage sector. Rather than becoming unemployed, labour finds work in the more flexible income sector.

This creates a distinction between a generally low productivity sector (absence of skills) and the situation created above which Robinson describes as ‘disguised unemployment'. The difference in these two scenarios is made clear by the assumption that full employment will be achieved in the latter if there's an increase in aggregate demand, shifting labour - who are assumed to have retained their skills from previously working in a high skilled sector – back to the productive sector or the ‘rigid wage sector'. Robinson's concept was soon adopted by economists and in 1944, Paul

Rosenstein-Rodan in his ‘big-push' industrialization theory referred to ‘disguised unemployment' in the least Developing Countries (LDCs) as a specific form of employment deficiency.

There remained a clear distinction between what existed in the developed world and that which existed in the LDCs in that, workers in the LDCs were very unlikely to have been as highly qualified (skilled) as those workers who had been laid off in the developed countries (the former might have never held a high-skilled job prior to working in the ‘flexible income sector'). Thus Rosenstein-Rodan argued that, if the ‘big-push' industrialization were to succeed, the ‘low or no productive workers' (mostly in the agrarian sector) would likely contribute the bulk of labour – doing manual labour or working for wages. Thus, he classified those workers as having ‘zero marginal-productivity'. Arthur Lewis in the early 1950s developed the surplus-labour concept systematizing Rosenstein-Rodan's view. Lewis' concept assumed a dualistic economy (rural agricultural and urban manufacturing): surplus labour in the agricultural sector and non-surplus labour working at full capacity. He argued that disguised unemployment would only end by rapid economic development.

The ILO sidestepped the theoretical debate, assuming a practical stance with a focus on developing an operational definition of disguised unemployment to assist in government policies towards development planning. ILOs focus was set towards international economic development. In 1951, the term underemployment was used by an ILO official Chaing Hsieh as a substitute for disguised unemployment, defining it as: ‘the difference between the labour force's actual and potential working time'. It consisted of workers who were fully employed but working with low productivity levels. In Keynesian terms, ILO defined underemployment as ‘the difference between the actual employment and the theoretical full employment of the labour force'. However, there were measurement issues with regards to this new term, especially in applying it to LDCs.

The urgency of getting labour force statistics was intensified in the late 1950s, as more countries ran into problems while undertaking exercises on development planning. In 1956, ILO reported that achieving full employment in LDCs was not an easy task, and attributed the challenges to the rapid population expansion which ‘offset much of the decrease in unemployment that would have otherwise arisen as new jobs were created'. In 1961, an ILO report attributed the problems limiting full employment not only to increasing labour force but also to a slowly rising labour demand.

In most developing countries, the increase in the number of factories was not commensurate with the increase in the share of employment from the manufacturing sector. This was ascribed by the ILO to the skewness in ‘composition of output' and the ‘choice of techniques' in government formulated policies targeting industrialization. The taste and preferences of the rich in LDCs were directed towards capital intensive goods rather than labour-intensive goods – the rich absorb a larger share of market demand. Also, the focus of governments in LDCs on the ‘big-push' industrialization led to the spending of the scarce foreign exchange on importing labour-saving machinery, ignoring the rising levels of underemployment.

In the late 1960s, ILO abandoned the project of standardizing measures of employment, underemployment, and unemployment. Although there was still a need to find a reliable way to measure unemployment in LDCs. This was to incorporate employment targeting into development plans. In the industrialized countries, there was a clear organization of jobs based on wage relations which were not the case in LDCs. In the latter, there was a continuous trend of self-employment and unpaid family work. As economists and statisticians debated on and created new concepts to include and submerge the sector in which the labour force categories could not be applied (not organized around wage relations), the term ‘informal sector' sprang up.

In 1971, Keith Hart described the activities of some workers as informal economic activities. He argued that these activities should be encouraged not suppressed in the course of development. It was immediately adopted in the ILOs Kenya report by Hans Singer and Richard Jolly.

They argued that the informal sector encompassed not only low productivity jobs but most were ‘economically efficient and profit-making' units. Unlike theories of employment insufficiencies which only focused on low productive jobs. The name informal sector came about to indicate that most of these individuals and enterprises performing ‘informal economic activities' existed largely outside of the system of government benefits and regulations and that the conditions in this sector would improve if measures were put in place to legalize small-scale enterprises. The arguments made by Singer and Jolly (2012) gave advance indications to the neoliberal talking points around development. However, they argued for the informal sector to be included in the framework aimed at greater equality.

The concept of disguised unemployment later became popular in the 1980s and 1990s, although its meaning remained fuzzy. The fuzziness of the concept gives a varying estimate of its size (Gibson and Kelley, 1994).

Since the term informal sector sprang up in the early 1970s, there have been many theories that have tried to explain the nature and some characteristics of the informal sector. The modernization theory believed that the informal economy would disappear when the economy was gaining strength in developing countries as was the case of the developed countries. This theory posits that, as an economy is recovering or growing, the informal sector will be absorbed automatically into the formal system.

The theories behind informality can also be explained through the composition of the economic agents – labour, micro-enterprises, and firms. From the labour perspective, it is posited that labour has insufficient human capital to get a formal job and so resorts to the informal sector where the insufficient human capital suffices. Alternatively, informality arises when labour decides to work for themselves, make money, avoid taxes, and enjoy flexibility by quitting the formal job. Another explanation from the micro-enterprises or micro-firms' point of view – with no potential nor intention for growth, there is not a need for micro-firms to engage with the state. Secondly, the chances of becoming a formal enterprise are stymied by high barriers to entry. Firms, on the other hand, choose to partially register their workers and sales and avoid taxation and other regulation. This is not in conformity to the laws of the state and may attract sanctions if discovered.

The debates surrounding the informal economy are categorized into four leading schools of thought by Chen (2012):

- Dualist
- Structuralist
- Legalist
- Voluntarist

The dualist school of thought started the conversation on the causes of informality during the ILO world employment mission in Kenya in 1972. The duality theory focuses on labour and suggests that the informal and formal sectors of the economy exist independently of each other. Informal activities are characterized by this school of thought as autonomous activities that have few (if any) links with the rest of the economy. It features ease of entry, small-scale production, dependence on aboriginal resources, unregulated and competitive markets, and it is mostly labour-

intensive and owned by family. Skills acquired outside the formal educational system is the necessity for this type of job. This same school of thought postulates that the informal sector persists when the rate of growth in the population of a country is very fast or when there is slow economic progress. That is, labour is excluded from modern economic opportunities due to the imbalances between population growth and the growth of modern industrial employment or the skills of labour and the structure of modern economic opportunities. In the Harris-Todaro model, which falls under the dualist school of thought, the poor folks from the rural areas migrate to urban centers in search of jobs. Todaro (1969) and Harris and Todaro (1970) view the informal sector basically as a stagnant and unproductive sector which serves only as a refuge for those who migrate from the rural areas in search of formal jobs and for the unemployed already in the urban area. Maloney (1999) however opines that there is no compelling evidence to conclude that there exist dualistic labour markets in developing countries. Betcherman (2002) hypothesizes that an ensuing response of inadequacy of the growth of output in the formal sector is an expansion in the informal sector labour force. Otherwise, low levels of employment are generated in the formal sector as the sector grows because it is the capital-intensive industries that drive growth in this sector.

The structuralist school postulated by Manuel Castells and Alejandro Portes (1989) focuses on the relationships of production. This school of thought describes the informal economy as universal, on the rise and systematically linked to capitalist or formal firms and unregulated by the institutions of society. Thus, the formal firms' attempt to reduce the cost of labour and increase competitiveness and their reaction to the power of organized labour, global competition, and regulations (taxes and social legislation) is what causes informality to exist. In other occurrences, the informal economy is generated by the industrialization processes including off-shore industries and sub-contracting chains. Accordingly, the informal economy is composed of the self-employed and wage employed

including petty artisans, petty traders, sub-contracted workers, casual labourers, and informalized wage workers.

The legalist approach by Hernando De Soto (1989) posits that entrepreneurs and employers and own-account workers evade the legal system by diverting to the informal sector to avoid the legal costs. This is what Bushi (2015) identifies as corruption and cautions that it leads to a greater informal economy. The focus for the legalist school of thought is centered around migrants, especially those from the rural to the urban areas, and the causal theory of informality generates from the hostile reception from the legal system, the cost of formalization, the benefits perceived from remaining an informal enterprise, and the absence of a good law. Consequently, burdensome regulations, the lack of enforcement of property rights and enforceable contracts, the benefits of staying informal and the costs of formalizing and remaining formal may be the reasons for the persistence of the informal economy. The arguments raised by Pratap & Quintin (2006) leans towards this notion - that the tax and regulatory burdens in developing countries promote the increase in the informal sector activities. A result of this is that the tax base of the country is lessened and the tax revenue likewise generated, is reduced. Essentially, the resources in the country are not properly channeled to good and efficient use for beneficial outcomes in an environment where the enforcement of regulations is curtailed. Accordingly, governments of developing economies adopt policies to rope in operators in the informal sector or the unregulated and untaxed economies (Pratap & Quintin, 2006).

The Voluntarist School (William Maloney, 2004) suggests that the informal sector is mostly made up of the self-employed, usually male micro-entrepreneurs, who choose to be in the informal sector after analyzing the costs and benefits of formality and informality. The benefits of informality (earn more income while avoiding the costs of formality) for these people outweigh the costs of

formality (paying of taxes and workers' social protection contributions). According to Betcherman (2002), the informal sector may be more dynamic than the formal sector which leads to high levels of employment generated in the former.

The above theoretical literature is broadly categorized into two main arguments – the competitive advantage argument and the labour market segmentation argument.

The first hypothesis views the informal sector as competitive as the formal sector but only different in terms of production functions. The hypothesis implies that some workers choose to work in the informal sector where they are likely to be more productive (Heckman and Sedlacek, 1985). On the other hand, the segmentation hypothesis which builds on the Lewis dual labour market concept views the informal sector as a second option for labour who do not find work in the formal sector, thereby characterized with poor working conditions and low wages (Fields, 1975).

Contrary to the first hypothesis, this hypothesis classifies the informal sector work as demand-led (firms' demand) and involuntary (influenced by unfavorable circumstances). This labour market segmentation implies that the average wage in the formal sector may be higher than the average wage of the informal sector workers (Baffour and Turkson, 2015). This presupposes that poverty may act as a determinant and implication of informal sector work.

According to GSS (2016), the formal sector in Ghana employs just about 28.7% of total employed persons. Also, more than half of the employed persons in Ghana are engaged in vulnerable employment (contributing family workers and own-account workers. In addition, persons who work in elementary occupations such as street vending, domestic workers, etc. earn the least average monthly income amongst workers in all occupations. This suggests that the labour market segmentation argument prevails in Ghana.

3.2 Empirical Literature

There are diverse views across existing empirical studies on the importance of the contribution of the informal sector to an economy. Empirical results indicate that informality is not determined from a single source. Most empirical literature in contrast to the theoretical literature views the informal sector as a significant contributor to the output of a nation in its dynamism and efficiency. Moreover, several authors report in their empirical studies that the informal sector has the potential for attracting and supporting labour in its own way. Studies have shown that the size of the urban labour force engaged in the informal sector is surprisingly significant, ranging from 30% to 70% (Bhattacharya, 2011). Empirical findings also show that many migrants from the rural to the urban area are attracted by income-earning opportunities in the informal sector itself; also, that there is very little job search activity by the workers in the informal sector (Fields, 1972).

3.2.1 Determinants of Informal Sector Employment

Generally, several authors have observed that, although the informal sector has lower earnings than the formal sector, the heterogeneous nature causes high-income disparities within the sector. The informal sector includes both individuals for whom informality is a strategy of last resort to escape unemployment and individuals who have a comparative advantage in the informal sector. Some studies indicate that highly educated persons use informal jobs as a waiting strategy until jobs become available in the formal sector. Most of the studies indicate that informal employment is one of the most important factors causing and exacerbating income inequality in urban centers. Others have also reported that the informal sector is an unattractive sector that downs economic progress and increases the risk of poverty. A few empirical studies are reviewed below.

In Ghana, Koto (2015) examines the determinants of the decision of owners of small enterprises in Ghana to participate in the informal sector at start-up. Using a standardized questionnaire developed by the World Bank and a sample size of 710 informal sector enterprises in Ghana, the author collects data from four survey regions across Ghana; Tema, Accra, North, and Takoradi. The author uses two outcome variables: a binary variable that measures whether an enterprise registered at start-up as a proxy for the decision of owners of small enterprises to participate in the informal sector at start-up and a binary variable that measures the existence of a supply contract as a proxy for the linkage between the formal and informal enterprises. The study uses the level of education of the owner, financial constraint, taxes, inspections, and meetings with government officials, payments of bribes, and the perception of no benefit from operating in the formal sector, the gender of the owner, and bank account as the explanatory variables. It then uses instrumental variable probit (IV Probit) estimation to account for the potential endogeneity between the level of education of the owner and his decision to register at start-up. The results for the study revealed that an individual is more likely to operate in the informal sector if his parents own an enterprise in the informal sector too. Also, financially constrained owners, high levels of taxes, and no perceived benefits from operating in the formal sector are factors that have a negative influence on the decision to register at start-up, while the level of education of the owner had a positive impact.

Similarly, Basbay et. al. (2018) studies the relationship between informal sector employment and the socio-demographic characteristics of the participants, as well as the political acts and attitudes and the individual norms for seven countries (China, Ecuador, Egypt, Mexico, Peru, South Africa, and Yemen). Consistent with the findings of other studies, the authors also observe that males, married individuals, and those who received a university education are less likely to be employed

in the informal sector using the probit model. They also find that individuals involved strongly in politics were less likely to accept work in the informal sector and that individuals employed in the informal sector were less likely to participate in any political event.

