UNIVERSITY OF KWAZULU-NATAL

INFORMAL ECONOMIC ACTIVITIES IN GHANA: A CASE STUDY OF SLUMS IN KUMASI AND ACCRA

by

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DECLARATION

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ABSTRACT

Slums are urban households, which lack permanently durable housing, adequate living space, access to clean water, suitable sanitation and land tenure security. Globally, slums house a third of the world's population. These slums do not only accommodate individuals who cannot afford formal housing, but also, a vibrant informal sector. Slum operators engage in diverse economic activities to earn a living, mostly in cities where there is lack of employment opportunities. Slum activities are an integral part of the informal sector, which globally, is found to contribute significantly to employment and income, especially among low-skill individuals.

In Ghana, the informal sector employs 86% of the total labour force. The Harris-Todaro model suggests that people migrate from rural to urban areas because of income differentials and employment opportunities. In the absence of adequate housing and employment facilities in Ghana, migration results in the growth of slums and urban slum informal activities as people look for a place to stay and earn a living in desperation. The informal sector is a flourishing segment of the economy, a springboard from which many dynamic small firms may graduate to the formal sector over time. There may be other motivations too that influence people in Ghana to engage in the informal slum activity. This study examined what factors motivate individuals to engage in that sector on the basis of a survey of 344 slum operators in Kumasi and Accra, two major cities in Ghana. Data collected by means of a questionnaire were analysed using SPSS and STATA.

The study found out that, three levels are involved when one engages in slum activities; the entry, operation and exit phases. Factors that motivate operators to engage in slum activities represent the first stage. Using Principal Component Analysis, the study found out that avoidance of government regulation is the main motive for one's involvement in slum activities. Hence, government initiatives that will take away some of the bureaucratic burdens and rigorous procedures of operating in the formal sector may assist in reducing the growth rate of slum activities in Ghana. Other driving forces include the 'luxury' of working at one's own time, making use of one's talents and relations, and the quest for higher income.

An operator's participation in slum activities represents the second stage. As one engages in these economic activities to generate income, the study found out that, the surveyed operators earn about US $ 8 a day, higher than the World Bank's poverty line of US $2 a day. To find out what factors determine the average daily income earned, the OLS regression analysis is used. Amongst factors,

an operator's social networks, locus of control, type of economic activity, educational level, age of business and labour size, it was found that firm age was the main determinant of average daily income in slum activities in Ghana, with a 20% increase in average daily income for every extra year of operation. Some hypotheses are also tested regarding differences in performance between the two regions and between male and female operators. The mean income of males is found to be significantly higher than that of females while differences in average income are also found between the two regions.

The study then investigated the constraints that limit the growth and development of enterprises, using Factor Analysis. Of the constraints, insufficient skills and business knowledge was most inhibiting. Other growth constraints include infrastructural challenges, difficulty in accessing credit, lack of tools and materials, security problems, poor communication and social networking.

Exiting informal slum activities represents the third and final stage, which involves a slum operator's willingness to move into formal activities. Formalising of the informal sector is crucial to generating sustainable income and employment. Results from logistic regression indicate that of all the constraints, addressing access to finance will prompt slum operators to move into formal sector. Many slum operators are happy to stay in the informal sector. Nevertheless, it is imperative that policy makers come up with suitable financing strategies to assist slum operators in order to help in formalisation.

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DEDICATION

I dedicate this work to my grandmother Mrs. Grace Fiagome, the late Mrs. Dzefi and my late

father, Dr. Luther-King Zogli.

LIST OF ABBREVIATIONS

AfDB – African Development Bank

CPESDP – Co-ordinated Programme of Economic and Social Development Policies

ERP – Economic Recovery Programme

EU – European Union

EUROSTAT – Statistical Office of the European Communities

GDP – Gross Domestic Product

GPRS - Ghana Poverty Reduction Strategy

GSGDA – Ghana Shared Growth and Development Agenda

GSS – Ghana Statistical Service

HIPC - Highly Indebted and Poor Country

IDA – International Development Association

IFAD – International Fund for Agricultural Development

IIAG – Ibrahim Index of African Governance

ILO – International Labour Organisation

IMF – International Monetary Fund

LOC – Locus of Control

MDG – Millennium Development Goal

MTDPF – Medium Term Development Policy Framework

NDPC – National Development and Planning Commission

NGO – Non-Governmental Organization

OECD – Organisation for Economic Co-operation and Development

SADA – Savannah Accelerated Development Authority

SAP – Structural Adjustment Programme

SWB – Subjective Well-being

UN – United Nations

UN-HABITAT – United Nations Human Settlement Programme

USAID – United States Agency for International Development

WDI – World Development Indicator

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND INFORMATION

The number of slum dwellers worldwide was 650 million in 1990, 760 million in 2000 and 863 million in 2013 (UN-Habitat 2013, p. 84), showing the alarming slum growth rate globally. Ghana over the years, however, has made some progress in reducing the proportion of urban dwellers living in slums which dropped from 27.2% in 1990 to 19.6% in 2008. However, while the proportion has decreased, most recent data shows that the total number of people living in slums has increased from 4.1 million in 1990 to 5.5 million in 2008. With this trend, it is likely that about 14% of the entire Ghanaian population may still live in slum areas by 2020 (National Development and Planning Commission [NDPC] and UN, 2012).

According to UN-Habitat, slum formation is due to a combination of factors such, as in-migration, poverty, failure of housing policies, poor national and urban policies and lack of planning for urban growth (UN-Habitat 2003, p. 5-17). Slums sprung up in Ghana due to the lack of adequate response mechanisms to urbanisation by the various governments (UN Habitat, 2009). Slums do not only house migrants, but also an informal economic sector.

Informal sector activities consist of unincorporated household enterprises owned by households which are fully or partially outside the jurisdiction of government regulation and taxation (Eurostat *et al.,* 1993, p.135; World Bank, 2013). According to the International Labour Organisation (ILO) (1972, p. 6) the informal sector is characterised by "ease of entry, reliance on indigenous resources, family ownership of enterprises, small-scale operations, labour-intensive and adapted technology, skills acquired outside the formal school system and unregulated and competitive markets." Slum activities include all informal sector activities that take place only in slum areas and possess most of the characteristics of the informal sector.

ILO (2014) estimates of non-agricultural informal employment show that, the informal sector represents 82% of total employment is South Asia, 66% in sub-Saharan Africa, 65% in East and South-East Asia, 51% in Latin America and 10% in Eastern Europe and Central Asia. The ILO further ranks India as having the largest share of informal sector employment, at 83.5% of the total employment. This figure is closely followed by Mali with 82% and Bolivia with 75% (ILO, 2014). According to Ghana Statistical Service's (GSS) 2010 census, informal sector employment in that country was around 86%.

Slum activities form part of Ghana's informal sector, which employ about 86% of the nation's work force according to the GSS, (2012), corroborating Canagarajah and Sethuraman's (2001) study which found out that the informal sector of developing economies employs about two thirds of labour. Informal activities in slum areas contribute positively to a country's GDP. In Dhaka[1], slums contribute 8% of the country's GDP (Hye, 2014).

King and Amponsah (2012) also found out from studies conducted in three slums[2] in Ghana, that slum operators earn $3.7 a day, which is higher than the national poverty line of US $ 2.0 a day. Of these slum operators, 50% are engaged in manufacturing, which involves activities such as collection, processing and sale of the scrap metals, manufacture of traditional coal pots, manufacture of peanut butter and corn flour, carving of handicraft and wood processing. Another 49% are involved in services, which include activities such as petty retailing (such as sale of confectionaries), food preparation and vending, running of public bathhouses, head portage (transportation of goods on the head), hair designing (male and female) and repair of electronic appliances. The remainder 1% is engaged in the primary sector (Farouk and Owusu, 2012; King, Amponsah and Ato-Quansah, *et al.,* 2012; King and Amponsah, 2012).

Several other studies, in countries such as India, Bangladesh and Kenya, have also concluded that operators in slum activities earn high income levels above the poverty threshold income (Jha, Rao and Woolcock, 2007; Mahoney, 2010; Chege and Mwisukha, 2013; Das and Meher, 2013; Meschkank, 2013; Hye, 2014). These studies however did not come out with conclusive evidence

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[1] Capital of Bangladesh
[2] "Sodom and Gomorrah" and "Amui Dzor" in Accra, and "Akwatia Line" in Kumasi

as to what factors motivate operators to engage in slum activities. Hence the purpose of the current study is to fill in this knowledge gap by finding out the motives prompting operators to engage in slum activities in selected cities in Ghana. Furthermore, the current study seeks to determine the constraints of operators in slum activities and find out the resources needed to prompt a movement into the formal sector.

Policy makers in Ghana are interested in investing in projects that will curb the rate of growth of slums. However, their efforts have not been successful thus far. The problem being that, there has been no conclusive evidence in Ghana regarding what motivates operators to engage in informal sector activities in slums, what factors hinder the growth of informal slum businesses, what keeps them there, and what will prompt them to move into the formal sector. The current study is therefore crucial in helping to provide answers which will assist policy-makers in reducing slum growth and assisting slum enterprises to grow.

1.2 RESEARCH PROBLEM

Studies in different countries have established that informal sector activities in slums constitute a vibrant economic sector. Hye (2014) discovered that, slum enterprises in Bangladesh employ poor people and contribute significantly to the country's GDP. Studies in Ghana have also revealed that operators in slum activities record average incomes that are higher than the national poverty line, as noted above (King and Amponsah, 2012).

Informal sector activities in the slums of Ghana are expanding, enabling their operators to earn an income that is above the poverty line. This growth is attracting more people to venture into slum activities. Although there have been various studies on slums in Ghana and elsewhere (Jha, Rao and Woolcock, 2007; Mahoney, 2010; Nyametso, 2010; King and Amponsah, 2012; Das and Meher, 2013; Chege and Mwisukha, 2013; Meschkank, 2013; Hye, 2014), none has investigated the motives prompting operators to engage in such activities in slum areas. Further, no study that the author is aware of, has investigated the constraints faced by slum operators and whether these slum operators want to move into the formal sector and the resources needed to make such a move. Hence, this study is driven by the need to find out the driving force behind individuals'

involvement in slum activities, the constraints faced by slum enterprises and the resources needed to move out of slum activities into formal activities and whether there are differences in average income of the operators between Kumasi and Accra.

According to the Organisation for Economic Co-operation and Development [OECD] (2006, p. 28), formalising informal sector activities is a solution to poverty eradication in the long run. This is due to the fact that, most informal firms are small and stagnant (La Porta and Shleifer 2014, p. 112). Although these informal enterprises help in meeting household livelihood needs in the short-term, creating a stronger formal enterprise economy leads to long term wealth creation, stable employment and poverty reduction. It is hoped that, the findings of the study will assist policy-makers and development institutions responsible for enterprise development in formulating policies which are tailored to helping slum enterprises to develop and to move into formal enterprises.

1.3 RESEARCH QUESTIONS

The following research questions arise from the research problem:

1. What are the factors that motivate individual operators to engage in slum activities?

2. What determines the income level of individual enterprises in slum activities and are there differences in income, based on regions and gender?

3. What are the growth constraints faced by operators involved in slum activities?

4. What are the resource needs of the slum operators which may prompt them to exit from slum activities and move into formal businesses?

5. Does income contribute to the subjective well-being of slum activity operators?

1.4 RESEARCH OBJECTIVES

The **main objective** of this research is to find out the factors that motivate operators to engage in informal activities in slum areas, what keep them there and how they can be assisted to develop and transition to the formal sector.

1.4.1 Specific research objectives

- To find out the factors that determine income levels generated in slum activities and if there are differences in average income based on regions and gender.
- To determine factors that constrain the growth of firms involved in slum activities
- To examine the resource needs of the slum operators which may prompt them to move out of slum activities and venture into formal businesses.
- To determine whether income contributes to the subjective wellbeing of slum activity operators.

1.4 ORGANISATION OF THE STUDY

The study is organised into eight chapters. Chapter one deals with the general introduction, research problem, questions and objectives. The second chapter deals with an economic overview of Ghana. Emphasis will be made on unemployment, migration, urbanisation and housing in Ghana. The third chapter presents the nature of slums, and the factors that lead to their formation.

The fourth deals with the informal sector in selected countries and their contribution to the development of their respective countries. Slum activities in Ghana are also examined and the conceptual framework of the study is presented. Chapter five covers the research methodology. Chapter six presents the characteristics of the surveyed sample. Chapter seven covers the major findings of the study.

The final chapter presents the summary, conclusions and policy recommendations of the study. In addition, it gives suggestions for further research.

CHAPTER TWO

ECONOMIC PROFILE OF GHANA

2.1 INTRODUCTION

This chapter provides an overview of Ghana's economy. The developmental path of Ghana is discussed with the main focus being the political history and economic performance of the country since independence in 1957. Emphasis is made on developmental issues like GDP and its growth over the years, inflation, exchange rate, performance of various sectors of the economy and Ghana's external debt situation. Data from the World Development Indicators (WDI), Government of Ghana and the Ghana Statistical Service are used to draw graphs and charts to depict the county's economic profile.

2.2 BACKGROUND OF GHANA

The Republic of Ghana is a low-middle income country, West Africa's second largest economy and Africa's twelfth (AfDB, 2012a). Ghana is bordered to the south by the Atlantic Ocean, Togo to the east, Burkina Faso to the north and La Cote d'Ivoire to the west and has a land area of 239,000 km^2 (Ngugi *et al.,* 2007, p. 21; AfDB, 2012a).

Ghana is divided into ten administrative regions as shown in Figure 2.1, with an estimated total population of the about 24.7 million in 2010, rising from about 18.9 million in 2000, representing a 23.5% increase over 10 years (GSS 2013, p. 50). Accra is Ghana's capital city and houses about 1.8 million people (GSS, 2013a).

Ghana's official language is English. 71% of Ghana's population is Christian, 17.6% Muslim and 5.2% being Traditionalists (GSS 2013b). Formerly known as the Gold Coast due to its rich gold deposits, the country gained independence from Great Britain on 6th March, 1957, after which the name was changed to Ghana.

Figure 2.1 Map of Ghana

Source; Maps of the World, (2013).

Ghana was the first Sub-Saharan country to gain independence and this feat was achieved under the leadership of Dr. Kwame Nkrumah. Ghana in 2015 was rated as the 88th largest economy in the world in terms of its GDP (World Bank, 2016a).

2.3 POLITICAL EVOLUTION OF GHANA

Upon attaining independence, Ghana experienced three military coup d'états, the first in 1966, second in 1972 and the last of which took place in 1981. Beyond 1981 however, Ghana has experienced a smooth democratic transfer of political power. The political evolution of Ghana is represented in Table 2.1.

Table 2.1 Political history of Ghana

YEAR	OCCASION
1957	Attained Independence from Great Britain, led by Dr. Kwame Nkrumah
1960	Ghana becomes a Republic
1966	Military overthrew 1st republic
1969	Second republic with Dr Busia elected as prime minister
1972	Military overthrew 2nd republic
1979	Third republic with Hilla Limann elected as president
1981	Military overthrew 3rd republic
1993	Fourth republic with Flt Lt J.J. Rawlings elected as president
1996	Flt Lt J.J. Rawlings re-elected
2000	J.A Kuffuor elected as president
2004	J.A Kuffuor re-elected
2008	Prof. J. E. A. Mills elected as president
2012	Prof. J. E. A. Mills passes away and J. D. Mahama (then Vice president) sworn in as president
2012	J. D. Mahama elected as president

Adapted from: Government of Ghana, (2014)

The constitutional reform in 1992, under the governance of President J. J. Rawlings serves as a foundation on which Ghana's democratic feats have been chalked. The 1992 constitution made it possible for a multi-party state, with a decentralised local government system. The constitution allowed for three independent arms of government: the Judiciary, Legislature and the Executive. The president is allowed a four year term in office and can be re-elected only once. The new constitution also laid emphasis on press freedom and fundamental human rights. Since 1993, Ghana has experienced six peaceful democratic elections.

The Ibrahim Index of African Governance (IIAG), which rates African countries based on Safety & rule of law, Participation & human rights sustainable, Economic opportunity and Human development, in 2016, rated Ghana as the 7th and 2nd best in Africa and West Africa respectively (IIAG, 2016).

2.4 GHANA'S ECONOMY (1960-2014)

2.4.1 Gross Domestic Product (GDP) growth

The period of the early 1960s in Ghana, was characterised by positive economic growth and increasing GDP growth as depicted in Figure 2.3. The cocoa industry which took off in the Gold Coast in the 1870s by efforts of local farmers had generated a lot of revenue. In 1951, the Gold Coast's foreign reserves stood at about $316 million and by independence (1957), appreciating to about US $502.2 million (Akwah, 2012). This foreign reserve was generated by the cocoa industry and the mining sector which was dominated by gold.

Figure 2.2 GDP at current prices (US$); 1960 – 2014
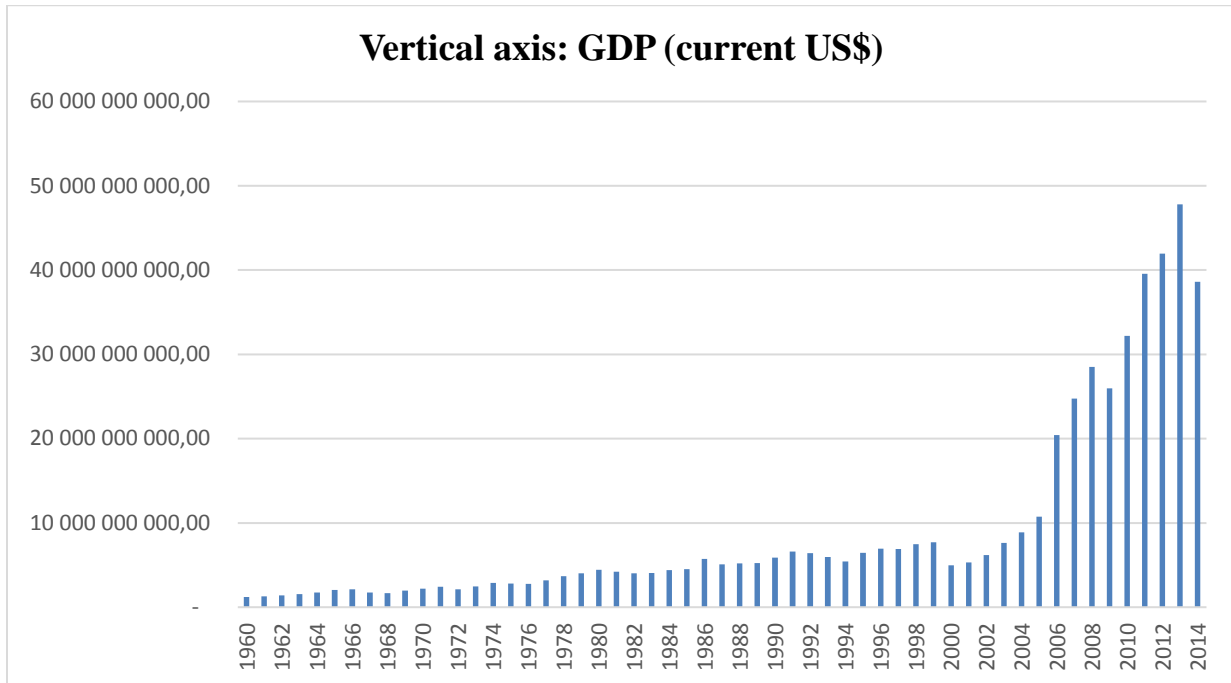
Source: Author's own graph using data from WDI (2016)

Figure 2.2 shows Ghana's GDP in US dollars from 1960 to 2014. As of 1960, the country's GDP was US $ 1.2 billion and the country's GDP increased gradually to about US $ 10 billion in 2004, representing a US $ 9 increase from 1960 to 2004. From 2006 to 2013, Ghana's GDP increased considerably from about US$ 20 to US $ 48 billion due to the rebasing of the economy and discovery of oil. The rebasing of Ghana's economy is further discussed in Section 2.4.8.

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In the early post-independence era, Ghana's economy was dominated by foreign private enterprises (Esseks, 1971, p. 59). Hence the socialist inclined, Convention People's Party (CPP) government, led by Dr. Nkrumah, embarked on a policy of competitive coexistence. State or CPP owned enterprises were established to compete with foreign firms in manufacturing, banking, shipping, insurance, timber extraction, and construction. This policy was successful in only two fields in the primary sector, which included the internal marketing of cocoa and the trade of timber logs. Three main reasons led to the underperformance of this policy. Firstly, there was unavailable manpower locally to run these firms. Secondly, the Ghanaian firms lacked the capacity to generate industrial investment and finally, there was conflict within the government regarding the beneficiaries of these economic policies as Dr. Nkrumah favoured a socialist pattern of development (Esseks, 1971).

Figure 2.3 GDP growth (annual %); 1961 – 2014
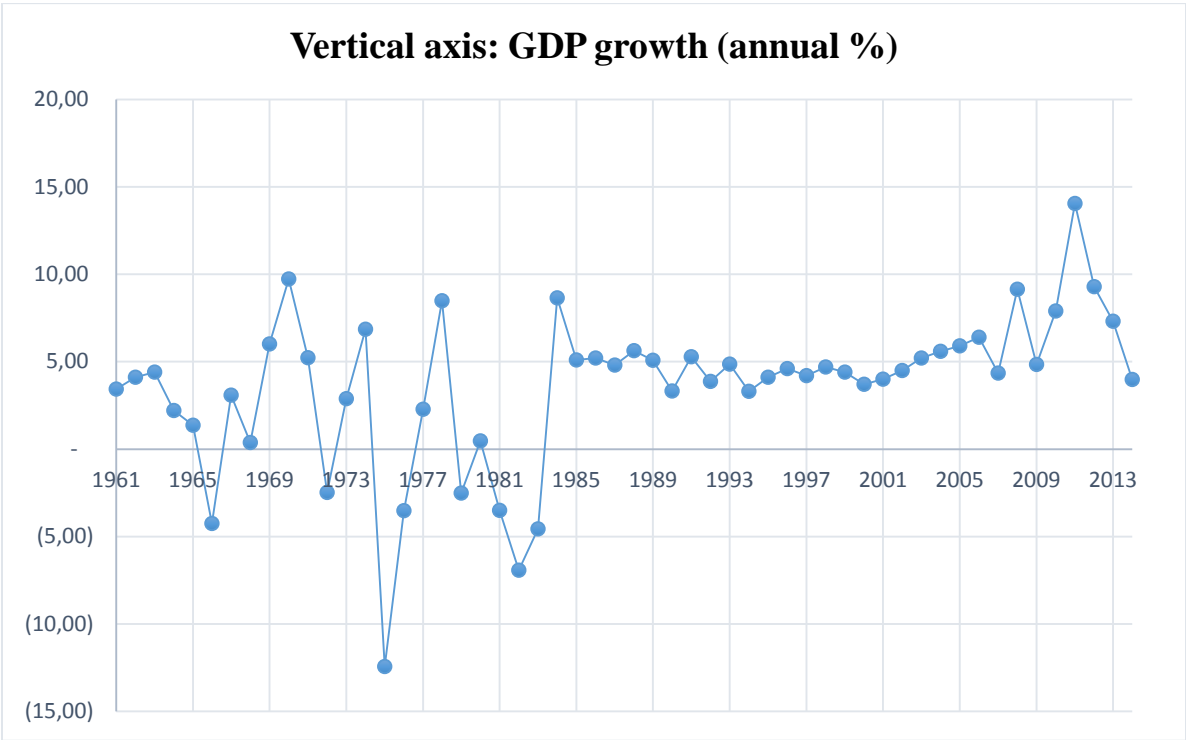
Source: Author's own graph using data from WDI (2016)

Figure 2.3, presents Ghana's GDP growth rate over the periods of 1961 to 2014. Ghana's economy experienced economic crisis between 1966 and 1983, mainly due to political instability. This led to periods of negative GDP growth. However, post 1984, economic growth has stabilised and has grown at an overage of about 5.6% up until 2014.

Ghana experienced its first negative GDP growth in 1966. Owing to disgruntlements with the socialist leadership style of Dr. Nkrumah and his quest to making Ghana a one-party state, the president was overthrown in 1966 by a military coup d'état. By the beginning of 1963, Ghana's foreign reserves had fallen to $200.2 million and as of when Dr. Nkrumah was ousted from power in 1966, Ghana's foreign reserves were almost depleted (Akwah, 2012). The Ghanaian economy hence began to experience low GDP growth rate as of 1964 as shown in Figure 2.3. The slow growth continued from the mid-1960s only to stabilise after 1984. During this period of slow growth, there was a record of negative growth during periods such as 1966, 1972, 1975-6, 1979 and 1981-3 as depicted in Figure 2.3. From 1984 to 2013, Ghana experienced positive economic growth ranging from 3% to 14% (Figure 2.3). It can also be seen that, GDP per capita increased in the aforementioned periods (Figure 2.4). The GDP per head increased from US $ 358 in 1984 to US $ 1,442 in 2014 (Figure 2.4).

Figure 2.4 GDP per capita (US$); 1960 – 2014
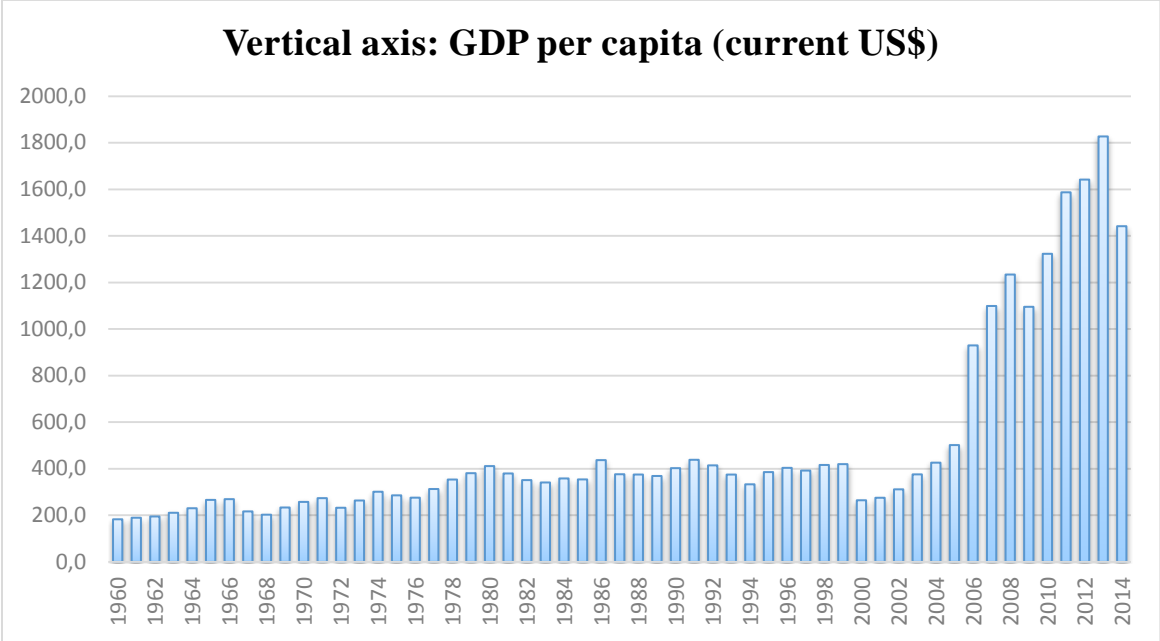
Source: Author's own graph using data from WDI (2016)

Apart from political instability, other reasons such as oil shocks in the 1970s and the inward looking protectionist military government led to the lowest growth of about -12% in 1975 (Figure 2.3). The period of 1970 to 1981 marked a period of sustained economic turmoil in Ghana. Mineral production fell by 32% and cocoa which was the country's largest export earner fell from 400,000m tons in 1970, to 225,000m tons in 1981 and further down to 158,000m tons in 1983. This economic hardship led millions of Ghanaians, both skilled and unskilled to migrate out of the country (Kraus 1991, p. 21-22).

The difficult economic conditions led to the government of Ghana in collaboration with the International Monetary Fund (IMF) and World Bank to initiate a stabilisation programme called the Economic Recovery Programme (ERP) in 1983. The aim of this programme was to restore external equilibrium in the balance of trade account, stabilise and halt the economic decline (Kraus, 1991; Fosu and Aryeetey, 2008). Albeit gaining economic stabilisation, the sudden deportation of about 1 million Ghanaians from Nigeria without notice in 1983, put more pressure on the frailing Ghanaian economy (Aluko, 1985; Anarfi *et al*., 2003). These jobless returnees joined the country's growing informal sector. The ERP was further supplemented with the Structural Adjustment Programme (SAP) in 1986 to correct the structural imbalances in the view of sustaining healthy economic growth (Fosu, 2000). Upon the implementation of these programmes, Ghana began to experience positive growth averaging 5.7% between 1984 and 1989, as shown in Figure 2.3 (Kraus, 1991).

Flt. Lt. Jerry Rawlings, who was elected as the first president of the fourth republic in 1992, assumed governance in January 1993. The Rawlings administration came up with a long term vision document in 1996 called the VISION 2020. The objective of this programme was to achieve a stable economy, become a middle income country, and a high living standard accompanied with a development level synonymous to that of Singapore within twenty-five years (1996-2020). This objective was to be achieved through creating an open and liberal market economy hinged on competition, initiative and creativity. This was also to pay critical attention to the protection of the environment and to be equitable in distributing the benefits of development. This agenda was set knowing that in 1996, Singapore had a GDP per head of $25,000 against Ghana's $400 (Figure 2.4) (Government of Ghana, 1995; Osei-Bonsu, 2012; WDI, 2016).

The first step of the Vision 2020 development agenda was set in a 5 year Medium-term development programme called the Co-ordinated Programme of Economic and Social Development Policies (CPESDP) with the aim of consolidating the gains achieved during past decade under the ERP and put in place a strong foundation for an enhanced growth and development during the next two decades. Hence, this medium-term policy embodies the first step to be undertaken in the initial 5-year period (1996-2000), in order to achieve Ghana's vision by the year 2020 (Government of Ghana, 1995). When there was a change in government in 2000 from the Rawlings to the Kuffour regime, the Vision 2020 was also phased out. Ghana's GDP per capita as of 2000, was about US$ 265 (Figure 2.4) as compared to about US$ 24,900 of Singapore (WDI, 2016).

The new Kuffour regime put in place an interim strategy which aimed at increasing food production and processing, as well as ensuring job creation. This interim strategy ushered in the Ghana Poverty Reduction Strategy I (GPRS) issued in 2003, which was a policy framework directed primarily towards the attainment of the anti-poverty objectives of the UN's Millennium Development Goal [MDG] (IMF, 2006). GPRS II then followed in 2006, which was implemented between 2006 and 2009 with the aim of enhancing the growth of the economy so the country can attain middle-income status within a specific period (IMF, 2012). World Bank's (2016b) classifying of lower-middle income countries, includes economies with a Gross National Income (GNI) per capita between $1,026 and $4,035. Ghana achieved a low-middle income status in 2010 (Cooke, Hague and McKay, 2016).

Ghana discovered oil in 2007 and begun producing oil and gas in commercial quantities in the third quarter of 2010 (Gyampo, 2010). The oil reserves of Ghana amounts to about 490 million barrels, following Angola's 9.5 billion barrels and Nigeria's 37.2 billion (African Development Band [AfDB] 2012a, p. 2). The Ministry of Energy and Petroleum as of September 2013, declared $1.4 billion as Ghana's earnings from the production and export of oil. 77 million barrels of oil were produced, however Ghana's share was a meagre 13 million barrels where as 64 million barrels went to the "international partners" (Obuor, 2013). During the implementation of the GPRS I and II (2001 to 2008), GDP growth averaged about 5.8%, as shown in Figure 2.2 and GDP per capita averaging US $644, as shown in Figure 2.4.