Evidence from Brazil as studied by Henley et.al (2009) suggests that in comparing three measures of informality – signed labour card, social security membership, and informal activity - there are fewer informally employed persons when informality is defined by the three indicators than when it is defined with the individual indicators. The authors also observe a higher correlation between the measures, signed labour card and social security membership than comparing each with the third measure (informal activity). They also find that low educational attainment strongly influences informality and that females are more likely to be informally employed, especially when it is measured by the informal sector activity.

Gunther and Launov (2011) define the informal sector as the ‘self-employed', ‘those employed without a written contract', and ‘employed with a company with no formal bookkeeping'. Testing the hypothesis of segmentation in the Cote D'Ivoire labour market against the alternative of the competitive labour market, the authors assume a homogenous formal sector and heterogenous informal sector (low-paid and high-paid informal sector), with age, sex, education, training, religion, and location as the regressors. The authors observe that there are two segments in the informal sector, with one superior (higher wages) than the other. They find that most of the informal workers (a majority in the lower-paid informal sector) are there because of market segmentation, while most informal sector workers in the higher-paid informal sector have a comparative advantage. The authors also find that sex and age are significant and have a positive relationship in all the three segments- formal sector, higher-paid informal sector, and lower-paid informal sector. However, education is only significant in the formal sector and higher-paid

informal sector, while training is significant in the formal sector and the lower-paid informal sector. The study also finds that religion is significant and positively related to only the lower-paid informal sector. Gunther and Launov (2011) conclude that the informal sector encompasses both workers who are there as a last resort and workers who are there because of the comparative advantage they have in the informal sector.

Also, Elgina and Oyvat (2013) use fixed-effect regressions and OLS regressions using pooled data on 152 countries, including 114 developing countries to examine how urbanization affects the size of the informal sector during the development process. The paper defines the informal sector as 'market-oriented production activities' that operate outside the legal standards of the labour market. That is, the production units avoid paying taxes, social contributions, and does not comply with the minimum wages and maximum hours of work regulations. With the size of the informal sector as the dependent variable and the control variables being tax burden, capital-output ratio, trade openness, population density, unemployment rate and three institutional quality variables, namely law and order, bureaucratic quality, and corruption control indices, the author separates the effect of the variation in urbanization on the variation in the size of the informal sector. The study reveals an inverted-U relationship between urbanization and the share of the informal sector due to pull and push factors towards the informal sector in the process of industrialization. The study concludes that later phases of development results in a lesser impact of this push and pull factors as a natural result of rural dwellers getting wealthier.

In assessing the micro-determinants of informal employment in the Middle East and North Africa region, Angel-urdinola, Urdinola, & Tanabe (2012) quantify the patterns of labour informality (defined as the share of all employment with no access to social security) according to age, gender, education level, employment sector, profession, marital status, employment status, and geographic

area in a selected group of countries in the region. The study analyses the determinants for both the urban and rural areas using a set of correlations between informal employment and individual characteristics such as age, gender, and years of education. The study then assesses informality using a simple probit regression model to provide more insight into the correlates. The dependent variable of the regression model is a binary variable. The study finds that rural employment is mainly associated with informal agricultural activities in most countries in Latin America, while in the MENA countries, there is an important public sector presence (formal employment) in rural areas. It also reveals that age, gender, and education constitute important determinants of formality and that the average worker in the informal sector is somehow disadvantaged versus the average worker in the formal sector, as they are uncovered against social risks and are generally employed in low-productivity jobs.

To conclude, the work of those in the informal sector mostly affects where they live, their surroundings, their health, their education and generally, their standard of living. Obeng-Oddom (2011) states that governments often "... pay insufficient attention to the close connections between where victims of evictions live and work". A cycle of poverty is then created for those workers, and the poverty in the country is worsened. Household poverty may also act as a determinant of household head's decision to participate in the informal sector (Fields, 1975).

3.2.2 The relationship between informal sector work and poverty

Only few studies on the informal sector have explored the relationship between poverty and the informal sector (Williams, 2014). However, there have been consistent debates on how poverty and the informal sector are related, with two foremost views; a positive relationship between them through the low earning capacity of workers in the informal sector or no direct relationship between poverty and working in the informal sector. According to Sharma (2017), street vendors

in some parts of India are poor (through low earnings) because they are lazy, and others are not willing to put in the effort to move from the informal sector to the formal sector. Ogunrilola (2010) finds that the poor in developing countries especially, find a coping mechanism by exploring opportunities in the informal sector. On the other hand, Timofeyev (2012) reports that although the informal sector can be viewed as "a factor of social stability in a post-socialist transition economy" in Russia, it cannot have any significant impact on poverty reduction. Hull (2009) reports that the level of employment, the quality of jobs, and the access to decent earnings opportunities by the poor, will be crucial bases for poverty reduction.

A study conducted in Kenya showed that the informal sector workers are mostly poor simply because they lack better wages and overextend themselves in the work that they do. Similarly, in a research work done in Chile (Amuedo-dorantes, 2004), the author uses household survey data (microlevel data) to analyze the determinants of informal sector work and the link to poverty by male and female household heads. Using a simultaneous equation framework (simultaneous equation probit), the author accounts for the endogeneity problem that exists between household poverty and wage and salary work of household heads in the informal sector, defined by the existence of a written contract. The maximum likelihood probit is used to estimate each probit model. After controlling for a variety of determinants (age, household size, firm size, regional characteristics location, etc), the results in Chile showed that household poverty is a common determinant of the growing percentage of household heads in wage and salary jobs in the informal sector. In the reverse, the study concluded that work in the informal sector have worrisome poverty implications, and is even higher among male-headed households.

Orlando (2001) also uses the logistic model to estimate the probability of working in the informal sector as a function of the years of schooling, gender, age, number of individuals in the labour

force within the household, household size, and area (urban or rural). The author also studies the relationship between poverty and participating in the informal sector through the earnings of labour and analyzes the determinants of earnings in the formal and informal sectors using the Mincerian model to quantify the income gap between the sectors. The study finds that women, individuals with less education and those living in rural areas are more likely to be in the informal sector. The study also finds contradictory results for age and number of workers in the household for the different periods studied. Moreover, the study shows that, in the same economic activity, formal sector workers yield an increase in their income relative to informal sector workers with the same level of education, experience, gender. The maximum likelihood is used in the estimation conforming to the use of the logit model. Informal sector workers are identified as owners of microenterprises and informal self-employed workers.

Yakubu et. al. (2014) examined job creation in the informal sector (self-employed individuals) and the level of poverty among operators in the informal sector in Nigeria. A multi-dimensional poverty index (three dimensions and seven indicators) was generated by the authors following Alkire and Foster (2007, 2011) and used as a measure of poverty. An individual was deemed poor if his weighted deprivation count was greater or equal to a certain cutoff point. Employing the Ordinary Least Squares method, the authors found that, an individual's level of multi-dimensional poverty reduced as his income earned per day increased. The study also showed that, for an informal sector operator to reduce his multi-dimensional level of poverty, his number of hours worked per day, and days worked per week should increase. Also, a higher level of education reduced the operator's level of multidimensional poverty.

An obvious means of poverty is through low income (Schiller, 2001). Chen (2012) argues that the informal sector provides low incomes to its participants most of the time. Other studies also

confirm this finding. For instance, a study by Orlando (2001) revealed that, in the Latin American countries, poverty is a common phenomenon in the informal sector (43%) than in the formal sector (15%). Cartaya (1991) also found in a similar study on the informal sector in Venezuela that, majority of the households living in extreme poverty reported that the greatest portion of their incomes was from the informal sector. This shows a significant relationship between poverty and the informal sector: the poor mostly are found in the informal sector jobs.

Recently, the proportion of women engaged in paid employment is increasing (Brown & McGranahad, 2015). According to the Ghana Statistical Service, about half of the employed in the active population (7+ years) are women. About 58.4% of non-farm enterprises in Ghana in 2016 were operated by women (GSS, 2016). Sadaf (2002) reports that this increase in women's labour force participation in the informal sector may be attributed to childhood nutrition and low mortality rates for both females and children.

It is, however, worth noting that, women in employment are mostly concentrated in low paying and irregular and low-quality jobs than men (Chen, 2004). A resultant outcome of this is that women may generally be affected more in the case of government downsizing the public sector labour (ILO, 1998; Moghadam, 1998). Also, women are more susceptible to encountering numerous challenges in employment which can somewhat be ascribed to their characteristics and partly to the presence of gender discrimination in the labour market (Kabubo-Mariara, 2003).

Some studies have shown that women are forced into the informal sector because of gender discrimination that exists in the formal sector, limiting their access to formal wage employment (ILO, 2002). Canagarajah & Thomas (1997) report that men have higher literacy rates than women, which may be the reason there are more men employed in the private formal sector than women.

Women also have limited skills and work experience and have restricted access to capital. In terms of income, women mostly earn lower than men in all facets of employment (GSS, 2016). On average, men receive higher earnings than women in almost all employment sectors (GSS, 2012). Also, Buvinic (2002) comments that women are also discriminated against in terms of their access to space and restricted mobility Women also have limited representation in formal governance structures. Studies have revealed that most women self-select themselves into professions or jobs with flexible conditions, to manage the home (the additional responsibilities like cooking and cleaning) and their families as well (Stumbitz et al., 2018).

Amuendo-Dorantes (2004) also posits that women have more interrupted career patterns. According to Cunningham (2001), there is 'feminization' of the informal sector, implying more women participating in the informal sector than men or other definitions, more women participating in the informal sector than in the formal sector. Cunningham (2001) also reports that women tend to be over-represented in the informal sector with their share in the informal sector higher than their share in the total labour force.

It has been argued that, women, especially those who head households should be given special attention because of their high disadvantage as compared to men – "..they experience the burden of poverty, gender discrimination, and absence of support.." if they so happen to be the head of their household (Buvinic &Gupta, 1997). Thus, the analysis is carried out separately for men and women to assess the gender effects of participating in the informal sector. In Ghana, there has not been studies conducted in this regard to the best of my knowledge.

CHAPTER FOUR

METHODOLOGY AND EMPIRICAL ANALYSIS

4.0 Introduction

This chapter elaborates on the conceptual framework, research design and model specification of the study using data from the seventh round of Ghana Living Standard Survey (GLSS 7). In this chapter, the estimation technique used and the variables for the study are discussed. Finally, this chapter concludes by analyzing and discussing the empirical results of the study.

4.1 Conceptual Framework

This study focuses on finding the determinants of participation in informal sector employment and its poverty implications. The definition of the informal sector in Ghana follows the definition as adopted by the 15th International Conference of Labour Statisticians (15th ICLS) in the 'resolution concerning statistics of employment in the informal sector'. This definition is also at par with the 'guidelines concerning a statistical definition of employment' from the 17th ICLS. Assessing the determinants of informal sector employment, which encompasses both observable and unobservable variables, is made possible because of the officially accepted guidelines and definition. The International Labour Organization's (ILO) report in 2012 on a statistical update on employment in the informal economy encourages studies to restrict employment in the informal sector to non-agricultural informal sector units. As stated by the report, employment in the informal sector is an enterprise-based concept, that is, persons working in a unit that has 'informal' characteristics in terms of its legal status, registration, bookkeeping, registration of employees, etc. (ILO, 2012). The operational definition of a formal sector unit follows these criteria – legally incorporated (institutional) and recognized formal sector, registration of the economic unit at the

national level, bookkeeping, alternative criteria (employer contribution criterion, economic unit size, and fixed location) (Bonnet et. al., 2019).

Consequently, to identify persons working in this sector, the informal sector unit must first be identified. Several studies use the size of the enterprise to identify the informal sector (Rothenberg et al., 2016), whiles other studies use other indicators such as the employee registration (that is, if the employee has a written contract) (Amuedo-Dorantes, 2004) or the location criterion (whether fixed location or not). In this study, the registration of the economic unit is used to identify the informal sector units. The bookkeeping criterion which assesses that the economic unit keeps a set of accounts as required by law would have been used to augment the already mentioned criterion to give a more robust identification of the informal sector units in Ghana. However, in Ghana, not all economic units adhere to the rules guiding an economic unit (Ghana Statistical Service, 2016). It is identified later in this study that some economic units are deemed formal in registration and size but do not keep the proper accounts. Whereas, other units seen as 'informal' based on their legal status, keep accounts - whether audited or unaudited. For this reason, the study uses the registration status of the economic unit only to identify the sector of the economic unit, and subsequent analysis is done on the individuals (heads of households) working in this sector. Low household heads' incomes are frequently a convincing clarification for household poverty since they contain a critical division of household incomes.

Generally, this study measures the probability that an individual is employed in the informal sector of the Ghanaian economy (dependent variable), conditioned on a set of explanatory variables such as poverty, sex, age, educational attainment, household size and others, and a constant that represents a set of all unobservable variables. There are two main hypotheses advanced in the study of the informal sector. One being the competitive sector hypothesis or supply-led and voluntary

informal sector workers. This hypothesis views the informal sector as competitive as the formal sector but only different in terms of production functions. The hypothesis implies that some workers choose to work in the informal sector where they are likely to be more productive (Heckman and Sedlacek, 1985).

On the other hand, the segmentation hypothesis which builds on the Lewis dual labour market concept views the informal sector as a second option for labour who do not find work in the formal sector, thereby characterized with poor working conditions and low wages (Fields, 1975). Contrary to the first hypothesis, this hypothesis classifies the informal sector work as demand-led (firms' demand) and involuntary (influenced by unfavorable circumstances). This labour market segmentation implies that the average wage in the formal sector may be higher than the average wage of the informal sector workers (Baffour and Turkson, 2015). This presupposes that poverty may act as a determinant and implication of informal sector work.

4.1.2 Multidimensional Poverty

"*Poverty is not just lack of money. It is not having the capability to realize one's full potential as a human being" – Amartya Sen (2016)*

"Poverty has many dimensions and is characterized by low income, malnutrition, ill-health, illiteracy, and insecurity, among others" (GLSS 6). Multidimensional poverty is a concept that has been explored by researchers in recent years. Studies have shown that one can be poor in so many ways than one. Thus, the conventional measurement of poverty using income limits the way and the number of people who are deemed poor. Also, using just the income of an individual to determine whether the person is poor may not be appropriate since there are other ways in which a person can be poor. Cash income is needed to ensure a good life or tolerable living. However, to

attain economic wellbeing, cash income is not the only factor that should be considered. There are other factors or aspects of good living that are also relevant.

The multidimensional poverty index (MPI) then caters to the restrictions of the income poverty measurement which includes its comparable features among countries. The multidimensional index takes care of three dimensions of poverty - health, education, and standard of living - to make for a full description or view of poverty. Under these three dimensions, there are indicators for measurement and analysis. Unlike the human poverty index developed as a complement to the human development index to evaluate the standard of living in countries and was derived separately for developing and OECD countries, the multidimensional poverty index stands on its own and is a general index that allows for comparison among, within, and between regions and countries.

The MPI concept was developed by Oxford Poverty & Human Development Initiative (OPHI) in 2010 (Oxford Poverty & Human Development Initiative, 2016). Measuring and characterizing poverty using multiple dimensions of deprivation provides a more complete picture of poverty since the poor are not only those who lack income but also those who do not possess minimally acceptable standards in several dimensions of economics wellbeing.

The Alkire and Foster (2008) methodology of the multidimensional poverty index considers health, education, and standard of living of the individual. A multidimensional poverty index that consists of three dimensions and eight indicators are computed and all indicators are given equal weights.

Table 4 1 : Multidimensional Poverty Index

DIMENSION (weight)	INDICATORS (weight)	DEPRIVED IF...

Health (1/3)	BMI (1/6)	BMI of any household member (age 15+) is less than 18.5m/kg^2
	Child mortality (1/6)	Any child (age< 5) died in the household, 5 years before the survey
Education (1/3)	Level of education (1/3)	No household member (10+) other than the household head has completed at least 6 years of school (equivalent to primary school)
Standard of Living (1/3)	Water (1/15)	The household does not have access to safe drinking water and/or distance to get drinking water is more than a 30-minute walk (roundtrip)
	Sanitation (1/15)	Toilet facility is not improved or is shared
	Fuel (1/15)	Household cooks with dung, wood, or charcoal
	Electricity (1/15)	No electricity
	Floor (1/15)	The floor is made with natural materials

In calculating this score, each household is first examined in each of the dimensions to check the deprivation of any indicator. A household is assigned a value of 1 if it is deprived in any indicator, and 0 if it is not (see table 4.1). Any household with missing data for all the indicators in a particular dimension is dropped from the sample. Second, equal weights are assigned to each indicator such

that a household takes a value of the weight if it is deprived and 0 if it is not. For example, a household will take a weight equal to 1/6 (1/6 * 1) in the first indicator for health if it is deprived, and 0 (1/6 * 0) if it is not. Thus, a household will have a weight equal to 1/3 if it is deprived in all the indicators of health. This process is carried out for all the indicators. A household is then said to be multidimensionally poor if the score of the weighted indicators deprived sum up to or more than 33 percent, following Alkire & Santos (2010).

4.2 Empirical Design

The focus of this study is to determine the relationship between informal sector work and poverty. For this study, an individual is said to be employed in the informal sector if he or she works in any economic unit identified as informal (i.e. not registered) that was in operation 2 weeks before the interview of the survey. The outcome variable is thus a binary variable that takes a value of 1 if an individual works in the informal sector and 0 if not. The nature of the dependent variable (binary) allows the use of a binary classification model. The study employs the probit model in its first estimation, giving the results to the first objective, where the dependent variable is the probability of a person working in the informal sector; taking a value of one (1) when an individual works in the informal sector and zero (0) when an individual does not work in the informal sector.

The probit model is based on the utility theory, or rational choice perspective on behavior, as developed by McFadden (McFadden, 1973). To motivate the probit model, we assume that the decision of the *i*th head of household to participate in the informal sector or not depends on an *unobservable* utility index *Ii* (also known as a latent variable), that is determined by one or more explanatory variables, *Xi* , in such a way that the larger the value of the index *Ii* , the greater the probability of an individual participating in the informal sector. We express the index *Ii* as

$Ii = \beta_1 + \beta_2 Xi$

where Xi is the independent variables of the ith household head.

Let $Y = 1$, if an individual works in the informal sector and $Y = 0$ if an individual does not work in the informal sector. We now assume that there is a threshold level of the index (I^*_i), such that if Ii exceeds I^*_i, the household head will participate in the informal sector, otherwise it will not. The threshold I^*_i, like Ii, is not observable, but if we assume that it is normally distributed with the same mean and variance, it is possible not only to estimate the parameters of the index given in the above equation but also to get some information about the unobservable index itself. Given the assumption of normality, the probability that I^*_i is less than or equal to I_i can be computed from the standardized normal cumulative distributive function (CDF) as:

$Pi = P(Y = 1 \mid X) = P(I^*_i \leq Ii) = P(Zi \leq \beta 1 + \beta 2Xi) = F(\beta 1 + \beta 2Xi)$ (Gujarati & Porter, 2009).

In our model, there exists possible simultaneity between the dependent variable (informal sector worker) and the main independent variable (poverty), and as such, employing the OLS estimation technique may result in biased and inconsistent estimates. To be precise, when a relationship is explained by a system of equations, then some regressors may be stochastic and associated with the error term. This violates the basic assumption underlying the use of an ordinary least squares method (fixed regressors and no correlation between the regressors and the error term), and consequently ordinary least squares estimator produces inconsistent results. This then requires us to employ an estimation technique that will solve that problem. As a result, this study will employ the simultaneous equation probit technique.

The conditional mixed processing (CMP) command in stata is used for the estimation of the simultaneous equation probit. The CMP uses a full information maximum likelihood criterion to estimate the values of the coefficients.

The second objective is twofold; estimating two regression models using a unidimensional poverty measure and a multidimensional poverty measure. Each estimation will follow an ordinary least square (OLS) estimation. The dependent variable (UDP) is a consumption-based approach which measures the consumption expenditure per year, and is a continuous variable. This variable has already been computed in the current GLSS with a variable name "welfare" (Ghana Statistical Service, 2018). The other dependent variable (MPI) is a generated index ranging from zero to one, and is a continuous variable.

4.3 Estimation Technique and Model Specification

There have been several approaches used in examining the determinants of participation in the informal sector across countries. Amuendo-Dorantes (2004) provides an empirical framework for examining these determinants and its implications on poverty. This study follows the empirical work of Amuendo-Dorantes (2004). Given the dichotomous nature of the dependent variable (for the first objective of the study), the probit model will be used to estimate the data.

Using the OLS estimation technique, in this case, will result in the problem of heteroskedasticity (Jones, 2005). The OLS method assumes that there is no correlation between the independent variables and the error term. If this assumption is violated, then the estimates will be biased and inconsistent. To prevent this, the probit or logit models may be used.

The probit model is part of a family of models (probit, logit, LPM) used in estimation when a dependent variable is dichotomous. It uses the cumulative normal distribution function to estimate

the coefficients. For this study, this method is used because the dependent variable is the probability of a person working in the informal sector (Inf); taking a value of one (1) when an individual fall within this category and a value of zero (0) when an individual does not fall in this category. The probit model estimates the probability of the head of the household participating in the informal sector given a set of explanatory variables represented by 'X'. Representing informal sector worker as "Inf", then;

$$Pr (Inf = 1 | X) = F (\beta_1 X)$$

The probability of Inf = 0 is derived as 1 - Pr (Inf = 1 | X)

The predicted probabilities lie between 0 and 1 and the probit model is estimated using Maximum Likelihood estimation with error term assumed to follow a standard normal distribution.

Based on the framework above and empirical literature reviewed, this study estimates the likelihood of the household head working in the informal sector using the simultaneous equation probit specified:

$$\textbf{Informal sector}_{ijl} = \alpha_1 \textbf{Poverty}_i + \beta_1 P_{ij} + \delta_1 H_i + \gamma_l F_{ij} + \varphi_1 R_l + \varepsilon_{ijl} \quad \text{..... Equation 1}$$

$$\textbf{Poverty}_{ijl} = \alpha_2 \textbf{Informal sector}_i + \beta_2 P_{ij} + \delta_2 H_i + \gamma_2 F_{ij} + \varphi_2 R_l + v_{ijl} \quad \text{..... Equation 2}$$

α_1 shows the direct implications of poverty on the decision of the household head to work in the informal sector.

α_2 shows the effect of the household head's work in the informal sector on household poverty.

ε_{ijl} and v_{ijl} are the error terms

List of variables	Definition
$Poverty_i$ Poor or nonpoor)	A dummy variable indicating the *i*th household's poverty status
$Informal\ sector_i$	A dummy variable indicating whether an individual is in the informal sector.
P_{ij}	A vector of personal demographic and work-related characteristics of the *i*th household head employed at firm *j*
H_i	A vector of household characteristics
F_{ij}	A vector of firm characteristics at which the ith household head is employed.
R_l	A vector of location-specific characteristics.

Endogeneity

In a simple regression model, it is assumed that the regressors (say 'X') are exogenous, fixed or have no relationship with the error term (e), i.e. Correlation (X′ e) = 0. If there is a correlation between these, then there is the problem of endogeneity which may lead to biases in the parameters being estimated and inconsistency. In other cases, if the relationship between the independent variable and the dependent variable is such that the dependent variable also influences the independent variable, then, there is also a problem. In our model, there exists possible simultaneity between the dependent variable (informal sector worker) and poverty, and as such, employing the OLS estimation technique may result in biased and inconsistent estimates.

The simultaneous equation framework is used to account for this possible endogeneity issue. Equation 1 is econometrically identified by the exclusion of two variables – number of other

household members working and number of other household members with more than at least a high school educational qualification. According to Amuendo-Dorantes (2004), these variables do not have any relationship with household heads' decision to participate in the informal sector other than through household poverty. They contribute to the income of the household, which thus affects the poverty level of the household. With that said, the variables are included in the poverty equation (equation 2). Also, the variable "firm size" is excluded from equation two and included in the first equation instead. The relationship between the size of the firm and the poverty status of the household is not pronounced other than through its link with the household heads' participation in the informal sector. Equation one and two are thus econometrically identified.

Multicollinearity

In appendix A, table 11 shows the collinearity diagnostics for the variables in the first regression, showing the values of the variance inflation factor (VIF). The VIF indicates the level of multicollinearity in a given model, measuring the impact of collinearity among the variables in the model. Multicollinearity in a model is undesired as it has the potential of increasing or inflating the standard errors thus causing some variables to be statistically insignificant when they should be significant (Daoud, 2017). Thus, it is important to check for multicollinearity in any regression model. The higher the VIF, the higher the correlation among the independent variables. The rule of thumb for interpreting the VIF id that values of the VIF greater than 10 indicates high multicollinearity and is a major cause for concern. However, in our model (table 11, appendix a), the collinearity diagnostics indicate that there is no cause for concern.

The second research question is aimed at analyzing the implications of labour participation in the informal sector on poverty (measured using consumption expenditure) and multidimensional

poverty in Ghana. (Yakubu et. al., 2014) model multidimensional poverty as a function of the number of hours worked per day, mode of operation, the legal status of the business, earnings per day, savings per day, and educational status of the head of household.

In line with the second question and objective, these models are formulated:

$$\mathbf{MDP_i = \alpha + \beta X_i + \varepsilon_i}$$

$$\mathbf{UDP_i = \alpha + \beta X_i + \varepsilon_i}$$

Where;

MDP_i is multidimensional poverty of household i,

UDP_i is the log of consumption expenditure of household i

X_i is a vector of explanatory variables including the average number of hours worked per day of household head; mode of operation (full-time or part-time); mode of doing business; personal characteristics; household characteristics.

ε_i is a random error.

This equation is estimated using OLS since the dependent variable is continuous. The second objective determines how the characteristics of the informal sector work affect the households' unidimensional and multidimensional poverty level.

4.4 Justification of the Variables Used

4.4.1 Dependent Variables

Poverty is traditionally measured at the household level, whereas information on personal characteristics (especially those that affect work), the economic activity and human capital are mostly at the individual level. Amuendo-Dorantes (2004) argues that household heads may decide to work in the informal sector as a last resort - if they cannot find better jobs in the formal sector- to cater for the basic needs of the household; food, clothing, shelter, and fuel requirements, a lack

of which deems the household as poor. This study therefore carries out the analysis at the household level using the data on the household head.