In January 2009, the two terms of President Kuffour was over and Prof. J. E. A. Mills was elected into power. The new government put in place a new Vision document called "The Better Ghana Agenda". The main goal of the new growth policy ("The Better Ghana Agenda") was to ensure a sustained macroeconomic stability, attain a higher middle-income status by 2020 and also achieve the Millennium Development Goals (NDPC 2010, p. 7). IMF (2012), enumerated the underlying purposes of this policy document as the following:

- Ensuring macroeconomic stability
- Boosting the competitiveness of the country's private sector
- Applying science, technology and innovation to ensure environmental sustainability in the use of natural resources and agricultural modernisation.
- Development of oil and gas
- Improvement of infrastructure, energy and human settlements
- Seek to attain human development and an employment-led economic growth
- Ensuring transparency and accountable governance.

 (IMF, 2012)

Towards the achievement of the Better Ghana Agenda, a medium-term development policy framework which is Ghana Shared Growth and Development Agenda (GSGDA) was put in place in 2010, running until 2013. The GSGDA aimed at focusing on human development, good governance, infrastructure development, Information and Communications Technology (ICT), value-added natural resource development and private sector development. All these put together was expected to aid in poverty reduction and shared growth through accelerating employment creation and income generation (IMF, 2012).

The GSGDA, which ran up to 2013 was followed by the Medium Term Development Policy Framework (MTDPF), was to be implemented from 2014 to 2016. The specific macroeconomic targets for the MTDPF consist of the following: "an average real GDP (including oil) growth rate of at least 8%" (Government of Ghana Budget 2014, p. 49). This target of the MTDPF was not achieved in the first year on implementation as GDP growth fell from 7.3% in 2013 to 4% in 2014

(Figure 2.3). The GDP per capita of Ghana fell from US$1,827 in 2013 to US$ 1,442 in 2014 (Figure 2.4).

2.4.2 Inflation

After attaining independence, Ghana's inflation rate averaged 7% from 1960 to 1970 (Figure 2.5). However, the period of 1970 to 1981, was marked by economic turmoil in Ghana as the regimes experienced heavy deficit spending, leading to hyperinflation. Inflation averaged about 50% during the period of 1970 to 1981 and real wages fell drastically. The highest inflation rate was recorded in 1983 which was about 122%, as shown in Figure 2.5.

Owing to the economic turmoil faced by Ghana, the ERP was introduced as previously mentioned, and with better fiscal and monetary policies, inflation dropped to 11% in 1993 (Figure 2.5).

Figure 2.5 Inflation (annual %); 1961 – 2014
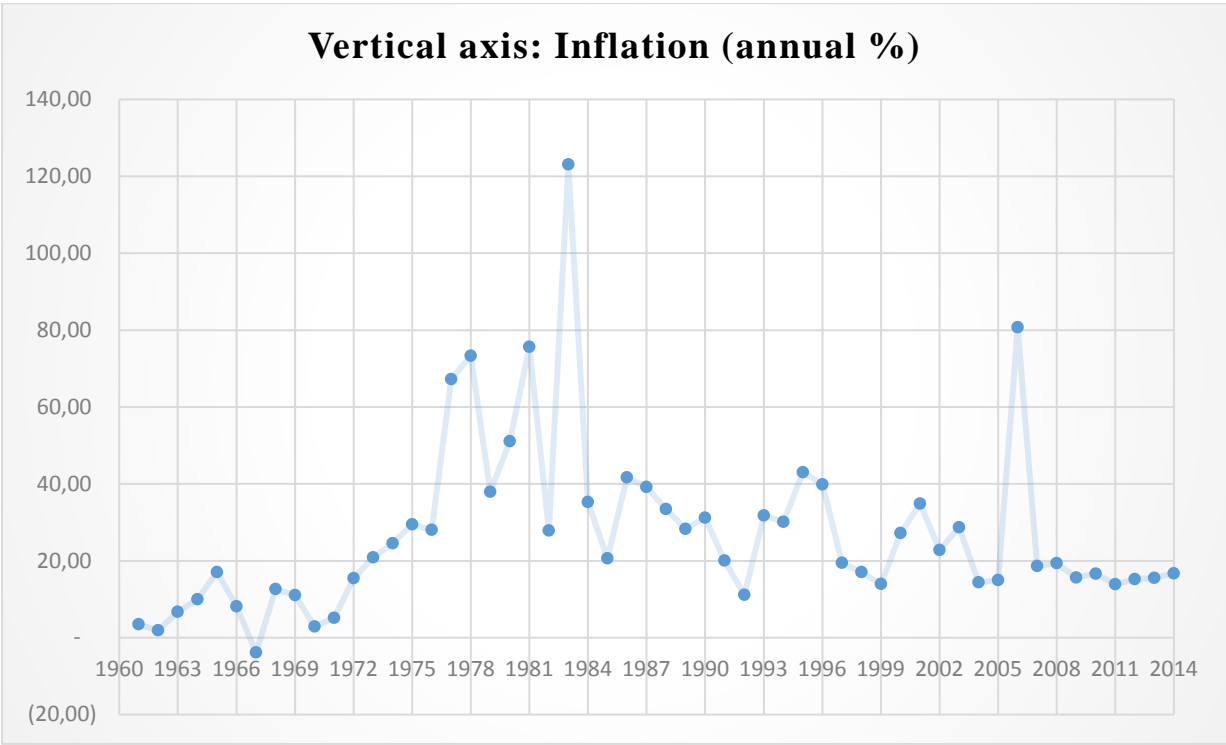
Source: Author's own graph using data from WDI (2016)

Post 1993, inflation pressure re-emerged pushing inflation to over 40%. Chiaraah and Nkegbe (2013) gave reasons such as terms of trade shocks, falling cocoa and gold prices, rising oil prices as well as inconsistent monetary and fiscal policies as causes of high inflation in Ghana. From 1996 to 2005, inflation stabilised around 21% (Figure 2.5). Oil price hikes and the energy crises in Ghana, caused a surge in inflation, from 15% in 2005 to about 81% in 2006. Inflation however stabilised at about 15% from 2007 to 2014. Inflation as of July 2015, according to GSS (2015a) was 17.9% which is about twice of the MTDPF's target of 9%.

2.4.2 Performance of sectors of the economy

From independence up until 2005 (Figure 2.6), the agricultural sector in Ghana, was the highest contributor to GDP. The share of agriculture increased from 50% in 1965, to 65% in 1978.

Figure 2.6 Value added by sector; 1965 - 2014
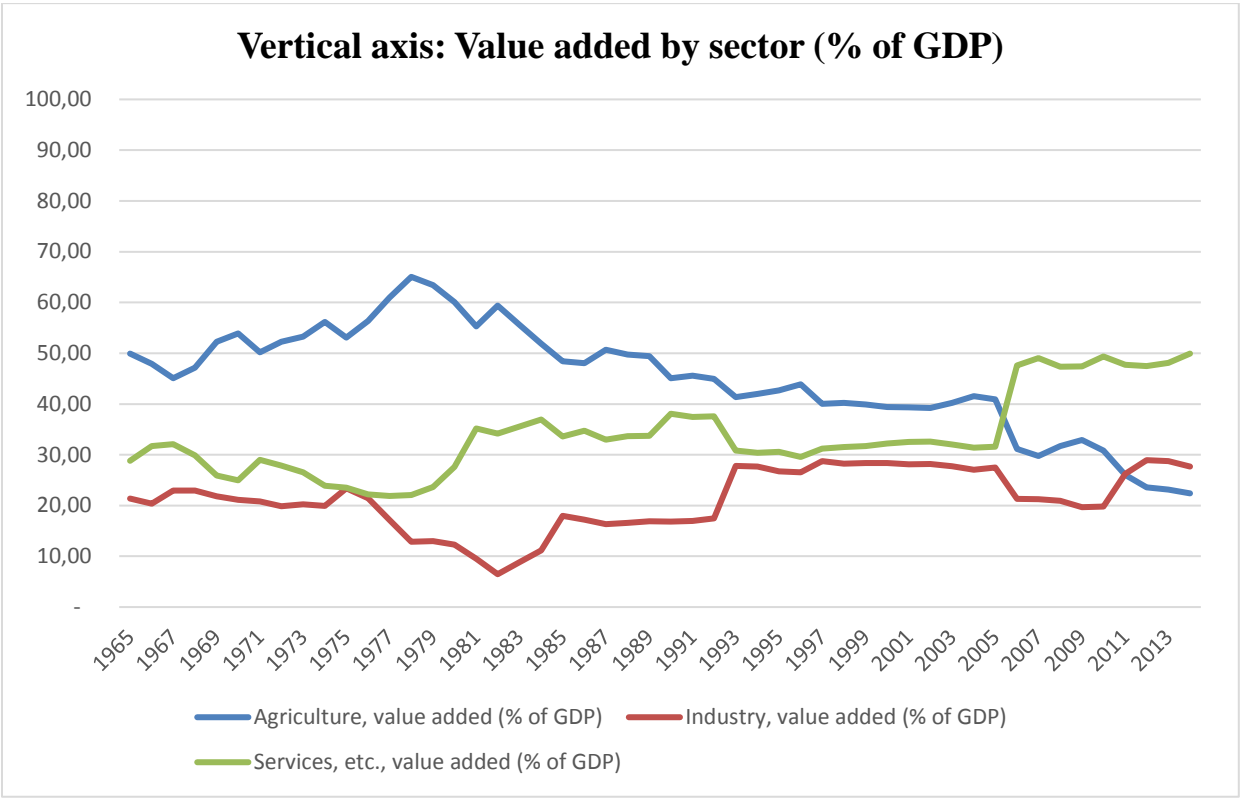
Source: Author's own graph using data from WDI (2016)

Ghana was largely an agrarian economy exporting cash crops like cocoa, coffee, oil palm and cotton. From 1976 however, the contribution of the agricultural sector begun decreasing up until it was overtaken by the services sector in 2006. Improvements in the banking, ICT (mostly telecommunication) and transport sectors caused a rise in the value added by the services sector as shown in Figure 2.6. The share of the services sector increased from 48% in 2006 to 50% in 2014.

The industrial sector had the least value added percentage to GDP from independence up until 2010. Industrial sector's contribution to GDP fell from 21% in 1965, to 6% in 1982. This figure however rose from 9% in 1982 to 26% in 2011 (Figure 2.6). The increase in the contribution of the industrial sector stems from Ghana's production of oil and gas in 2010. From 2011 onwards, agricultural sector has been the least contributor to GDP. Government expenditure on agriculture however, is very meagre as Fan, Omilola and Lambert (2009) noted that, the government's spending on agriculture was less than 10% of annual expenditure.

2.4.3 International Trade

The trade pattern of Ghana over the years has been in favour of imports rather than exports. As shown in Figure 2.7, the imports of goods constantly exceeds exports over the years.

Ghana's main export products are gold, cocoa beans and crude oil which are all raw materials whereas imports include refined petroleum products, cars, machinery (Okudzeto, Lal and Sedegah, 2016). Hence the slight decline of gold and cocoa prices in the world market have detrimental effects on Ghana's economy. The excessive importation and meagre exportation which is mostly raw materials, is a major contributor to the weakening of the Ghana cedi [₵] (Ghana's currency).

As evident from Figure 2.7, due to lack of international competitiveness, there exists a wide gap between the graph for imports and exports. It was only the periods of 1967 to 1986 that imports did not exceed exports by much as both graphs in Figure 2.7 were close to each other. From 1987, the gap between imports and exports has continued to increase.

Figure 2.7 Import and export as a percentage of GDP; 1960 - 2014
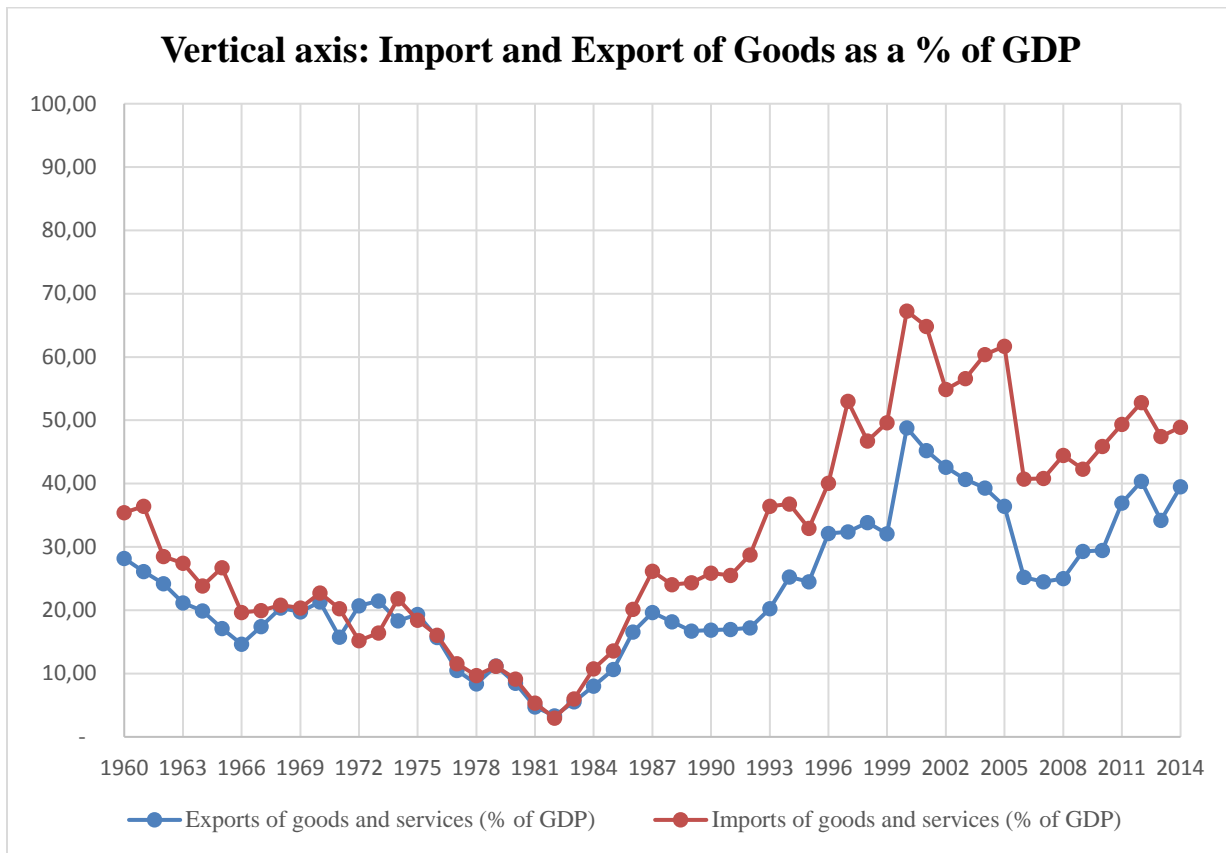
Source: Author's own graph using data from WDI (2016)

The constant increase in imports as against exports, is one of the main causes of the depreciation of the Ghana cedi, which is covered in the next section.

2.4.4 Exchange rate

Twarowska and Kakol (2014), group factors affecting exchange rate fluctuations into 3 categories. The first being short-term, which includes factors such as inflation, interest rate, current and capital account balance. Secondly, there is the long-term category, which includes factors such as budget deficit, competiveness of the economy as well as relative domestic and foreign prices. The final category includes non-economic factors like political risk, natural disasters and policy approach. In Ghana, several of the aforementioned factors come to play regarding the fluctuations in the

country's exchange rate. Inflation rates in Ghana have remained relatively high; interest rate is regarded as one of the highest in the world with Ghana's official interest rate according the Bank of Ghana, as of 2016 was about 26%. All these factors have contributed to the depreciating of the Ghana cedi. Furthermore, Ghana mainly exports raw materials and imports finished products as indicated in Section 2.4.3.