The first part of the study has two equations – the first dependent variable is 'informal sector worker', a binary variable that determines whether the head of the household works in the informal sector or not. This is related to the first research question which is to find the determinants of participation in the informal sector and its poverty implications. The informal sector worker takes a value of one, and zero otherwise. The second equation is modeled to get the implication of the informal sector work on poverty (measured by the poverty line), taking a value of one if the household is poor, and zero otherwise. The upper poverty line is GH¢1,760.8 per adult equivalent per year and the extreme or food poverty line is GH¢982.2 per adult equivalent per year for 2016/17 (GLSS 7). For the purpose of this study, the upper poverty line is used to determine if a household is poor or nonpoor. A household whose consumption expenditure falls below GH¢1,760.8 per adult equivalent per year is considered to be poor.

The second part of the study has two outcome variables – unidimensional poverty (UDP) measured by consumption expenditure and multidimensional poverty (MDP). These variables are continuous variables. UDP is measured by the log of yearly consumption expenditure per adult equivalent of each household under observation. Information on this variable can be found in appendix 7 of GLSS 7 (Ghana Statistical Service, 2018; p.102).

4.4.2 Explanatory Variables

The probability of working in the informal sector is a function of the socio-economic characteristics of individuals. The explanatory variables for the part of this study are grouped into

four different categories – personal characteristics, household characteristics, firm characteristics, and regional characteristics.

Personal characteristics include age, educational status, marital status, and religion. The household characteristics include household size, the poverty status of the household, the number of household members working and those working in the informal sector. The firm characteristics include the occupation, industry and firm size. The regional characteristics include regions and location (urban or rural).

Age

According to literature, age is a very important variable in determining informal sector employment Basbay et. al. (2018). Studies have posited a u-shaped relationship between this explanatory variable and informality (Williams and Martinez, 2014). For this reason, the square of age is added as a dependent variable. It is hypothesized that the youth tend to be more involved in the informal sector because they find it difficult to secure jobs in the formal sector. Also, the formal sector organizations may be inclined to select a middle-aged person for a job on the assumption of more experience. Further, the retired may likely be able to find jobs in the informal sector.

Level of education

According to Henley et. al. (2008), there is a strong association between lower levels of education and informality. Other studies have shown that there is a positive relationship between having higher education and being formally employed (AfDB, 2010). According to Oviedo et.al (2009), there is an incentive for individuals with lower levels of education to operate in the informal sector. *The level of education of the household head is based on the response to the question "what is your highest level of education attained?"* Various studies have shown the importance of

educational credentials in securing even the most "unskilled" manual jobs (Neckerman, 1997; Collins et.al, 2019). According to Livingstone (2010), "…over the past century higher formal education credentials have increasingly been used as criteria for job entry". The minimum educational criterion used as a means to secure a job in the formal sector cannot be overemphasized. In the words of Adams et. al, (2013), "secondary and higher education appear to be the passport today for entry into the formal sector…". Thus, the education variable is a categorical variable with individuals with no education and basic education being the reference group, secondary education, and tertiary education as the alternative groups.

Marital status

A recent study by Jordan and Zitek (2012) reported on an experiment carried out on employee perception of marital status revealed a biasedness against married women. Accordingly, married men were favored as employees than married women. The study also revealed that participants in the experiment believed that the productivity of recently married women would take a downward spiral. The opposite was predicted for recently married men. Also, Bremmer and Kesselring (2004) reported in a study that, increasing rates of divorce could explain why women are participating more in the labour force. Thus, marital status is included as an independent variable to find its effect on household heads' decision to participate in the informal sector.

The marital status is based on the response to the question, "what is your present marital status?". It is recoded into a dummy (0 for not married and 1 for married). All divorced and single individuals are included in the not married category, whiles the married and cohabiting individuals are categorized as married.

Religion

Several studies have investigated the relationship between religion and a woman's career decision. Rogers and Franzen (2014) study such a relationship and report that women choose not to work outside of their homes in communities where there is a greater conventional religious influence. King and Williamson (2010) also report that a strong affiliation to a religion can influence his expectations on his job environment and job satisfaction. For this reason, this study posits that religion can affect an individual's choice of work. The religion variable is recoded into three categories – no religion and other religion, Christianity, and Islam- based on the question, "what is your religious denomination?".

Household size

There have been findings from studies that suggest that large family size may have a negative effect on the career patterns of women, more so than men (Cools et. al. 2017; Adda et.al. 2017). Research has also shown that an individual with a large household size may be influenced to work in the formal sector. The household size is included as an independent variable in the first equation. It is calculated as a sum of all household members determined with the question, "are you a household member?".

Other variables

Other variables controlled for include the main occupation of the household head, the number of household members in the informal sector, access to NHIS coverage, the firm size, location, and region. According to Garcia-Andres et. al. (2019), there exists a relationship between intergenerational employment choices. It is believed that the number of household workers in the informal sector may have a strong influence on the decision of the household head to participate

in the informal sector. To capture any potential behavior among family members, the variable 'household members working in the informal sector' is constructed.

Danquah & Ohemeng (2017) report that the national health insurance scheme (NHIS) in Ghana was established as a pro-poor intervention with the aim of improving the lives of the poor by giving them access to better health care. This suggests that, enrolling on the NHIS reduces the likelihood of poverty. This variable is coded into three categories – 0 for those who do have not registered on any scheme, 1 for those who have registered but currently have no coverage, 2 for those who have registered on either NHIS or private scheme or both private and NHIS and are currently covered.

Amuendo-Dorantes (2014) establishes in a study that there is a relationship between the firm size and employment in the informal sector. The size of the firm may determine the resources available to the firm to employ labour with all the necessary conditions.

In the case of location (rural or urban), studies have shown that rural folks tend to be more involved in the informal sector (ILO, 2018).Some likely variables that may be significant include tenure and potential experience (the number of years an individual worked without schooling (see Orlando, 2001)), which may influence the decision to participate in the informal sector. However, the survey data did not have questions to enable the generation of such variables. Further research may need to collect their data in addition to the survey data to get all the necessary information. This, in by no means, affects the results of this study since there are enough variables.

For the second part of the study, the explanatory variables can also be grouped into three (3) categories: informal sector characteristics, personal characteristics, and household characteristics. The informal sector characteristics include the average hours of work, mode of operation, industry,

and mode of doing business. The personal and household characteristics are the same as given above.

Average hours of work

Baah (2007) noted that the average hours of work for employees in the informal sector is 50% higher than the stipulated hours of work in the formal sector in reference to the Labour Act (Act 651). It can be inferred that their long hours of work can have an adverse effect on their health resulting in them spending the meagre income they get on hospital bills hence likely to make them poor. This variable is derived from the question "what is your average hours worked per day?"

Business Mode

Is derived from the question "what is the enterprise's main mode of doing business?" There are four options available: structure outside household, open space, table top, and structure within household, which is coded 0 – 3 respectively, with the reference being "open space". Open space includes those working in the markets or on the streets, table tops includes those who display their wares on small tables, and structure within or outside household includes kiosks and containers set within or outside the household premises. It is hypothesized that the open space poses much of a risk to the worker and so will more likely increase the multidimensional poverty level and reduce consumption as compared to the other options. In addition, persons who work in elementary occupations such as street vending, that is, in the open space, earn the least average monthly income amongst workers in all occupations (GSS, 2016).

Employment status

The first hypothesis of informal sector implies that some workers choose to work in the informal sector where they are likely to be more productive (Heckman and Sedlacek, 1985). The employment status of a worker in the informal sector is likely to affect his poverty level, whether unidimensional or multidimensional. It is conjectured that, own account workers with employees in the informal sector are likely to be less poor or even richer than the other workers in the informal sector. This variable is coded as 0 – paid employee in the informal sector, 1 – casual worker, 2 – self-employed with employees, 3 – self-employed without employees, and 4 – contributing family worker.

4.5 Data Types and Source

The study employs data from the seventh round of the Ghana Living Standard Survey. This survey was conducted in the year 2016/2017. The data incorporates an additional set of information on the non-farm enterprise. The survey was carried out in two phases. During the first phase information was obtained from households about the activity of individuals to identify households that have non-farm enterprises. The head of the household or the person responsible for the enterprise is part of the sample frame for the next stage. In the second phase, the sample selected was questioned about the economic unit he or she is responsible for. Questions are also asked on other workers in the economic unit (paid employees, contributing family workers) and the entrepreneurs' household members.

A module is included to gather information on the non-farm enterprises in the household. The latest survey GLSS 7 is an improvement of the sixth round in terms of the number of respondents interviewed (about 15,000 households in 1,000 Enumeration Areas (EAs), consisting of 561 (56.1%)

rural EAs and 439 (43.9%) urban EAs). The survey was spread over 12 months to ensure a continuous recording of household consumption and expenditures and changes occurring thereof. One household questionnaire, divided into Part A and Part B, was administered. Precaution was taken to minimize the errors that often occur during the coding process by pre-coding almost all the questionnaires.

The survey data is used because it provides essential information needed to analyse the household services and standard of living. It contains the necessary information needed on the personal (age gender, marital status, educational levels), household (household size, poverty levels of the household, etc.) and non-farm enterprise characteristics. The survey also captures information on the economic activities of the members of the household.

4.6 Empirical Results / Discussions

4.6.1 Summary Statistics and T-Test

The tables 4.3a to 4.3e presents the summary statistics of the representative sample of the study based on the gender of the household head. With about 68 percent of the sample as males and about 32 percent as females, the data showed that the average age of household heads in the informal sector was 43 years - the female heads were slightly older (44 years) than the male heads (43 years) on average.

Statistics of marital status also showed that, a greater proportion (88.6 percent) of male household heads were married as against a mere 32.9 percent of female heads. More (62.6 percent) of the females lived in the urban areas than the males (54.8 percent). Most of the household heads were religious, falling into one of either categories of religion, with only about 4 percent belonging to no religion (see table 2 in appendix A).

The results of the household size of the participants demonstrated that on average, female-headed households had a smaller household size (about 4 household members) and a maximum of 14 members than the male-headed households who had on average 5 members and a maximum of 21.

Also, a typical female-headed household had about two household members who had a job and two household members who worked in the informal sector. This is slightly lower than a male-headed household where on average three household members had a job, with a minimum of zero and a maximum of 15, and two members who also worked in the informal sector.

Still on economic activity, in table 4.3d and 4.3e, it is revealed that less than 10 percent of both male and female heads worked part-time, with the majority having a regular job. Only about 7 percent of males worked part-time about 9 percent of females worked part-time.

On average, a male household head worked 8 hours per day while a female head worked 7 hours per day. Also, table 6 in appendix A shows that females mostly do business on table tops (about percent 40.4 percent) whiles males mostly conduct their business in the open space, including the markets or on the streets (35.8 percent).

As shown in tables 4 and 5 in appendix A, female household heads were predominantly employed in the wholesale and retail trade industry (46.51 percent) or in the manufacturing industry (23.6 percent) and the male household heads dominated in the agriculture, forestry and fishing industry (40.48 percent). In terms of occupation, females were mostly engaged in the service occupation (about 43.4 percent) whiles the males were mostly found in the skilled agriculture or fishing occupation (39.99 percent).

Table 1 in appendix A provides information on the educational background of the household heads. The information suggests that majority of the household heads have poor educational background,

with the females faring the worst. Majority of the household heads had completed only basic education, with a higher percentage for females (87.88 percent) than for males (72 percent) (see table 1 in appendix). Only a small percentage of male household heads (9.3 percent) had tertiary education which is still higher than their female counterparts (1.6 percent). This suggests that more needs to be done in terms of educating the girl-child.

This study takes interest in one main sector - the informal sector. The data shows that about 85.7% of all production units are in the informal sector, while 14.3% are in the other sector. Out of this, about 87.25% of the informal sector units keep no account, 12.33% keep unaudited accounts, while a mere 0.43% keep audited accounts. In the other sector, still, a high percentage (70.56%) of the economic units do not keep accounts, while a few (2.40%) keep audited accounts with the remaining 27.04% keeping unaudited accounts (see table 7 in appendix A). Also, on average, there are approximately 2 workers in a typical informal sector firm.

In table 4. 2, it indicates that an informal sector worker earns about GH₵ 762.3 per month. The average monthly earnings for a worker outside the informal sector (GH₵ 1246) is over 60 percent more than that of an informal sector worker.

Table 4 2: Average Earnings for Informal Sector Workers

Variable	Mean	Std.Dev.	Min	Max
Earning per month (Informal Sector)	762.228	651.576	40	4652
Earning per month (Formal Sector)	1246.105	1386.19	45	12000

It is therefore not surprising to find that while about 21 percent of informal sector workers are poor, only 5 percent of workers outside the informal sector are poor (see table 8 in appendix A). Tables 4.3a and 4.3b show that male-headed households in the informal sector are poorer in

comparison with female-headed households. While 9.5 percent of female headed households are poor, 14.01 percent of male-headed households are poor. However, multidimensionally, female-headed households have a higher multidimensional poverty index (0.27) on average compared to their male counterparts who have an average MPI of 0.19, as shown in tables 4.3d and 4.3e.