Figure 2.8 Exchange rate in Local currency units (Ghana cedis); 1991 - 2015
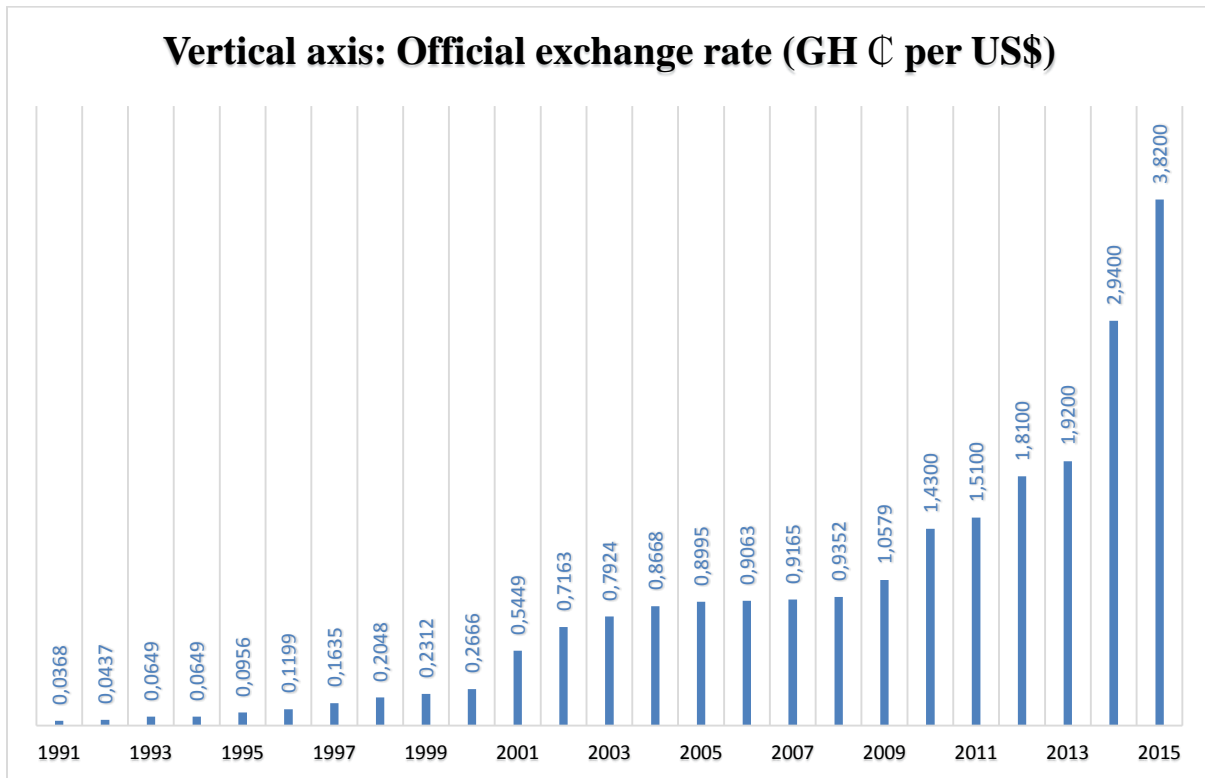
Source: Author's own graph using data from WDI (2016)

Figure 2.8 shows how Ghana's currency has depreciated against the US dollar from 1991 to 2015. In 1971, Ghana devalued the cedi from 1.02 (0.000102 new Ghana cedi) to US $ 1 to 1.82 cedis (0.000182 new Ghana cedi) to US $ 1. This policy did not help in the country's balance of payment problems and the cedi was devalued by a further 20% in 1972. The period 1972 to 1997 was riddled with many policy reforms, economic crisis and political instability, causing the cedi to depreciate from 2.75 cedis (0.000275 new Ghana cedi) to US $ 1 in 1983 to 2,250 cedis (0.225 new Ghana cedi) to US $ 1 in 1997 (Harvey and Sedegah, 2011). By the end of 2005, the cedi was trading at about 9,000 (0.9 new Ghana cedi) to US $ 1 as represented in Figure 2.8.

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As of 2015, the Ghana cedi was trading at 38,200 cedis (Ghana cedi 3.82) to 1 US $ 1 (Figure 2.8), signifying a worsening of Ghana's currency, hence, one needed more Ghana cedis to purchase a dollar. The continuous importation of finished products stems from the fact that, Ghana's domestic productivity and supply are unable to meet the current investor and consumer demand. High demands for technologically advanced products, which cannot be manufactured in Ghana, make importation the only means of satisfying local demand (Osei, 2012).

The depreciation of the Ghana cedis led to the dollarisation of the Ghanaian economy. Dollariastion refers to the replacement of a country's domestic currency with an alternative foreign currency as a medium of exchange (Cooper, 2004). Cooper (2004) argues that, dollarisation may take three forms; official, semi-official and unofficial:

- Official dollarisation – this form of dollarisation occurs when the official currency of a country is replaced by a foreign currency by monetary authorities at an exchange rate.
- Semi-formal dollarisaion – this happens in a situation when monetary authorities legalise a foreign currency to circulate alongside a local currency concurrently; both as legal tenders.

Unofficial dollarisation – this type of dollarisation refers to a situation where citizens of a country lose confidence in their local currency due to high inflation rates, hence, they use a stronger currency as a store of value (Cooper, 2004).

According to Adenutsi and Yartey, (2007), a continuous proliferation of a foreign currency in a developing country is likely to lower demand for the local currency as well as affecting its stability. Hence, as can be seen in Figure 2.8, the Ghana cedi has depreciated considerably over the years. The exact inception of dollarisation in Ghana is not known. Stryker (1999) found out that, due to high inflation rates in the early 90s a case of dollarisation occurred in 1990 when a bank issued home mortgages in US dollars. By December 1996 however, foreign exchange deposits accounted for 30% of total deposits in Ghana. Dollarisation of the economy continues to put pressure on the Ghana cedi, making it weaker and wearker, as individuals favour saving their money in more stable currencies (foreign).

2.4.5 External Debt

After independence, Ghana had a lot of foreign reserves and did not have to rely on borrowing. However, these foreign reserves were quickly depleted and the country had to rely on external and domestic loans. Ghana's debts reached 100% of GDP in 2000.

Figure 2.9 shows Ghana's external debt stock between the years of 1970 and 2014. In 1970, external debt stood at about US $ 560 million and this figure rose sturdily to about US $ 7.8 billion in 2003. The continuous increase in Ghana's debts saw the country being categorised as a Highly Indebted and Poor Country (HIPC) and in 2006, the country benefited from debt relief which saw debts owed to IMF, International Development Association (IDA) and AfDB completely cancelled (Kwakye, 2012).

Figure 2.9 External debt; 1970 - 2014

Vertical axis: External debt stocks, total (current, US$ '000)
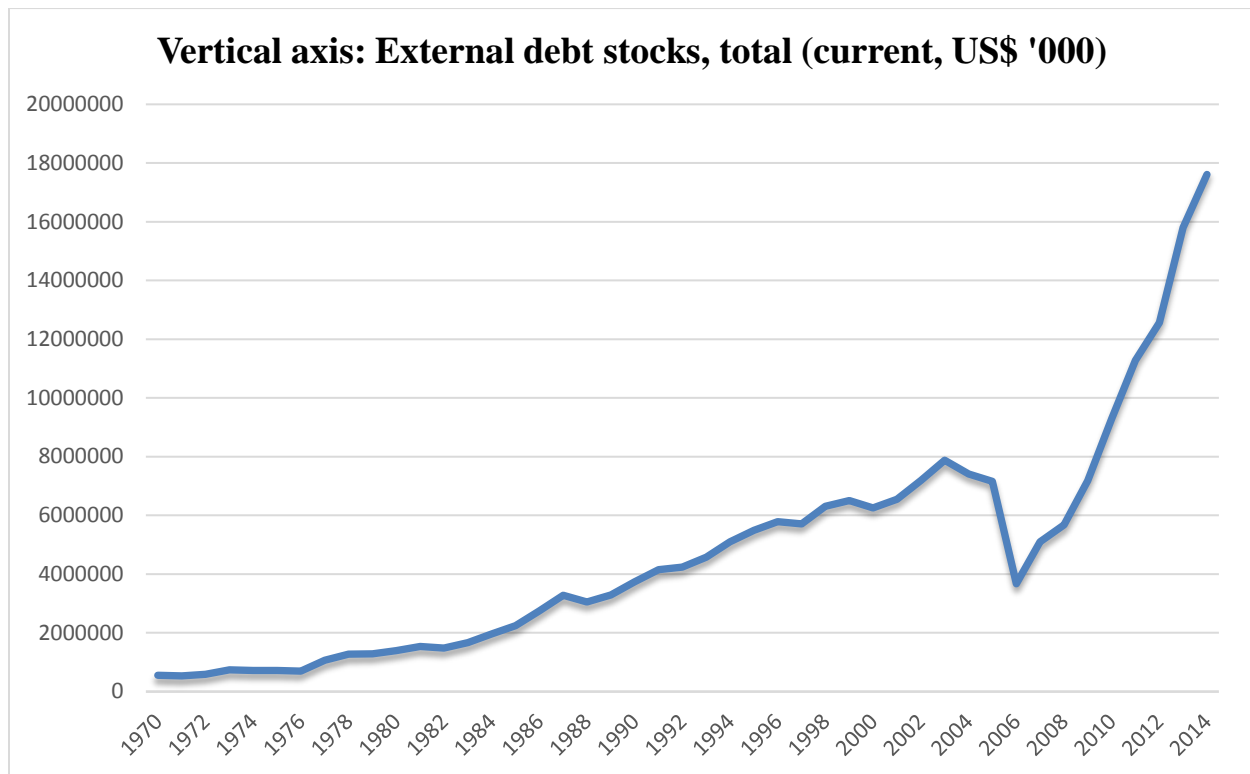
Source: Author's own graph using data from WDI (2016)

The cancellation of Ghana's debts in 2006, saw a drop in its external debt stock from US $ 7.9 billion to US $ 3.7 billion as evident in Figure 2.9. In 2010 however, there was a rebasing of Ghana's economy (further discussed in Section 2.4.8), which led to the country being given the middle income status. The middle income status expanded the country's borrowing capacity, hence, leading to a rise in external debts (Figure 2.9). Furthermore, since Ghana started producing oil in commercial quantities from 2010, the oil proceeds have been used as collateral security for more borrowing (Gyimah-Boadi and Prempeh, 2012). Hence, as shown in Figure 2.9, Ghana's external debt has escalated from 2006 onwards; rising from US $ 5.1 billion in 2007 to US $ 17.6 billion in 2014.

2.4.6 Government Revenue

Over the years, various governments in Ghana have relied heavily on borrowing and grants for economic development. As seen in Section 2.4.5 above, the country's external debt has been on the rise since 1970.

Figure 2.10 Government revenue excluding grands; 2001 – 2011
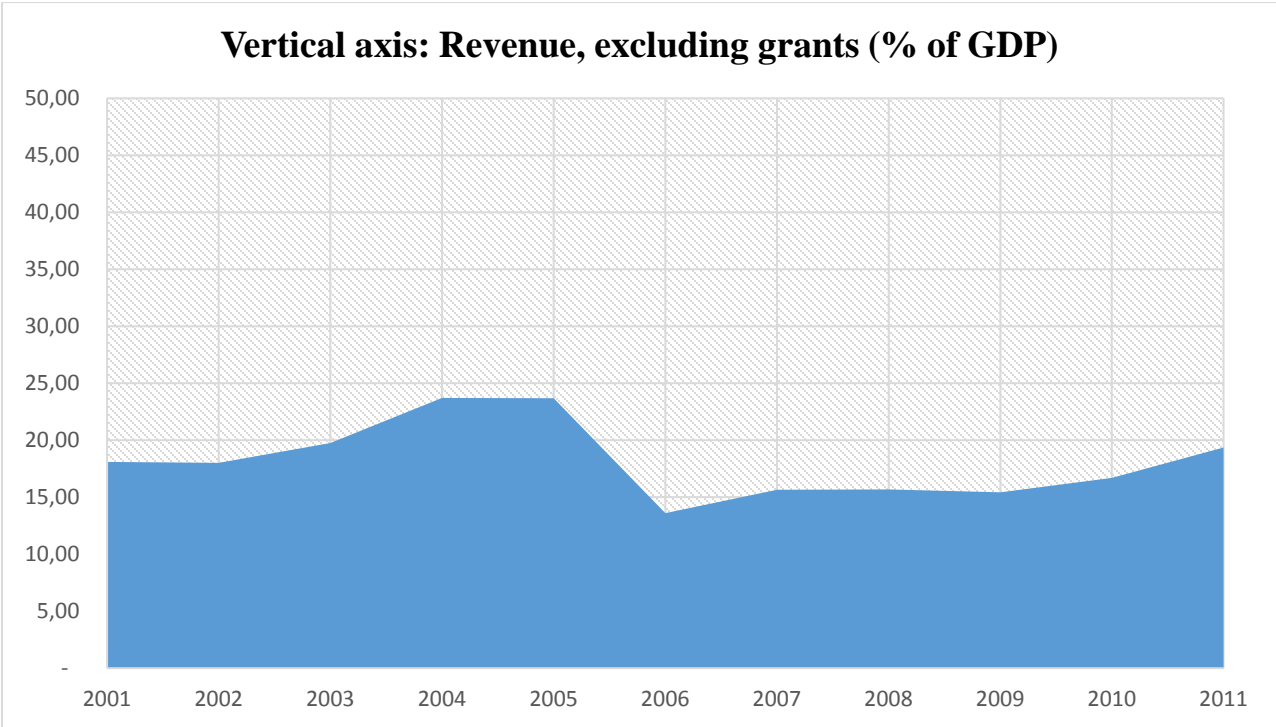
Source: Author's own graph using data from WDI (2016)

Government revenue excluding grants as a percentage of GDP has been meagre as presented in Figure 2.10. As a percentage of GDP, government revenue have been below 25% from 2001 to 2011. The years 2004 and 2005 saw the Ghanaian government generate the most revenue of about 24% of GDP. However, in 2006, the proportion dipped to about 14% of GDP and has averaged about 17% of GDP till 2011 (Figure 2.10).

Younger, Osei-Assibey and Oppong, (2015) found out in 2013 that, 74% of internally generated revenue in Ghana came from taxes. This shows how various governments in Ghana fail to come up with innovative ways of generating internal funds and heavily rely on tax and borrowing.

2.4.7 Redenomination of the Ghana Cedis

The Bank of Ghana in July, 2007 announced a redenomination of the Ghana cedi. Majority of financial transactions undertaken in Ghana, are done with cash and during the period of redenomination, the exchange rate was approximately ¢10,000 (old Cedis) to $1(UD dollar). The new denomination made ¢10,000 (Old Cedis), GH ¢1 (New Ghana Cedis), hence making the exchange rate, GH ¢1 to $1 (Bank of Ghana 2007a; Dzokoto and Mensah, 2011). The Bank of Ghana saw the redenomination to be necessary, due to high transaction cost at tellers, risks in carrying loads of cash, and the strain on payment systems particularly, at Automated Teller Machines, vendor machines and car parking meters. Furthermore, redenomination sought to ease the problems associated with keeping statistical records and maintain compatibility with data processing softwares (Bank of Ghana, 2007b).

2.4.8 Rebasing of the Ghanaian Economy

The rebasing of the Ghanaian economy, was completed by the GSS in November 2010. The GSS was of the view that, the GDP of the country was substantially underestimated, hence necessitating the rebasing. Rebasing of a nation's accounts series entails the replacement of the former base year used for collating the constant price estimates, with a different and more recent one. The policy in Ghana, also sought to reconcile the different estimates of GDP and provide methodological and conceptual reviews and improvements. The base year for calculating GDP was therefore changed from 1993 to 2006 (GSS, 2010). After the rebasing was carried out, there was a 60.3% increase in

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GDP estimates. GDP estimates for 2006 from rebasing was GH¢ 18,705.1 million while estimates based on 1993 series was GH¢ 11,671.97 million. The size of Ghana's GDP post rebasing placed the country among the Lower middle income countries (GSS 2010).