Table 4 3: Summary Statistics by Gender

Table 4 3 a**:** Male Estimation sample cmp Number of observations = 2,812

Label	Mean	Standard Deviation	Min	Max
Poverty status (%)	0.1401	0.3472	0	1
Age in years	42.6906	11.8499	18	87
Marital status (%)	0.8855	0.3185	0	1
Education (%)				
Basic	0.693	0.461	0	1
Secondary	0.198	0.398	0	1
Tertiary	0.106	0.307	0	1
Religion	1.0658	0.5161	0	2
Household size	4.7667	2.5542	1	21
No. Of hh members working in informal sector	2.2255	2.2259	0	15
No. Of hh members working	2.7386	2.1406	0	15
Occupation	3.1134	1.2676	1	5
Industry	2.1579	0.8519	1	3
Location (%)	0.5477	0.4978	0	1

Table 4 3 b: Female Estimation sample cmp Number of observations =1,330

Variable	Mean	Std.Dev.	Min	Max
Poverty status (%)	0.095	0.294	0	1

Age	44.182	12.808	17	88
Marital status (%)	0.329	0.470	0	1
Religion	1.029	0.320	0	2
Household size	3.513	2.038	1	14
No. Of hh members working in informal sector	1.517	1.665	0	13
Education (%)				
No education / Basic	0.856	0.352	0	1
Secondary	0.119	0.324	0	1
Tertiary	0.022	0.146	0	1
No. Of hh members working	1.802	1.678	0	13
Occupation	2.780	1.009	1	5
Industry	2.553	0.678	1	3
Location (%)	0.626	0.484	0	1

Table 4 3 c: Head Estimation sample cmp Number of observations = 4,140

Variable	Mean	Std.Dev.	Min	Max
Age in years	43.16884	12.1852	17	88
Gender (%)	.3207729	.4668301	0	1

Table 4 3 d: Male Estimation sample regress Number of observations = 450

Labels	Mean	Std.Dev.	Min	Max
MDP	0.193	0.149	0	0.667
Ln_consumption	8.149	0.711	5.660	9.827
Average hours worked per day	8.076	3.856	1	24
Average hours sq	80.049	88.458	1	576
Work mode (%)				

Part-time	0.069	0.254	0	1
Regular	0.931	0.254	0	1
Industry				
Agriculture	0.391	0.489	0	1
Mining, Manufacturing	0.236	0.425	0	1
Services	0.373	0.484	0	1
Business mode (%)				
Structure outside hh premises	0.244	0.430	0	1
Open Space	0.289	0.454	0	1
Table top	0.213	0.410	0	1
Structure within hh premises	0.253	0.435	0	1
Education (%)				
No education / Basic	0.711	0.454	0	1
Secondary	0.198	0.399	0	1
Tertiary	0.091	0.288	0	1
Age in years	42.633	10.592	20	68
Region (%)				
Western	0.111	0.315	0	1
Central	0.147	0.354	0	1
Greater Accra	0.124	0.330	0	1
Volta	0.151	0.359	0	1
Eastern	0.067	0.250	0	1
Ashanti	0.087	0.282	0	1
Brong Ahafo	0.102	0.303	0	1
Northern	0.082	0.275	0	1
Upper East	0.062	0.242	0	1
Upper West	0.067	0.250	0	1
Location (%)	0.451	0.498	0	1
No. of HH members working	3.298	2.379	0	15
Household size	5.396	2.927	1	21

Note: HH means household

Table 4 3 e: Female Estimation sample regress Number of observations = 248

Labels	Mean	Std.Dev.	Min	Max
MDP	0.270	0.195	0	0.8
Ln_consumption	8.304	0.645	5.766	9.849
Average hours worked per day	7.415	3.290	1	20
Average hours sq	65.770	52.529	1	400
Work mode (%)				
Part-time	0.085	0.279	0	1
Regular	0.915	0.279	0	1
Industry (%)				
Agriculture	0.117	0.322	0	1
Mining, Manufacturing	0.383	0.487	0	1
Services	.5	0.501	0	1
Business mode (%)				
Structure outside hh premises	0.149	0.357	0	1
Open Space	0.262	0.441	0	1
Table top	0.343	0.476	0	1
Structure within hh premises	0.246	0.432	0	1
Education (%)				
No education / Basic	0.875	0.331	0	1
Secondary	0.105	0.307	0	1
Tertiary	0.020	0.141	0	1
Age in years	44.718	10.977	17	69
Region (%)				
Western	0.097	0.296	0	1
Central	0.153	0.361	0	1
Greater Accra	0.125	0.331	0	1
Volta	.25	0.434	0	1
Eastern	0.069	0.253	0	1
Ashanti	0.137	0.345	0	1
Brong Ahafo	0.073	0.260	0	1
Northern	0.024	0.154	0	1

Upper East	0.040	0.197	0	1
Upper West	0.032	0.177	0	1
Location (%)	0.605	0.490	0	1
No. of HH members working	2.367	1.808	0	8
Household size	4.077	2.235	1	13

Note: HH means household

This study seeks to reveal that there are gender disparities in certain characteristics among household heads which influences their decision to participate in the informal sector. Thus, a t-test is conducted on a sample of 4487 household heads made up of 1607 females and 2880 males to investigate the statistical significance of the differences we see in some selected variables.

Table 4.4 contains the gender-based mean values of selected variables, mean differences, and their corresponding p-values which show significant relationships.

In the Table 4.4, the p – values suggest that at the 5 percent level of significance, all the variables are significant. This means that, men and women in the informal sector differ significantly in their age, marital status, industry, employment status, poverty levels, education, and even their household characteristics.

From the table, it is revealed that there is a positive significant mean difference of 0.071 between males and females' unidimensional poverty level, indicating that indeed male headed households are poorer than female headed households.

Table 4 4: Two-sample T Test of Selected Outcomes and Gender

Variable	**Mean (male)**	**Mean (female)**	**Difference**	**Std. error**	**T_ value**	**P_ value**
Poverty Status	.234	.163	.071	.013	5.700	0
Multidimension Poverty	.209	.265	-.055	.007	-8.1	0

Age in years	43.983	47.262	-3.280	.419	-7.850	0
Marital status	.900	.310	.591	.012	51.800	0
Household size	5.224	3.700	1.524	.084	18.100	0
No. of HH members working	3.062	1.952	1.110	.069	16.200	0
No. Of HH members working in informal sector	2.945	1.927	1.018	.070	14.700	0
Education	.276	.117	.159	.015	10.650	0
Average hours worked per day	7.941	7.336	.606	.262	2.300	.021
Status in job	1.768	2.851	-1.083	.047	-22.989	0
Buzz mode	1.430	1.673	-.243	.042	-5.8	0

Source: Author's own construct, 2020

On the other hand, there is a negative significant mean difference between males and females' multidimensional poverty index, indicating that multidimensionally, female headed households are poorer. This then proves that in measuring poverty, one should consider all the facets of this multidimensional phenomenon.

Moreover, the results indicate that male and female heads differ significantly in their age, educational level, and marital status. Majority of female heads are older, less educated, and single. This contributes significantly on their decision to participate in the informal sector.

However, the results indicate that males work more hours than females and may work more in the open space, while females were involved more in table top ventures. Also, the "status in job" statistic reveals that males are mostly self-employed with employees while females are mostly self-employed without employees (see Tables 9 and 10 in appendix A).

4.6.2 Determinants of informal sector work and poverty implications

Table 4.5 displays the determinants of informal sector work in Ghana and its implications on poverty. It is worth noting that, there are different factors that influence participation in the informal sector for males and females. For female-headed households, the poverty status, some personal characteristics of the household head, and some household characteristics are the only factors that can influence the female's decision to participate in the informal sector. Other firm, regional, and location characteristics do not influence this decision. However, these other factors affect a male's decision to participate in the informal sector also.

First, there is a positive and highly significant relationship between household poverty and households' participating in the informal sector for both male and female-headed households. The reverse also holds true - households participating in the informal sector are more likely to be poor. This finding suggests that the notion of informal sector work being involuntary (dualist school of thought) may be true in the case of Ghana. That is, participants in the informal sector in Ghana may have no choice than to work in that sector to cover their minimum living expenses. This conclusion is not far-fetched. It also suggests that, although the informal sector in Ghana may be a source of livelihood for the poor, there may be unfavorable conditions of work in the sector, including low earnings, which ultimately makes the participants poor. This is consistent with other studies done in this regard (See Orlando, 2001; Schiller, 2001; Amuendo-Dorantes, 2004; M. Chen et al., 2019) and supports the duality theory of informality.

We also find that, while the age of the household head negatively affects his or her decision to work in the informal sector, it is highly significant for females than for males, but has no effect on household poverty, holding other variables constant. Thus, as the household head grows older, the probability of participating in the informal sector reduces.

As a person ages, the desire to work in a more stable job increases. The formal sector provides that kind of stability in terms of regular income flow, social security benefits, and other types of benefits that cannot be provided in the informal sector. In other words, the formal sector may provide better conditions of service and may provide stability when a person gets to the pension age i.e. when he grows older and cannot afford to work again. Thus the probability that a young person may be in the informal sector will be higher than that of an older person. Osei-boateng & Ampratwum (2011) confirms this in their report on the informal sector in Ghana; persons within the ages of 15-35 are mostly found in the informal sector. Research has also shown that 94.9% of persons within the ages of 15 and 24 can be found in informal employment (ILO, 2018).

It is worth noting that, above a certain age, the probability of participating in the informal sector increases for females. This may stem from the fact that, women at certain points in their lives, self-select themselves into less demanding jobs in order to start a family and manage the home (Stumbitz et.al., 2018). Most informal sector jobs are time flexible and may allow for 'matured' women to participate and still raise a family, especially in the kind of industry that most females veer into – services industry.

Thus, age squared being insignificant for males with a coefficient of zero (0) will mean that there is a negative linear relationship between age and the decision of males to participate in the informal sector. This implies that, for males, the probability of participating in the informal sector continues to dwindle as he grows. Males are not required to raise a family like females are, but they have the greater responsibility of providing for their families, and even more so as they age. Therefore, the quest to be in a secure and well-paying job with better terms of employment such as health benefits for family inclusive, pension, etc., as provided in the formal sector, will be even stronger as they

grow. Interestingly though, a married man also has a higher probability of participating in the informal sector than an unmarried man, which defies the logic above.

While marriage has no significant impact on a female household head or on household poverty, the size of the household is significant and has an adverse impact on both the male and female household heads' informal sector status and the household poverty, ceteris paribus. Thus, the larger the household size, the less likely is the head of the household to work in the informal sector, and the more likely the household is to be poor irrespective of the gender of the household head. This suggests that, informal sector jobs in Ghana may not provide sufficient means to cater for a large family size. Previous literature also confirms this finding. For instance, Henley et. al. (2009) find that the number of dependents in household is associated with a low likelihood of informality.

However, as the number of household members working in the informal sector increases, the probability that the household head will work in the informal sector also increases, but it also reduces household poverty. Given the number of household members working in the informal sector, it may be relatively easier for a household head to also get access to some form of job in the informal sector comparative to finding job in the formal sector. It may also be that the collective efforts of the family members give rise to a form of informal sector enterprise since informal enterprises are mostly funded by private savings. This conforms to the conclusions drawn by Henley, Arabsheibani, Bank, & Brasilia (2009) and Garcia-Andres et. al. (2019) that there exists a relationship between intergenerational employment choices. Thus, a household head may be influenced to start a business in the informal sector if there are numerous household members also working in that sector. And the collective effort of the workers, though in the informal sector, reduce the household poverty.

Current literature find education as an important variable in determining work decisions of individuals and also household poverty (See Orlando, 2005; Hendy & Zaki, 2013; Sanjay, 2017). Though this may be the case, education remains a significant factor for only men in this sample. However, it is consistent with literature that men with higher education are less likely to participate in the informal sector than those with little or no education, with other variables held constant. This notwithstanding, education has no significant influence in the female head's decision to participate in the informal sector and on the poverty status. In table 4.3b, it is revealed that about 86 percent of women in the informal sector in our sample had only basic education. This suggests that education should not be a major policy tool for women in the informal sector.

Another significant variable in determining the decision of a male household head to participate in the informal sector is the size of the firm. The results indicate that informality is mostly associated with micro firms than small, medium, or larger firms. Larger firms tend to formalize because of opportunities they might get but micro firms (less than 5 employees) may not want to formalize because of perceived costs of formalization (Heintz, 2012; Koto, 2018). In this study, all firms with five or more employees are termed as "other".

Finally, the location and regional characteristics included in the regressors indicate that the residence of the household may have an influence on informality and household poverty. In Ghana, the probability of working in the informal sector is increased when a male head resides in the Greater Accra region relative to the Northern parts.

Similarly, residing in an urban location positively affects males' participation in the informal sector. In the urban setting, the perception is that unnecessary costs associated with formalizing is evaded if working in the informal sector while the formal sector in a rural setting is associated with

increased income and prestige. As noted by Kar & Marjit (2009), the majority of informal sector workers are present in the urban areas.

Table 4 5: Simultaneous Equation Probit Regression Results with CMP. Estimates of the Probability that A Household Head Participates in The Informal Sector and Its Poverty Implications

	(1)	(2)	(3)	(4)
	Men		**Women**	
VARIABLES	Informal Sector Work	Poverty status	Informal Sector Work	Poverty status
Informal sector work	….	1.813***	….	1.945***
		(0.154)		(0.229)
Poverty status (poor)	1.880***		1.917***	
	(0.166)		(0.213)	
Age in years	-0.031*	-0.002	-0.087***	0.001
	(0.0163)	(0.0035)	(0.0335)	(0.0049)
Age squared	0.000	….	0.001***	….
	(0.0002)		(0.0003)	
Married (yes)	0.197**	0.013	0.126	-0.134
	(0.0979)	(0.121)	(0.166)	(0.212)
Religion (Ref: none or other)				
Christianity	-0.200	….	-0.366	….
	(0.129)		(0.507)	
Islamic	-0.068	….	-0.402	….
	(0.143)		(0.573)	
Household size	-0.284***	0.262***	-0.427***	0.510***
	(0.0270)	(0.0412)	(0.0458)	(0.0866)
Number of household members	0.440***	-0.208***	0.892***	-0.329***
in the informal sector	(0.0297)	(0.0373)	(0.0966)	(0.0869)
Education (Ref: none or basic)				

Higher education	-0.115*	-0.104	-0.395	-0.070
	(0.0688)	(0.0797)	(0.329)	(0.427)
Occupation (Ref: managers/professionals)				
Service/Sales	0.052	0.085	0.116	0.247
	(0.119)	(0.164)	(0.350)	(0.909)
Skilled Agriculture and fishery	0.105	-0.127	0.081	-0.059
	(0.208)	(0.224)	(0)	(2.419)
Craft and trade work	0.083	0.133	0.147	0.304
	(0.152)	(0.177)	(0.399)	(0.962)
Others	0.032	0.080	0.797	0.021
	(0.130)	(0.170)	(0.526)	(0.983)
Main industry (Ref: Agriculture)				
Mining, manufacturing, construction	0.116	-0.537***	-0.007	-0.505
	(0.180)	(0.168)	(2.069)	(1.593)
Service and others	-0.056	-0.481***	0.001	-0.706
	(0.165)	(0.158)	(2.106)	(1.635)
Firm size (small, medium, large)	-0.498***		-0.583	
	(0.163)		(0.542)	
REGION (G. Accra)				
Western	0.008	0.238	0.076	-0.191
	(0.110)	(0.233)	(0.264)	(0.432)
Central	-0.045	-0.145	-0.158	0.247
	(0.116)	(0.264)	(0.220)	(0.409)
Volta	0.083	0.387*	0.090	0.375
	(0.130)	(0.224)	(0.223)	(0.349)
Eastern	0.025	-0.082	0.021	-0.026
	(0.127)	(0.267)	(0.184)	(0.382)
Ashanti	0.047	0.119	0.139	-0.047
	(0.120)	(0.247)	(0.180)	(0.374)
Brong-Ahafo	0.122	0.076	0.364	0.180

	(0.130)	(0.244)	(0.287)	(0.380)
Northern	-0.004	0.441*	0.553	0.725
	(0.192)	(0.248)	(1.610)	(1.500)
Upper East	-0.457***	0.851***	-0.270	1.072***
	(0.140)	(0.232)	(0.295)	(0.379)
Upper West	-0.372**	0.924***	0.0567	1.030***
	(0.166)	(0.248)	(0.424)	(0.393)
Location (urban)	0.193***	-0.472***	-0.130	-0.597***
	(0.0659)	(0.0697)	(0.201)	(0.178)
Number of household members working	….	-0.034	….	-0.112
		(0.0566)		(0.0987)
Number of household members with HS	….	-0.014	….	-0.160**
		(0.0325)		(0.0721)
Constant	1.907***	-2.934***	3.460	-3.634
	(0.426)	(0.371)	(3.097)	(2.696)
Observations	2,812	2,812	1,330	1,330

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

4.6.3 Characteristics of the Informal Sector That Impacts on the Welfare of the Household and Those That Influence Their Multidimensional Poverty Level (MDP)

Table 4.6 and 4.7 below display the results form estimating the characteristics of the informal sector that influences the households' multidimensional poverty level, considering the gender of the household head. There are 6 regression models in each table, 3 for each gender specific equation. The first two equations accounts for the characteristics in the informal sector and how it affects poverty, which is our baseline model. Then, the personal characteristics of the household heads are controlled for in the next two equations. Finally, the household characteristics are also

accounted for in the last two equations. This is to help identify the informal sector characteristics that affect a household's poverty level if the personal and household characteristics are also accounted for.

Baah (2007) noted that the average hours of work for employees in the informal sector is 50% higher than the stipulated hours of work in the formal sector, which is 8 hours as per the labour Act in Ghana. However, the study showed that, the average working hours for the sample of informal sector workers was just as the labour Act requires, that is, 8 hours for men, and even slightly below that at 7 hours for females in the informal sector. The results in table 4.6 and 4.7 suggests a positive and significant relationship between average working hours and consumption for both male and female headed households. This suggests that, a household's consumption increases as the head of the household works more hours. This is consistent with the work of Yakubu et. al., (2014) who also found that operators in the informal sector can reduce the level of poverty by working for long hours. However, this variable has an inverted u-like relationship with consumption, such that, at a point, an increase in the average hours of work reduces consumption. This finding suggests that there is a limited time period that one can allocate to work, more than which reduces and individual's consumption and thus increases unidimensional poverty measured by consumption expenditure. It is possible that those who dedicate too much time to work may not have earned enough income and as such decide to increase their hours of work. This may account for the inverted u- shaped relationship between average hours worked and the unidimensional poverty level.

It is also worth noting that, this variable is highly significant for females than for males. The summary statistics suggest that females are mostly represented in the service or sales occupation (table 5 in appendix A), are mostly self-employed without employees, and mostly conduct their

businesses on table tops, while males are mostly paid employees or self-employed with employees and are mostly in the agriculture, fishing or forestry occupation. The occupation of the female workers is flexible, can allow longer hours of work, and allows that working more hours brings in more income as compared to the males. Thus, the average working hours has a higher significance for females than for males.

However, this variable does not have any significant impact on the multidimensional poverty level of the household, which supports the statistic that the informal sector participants work the normal working hours and so may not have any significant impact on their health, education or standard of living as measured by the MDP. The labour market theory suggests that hours dedicated to work is a function of wages earned. But multidimensional poverty does not factor in income or wages earned. Then this finding makes sense.

Secondly, the results provided in table 4.6 and 4.7 suggests that the services industry is a highly significant factor in reducing poverty in all facets for males and in only unidimensional poverty for female-headed households, whiles the mining, manufacturing, and construction industry is only significant in reducing poverty for males, as compared to the agriculture industry. This finding has a lot of implications. First, it suggests that conditions of work in the agricultural industry may not be optimal, and earnings may be lower in that industry (Ranis & Stewart, 1999). The agricultural sector in Ghana offers the lowest wages to its participants while the mining sector boasts as the "most lucrative" sector in Ghana (Bank of Ghana, 2007).

Also, from the descriptive statistics, males are more (62.43 percent) represented in the mining, manufacturing, construction industry (see table 12 in appendix A). Females are also mostly represented in the services sector. Table 12 in appendix A reveals that close to 60 percent of

females are in the services industry, whiles about 37 percent of males are in this industry. Thus, while the services industry may contribute to both males and females' poverty levels, it is possible that the mining, manufacturing, and construction sector will only contribute to the males' poverty level.

Furthermore, this result shows the significant difference between male and female MDP. In table 4.7, it is shown that the MDP of the males is significantly reduced when the industry is taken into account, whiles it has no significant impact on the female's MDP. Apart from the fact that males are heavily represented in the industry, it is also possible that females in the informal sector are treated differently than their male counterparts in these industries. That is, males may be getting better conditions of work such that remaining in these industries as compared to the agricultural industry, reduces significantly their multidimensional poverty levels.

Still on the characteristics of the informal sector, it was revealed that the status of job in the informal sector had a significant impact on only males. In this regard, self-employed males with employees tended to increase consumption and thus reduce their level of unidimensional poverty as compared to having the status as paid employees. It has been shown already that males have a tendency to be self-employed with employees. Yamada (1996), in his study of urban informal employment and self-employment in developing countries found that most self-employed workers with employees in the informal sector, voluntarily remained in the informal sector, finding evidence supporting competitive earnings among these group. This supports the finding that poverty is reduced among only male self-employed workers with employees, meanwhile females are found to be self-employed without employees.

Regarding MDP, the study found that there was a positive significant relationship between male casual workers and multidimensional poverty of the household. That is, male casual workers had an increased level of MDP than paid employees. This finding may result from the fact that there are significant differences between the various employment of statuses of males as compared to females. Thus, moving from the status of a paid employee to a casual worker, for a male, will be so drastic of a change because of the vast difference in the treatments or conditions served in either statuses.

However, the conditions of service between the employment statuses for females may not be that significant to compel a great transformation that will impact on their poverty level if there was a change. That is to say, whether a female was employed in the informal sector as a casual worker or paid employee, the difference would not be that visible. However, female own-account workers without employees would give a different result. In table 4.7, it is shown that the level of MDP in a female-headed household is significantly increased if the head works as a self-employed without employees relative to being a paid employee. This suggests that there is significant difference between these two categories of employment status among females.

In the same way, the results indicate that the mode of doing business, that is, whether conducting business in the open space, table top, or in a structure within or outside the household, significantly affects the level of poverty for only female-headed households. Thus, the level of MDP in a female-headed household is reduced significantly if the household head conducts business on a table top, in a structure within or outside the household premise relative to conducting business in the open space, albeit less significant if the business is conducted in a structure within the household. Similarly, the unidimensional poverty is reduced for female-headed households if they conduct business on a table top or in a structure outside the household premise relative to being in an open

space. Kusakabe (2006) reported that in several studies on street vending, a reported approximately 30 to 40 percent of vendors respondents lived in women-headed families, worked longer hours per day, and received a meagre income that contributed to more than half of the household expenditure. Thus, the mode of doing business is very critical for women.

For the males, it does not matter the structure or mode of doing business, and so it has no significant impact on their poverty level because they mostly adapt to bad situations (risks faced on the streets) faster and can make the most out of every situation unlike females who have to struggle with other risks aside the general risks pertaining to working in the open space such as sexual harassments (Agadjanian, 2005).

Next, the personal characteristics of the household heads such as age, level of education, location, and region are included as regressors to account for the personal characteristics of the household heads. There's not much change in the initial regressors – the signs and significance remain the same for some but other variables lose their significance. Some of the new regressors however are significant.

For example, the average working hours becomes insignificant for the male model (r3), whiles it becomes less significant in the female model (r4) in Table 4.6. In the same way, the employment status remains significant for the male household but contributes lesser to poverty reduction when the personal characteristics are accounted for. For the female-headed household, one employment status (self-employed without employees) becomes significant, reducing consumption, thereby increasing the poverty level of the household relative to paid employees, but this variable becomes insignificant when the MDP is being considered. So, after accounting for the personal characteristics of the household head, the employment status no longer matters in influencing the

MDP level of the female-headed household, but has slight influence in the unidimensional poverty of the household.

In addition, while secondary and tertiary education is highly significant in reducing the level of MDP of a male-headed household, only secondary education is significant in reducing the level of MDP in a female-headed household. Meanwhile, education is not a significant factor in determining unidimensional poverty of a household. The magnitude of the decrease in the level of MDP for secondary education relative to having no education or only basic education is more for the female-headed household (0.136) than the male-headed household (0.072). This has several implications. First, education does not really impact on consumption of a household but affects other aspects of poverty like health or standard of living, as indicated by the significant MPI reduction. Next is the fact that, men in the informal sector have a higher need for higher education than women in this sector. This contributes to the hypothesis that males are mostly self-employed with employees and may remain in the informal sector voluntarily, unlike females who may remain in the sector for survival and thus may need just enough education to survive. This supports the finding in Table 4.5 that education is a significant factor in the decision of a male household head to participate in the informal sector.

Table 4 6: Estimating the Relationship Between Log of Consumption and Informal Sector Characteristics by Gender – Regression Results

	Male	Female	Male	Female	Male	Female
	r1	r2	r3	r4	r5	r6
VARIABLES	ln_consumption	ln_consum	ln_con	ln_con	ln_con	ln_con

Average hours worked per day	0.0554*	0.129***	0.00358	0.0840*	-0.0164	0.0343
	(0.0310)	(0.0476)	(0.0272)	(0.0495)	(0.0255)	(0.0458)
Average hours worked per day squared	-0.00272**	-0.00963***	2.03e-05	-0.00635*	0.000975	-0.00297
	(0.00130)	(0.00315)	(0.00115)	(0.00329)	(0.00108)	(0.00304)
Main industry (reference= agriculture, forestry, fishing)						
Mining, manufacturing, construction	0.680***	0.318	0.490**	0.252	0.482***	-0.00533
	(0.228)	(0.308)	(0.198)	(0.309)	(0.185)	(0.285)
Services and others	0.775***	0.601**	0.537***	0.487	0.502***	0.204
	(0.227)	(0.303)	(0.199)	(0.306)	(0.186)	(0.284)
Enterprise's mode of doing business (open space)						
Table top	-0.0950	0.378***	-0.104	0.343***	-0.101	0.362***
	(0.102)	(0.130)	(0.0880)	(0.128)	(0.0818)	(0.115)
Structure within household premise	-0.00166	-0.00128	0.0526	0.0125	-0.00232	0.0518
	(0.124)	(0.105)	(0.106)	(0.103)	(0.0989)	(0.0937)
Structure outside household premises	-0.0563	0.287**	0.0900	0.254**	0.0501	0.276***
	(0.110)	(0.113)	(0.0960)	(0.113)	(0.0896)	(0.104)
Status in Job (Paid employee)						
Casual worker	-0.229	-0.0200	-0.194	-0.357	-0.260*	-0.394
	(0.197)	(0.655)	(0.168)	(0.657)	(0.157)	(0.591)
Self-employed with employee	0.348***	0.155	0.415***	-0.211	0.241**	-0.0849
	(0.118)	(0.294)	(0.105)	(0.331)	(0.103)	(0.299)
Self-employed without employee	0.0967	-0.324	0.107	-0.568*	0.00603	-0.356
	(0.0994)	(0.275)	(0.0946)	(0.311)	(0.0901)	(0.282)
Contributing family worker	0.0174	-0.0499	-0.0274	-0.605	-0.157	-0.345
	(0.257)	(0.669)	(0.222)	(0.676)	(0.208)	(0.609)
Highest level of education (none and basic)						
Secondary			0.0807	0.0314	0.0606	-0.0584
			(0.0787)	(0.129)	(0.0734)	(0.117)