2.4.9 Unemployment

Ghana's unemployment rate stood at 2.4% as of 2014 (WDI, 2016). Although the levels of unemployment seem to be low, the figure hides the country's high levels of underemployment. Employment in Ghana, seems to be mainly an urban issue as unemployment rates in urban areas are quadruple that of rural areas (Baah-Boateng, 2013).

In the rural areas however, there are high levels of underemployment. The majority of rural dwellers in Ghana are engaged in agriculture and most of these farms employ family members. These family labour mostly rate themselves as employed but are mostly unpaid. Hence, there is high levels of rural underemployment in Ghana which in turn is masked by the aggregate unemployment rate in the country, which relatively low. Meagre earnings by underemployed workers in rural areas also acts as a push factor, motivating individuals to migrate to urban areas in search for better 'non-existent' jobs. More details on unemployment and migration are presented in the next chapter.

2.5 SYNTHESIS

Ghana was the first sub-Saharan African country to become independent in 1957. After independence from Great Britain, the country experienced three military coup d'états, last of which occurred in 1981. Since, 1993 however, there has been political stability with five democratic elections.

Ghana over the years has suffered from several periods of economic meltdown (1966, 1972, 1975-76, 1979, 1981-83) where the country experienced negative economic growth. Some reasons responsible for these troughs include change in government, oil shocks, changes in world market price of cocoa and certain government policies. In dealing with the economic turmoil, the

government of Ghana teamed up with the IMF to introduce the ERP in 1983 and SAP in 1986. These two programmes helped to stabilise Ghana's economy post 1984. From 1993 to 2016, Ghana has not demonstrated an overarching vision. This is when there is a change in government, the previous vision document is discontinued. This lack of a strategic direction has affected the country negatively as projects started by previous governments are abandoned and monies spent on them put to waste.

Although GDP growth rate has averaged about 5.5% from 1984 to 2014, there are other segments of the economy that leave a lot to be desired. Inflation has averaged about 25% since 1993; there has been sustained exchange rate depreciation as well as a high external debt stock. Ghana's economy was rebased in 2010, leading to the country being recognised as a middle income country. In addition to the rebasing, Ghana began exporting oil in 2010. These two occurrences gave the country the capacity to borrow more, and the country's external debt stock rose from about US $ 9.3 billion in 2010 to US $ 17.6 billion in 2014.

2.6 CONCLUSION

The Ghanaian economy experienced a lot of economic difficulties from independence in 1957 up until the beginning of the fourth republic in 1993. During this period, with the help of the IMF, the country introduced the ERP and SAP which helped stabilise the fragile economy. After these two development programmes, various governments in Ghana, have come up with many development programmes, which are mostly short or medium term. With the lack of a long term vision, most development projects are ad hoc, failing to solve long term problems.

Furthermore, the economy of Ghana is failing to meet the consumption demands of households and firms in the country. Hence, the increase in importation. Ghana mostly exports raw materials and imports intermediate and finished goods. This pattern of trade has been detrimental to the country's currency which has continued to depreciate over the years.

It can also be observed from the current chapter that, the agricultural sector is the least contributor to GDP. This sector employs mainly the rural population and with dwindling government

expenditure in the agricultural sector, farmers in the countryside are beginning to migrate to the urban centres in search of greener pastures. The issues of unemployment, migration and urbanisation are discussed in the next chapter.

CHAPTER THREE

SLUMS AND THEIR FORMATION

3.1 INTRODUCTION

Slums are a global phenomenon, housing 863 million people worldwide, according to UN-Habitat (2013); this represents about 12 % of the world's 7.1 billion population. Slums over the years, have become an integral part of urban areas, providing accommodation to those who cannot afford formal housing. To ameliorate the exacerbating growth of slums, the UN millennium Target 7(D) aims at substantially enhancing the livelihood of at least 100 million people living in slums worldwide by the year 2020 (UN, 2015). Achieving this goal will require one to understand what slums are, how they came about and reasons for their continuous growth.

The current chapter seeks to explain the development of the slum phenomenon. The chapter is divided into five sections. The first section presents the differing meanings of the word "slums", and then chooses the working definition to be used in the current study. Section two looks at how slums came about and the reasons for their continuous growth. The third section discusses the slum situation worldwide, before presenting Ghana's. Section four deals with some slum intervention programmes implemented in Ghana and the last section provides a synthesis of the entire chapter.

3.2 DEFINITION OF A SLUM

The definition of slums has evolved over the years. This section first considers the traditional definition of slums, and then the contemporary one.

In the 1980s in London, areas which had poor housing and unhygienic living conditions usually housing criminals and the socially marginalised was referred to as a "slum" (UN-Habitat, 2003). Stokes (1962) referred to a slum as a home to the poor and the stranger in a city. Stokes viewed slum areas as a habitat for classes of people who are yet to be integrated into the life of the city. These slum dwellers are people who do not have the "required level of social development" and hence they cannot be utilised in the economic and social development of the city (Stokes 1962, p.

188). This represents the traditional definition of slums. As per Stokes' definition, slums only house people who do not partake in the economic or social life of the city and exist mutually exclusively from the city. Hence, poor strangers coming into a city inhabit slums up until they can contribute to the economic life of the city. The ideology that, slums only house the urban poor is contrary to contemporary assertions, as Pornchokchai (2003) argues that, the real poor people in cities live outside slums. Hence, one can conclude that, not all slum dwellers in cities are poor.

Contemporarily, modern definitions of slums seek to describe living conditions rather than the class of people who live in a slum.

The word "slum", according to Yelling (1986), has a political connotation and its definitions vary in diverse contents, in different countries; depending on ideologies, social class and culture. This implies that, what is referred to as slum changes over time across countries when living conditions change. For instance, when the quality of housing in a particular city improves over time, areas which do not improve are referred to as slums. Yelling (1986), further argues that, outside toilets in Western Europe were acceptable years ago but not anymore in the 21st century. Hence, houses with outside toilets are referred to as slums since they have not developed like the other contemporary housing with inside toilets. The author's argument suggested that, there was no institutional definition of slums, as slums were defined differently in diverse contexts, depending on the conditions in a society.

In 1978, the UN established the **UN-Habitat**, a brainchild of the first UN conference on Human Settlements and Sustainable Urban Development, held in Canada in 1976. The UN-Habitat was set up with the vision of helping develop well planned and governed, efficient cities with adequate infrastructure, housing units, with ease of access to basic social amenities such as energy, water and sanitation.

The UN-Habitat describes a "Slum" as a cluster of urban households which lacks the following sources:
- permanently durable housing,
- sufficient living space,

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- ease of access to clean water,

- adequate sanitation,

- land tenure security that prevents forceful eviction (UN-Habitat 2006, p. 21).

The severity of a slum's living conditions depends on the number of the problems listed by the UN-Habitat's definition, present in a particular slum.

The World Bank/UN-Habitat (2000), on the other hand, refer to a slum as deserted areas in cities with poor living conditions and housing. These slum areas may either be concentrated poor central city settlements or scattered communities residing on illegal lands on the outskirts of cities. Slums are settlements which do not have:

- Basic social amenities such as water, sanitation, street lighting, paved footpaths, roads for emergency access.

- Easily accessible schools and clinics and safe communal playgrounds for children

- Centres for communal meetings (World Bank/UN-Habitat, 2000).

Cities Alliance (2014) refers to slums as informal settlements within cities which are overcrowded with many people in a small living space with filthy living conditions. These settlements lack social facilities such as schools, hospitals, clean water, energy sources and security.
From the above, it can be deduced that, Slums refer to areas particularly in cities, which are crowded and lack basic social amenities. The current study uses the UN-Habitat's definition as its operational definition of slums.

UN-Habitat (2003) goes further to categorise slums into two broad classes based on their perceived future.The two classes of slums are:

I. Slums of hope: this represents settlements which seem to be making some progress and been through some process of improvement. These settlements usually consist of self-built structures on illegal lands.

II. Slums of despair: this class of slums represent deteriorating neighbourhoods, with worsening living conditions. Slums of despair consists of settlements with deteriorating environmental conditions, where basic amenities are either non-existent or degrading.

Overtime however, slums of hope become slums of despair as per evidence from slum areas in Europe, North America and Australia. This metamorphosis usually happens due to the lack of adequate intervention programmes to help graduate slums of hope into formal housing units (UN-Habitat, 2003).

3.3 FORMATION AND GROWTH OF SLUMS

Roy *et al*., (2014) enumerate the reasons for the growth of slums; these include high population growth, economic growth with no improvements in living standards and economic opportunities, housing constraints, the informal economy and the legality of slums. These factors are further developed in the next section. The World Bank/UN-Habitat (2000) are also of the view that, slums come about as a result of bad governance, redundant land markets and lack of political will to address the formation of slums. Hence, the failure of government leads to the formation of more slums, exacerbating the already existing slum situation, consisting of people who are constrained from the opportunities for development, provided by urban cities.

UN Habitat (2003, p. 5-17) attributes the formation of slums to a combination of factors, such as in-migration, income inequality, poverty, failure of housing policies, poor national and urban policies and lack of planning for urban growth. Figure 3.1 shows the slum formation process, according to the UN-Habitat.

Figure 3.1 Slum formation
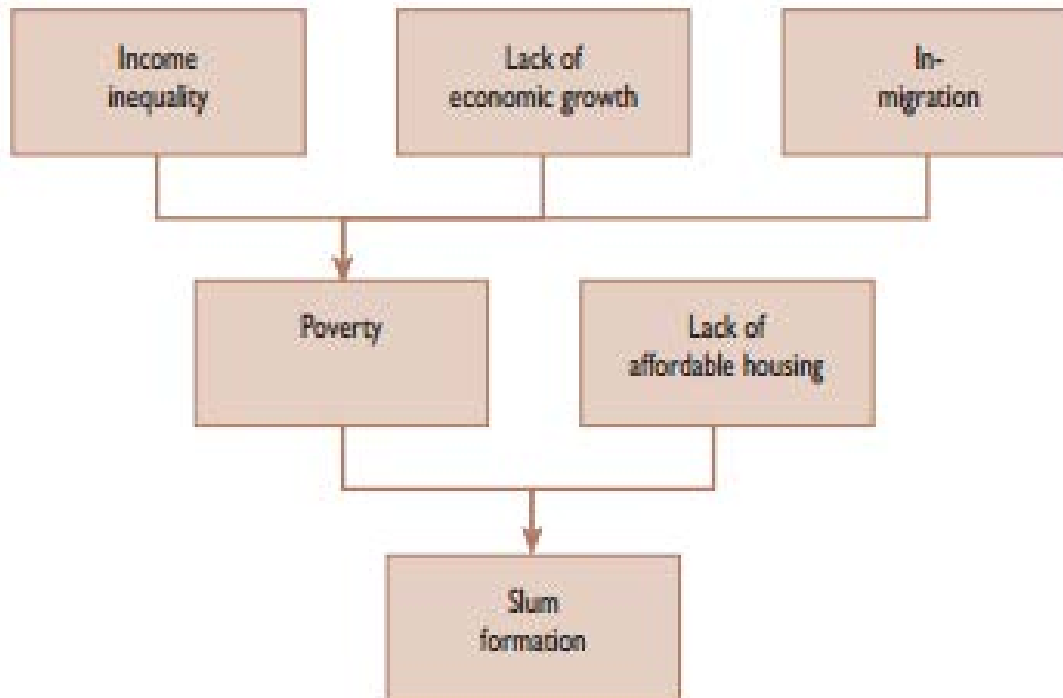
Source: UN Habitat (2003, p. 17)

The ensuing sections discuss some reasons that lead to slum development, as suggested by World Bank/UN-Habitat (2000), UN-Habitat (2003) and Roy *et al.*, (2014).

3.3.1 Population growth

The population growth rate is the relative increase in population size due to natural increase (difference between births and deaths) and net migration (Todaro and Smith, 2015).

Sibly and Hone (2002) regard population growth rate as a parameter that summarises population density trends. This explains how population density is either increasing, decreasing, stable and the rate at which the changes are occurring. Rapid population growth, which is not often accompanied with economic development, leads to reduced per-capita income as evident in most African countries (Mutisya and Yarime, 2011; Buhaug and Urdal 2013).

Rapid population growth in Africa is badly managed, as governments fail to plan and invest in manpower needs. This lack of proactiveness by African governments to deal with population growth has led to the continuous development of slums (Fox, 2014).

Figures 3.2 and 3.3 show the percentage growth rate of Ghana's population as well as the total volume of population.

Figure 3.2 Population growth rate in Ghana; 1960 - 2014
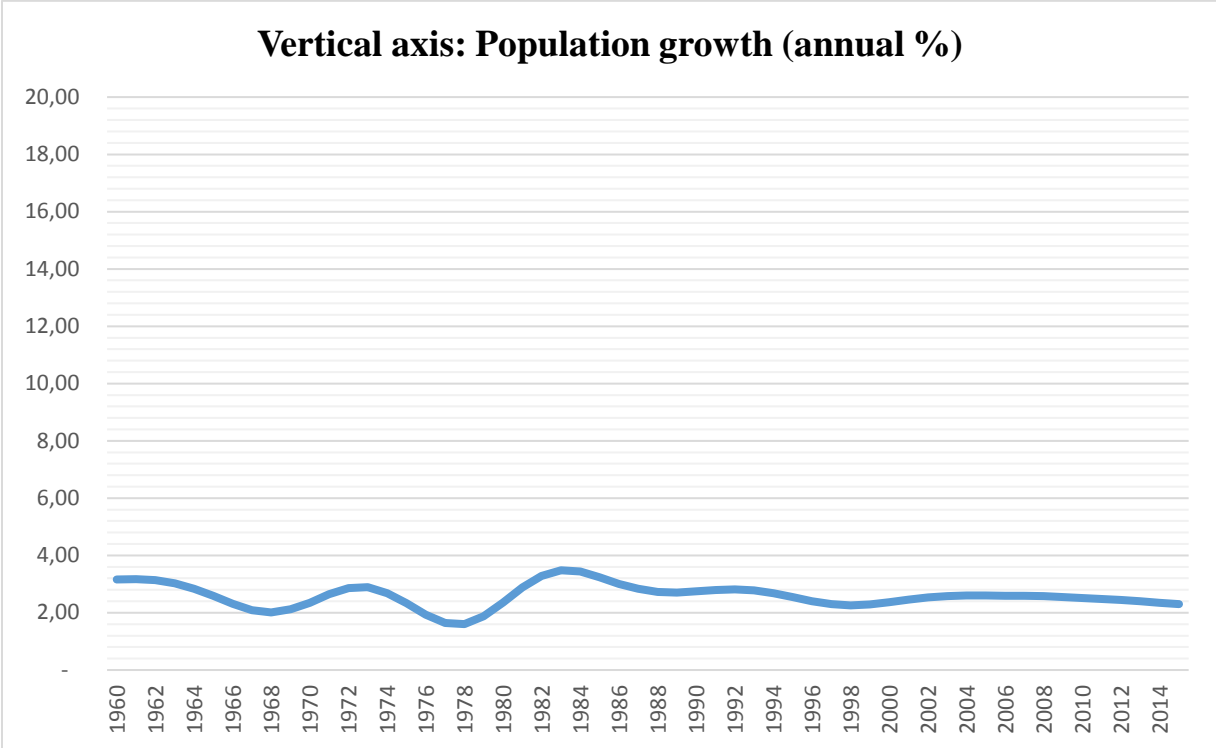
Source: Author's own graph using data from WDI (2016)

Figure 3.2 shows that, Ghana's population growth rate peaked at 3.5% in 1983 and has since been on the decline, reaching a minimum at 2.3% in 2015. It can however be observed that, although the population growth rate is decreasing, the volume of population is increasing (Figure 3.3).