Tertiary			0.107	-0.382	0.100	-0.309
			(0.117)	(0.331)	(0.109)	(0.299)
Age in years			-0.0320	-0.0326	0.00370	0.00423
			(0.0229)	(0.0266)	(0.0221)	(0.0250)
Age squared			0.000255	0.000403	-0.000100	2.26e-05
			(0.000265)	(0.000290)	(0.000253)	(0.000271)
Regions (Reference: Greater Accra)						
Western			-0.190	-0.204	-0.203*	-0.103
			(0.127)	(0.164)	(0.118)	(0.149)
Central			-0.198*	-0.202	-0.145	-0.119
			(0.120)	(0.153)	(0.112)	(0.138)
Volta			-0.385***	-0.375***	-0.371***	-0.341***
			(0.125)	(0.136)	(0.116)	(0.122)
Eastern			0.0139	-0.253	-0.0169	-0.157
			(0.165)	(0.174)	(0.154)	(0.158)
Ashanti			-0.0418	-0.162	-0.0752	-0.197
			(0.125)	(0.145)	(0.117)	(0.131)
Brong Ahafo			-0.137	-0.257	-0.181	-0.273
			(0.123)	(0.190)	(0.115)	(0.172)
Northern			-0.379***	-0.587**	-0.344**	-0.534**
			(0.144)	(0.282)	(0.135)	(0.255)
Upper East			-1.062***	-0.813***	-0.917***	-0.628***
			(0.150)	(0.210)	(0.142)	(0.191)
Upper West			-0.934***	-0.228	-0.863***	-0.455
			(0.169)	(0.308)	(0.158)	(0.279)
Location (Urban)			0.364***	0.201**	0.309***	0.223***
			(0.0731)	(0.0851)	(0.0685)	(0.0768)
No. of hh members working					0.0297	0.000140
					(0.0359)	(0.0448)
Household size					-0.109***	-0.117***
					(0.0294)	(0.0354)
Constant	7.339***	7.667***	8.543***	8.874***	8.399***	8.670***
	(0.267)	(0.380)	(0.560)	(0.760)	(0.526)	(0.707)
Observations	281	222	281	222	281	222

R-squared	0.118	0.211	0.424	0.335	0.506	0.468

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 4 7: Multidimensional Poverty of Household Head by Gender – Regression Results

	Male	Female	Male	Female	Male	Female
	r11	r22	r33	r44	r55	r66
VARIABLES	MDP	MDP	MDP	MDP	MDP	MDP
Average hours worked per day	-0.00693	-0.0140	-0.00385	-0.00657	-0.00330	0.00291
	(0.00603)	(0.0153)	(0.00588)	(0.0157)	(0.00595)	(0.0160)
Average hours worked per day squared	0.000170	0.00128	2.57e-05	0.000672	-1.81e-06	5.51e-05
	(0.000253)	(0.00101)	(0.000248)	(0.00105)	(0.000252)	(0.00106)
Main industry (reference= agriculture, forestry, fishing)						
Mining, manufacturing, construction	-0.223***	0.0575	-0.206***	0.0975	-0.205***	0.0987
	(0.0443)	(0.0991)	(0.0429)	(0.0983)	(0.0431)	(0.0995)
Services and others	-0.242***	0.0315	-0.216***	0.0973	-0.215***	0.0974
	(0.0440)	(0.0974)	(0.0432)	(0.0970)	(0.0433)	(0.0989)
Enterprise's mode of doing business (open space)						
Table top	0.00881	-0.138***	0.00821	-0.136***	0.00817	-0.143***
	(0.0199)	(0.0419)	(0.0190)	(0.0405)	(0.0191)	(0.0402)
Structure within household premise	0.0290	-0.0626*	0.0202	-0.0611*	0.0210	-0.0728**
	(0.0241)	(0.0338)	(0.0229)	(0.0326)	(0.0231)	(0.0327)
Structure outside household premises	-0.0200	-0.137***	-0.0290	-0.117***	-0.0283	-0.130***
	(0.0213)	(0.0364)	(0.0208)	(0.0360)	(0.0209)	(0.0363)
Status in Job (Paid employee)						
Casual worker	0.0674*	0.311	0.0603*	0.264	0.0612*	0.256
	(0.0382)	(0.211)	(0.0364)	(0.209)	(0.0366)	(0.206)

Self-employed with employee	0.0359	0.135	0.00792	0.137	0.0107	0.121
	(0.0229)	(0.0946)	(0.0228)	(0.105)	(0.0241)	(0.104)
Self-employed without employee	0.0102	0.155*	-0.00970	0.123	-0.00811	0.102
	(0.0193)	(0.0883)	(0.0205)	(0.0989)	(0.0210)	(0.0983)
Contributing family worker	0.0336	0.0218	0.0263	0.0492	0.0282	0.0306
	(0.0498)	(0.215)	(0.0480)	(0.215)	(0.0486)	(0.213)
Highest level of education (none and basic)						
Secondary			-0.0722***	-0.136***	-0.0714***	-0.122***
			(0.0170)	(0.0409)	(0.0171)	(0.0408)
Tertiary			-0.0661***	-0.0254	-0.0658**	-0.0449
			(0.0254)	(0.105)	(0.0255)	(0.104)
Age in years			-0.00406	0.0141*	-0.00476	0.00761
			(0.00496)	(0.00844)	(0.00515)	(0.00872)
Age squared			4.62e-05	-0.000179*	5.39e-05	-0.000111
			(5.74e-05)	(9.20e-05)	(5.90e-05)	(9.47e-05)
Regions (Reference: Greater Accra)						
Western			-0.0119	0.0675	-0.0120	0.0609
			(0.0275)	(0.0522)	(0.0276)	(0.0519)
Central			-0.0146	0.0266	-0.0159	0.0147
			(0.0259)	(0.0484)	(0.0261)	(0.0481)
Volta			-0.00635	0.0251	-0.00659	0.0202
			(0.0271)	(0.0431)	(0.0272)	(0.0426)
Eastern			-0.0300	0.0568	-0.0288	0.0404
			(0.0358)	(0.0553)	(0.0360)	(0.0551)
Ashanti			-0.0519*	0.00668	-0.0514*	0.00491
			(0.0271)	(0.0461)	(0.0272)	(0.0457)
Brong Ahafo			0.00836	0.0555	0.00953	0.0469
			(0.0267)	(0.0604)	(0.0268)	(0.0601)
Northern			0.113***	0.208**	0.111***	0.189**
			(0.0312)	(0.0894)	(0.0315)	(0.0889)
Upper East			0.0757**	0.205***	0.0725**	0.184***
			(0.0325)	(0.0667)	(0.0331)	(0.0666)
Upper West			0.0356	-0.0254	0.0343	-0.0112

			(0.0366)	(0.0977)	(0.0368)	(0.0975)
Location (Urban)			-0.0366**	-0.0317	-0.0353**	-0.0367
			(0.0158)	(0.0270)	(0.0160)	(0.0268)
No. of hh members working					-0.00290	0.0235
					(0.00839)	(0.0156)
Household size					0.00398	-0.00396
					(0.00685)	(0.0124)
Constant	0.410***	0.173	0.522***	-0.131	0.521***	-0.0162
	(0.0518)	(0.122)	(0.121)	(0.241)	(0.123)	(0.247)
Observations	281	222	281	222	281	222
R-squared	0.165	0.112	0.322	0.269	0.323	0.293

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Another important finding from table 4.7 shows that age has a significant nonlinear relationship with the level of MDP in a female-headed household only. This relationship takes the inverted u-shape. Consequently, the level of MDP in a female-headed household increases, gets to a maximum, and then begins to fall as age increases, all other things being equal. While insignificant, the opposite is true for male-headed households. It was revealed in Table 3 that female heads are slightly older (44 years) than their male counterparts.

Women around that age are still in the child rearing bracket and from there, it is possible to infer that female heads have a higher responsibility of taking care of the household with the meagre income earned in the informal sector, which may not be able to provide for the household sufficiently. This may affect the health, education, and even standard of living of the household, which are the components of the MDP. In the interim, the level of MDP of the household may increase. However, as the female head grows past the child rearing age, it is assumed that the household size gets smaller as children grow and leave the household, thereafter reducing the level

of MDP. One of the indicators of MDP under the health dimension is that child died in the household within 5 years of collecting the survey data. So, it is also possible that a household may not be deprived in that indicator as the woman grows, whereof the MDP level is reduced.

This is plausible because after controlling for some household characteristics, it is revealed that the age of the female household-head no longer matters in the level of the MDP, but the household size significantly reduces consumption, hence increases the level of poverty.

For both male and female-headed households, as expected, living in an urban area reduces the poverty level of the household, slightly lower for women (0.201) than men (0.364). Being in the urban location positively impacts on poverty, no matter the dimension of poverty being studied. According to GSS (2012), poverty is a rural phenomenon. Also, relative to Greater Accra region, the Northern regions (northern, upper east, and upper west region) increases the chances of a household being poor, irrespective of the gender of the household head. The Northern regions, according to past reports from the Ghana Statistical Service have consistently recorded the highest incidence of poverty.

The results from Table 4.6 and Table 4.7 seem to suggest that policies targeted towards reducing unidimensional poverty may be also reliable in reducing the level of multidimensional poverty of informal sector households, but for some slight differences. They both also highlight the gender differences in achieving the respective objectives.

CHAPTER FIVE

SUMMARY AND CONCLUSIONS

5.0 Introduction

This chapter summarizes and concludes on the study on the determinants and poverty implications of informal sector work in Ghana, and gives the policy implications of the study.

5.1 Summary

Informal employment and employment in the informal sector are two concepts that have gained global considerations in recent years. In social, development and economic discourses, these concepts have revved up into several debates, and has taken a turn towards the implications for poverty reduction and development in developing countries. Studies have shown that informal employment and employment in the informal sector may have adverse effects on poverty reduction. However, attempts by several governments to slow down the activities or stop outrightly the activities in the informal sector has seen a less than fruitful results. In Ghana, over 80% of the population can be found in informal sector employment. This sector serves as a safety hub for the population, especially the poor, and in economic downturns.

Despite the numerous theoretical studies carried out in this field, there is still more to be done in terms of the empirical studies. In Ghana, few works have been done on the informal sector, and even less on its implications on poverty. As this discourse continues to gain global attention, still more efforts must be put into developing an internationally recognized and accepted definition of the concepts, which will aid in easy identification of the informal sector, and help in comparison among countries.

This study used data from the seventh round of the Ghana Living Standard Survey from Ghana Statistical Service, carried out between 2016 and 2017. Information gathered is from 1000 enumeration areas across the country.

The objectives of the study were to identify and analyze the determinants of participation in informal sector work in Ghana, explore the relationship between informal sector work and poverty in Ghana, and analyze the implications of labour participation in the informal sector on unidimensional and multidimensional poverty levels of households in Ghana. The dichotomous and continuous nature of the dependent variables allowed the use of both the probit and ordinary least squares regression methods for estimation. The stata 15 statistical package was used.

It was found that characteristics like industry, employment status, firm size, education, and location had a significant and greater impact on male-headed households while variables like age, mode of doing business significantly affected the female-headed households.

Regional characteristics and the size of the household affected both male and female-headed households.

5.2 Conclusion

The informal sector in Ghana acts as a safety net for most Ghanaians, especially in periods of economic downturns, with the size hovering above 80%. The sector plays an important role in developing economies. In Ghana, the contribution of the sector to the economy cannot be overemphasized. For poor households, this sector provides a means of gaining income and sustaining livelihoods.

Poverty, although has been halved (attainment of MDG 1), remains a major concern in Ghana. The number of people living in poverty continues to increase with the fall in the poverty incidence,

analyzed using consumption expenditure. The development of the MPI provides a basis for analyzing poverty from a different perspective, other than through income and consumption. This paper keenly focuses on analyzing the determinants of the informal sector and the characteristics of the informal sector that affects the level of unidimensional and multidimensional poverty of a household, taking into consideration, the gender dynamics involved.

First, the study finds that there are significant differences between male and female-headed households. The level of poverty in the gender specific households, measured by consumption expenditure and multidimensional poverty, the age, marital status, educational qualification, and employment status of the household heads, all differ by gender. Following this, there are certain characteristics of informal sector work that may have significant impact on males' poverty levels but not on females and vice-versa.

The study also finds that participation in the informal sector and poverty are positively related irrespective of the gender of the household head. Also, age has significant effects on participation in the informal sector, particularly for female-headed households than male-headed households. A larger household size may influence a household head against participating in the informal sector, higher education discourages participation in the informal sector for male headed households but has no substantial impact on female-headed households, and regional and location-specific characteristics influences participation in the informal sector. Thus, the informal sector in Ghana may follow the labour market segmentation theory.

Another major conclusion drawn from the study is that certain characteristics pertaining to the informal sector may affect the multidimensional poverty and not the unidimensional poverty of the households participating in the informal sector, and vice-versa. For example, the average hours

worked may affect the unidimensional poverty level of the household but not the multidimensional poverty level.

Factors such as the average hours worked per day, main industry of work, employment status, and some personal characteristics of the participants have weighty influence on the level of poverty of a household.

The study concludes that the approach to improving the lives of workers in the informal sector should be gender specific.

5.3 Policy Implications

The study has revealed that informal sector work is related to poverty and vice versa. Also, this study has shown that there are gender differences where the informal sector is concerned, and as such policies should be gender-specific in targeting the informal sector, especially in the area of welfare improvement and reduction in multidimensional poverty. The policy implications arising because of the main conclusions drawn from the study are as follows.

- The informal sector in Ghana is not an attractive sector and may have dire consequences on poverty reduction strategies. Therefore, policies should be made in the direction of formalizing the informal sector. In that sense, bureaucracies involved in business registration can be lessened to allow self-employed workers to register their enterprises.
- Secondly, the informal sector in Ghana may be a safety hub for the poor, and as such eliminating the sector completely may have negative effects on the poor. Therefore, policies should be put in place to ensure that the harsh conditions in the sector is minimized. For example, workers in the informal sector should have easy and rapid access to credit at low cost that may enable them to grow. Since low or no education is associated with

participation in the informal sector, good investment in human capital, especially for males, may reduce the level of informality in the country. Training programs should be carried out for those already in the sector. In other words, policies should target making the sector attractive for workers in the informal sector.

- Social protection should be improved to guarantee a widespread coverage which does not depend entirely on being in the formal sector, because it was found that females in the sector are lowly educated and the informal sector may be their only option. This can be done by strengthening labour market regulations and encouraging well-organized cooperatives. This will ensure the dissemination of timely market information and may induce trust in institutions. Trust in the system may encourage useful dialogues between informal sector participants and the government through the cooperatives, informing the government on the needs specific to the sector and suggesting measures to meet those needs and improve the sector consequently.
- For females in the informal sector, education is not really an important factor but the mode of doing business is very important. Thus, policies targeting female empowerment and poverty reduction among female workers in the informal sector should not focus too much on education but must be directed towards equipping them to brave the oddities on the street and building better structures, specifically outside their household premises that will give them security and reduce their poverty levels.
- It was also found that the rural areas and the Northern regions particularly increased the levels of poverty for both males and females in the informal sector. Thus, particular attention can be given to the informal sector in those areas, implementing policies that will

make the region attractive to investors who can establish businesses and employ the workers in those areas.

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APPENDICES

APPENDIX A;

Tables

Descriptive Statistics

Table 1: Level of Education of Household Heads by Gender

Highest level of education	Sex of individual		
	Male	Female	Total
No Education	8	5	13
	0.35	**0.45**	**0.38**
Basic	1642	986	2628
	72.08	**87.88**	**77.29**
Secondary	416	113	529
	18.26	**10.07**	**15.56**
Tertiary	212	18	230
	9.31	**1.60**	**6.76**
Total	2278	1122	3400
	100.00	100.00	100.00

First row has *frequencies*; second row has *column percentages*

Table 2: Religion of Household Heads by Gender

Religious Denomination	Sex of individual		
	Male	Female	Total
No Religion	191	33	224
	6.63	**2.05**	**4.99**
Christianity	1785	1319	3104
	61.98	**82.08**	**69.18**
Islamic	663	188	851
	23.02	**11.70**	**18.97**
Traditionalist	236	65	301
	8.19	**4.04**	**6.71**
Other	5	2	7
	0.17	**0.12**	**0.16**
Total	2880	1607	4487
	100.00	100.00	100.00

First row has *frequencies* and second row has *column percentages*

Table 3: Region of Household Head by Gender

REGION	Sex of individual		
	Male	Female	Total
Western	242	123	365
	8.40	**7.65**	**8.13**
Central	284	200	484
	9.86	**12.45**	**10.79**
Greater Accra	312	189	501
	10.83	**11.76**	**11.17**
Volta	364	259	623
	12.64	**16.12**	**13.88**
Eastern	251	191	442
	8.72	**11.89**	**9.85**
Ashanti	284	236	520
	9.86	**14.69**	**11.59**
Brong Ahafo	235	132	367
	8.16	**8.21**	**8.18**
Northern	339	81	420
	11.77	**5.04**	**9.36**
Upper East	325	115	440
	11.28	**7.16**	**9.81**
Upper West	244	81	325
	8.47	**5.04**	**7.24**
Total	2880	1607	4487
	100.00	100.00	100.00

First row has *frequencies* and second row has *column percentages*

Table 4: Tabulation of Industry by Gender

Main industry	Sex of individual		
	Male	Female	Total
Agriculture, forestry and fishing	1165	275	1440
	40.58	**17.12**	**32.16**
Mining and quarrying	66	2	68
	2.30	**0.12**	**1.52**
Manufacturing and construction	567	379	946
	19.75	**23.60**	**21.13**
Electricity, gas, stream and air conditioning supply	9	0	9
	0.31	**0.00**	**0.20**
Water supply, sewerage, waste management	6	2	8
	0.21	**0.12**	**0.18**
Wholesale and retail trade	423	747	1170
	14.73	**46.51**	**26.13**
Transportation and storage	187	1	188
	6.51	**0.06**	**4.20**

Accommodation and food service activities	22	109	131
	0.77	**6.79**	**2.93**
Information and communication	8	1	9
	0.28	**0.06**	**0.20**
Financial and insurance activities	16	0	16
	0.56	**0.00**	**0.36**
Real estate activities	7	0	7
	0.24	**0.00**	**0.16**
Professional, scientific and technical activities	22	0	22
	0.77	**0.00**	**0.49**
Administrative and support service activities	16	1	17
	0.56	**0.06**	**0.38**
Public administration and defence	51	2	53
	1.78	**0.12**	**1.18**
Education	112	15	127
	3.90	**0.93**	**2.84**
Human health and social work activities	14	3	17
	0.49	**0.19**	**0.38**
Arts, entertainment and recreation	38	0	38
	1.32	**0.00**	**0.85**
Other service activities	133	65	198
	4.63	**4.05**	**4.42**
Activities of households as employers	8	4	12
	0.28	**0.25**	**0.27**
Activities of extraterritorial organizations and bodies	1	0	1
	0.03	**0.00**	**0.02**
Total	2871	1606	4477
	100.00	100.00	100.00

First row has *frequencies* and second row has *column percentages*

Table 5: Occupation of the Head of Household by Gender

Main occupation	Sex of individual		
	Male	Female	Total
Legislators/managers	32	7	39
	1.11	**0.44**	**0.87**
Professionals	145	13	158
	5.05	**0.81**	**3.53**
Technicians and associate professionals	71	7	78
	2.47	**0.44**	**1.74**
Clerical support workers	47	2	49
	1.64	**0.12**	**1.09**
Service/sales workers	400	777	1177
	13.93	**48.38**	**26.29**
Skilled agric/fishery workers	1148	270	1418
	39.99	**16.81**	**31.67**

Craft and related trades workers	623	473	1096
	21.70	**29.45**	**24.48**
Plant machine operators and assemblers	298	2	300
	10.38	**0.12**	**6.70**
Elementary occupations	105	55	160
	3.66	**3.42**	**3.57**
Other Occupations	2	0	2
	0.07	**0.00**	**0.04**
Total	2871	1606	4477
	100.00	100.00	100.00

First row has *frequencies* and second row has *column percentages*

Table 6: Tabulation of Business Mode by Gender

Enterprise's Main Mode of Doing Business)	Sex of individual		
	Male	Female	Total
Structure Outside Household Premise	470	123	593
	20.23	**8.83**	**15.96**
Open Space	832	459	1291
	35.82	**32.95**	**34.74**
Table Top	548	563	1111
	23.59	**40.42**	**29.90**
Structure Within Household Premise	473	248	721
	20.36	**17.80**	**19.40**
Total	2323	1393	3716
	100.00	100.00	100.00

First row has *frequencies* and second row has *column percentages*

Table 7: Forms of Records Kept by Sector

Informal Sector Unit	**Keep Any Form of Accounting Record**			Total
	Yes, audited	***Yes, unaudited***	***No account***	
Other sectors	92	1,036	2,703	3,831
%	2.40	27.04	70.56	100.00

Informal Sector	98	2,841	20,106	23,045
%	0.43	12.33	87.25	100.00
Total	190	3,877	22,809	26,876
%	0.71	14.43	84.87	100.00

Source: Author's computation based on GLSS7

Table 8: Poverty Status by Sector

Poverty Status	Head of Household		
	Not Informal	Informal Sector	Total
Nonpoor	784	3549	4333
	94.80	**79.10**	**81.54**
Poor	43	938	981
	5.20	**20.90**	**18.46**
Total	827	4487	5314
	100.00	100.00	100.00

First Row Has *Frequencies* and Second Row Has *Column Percentages*

Table 9: Tabulation of job status by group

What Is [NAME's] Status in This Job	Groupings of Informal Head by Gender		
	Male Head	Female Head	Total
Paid Employee	427	25	452
	33.28	2.65	20.29
Casual Worker	91	7	98
	7.09	0.74	4.40
Self-Employees with Employees	131	53	184
	10.21	5.61	8.26
Self-Employed without Employees	621	859	1480
	48.40	90.90	66.43
Contributing Family Worker	13	1	14
	1.01	0.11	0.63
Total	1283	945	2228

	100.00	100.00	100.00

First row has *frequencies* and second row has *column percentages*

Table 10: Tabulation of business mode by group

What is the Enterprise's Main Mode of Doing Business	Groupings of Informal Head by Gender		
	Male Head	Female Head	Total
Structure Outside HH Premise	332	93	425
	22.19	10.29	17.71
Open Space	495	274	769
	33.09	30.31	32.04
Table Top	363	373	736
	24.26	41.26	30.67
Structure Within HH Premise	306	164	470
	20.45	18.14	19.58
Total	1496	904	2400
	100.00	100.00	100.00

First row has *frequencies* and second row has *column percentages*

Table 11: Collinearity Diagnostics

Variable	VIF	SQRT VIF	Tolerance	R-Squared
Poverty status	1.36	1.17	0.7342	0.2658
Age	1.36	1.17	0.7341	0.2659
Marital status	1.29	1.13	0.7782	0.2218
Religion	1.1	1.05	0.9092	0.0908
Household size	2.91	1.71	0.3435	0.6565
No. of household members in the informal sector	2.96	1.72	0.3381	0.6619
Education	1.11	1.05	0.8996	0.1004
Occupation	1.17	1.08	0.8539	0.1461
Firm size	1.01	1.01	0.9869	0.0131
Industry	1.47	1.21	0.6821	0.3179
Region	1.2	1.1	0.8332	0.1668
Location	1.38	1.17	0.7265	0.2735

Mean VIF 1.53

Table 12: Tabulation of industry group

Main Industry	Groupings of Informal Head by Gender		
	Male head	Female head	Total
Agriculture	1165	275	1440
	80.90	**19.10**	**100.00**
	40.58	**17.12**	**32.16**
Mining_Manufacturing_Construction	633	381	1014
	62.43	**37.57**	**100.00**
	22.05	**23.72**	**22.65**
Services	1073	950	2023
	53.04	**46.96**	**100.00**
	37.37	**59.15**	**45.19**
Total	2871	1606	4477
	64.13	**35.87**	**100.00**
	100.00	**100.00**	**100.00**

First row has *frequencies*; second row has *row percentages* and third row has *column percentages*

APPENDIX B

Terminologies

CONCEPTS AND DEFINITIONS

Work: The concept of work in Ghana includes "those who performed an economic activity in the last week prior to the survey for payment either in cash or in kind" (GSS, 2017). "Work refers to any activity performed by the respondent that contributes to economic production" (GSS, 2013; p.44).

Economically active population or labour force: includes all persons above 15 years old who provide labour for manufacturing economic goods and services. The economically active population includes the employed and the unemployed population 15 years and older.

Employed persons: Defined to include 'the employed are persons of working age (15 years and older) who, during the 7 days before the interview did any work for at least one hour for pay, profit or family gain, or worked without pay on a farm or family holding (including unpaid family workers), and those who had a job and were temporarily absent from work'. (GSS Labour Force Survey, 2015).

This includes full- and part-time workers seeking other work during the reference period and paid apprentices and trainees but excludes persons who performed any work while being subject to compulsory schooling, or retired and receiving a pension and unpaid apprentices and trainees.

The unemployed: is defined as 'the unemployed are persons of working age who, during the 7 days before the interview, were without work and available for work and who have looked for work during the week prior to the interview'.

An underemployed person works less than normal duration, works less hours on an involuntary basis and is seeking or available for additional work during the reference period (LFS, 2015). All three criteria must be satisfied simultaneously before a person can be classified as "underemployed".

Household: A household consists of a person or group of related or unrelated persons, who live together in the same housing unit, who acknowledge one adult male or female as the head of the household, who share the same housekeeping and cooking arrangements, and are considered as one unit (GSS, 2017).

Head of Household: The definition of the head of the household is adopted from the 2010 population and housing census in Ghana. The household head is defined as a male or female member of the household recognized by the members of the household as the head. He or she also bears the economic and social responsibility for the household. The household head provides the needs of the household (GSS, 1988). This means that the onus lies on the household head to find a sturdy source of income to accomplish his or her task as the head. It is assumed that the poverty of the household head affects the entire household.

Occupation*:* This is a description of the work done by the respondent.

Main Occupation and Secondary Occupation*:* The main occupation is that on which most time was spent when the respondent has many jobs. The secondary occupation is that on which the person spent most time apart from the main.

Self-employed: A person who directly makes or delegates authority to others to make operational decisions about a business such as paying all expenses, controlling income from the business, and hiring staff, where applicable. The person's remuneration from the job is wholly dependent on the profits of the business. The person's business can have employees or that person can be working on his own without employees

Contributing family worker: This person helps in an enterprise (farm or non-farm) owned by a family member. Conceptually, these are household members of any of the owners who work in the establishment without regular pay for at least one-third of the normal working period.

Apprentice: This is a person who is learning a trade or skill. They may pay to receive training, get paid whiles being trained and working or get trained for free.