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Figure 3.3 Population of Ghana; 1960 – 2014

Vertical axis: Population, total
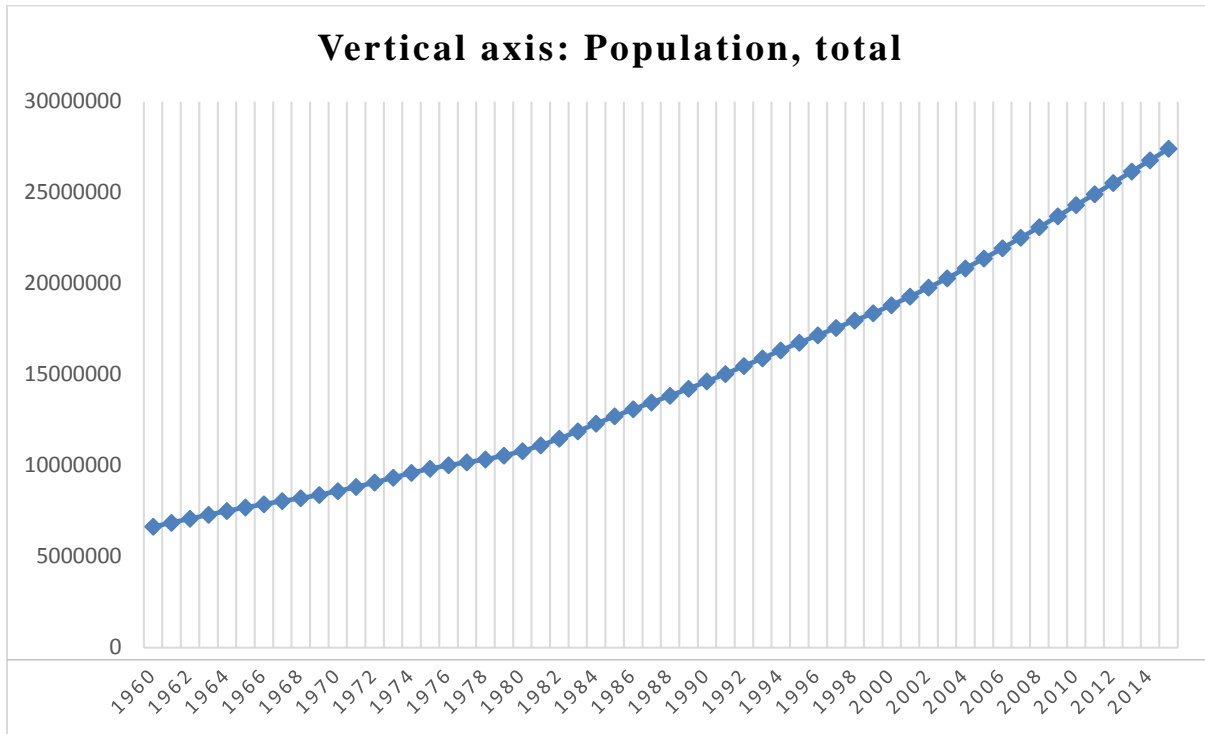
Source: Author's own graph using data from WDI (2016)

Figure 3.3 shows that, in 1985, Ghana's population was 12.5 million, rising steadily to 27.4 million in 2015, more than double over 30 years. This increase of population in Ghana, without accompanying economic development, puts pressure on the existing social amenities, leading to their deterioration. Ghana, over the years, has experienced severe energy crisis, deteriorating roads and water crisis because these amenities do not have the capacity to accommodate the increase in population (AfDB, 2012b).

3.3.2 Migration and urbanisation

Fouberg, Murphy and De Blij (2009) define migration as the permanent movement of an individual, household or community into a location other than one's origin. Internal or in-migration, involves moving locations within the borders of a country. In Ghana, the continuous in-migration from rural into urban areas, mainly Accra and Kumasi, stems from many factors. These include lack of investment in rural areas and the presence of modern industries in the urban centres that provide employment opportunities to labour (Isaac and Raqib, 2013). Migration comes with positives and negatives. Migrants' remittances to their families act as investments and income

which can be used to improve quality of life and productive capacity in rural areas (Taylor, 1999). On the other hand, rural-urban mobility comes with many disadvantages, to both the rural and urban areas. The rural areas are deprived of workers in economic activities, as migrants are mostly young productive men. In the urban centres, migration may lead to increase in crimes due to lack of employment opportunities, congestion in cities, cultural change and pollution (Andersen, 2002; Lall, Selod and Shalizi, 2006).

Hagen-Zanker's (2008) theoretical analysis classified migration theories into three levels; micro-level, meso-level and macro-level migration theories. Some of the theories backing people's decision to migrate are represented in Table 3.1.

Table 3.1 Motives for migration and some of their backing theories

Micro- level migration	Meso- level migration	Macro-level migration
Motive for migration: • Individual desires of survival and wealth generation	Motive for migration: • Collective and social network	Motive for migration: • Income and employment opportunity differentials
Backing theories: • Lee's push/pull factors • Human capital model	Backing theories: • Network theory • New Economics of Labor Migration Theory	Backing theories: • Neoclassical macro migration theory • Mobility transition

Adapted from: Hagen-Zanker, (2008)

The Micro – level migration involves the movement from one geographical location to another, based on an individual's personal decisions. Decisions may involve the quest for attainment of personal goals such as wealth, fulfilment or pleasure. This level of migration includes theories such as Lee's push/pull factors and human capital model (Hagen-Zanker, 2008).

Lee's (1966) theory, associates migration to four factors;

1. **Factors linked with migrants' area of origin** – there are certain positive and negative dynamics in a migrant's area of origin. One may decide to migrate if the unfavourable conditions in the area of origin exceed its positives.

2. **Factors connected to migrants' area of destination** – the destination of a migrant also possesses some positive and negative factors that one evaluates before deciding to migrate.

3. **Obstacles preventing migration** – migrants are faced with certain obstacles when deciding to migrate, some of which include, distance to be travelled and leaving one's family behind. To migrate, one must be able to surmount these obstacles.

4. **Personal factors** – people differ in terms of their personalities; some individuals are able to deal with change, while others are not. Hence, personality traits such as sensitivity, awareness and intelligence come to play in determining if one will make the decision to migrate.

Lee's (1966) theory describes migration, as a process where an individual assesses both positives and negative conditions in his/her area of origin and destination, then makes a migration decision based on which factors are more favourable in the midst of migration obstacles.

Another micro migration theory is the human capital theory. Sjaastad (1962), postulates that, the quest for higher paying job opportunities is a key cause of migration. Hence, individuals planning to migrate undertake a cost and benefit analysis of returns from migration. When the outcome of this analysis is positive, there is migration. Costs of migration are either monetary or non-monetary. Monetary costs include money based expenses while non-monetary costs include income forgone from current jobs while migrating as well as leaving behind family and friends. These costs are pit against potential earnings in the destination area and if the outcome is positive, an individual may migrate (Sjaastad, 1962).

Meso – level migration deals with migration perpetuated by social ties such as religious affiliation, ethnicity, social networks and community ties. Goss and Lindquist (1995) propose a network theory for international migration, which however, is also applicable to rural-urban in-migration. According to the network theory, migrants with social ties in their destination areas are provided with vital information about ways of doing things and assistance with settling in. These

social networks may help migrants overcome difficulties of the change in environment, as well as helping in getting a job.

New economics of labor migration theory, another meso-level model came to fore in the 1980s. One of the model's central ideas is that, one's decision to migrate is taken collectively with his/her household and not individually. The household sees migration as a form of diversification and invests in sending one member out to guard against uncertainties. Hence, the costs and returns from migration are shared by the household (Stark and Bloom, 1985). This theory therefore seeks to debunk the notion that, migration is an act of desperation, but however, it is a calculated step by a household to hedge against risk.

Macro – level migration refers to aggregate migration trends on a large scale as against being on individual levels. The Neoclassical macro migration theory, popularised by Harris-Todaro (2015) postulates that, the driving force behind rural-to-urban migration is lack of employment opportunities in the rural areas and the inequality between the rural and the urban sector real wage rates. In making the migration decision, individuals compare the returns to labour in the rural or agricultural sector to the going wage rate in the urban sector, as well as the number of job vacancies in the urban area. The larger the wage gap between the two areas, the higher the incentive for rural dwellers to migrate to the urban centres.

In Ghana, 80% of land in rural Ghana is regulated by customary law and manned by the traditional authorities, where all members of a lineage are entitled to use or derive profit from someone else's land. The uncertainty of returns from common ownership of land in rural areas tends to push young people to the cities which offer more stable jobs with high salaries relative to those in agriculture (UN Habitat, 2009). The poverty rate is about 63% in Northern Ghana, while 29% at the national level and this has caused almost one out of every five people born in northern regions of Ghana to migrate and settle in southern Ghana (GSS, 2007; Van der Geest, 2011). The wage gap between the rural and urban areas in Ghana, is a major reason why people migrate.

Zelinsky's (1971) hypothesis of mobility transition represents another macro level migration theory. Migration, according to Zelinsky (1971), is an end product of economic and social changes

as a result of modernisation. Hence, migration can be associated with increases in birth rate and industrialisation which comes with modernisation.

The interplay of all the above discussed theories, and others, are the cause of migration in Ghana. Migration, is a major determinant of urbanisation; others include natural population growth and the transformation of rural areas into urban centres (Buhaug and Urdal, 2013). As mentioned in Section 3.3.1, Ghana's population is growing and coupled with that, is the increase in the number of urban centres. Ghanaian villages gradually become towns once they surpass the threshold population of 5,000 and above inhabitants (Naab, Dinye and Kasanga, 2013). The increase in urban centres, has led to the concentration of development programmes in such areas, at the expense of rural settlements. This phenomenon, Todaro and Smith (2015) refer to as urban giantism.

Urban giantism, according to Todaro and Smith (2015) refers to the bias of developing countries' governments towards the urban sectors. This leads to all major development projects being concentrated in the urban areas causing a major development gap between urban and rural areas. The bias towards the urban sectors in terms of development projects, attracts rural dwellers to migrate. The migration causes an expansion in the urban centres, hence requiring more developmental projects to cater for the masses, continuing the cycle of urban giantism. The influx of migrants for job opportunities also creates unemployment and housing problems in the urban regions.

Figure 3.4 shows the percentage of urban, as compared to total population. In 1960, Ghana's urban population was 23.3% of the total population. However, due to rapid urbanisation, the urban population grew steadily to 50% of total population as of 2009 and in 2014, 53% of Ghanaians were living in urban areas (Figure 3.4).

The vibrancy of economic activities in the Greater Accra and Ashanti regions have made them attractive to several in-migrants as the sixth Ghana Living Standards Survey pointed out that migrants from other regions to Greater Accra (Accra as the capital town) was 39%, while the Ashanti (Kumasi as the capital town) was 11%.

37

Figure 3.4 Urban population as a percentage of total population; 1960 – 2014

Vertical axis: Urban population (% of total)
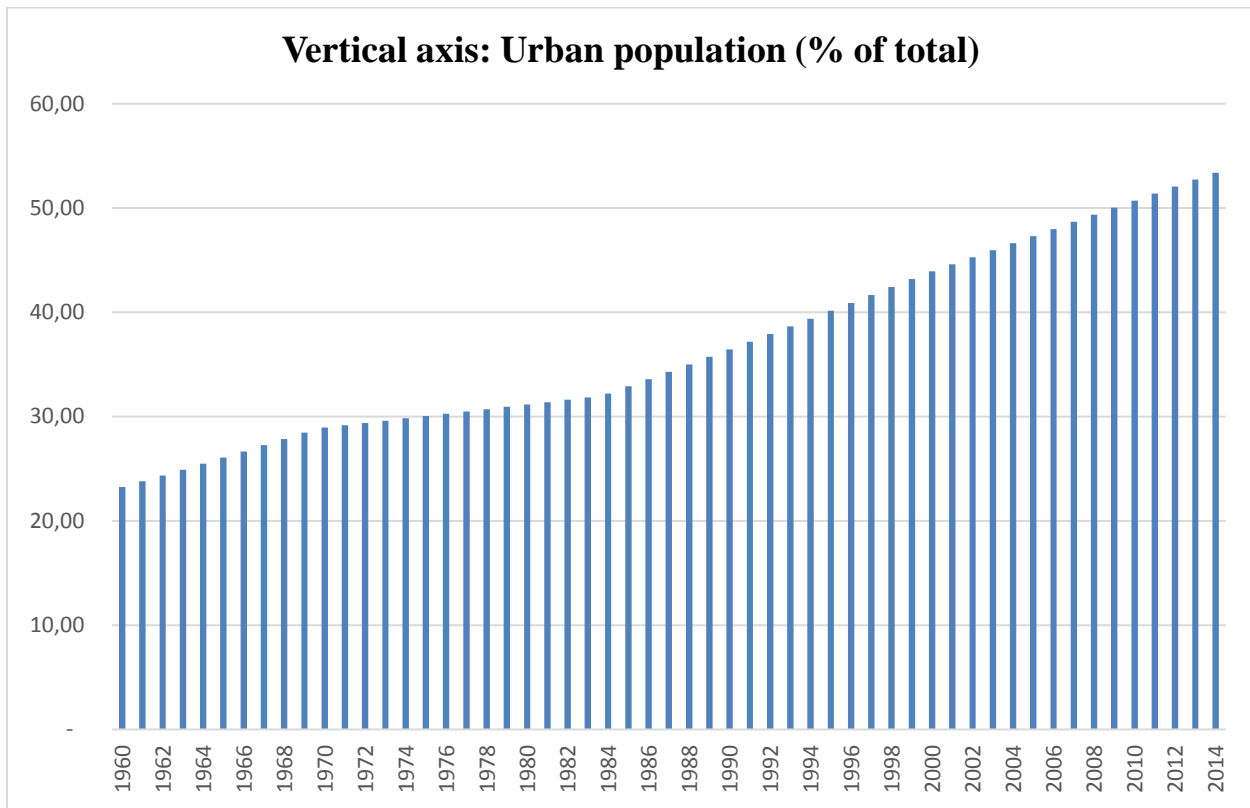
Source: Author's own graph using data from WDI (2016)

Accra and Kumasi have a population of 1.8 and 2 million respectively, and these two cities together, make up about 32% of the country's total urban population (GSS, 2013a; GSS, 2013b). Ghana's per capita income in 2013 was Ghana cedis 5,300. On regional level, the Ashanti region recorded the highest per capita income (Ghana cedis 8,200) more than the national average. Greater Accra also recorded a high per capita income (Ghana cedis 5,400). On the other hand, the three northern regions in Ghana had an average per capita income of about Ghana cedis 2,600, which was half the national average (GSS, 2013c). The high per capita income in the Ashanti and Greater Accra regions signify vibrant economic opportunities, hence attracts most migrants especially from northern Ghana.

Kumasi geographically, links the north of the country to the south, making it a hub of commercial activities and hence informally regarded as the commercial capital of Ghana. Apart from the

vibrant commercial activities in Kumasi, the town is distinguished for its local artisan enterprises, the majority (50%) of which are involved in wood related businesses (KPMG, 2008).

Accra on the other hand is located on the coast, along the Gulf of Guinea. The majority (36%) of those employed in the region are engaged in services and sales related activities. About 21% are engaged in craft and related activities while the rest are engaged in plant and machine operation, business management, agricultural, forestry and fishery (GSS, 2013a).

The IMF purports that, urbanisation is unstoppable, especially when globalisation has led to a worldwide demand for modern technology and higher labour skills. These pull factors entice rural dwellers to migrate to urban areas (IMF, 2007). Most rural areas in Ghana lack electricity and internet connection, hence, these rural dwellers in quest of living a modern life, migrate to the urban centres of Ghana.

3.3.3 Unemployment

An unemployed person, according to GSS (2013c), is one between the ages of 15 and 64, who is not engaged in any form of economic activity, has no connection to a job, but has made him/herself available to work by actively looking for it. Ghana's reported unemployment rate varies depending on the reporting body.

Figure 3.5 shows Ghana's unemployment rate between the periods of 2003 and 2014, has averaged about 5%. Official unemployment rate in Ghana, may however be masked by the high levels of underemployment (AfDB, 2012a; Domfe, Osei and Ackah, 2013). This stems from the fact that the government's definition of unemployment eliminates a great number of jobless people who may be available for work but are not specifically looking for work.

Data from AfDB which contradicts GSS's unemployment figures, points out that the youth of ages between 15 and 24 has an unemployment rate of about 26%. This is double the unemployment rate of the 25-44 age group and thrice that of the 45-64 age groups. Youth unemployment is a major problem in Ghana as 33% of the total population is made up of youth (AfDB, 2012b).

Figure 3.5 Unemployment rate; 1991 – 2014

Source: Author's own graph using data from WDI (2016)

Unemployment in Ghana is mostly an urban phenomenon as urban unemployment was four times higher than rural unemployment (Baah-Boateng, 2013). The national unemployment rate in 2014 was 2.4% (WDI, 2016). Therefore, low rates of Ghana's official unemployment figures are masked by severe underemployment and high urban unemployment rates.

Agriculture, which employs the majority of Ghana's labour force, adds the least value to GDP as seen in Section 2.4.2. Data is currently unavailable regarding the labour absorption rate of the various sectors, in the economy of Ghana. However, Baah-Boateng (2013) found out that, annual growth rate of sectors that employ majority of the country's labour force is low. Agriculture, which employs about half of Ghana's labour force only grew by 3% in 2010. The manufacturing sector, on the other hand in 2011 (including oil manufacturing which employs less than 100 Ghanaians) employed 10% of total labour force, but contributed to about half of the economy's 15% growth rate. Furthermore, demand for graduates who study agriculture related courses is very low in

Ghana. Only 4% of graduates are employed yearly as the provision of agricultural extension services are seen as a "public good" in Ghana, hence the private sector's employment of agriculture graduates is very minimal (Boateng and Ofori-Sarpong, 2002).

Another alarming problem in Ghana's economy is the issue of graduate unemployment. All tertiary institutions in Ghana together churn out an average of 70,000 graduates yearly. From Table 3.2, it can be seen that, of the labour employed in the formal sector, only 4.3% were tertiary graduates in 2013 (GSS, 2013c).

Table 3.2 Level of education attained by labour force

	Percentage of labour employed
Level of education	**2013 (%)**
Never been to school	32.8
Primary	21.1
Junior High School	29.7
Senior High School	8.5
Post-secondary	3.5
Tertiary	4.3
Total	**100**

Adapted from; GSS (2013c)

The problem of graduate unemployment is brought about by many factors. Some of these reasons according to Boateng and Ofori-Sarpong, (2002) and Alfred *et al*., (2008) include:

- Lack of critical tertiary teaching materials and laboratory equipment, leading to insufficient practical training.

- Mismatch between tertiary courses and demands in the labour market.

- Lack of expansion in private and public sectors to absorb graduates.

- The inadequacy of support for graduates who want to be entrepreneurs.

- Insufficient counselling of graduates on job prospects.

- Lack of collaboration between tertiary institutions and industry.

As the capacity of the formal sector to employ the large numbers of people who search for employment is limited, many individuals have therefore, moved into the informal sector. For most individuals, the informal sector becomes the only source of employment, out of necessity for survival.

3.3.4 Housing

In Ghana, the urban housing sector has not improved over the years to accommodate the increasing population growth. In addition to the housing deficit problem, the ambiguous definition of "occupancy" and "dwelling" by the various housing authorities in Ghana, makes it difficult to determine the accurate housing deficit in the country, making estimates somewhat unreliable in guiding policy makers (World Bank, 2015a). However according to Kwofie, Adinyira and Botchway's (2011) estimation, Ghana's housing deficit stood at 1.2 million as of 2010, as shown in Table 3.3.

The percentage of housing delivery from 1980 to 2010, has been rather low, at most not exceeding 25% of demand (Table 3.3), piling up the deficit. The majority of Ghana's population resides in urban areas (discussed in section 3.3.2), however, only 42% of the houses in Ghana are in urban areas, making housing problems more acute in urban Ghana (GSS, 2012). The housing deficit has increased from a quarter of a million in 1980 to 1.2 million in 2010 and the trend is likely to be on the rise.

Table 3.3 Housing deficit in Ghana

Year	Existing deficit	Yearly need	Yearly delivery	% of delivery
1980	250,000	133,000	70,000	22%
1998	300,000	140,000	30,000	25%
2000	700,000	199,000	25,000-30,000	21%
2008	1,000,000	150,000	37,000	22%
2010	1,200,000	300,000	199,000	23%

Adapted from; Kwofie, Adinyira and Botchway, (2011)

The low and middle income earners in developing countries are unable to afford a loan to buy the cheapest built housing units (UN-Habitat, 2011a). For this reason, many turn to renting. In Ghana, the nature of rental payment system puts a lot of pressure on tenants. Existing and potential tenants in Ghana are required to pay a lump sum, covering about two to five years of rental payment. Hence, people who cannot afford these high rental charges have to resort to alternative housing. Deficits in housing supply and high rents for decent accommodation are major factors that drive people into slums in Ghana (Nyametso, 2010).

The development of slums also stems from the lack of coordination between authorities in charge of urban planning, land allocation and economic development. Most governments worldwide, adopted the strategy that, economic development will cater for the housing needs of the country. The continuous increase in slums have however shown that, coordination among economic development, urban planning and land allocation authorities is crucial in aligning planned economic growth with the provision of sustainable housing (Ooi and Phua, 2007).

Assisting the construction industry to help in providing housing is also very crucial. UN-Habitat (2016a) suggests four ways in which the construction industry can help in addressing the housing constraint. These are:

- Doing away with monopoly practices

- The encouragement and provision of incentives for small firms to enter the construction industry.

- The lowering of import controls.

- The encouragement and support for research in the housing sector.

The construction industry in most countries, including Ghana tend to provide tax breaks, import tax holidays, financial assistance and free land to foreign contractors whose products the average Ghanaian cannot afford (UN-Habitat, 2016b). Hence, helping local and small contractors who build the majority of houses is crucial in reducing Ghana's housing deficit.

3.3.5 Economic growth

Rapid economic growth in developing countries, unaccompanied by the availability of sustainable employment leads to the formation of informal settlements in urban areas to house economic migrants (Roy *et al*., 2014). The growth of GDP in many African countries does not translate to a better quality of life for all in every region, but only in a few large cities. Therefore, people migrate to these big cities for better job opportunities and improved life, leading to a population boom in the cities. Developing countries are therefore faced with the task of ensuring that, quantitative growth is accompanied by qualitative growth (Madlener and Sunak, 2011).

Economic growth in Ghana, has not transferred into improved standard of living for the majority of people. There exists a big poverty gap between the northern and southern regions of the country. Poverty head count in the three northern regions in Ghana is 55%, above the national average of 33%. This figure is 6% in the Greater Accra region and 15% in the Ashanti region (GSS, 2015b). This development gap has therefore increased the migration rate from the north cities in the south, especially Kumasi and Accra.

3.3.6 Legality of slums

The lack of political will to tackle the formation and growth of slums by various governments in developing countries is one of the main reasons for the proliferation of slums. A crucial example

is the case of the Dharavi slum in Mumbai, India whose location is preventing the expansion of the Mumbai airport, but Dharavi is a vote bank, hence government's inability to evict the inhabitants (Roy *et al.*, 2014). Slums are regarded as the 'illegal world' of urban areas, where they are considered as non-existent.

Slums are not usually represented on maps, they are not enumerated during census, pay meagre or no taxes and are not provided with the basic social amenities. The private sector, especially the financial sector, also excludes slums from their target market. Slum entrepreneurs are unable to access capital due to the lack of collateral security. These slum operators then have to rely on informal finance sources, to raise funding and are charged exorbitant interest rates with short repayment periods (UN-Habitat, 2003).

3.3.7 Informal economy

Rural-urban migration in developing countries is mostly motivated by rural poverty, and the migrants join the vibrant informal sector in the urban cities (Datta, 2006). According to the UN-Habitat, the majority of people who operate in the informal sector live in slums. Therefore, the flourishing informal sector attracts more people join in and these people also end up living in slums. (Isunju *et al*., 2011; UN-Habitat, 2011b). The informal sector acts as a "safety basket" for the urban poor who cannot be employed in the formal sector. In the case of Ghana, as 86% of the labour force are engaged in informal sector activities and as housing is also critically in short supply, the vibrant informal sector is likely to push up the number of slum dwellers in the country.

3.4 SLUMS SITUATION WORLDWIDE

The growth rate of informal settlements has exacerbated over the past decades as the number of slum dwellers worldwide increased from 650 million in 1990, 760 million in 2000 and to 863 million in 2013. It is estimated that one out of every three persons living in the cities of a developing country is a slum dweller (UN Habitat 2013). Sub Saharan Africa records the highest prevalence rate as about 56% of the region's urban population lives in slums as indicated in Table

3.4. The Southern Asia region has a 31% prevalence rate while North Africa has the least incidence rate in Africa (12%).

Table 3.4 Urban Population Living in Slums

	Proportion of urban population living in slums (%)			
Region / Years	*2000*	*2005*	*2010*	*2014*
North Africa	20.3	13.4	13.3	11.9
Sub-Saharan Africa	**65.0**	**63.0**	**61.7**	**55.9**
Latin America and Caribbean	29.2	25.5	23.5	21.1
East Asia	37.4	33.0	28.2	26.2
Southern Asia	45.8	40.0	35.0	31.3
South-eastern Asia	39.6	34.2	31.0	28.4
Western Asia	20.6	25.8	24.6	24.9

Adapted from; UN-Habitat, (2016)

In Africa, slums are a part of every large urban centre. The biggest on the continent being the Kibera slum in Nairobi, Kenya, housing about 1 million people (IMF, 2007).

3.4.1 Slum situation in Ghana

Ghana, has made some progress in reducing the proportion of the urban population living in slums. The most recent data shows that, urban slum population dropped from 27.2% in 1990 to 19.6% in 2008. However, while the proportion has decreased, the total number of people living in slums has increased from 4.1 million in 1990 to 5.5 million in 2008. With this trend, it is likely that about 14% of the entire Ghanaian population may still live in informal settlements by 2020 (UN and NDPC, 2012).

The ensuing sections describe two of the most populous slums in Ghana.

3.4.1.1 Sodom and Gomorrah

The Sodom and Gomorrah slum is considered as the largest squatter settlement in Ghana. The slum is mostly made up of people from Northern Ghana and other West African countries who migrated to the slum through family and friends (network theory; Goss and Lindquist, 1995) (Ahlvin, 2012; Aseye and Opoku, 2015). The Sodom and Gomorrah slum sprung up in the 1980s when there was ethnic conflicts in northern Ghana. Migrants fleeing the conflicts settled in the slum (Awumbila, Owusu and Teye, 2014). The Sodom and Gomorrah slum is located adjacent to one of the biggest flea markets in Accra called the Agbogbloshie market. The slum provides labour for the Agbogbloshie market (Aseye and Opoku, 2015).

The Sodom and Gomorrah slum will hereafter be known as the S&G slum.

3.4.1.2 Akwatia Line

The Akwatia Line slum is located in Kumasi, Ghana's second most popular city. According to King and Amponsah (2012), the slum was founded in 1998, mainly by migrants from Northern Ghana in search of job opportunities in Kumasi.

The Akwatia Line slum will hereafter be known as the AL slum.

3.5 SOME SLUM UPGRADING PROGRAMMES IN GHANA

In a quest to reduce slum growth, no single city can do it on their own. Collaboration between several stakeholders, such as the private sector, civil society and international agencies, is needed to have attainable solutions. Furthermore, the input of the urban poor, whose lives are being improved is crucial in the decision making process (IMF, 2007). The UN-Habitat (2014), suggests some strategies and tools crucial in improving slum living conditions. These are:

- Upgrading slums – these should include all-inclusive and impartial programmes aimed at bettering the living conditions of slum neighbourhoods.

- Provision of housing – all governments should prioritise programmes designed to deliver affordable and acceptable for all citizenry.

- National Urban Policies – institutionalised and legalised legislation regarding slums is very important as policies act as guidelines in helping reduce slum growth.

- Urban Planning – planning is a proactive way of preventing the formation of slums. When cities are well planned, space is rationally used and dedicated for specific projects, leaving little room for slum formation (UN-Habitat, 2014).

The above strategies suggested by the UN-Habitat (2014) is to serve as a basis on which countries tailor their slum reduction strategies to suit conditions present. The Government of Ghana, (2015), designed the National urban policy, with eight major objectives. One of these objectives is aimed at upgrading existing slums and to prevent the occurrence of new ones. The strategies to be employed in achieving this goal include:

- Come up with slum infrastructure improvement policies and implement them in order to improve degraded settlements.

- The gradual integration of existing slums into formal settlements, by improving and revitalising the slums.

- Improving the lives of slum dwellers through poverty reduction strategies, like the provision of quality social amenities and assistance in securing land tenure security.

- Help low-income slum inhabitants to become economically sustainable.

- Partner Metropolitan, Municipal and District Assemblies (MMDA) in the monitoring and controlling of the proposed community development schemes.

- Prevention of violations of proposed land use by undertaking public awareness and media sensitisation programmes (Government of Ghana, 2015).

Governments in Ghana over the years have come up with varying programmes to improve or eradicate slums. The above policy guide has shaped several slum intervention programmes of which one was the S&G relocation programme. In 2006, the Ghanaian parliament approved €10.4 million to resettle residents of S&G slum at Adjin Kotoku[3]. A joint Committee on Finance and Works & Housing overseeing this project asserted that the new location which was situated by an "exciting railway station" will meet the commercial interests of the settlers. The project sought to provide basic social amenities such as water and electricity as well as security, market and transport terminal (Government of Ghana, 2008). Accra Metropolitan Assembly gave a deadline of February 28, 2014 by which inhabitants of S&G were to be moved to the new site but this did not happen (Naatogmah, 2014). Even though some of the intended projects, such as 95 storage rooms, a high school, clinic, police station and fire station were completed, the newly constructed market could not accommodate all slum dwellers, hence they failed to move (Smith-Asante, 2015).

Another slum intervention government project in Kumasi sought to provide roads as well as resettle the slum dwellers engaged in wood processing to a Wood processing village. This project successfully constructed the roads it aimed at making as well as relocating the operators into the Wood processing village. Accoding to Amoako and Cobbinah, (2011), the majority of the relocated operators were displeased with living conditions.

Undertaking forceful evictions and demolishing exercises constitute another strategy employed by most municipal authorities in Ghana, to deal with the slum situation. This they do by razing down structures that are deemed to be illegally placed. Properties worth millions of Ghana cedis get destroyed by bulldozers razing down stores and other structures. Over the years, there have been numerous demolishing exercises mostly in Accra and Kumasi. The Kumasi Metropolitan Assembly undertook a demolishing exercise in 2007 at the AL slum, but the residents returned immediately after (Brew-Hammond *et al*., 2011). In 2014, about 500 buildings were demolished in Tema, a suburb of Accra and over 300 structures were pulled down under police and military supervision in Kumasi. Victims of these exercises are added to the large pool of homeless people in Ghana (Abdulai, 2014).

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[3] A suburb of Accra

As stated earlier, slum intervention programmes can only succeed when there is a collaboration and assistance from various stakeholders. In Ghana, some collaborations have yielded results and some have not. One successful project is the HFC bank's provision of finance to slum dwellers. The HFC bank, developed as part of World Bank's Urban II project, formed a unit (Informal Sector Operations) to cater for the daily saving needs of informal operators in Kumasi, Accra and Tema.

The HFC performs its role by collecting on a daily basis, the savings of the informal operators and overtime; these operators could access credit from the bank. The HFC bank however did not have the capacity to provide finance for all as the bank noted that, a daily loan demand of US$ 225,000 from qualified borrowers is turned down (UN-Habitat, 2005). This policy by HFC bank, when taken up by other financial institutions, will be helpful to informal sector operators.

Some collaborative intervention programmes however, did not achieve their intended goal. In Kumasi, a sister-city relationship alliance between Kumasi-Almere (Netherlands) and Kumasi–Atlanta (United States of America) which focused on the training of children, waste management and strengthening of slum dwellers economic capacity, did not come to fruition according to Amoako and Cobbinah, (2011) as slum dwellers were not satisfied with the adequacy of the intervention.

3.6 SYNTHESIS

Slums have become an integral part of urban centres in the developing world. Most traditional descriptions of slum defined slums in terms of the people who live in it. Hence, slums were regarded as places where the poor and marginalised, criminals and people who do not partake in formal economic activities in cities live. Contemporarily however, slums have been defined in terms of the unavailability of certain crucial factors. The UN-Habitat definition, is used as the working definition for slums in the current study. It classifies slums as the regions with lack of permanent housing, sufficient living space, adequate sanitation, clean water and land tenure security.

Many factors lead to the formation and growth of slums. Rural-urban migration is one major reason as migrants seek to escape rural poverty, and take advantage of the many economic opportunities urban centres present. Rapid population growth, urbanisation, unemployment, inadequate housing and the growth of the informal sector, are other reasons for slum formation and growth. Sub-Saharan Africa represents the region with the highest prevalence of slums as about 56% of urban population live in slums.

In Ghana however, about one-quarter of the country's population live in slums. Poverty in northern Ghana, has driven lots of northerners to migrate to southern Ghana for greener pastures. In the urban areas in southern Ghana, mostly Kumasi and Accra, the influx of migrants puts so much pressure on the existing social amenities, housing and job opportunities that, new migrants have no choice than to settle in slums. This situation has led to the formation and growth of many informal settlements in the cities of Accra and Kumasi.

Some slums are seen as having the potential of being improved to becoming formal settlements and these are referred to as Slums of hope. Others, called slums of despair due to their dire degradation, will continue to be slums. Mostly, slums of hope gradually become slums of despair due to inadequate intervention programmes. In Ghana, the government along with some stakeholders have implemented programmes with the objective of improving slum communities. Some of these programmes have achieved their aimed objectives but majority fail to reach set targets.

3.7 CONCLUSION
Increased migration due to rural poverty and urban giantism has put a lot of pressure on urban infrastructure, especially housing. This has led to the development of several informal housing units (slums).

High unemployment rates coupled with a meagre public sector employment, leave the private formal and informal sector to be the sole employer of labour in Ghana. According to the GSS, public sector in Ghana employs 6.8%, private formal 7.7% and the informal sector, 85.5% of the

country's total workforce. The informal sector, being Ghana's largest employer, is discussed in the next chapter.

CHAPTER FOUR

THE INFORMAL SECTOR AND INFORMAL ACTIVITIES IN SLUMS

4.1 INTRODUCTION

Informal sector activities employ the majority of labour force in Sub-Saharan Africa. The sector mostly offers employment opportunities to people who cannot gain employment in the formal sector. The current chapter aims at providing an understanding of the informal sector and its attributes. The chapter is divided into ten sections. The first section presents definitions and origins of informal activities. This includes how the informal sector came about and the characteristics it possesses. The second section reviews the contribution of informal sector activities to the economies of some selected countries and a review of informal activities in slum areas makes up section three. The factors that motivate operators to engage in informal activities are covered in the fourth section while factors determining their income levels are presented in the fifth section.

Operating in the informal sector comes with certain constraints. These constraints are discussed in the sixth section, whiles factor that keep operators in informal activities and their possible formalisation are then presented in the eighth section. The chapter ends with a conceptual framework and a synthesis.

4.2 THE INFORMAL SECTOR

Keith Hart was the first scholar to introduce the term, "informal sector" into academic literature. Hart described this sector as the segment of the urban labour force whose operations are outside of the formal labour market. The sector consisted of self-employed individuals who operated on a small scale basis. Hart's (1973) main goal was to give a definition to the situation of mass unemployment in underdeveloped countries due to massive urban migration with no corresponding growth in urban employment opportunities. The concept of the informal sector was further developed by ILO (1972) by their studies in Kenya.

The ILO found that the informal sector in Kenya sprung up due to unemployment and inequality and this sector provided subsistence to households and a regular income to the poor.

The consequence of economic stagnation, depreciation of capital and unemployment led to birth of informal activities. Imbalances which stem from the difference between the growth of labour force and demand for labour, growth in urban population and the overall growth of the economy gave rise to the informal sector in the developing world (ILO, 1972; Gerxhani, 2004).

The System of National Accounts (1993, p.135) prepared by the UN, OECD and IMF regard informal sector activities as "activities that form part of the household sector as household enterprises or, equivalently, unincorporated enterprises owned by households". This implies that, informal sector activities are mostly family dominated businesses, which is mostly made up of unpaid labour. Informal sector activities are mostly characterised by kinship or social relations rather than contractual arrangements. Williams and Round, (2007) categorise informal activities as consisting mainly of self-providing work, which is undertaken by unpaid household members for themselves or for other operators of their household. In addition to self-providing workers, there is the unpaid community work, which entails the provision of unpaid labour to members of one's social network, extended family or neighbourhood. Portes (1983, p. 154), defined informal sector activities as comprising one or more of the following categories: persons performing domestic service, unregistered family workers and workers in "small" businesses with the size of 5 to 50 employees.

The birth and continuous growth of the informal sector is due to many differing factors. The ILO (2014) is of the view that, the growth of the informal sector is a governance issue, made up of issues such as:

    i.   Inappropriate, unproductive and badly executed government policies often developed without the necessary consultation.

    ii.   The absence of suitable legal and institutional frameworks.

    iii.   The lack of good governance for effective execution of policies and laws.

    iv.   An absence of trust in institutions and administrative processes (ILO, 2014).

The inability of government to provide the enabling environment in terms of policies, strong institutions and infrastructure, according to the ILO, is the reason for the growth of the informal sector. Governments in developing countries are mostly focused on quantitative increments in economic growth, however neglecting qualitative improvements in living standards by the provision of sustainable jobs.

Informal sector activities are fully or partially outside the jurisdiction of government regulation and taxation. The informal sector serves as an opportunity for people who cannot find jobs in the formal sector to be self-employed; but since businesses in the sector pay little or no taxes, society is robbed of taxes and social contributions which are necessary for infrastructural development. This also invariably increases the tax burden on registered labour (World Bank, 2013). Schneider, (2002) argues that, increases in tax and social security contributions, and the increase in government regulations in the formal sector are the main reasons for the continuous growth of the informal sector.

The informal sector has characteristics that differentiate it from the formal. The ILO (1972, p. 6) and System of National Accounts (1993, p. 135) describe the characteristics of the informal sector as:

- "activities where there is an ease of entry,

- reliance on indigenous resources,

- family ownership of enterprises,

- small scale of operation,

- labour-intensive and adapted technology,

- skills involved are acquired outside the formal school system and

- Unregulated and competitive markets."

As discussed above, the informal sector comes with some disadvantages to the state. Most important of all being the avoidance of tax. On the other hand, the informal sector plays a major role in all developing economies. Kirsten and Sindane (1994), are of the view that, the informal

sector can alleviate poverty in developing countries because it is labour intensive, employs people in the lower half of the income distribution scale, requires little capital and managerial resources and since it employs persons in the lower income groups, redistribution of income in these groups is reinforced. The sector also has employment creation potentials that can spur economic growth as raw materials, most tools and equipment used are locally produced, hence reinforces linkages in economies (Kaliyati, 1994).

4.3 INFORMAL SECTOR IN SELECTED COUNTRIES

The informal sector employs a majority of the labour force in many countries. The South Asian region hosts the largest informal sector, with about 82% of total labour employed by the sector. Sub-Saharan Africa and South-Eastern Asia are closely matched at 66% and 65% of total labour employed. The informal sector employs 51% of total labour in Latin America. Eastern Europe has the smallest informal sector incidence relative to the above regions employing only 10% of total labour (Vanek *et al*., 2014).

Ghana and India are ranked as having the world's largest informal sectors representing 86% and 83.5% respectively, of total workforce. Bolivia, also has a large informal sector employing 75% of total labour force (GSS, 2012; ILO, 2014). According to World Bank (2013), between 20% and 80% of non-agricultural employment in developing countries are provided by the informal sector. Furthermore, between 25% and 40% of the annual output of developing countries in Africa and Asia are generated by the informal sector as of 2013 (World Bank, 2013).

The following section will discuss the informal sector in selected countries such as Ghana, Bolivia and India.

4.3.1 Ghana

Ghana's informal sector took off in the early 1970s when the country experienced massive economic decline. Jobs were cut in the formal sector and the informal sector acted as a safety basket for most Ghanaians enabling them to survive extreme poverty in the urban areas (Barwa, 1995). The share of total employment provided by the public sector has continued to decrease from

about 13% in 1992, to 9.4% in the late 1990s, 9% in 2006 and 6.3% as of the latest (2010) population census.

In Ghana, the economy is not developing fast enough to cater for the increase in population growth and rapid rural-urban migration. This has led to the labour force growing faster than the availability of formal jobs (Aryeetey 2009, p. 16; GSS, 2012). The incapacity of the formal sector to absorb the available labour has pushed the majority of people into informal activities, either in formal settlements or in slums. Ghana's large informal sector robs the economy of potential revenue for development projects as the informal sector pays little or no tax.

Literature survey by Ofori (2009, p. 35-42) outlined the charateristics of the Ghana's informal sector under four main categories. These are explained below:

   a) Employment – explains the characteristics of persons engaged in informal sector activities. The informal sector in Ghana includes workers not covered by the minimum wage, who do not belong to a trade union organization, and have little or no job security and official protection.

   b) Enterprise – describes the economic activities in the informal sector. The activities informal operators engage in are usually small scale operations with individual or family ownership, have no restrictions regarding entry and exit, are labour intensive and employ adopted technology.

   c) Habitat – describes characteristics of the informal sector enterprise's land and housing. Mostly, informal sector businesses occupy vacant public or private land. These informal operators generally squat on any available land, illegally, in carrying out their economic activities. Hence, the majority of informal operators in Ghana lack land tenure security.

   d) Credit – the informal credit markets are characterised by easily accessible credit facilities but are for small amounts and on a short term basis. Generally, most informal operators access short term loans from unauthorised financial institutions or from individual loan

sharks. This is because, the informal operators lack land tenure and collateral security, hence cannot access loans from banks.

Ghana's informal sector does not adhere to government regulations hence they are constantly neglected by policymakers. Worse of all, they are constantly haunted by decongestion exercises carried out by municipal authorities. As seen in the "habitat" characteristic above, most informal businesses operate illegally on government or private lands, hence when municipal authorities carry out eviction projects, these informal operators lose millions of Ghana cedis (Osei-Boateng and Ampratwum, 2011). The operators mostly lose their tools, materials and workshops and have to wait to find another vacant land to start their businesses all over again.

Aryee (1977), discusses the interrelatedness of Kumasi's informal sector to formal sector businesses. The study revealed that the majority of the informal sector's primary and intermediate inputs emanate from the formal sector. Inputs for economic activities such as welding, blacksmithing, carpentry, tailoring, woodcarving, leatherwear and carpet weaving are provided by the formal sector. The interrelatedness also comes to the fore when the informal sector provides cheap wage goods and services for the urban population.

4.3.2 Bolivia

Bolivia is a South American country bordered by Brazil, Paraguay, Chile, Argentina and Peru. It has a population of about 10.72 million and a GDP of $33.2 billion as of 2014 (World Bank, 2016c). Despite being a lower middle income country, Bolivia is one of the poorest countries in Latin America. Income inequality between different population groups (indigenous and non-indigenous) continue to be evident in Bolivia, as there is high levels of rural poverty. Bolivia is a socially diverse country with a high representation of an indigenous population. Poverty is found to be highly correlated with the indigenous population (Gigler, 2009).

Bolivia is ranked as the 113rd country out of 187 regarding the United Nations Development Programme's Human Development Index. About 60% of the population are currently living below the poverty line and poverty levels are worse in the rural areas, where about three out of four persons live in poverty (IFAD, 2013).

About 75% of Bolivia's GDP comes from the informal sector. Furthermore, in urban areas, the informal sector accounts for 80% of total jobs (Hernani-Limarino *et al.,* 2011). Bolivia is found to be mainly a natural resource exporting country (Vargas and Garriga, 2015). The country exports natural resources and imports intermediate and finished products. The lack of productive capacity makes room for little formal employment, making the informal sector a necessary alternative for the poor.

4.3.3 India

India is also a lower-middle income Asian country with a population of about 1.21 billion people and accounts for more than 17% of the world's population. The country is the world's second most populous country after China and is expected to overtake China in 2025 (Census of India, 2011; Government of India, 2015). India's GDP was $1.88 trillion as of 2013 (World Bank, 2015b).

The agricultural sector of India, which employs the majority of the labour force (49%), contributes the least to GDP (14%) whereas the services sector (27%) which employs the least amount of labour, contributes the most (58%) to GDP (Institute for Human Development, 2014). The main export products of India include petroleum products representing 20.1% of total exports in the 2013/14 financial year, engineering goods (19.7%), chemical and related goods (14%), gem and jewellery (13.1%), agricultural and allied products (10.3%) and other products (22.8%). Import products consisted mainly of petroleum crude and products (36.7%), gold, silver, pearls and precious stones (12.7%), machinery (10%), electronic goods (6.9%) organic and inorganic chemicals (4.7%) and other products making up 29% (Prasad, Sathish and Singh, 2014).

The ILO ranks India as having the world's largest informal sector, with about 83.5% of total workforce engaged in informal activities, while the Institute for Human Development, (2014) sets the percentage of informal sector workers in India at 92% as of 2014. The reason for such high informality figures may be due to the fact that, about half of formal sector workers in India also work in the informal sector. They often work as part time workers to augment income (Naik, 2009). The majority of workers in the informal sector usually have low earnings and no social protection. India's total workforce as per National Sample Survey Office's survey conducted in 2011-12 put the country's total labour force at 470 million. The informal sector plays a major role in India's

economy; its contribution was about 46% of non-agricultural Gross Value Added in 2008 (ILO, 2013).

Rural poverty is a major problem in India, as 80% of rural population and 64% urban population were considered as calorie poor as of 2005. Qualitative surveys conducted also conclude that most Indian rural dwellers see themselves as poor (World Bank, 2011). Migration is the major cause of urbanisation in India as people from the countryside move to the major cities in search of a better life (Misra and Alam, 2014). The 2011 population census showed that, 31% of Indians live in urban areas. This urbanisation figure was below the global figure of 54%. However, India's urbanisation rate is estimated to reach 814 million people by 2050. Although India is fast becoming urban, the rural population will also grow substantially to about 804 persons by 2050 (Bhagat, 2014).

4.4 INFORMAL SECTOR ACTIVITIES IN SLUMS

The Global Entrepreneurship Monitor (GEM) framework is of the view that, individual entrepreneurs start a business for two main reasons (Allen *et al*., 2008). These are:

1. Opportunity entrepreneurship – this consists of individuals who form a business to take advantage of a business opportunity. These entrepreneurs analyse the business market for potential opportunities and start businesses only because they foresee a potential opportunity.
2. Necessity entrepreneurship – these are entrepreneurs pushed into starting a business because there is no other option for work.

Berner, Gomez and Knorringa (2012), also reiterate the two main types of entrepreneurship and name them, necessity driven and growth driven. The authors provide a distinction between these two types of entrepreneurship and these are presented in Table 4.1.

Allen *et al*., (2008) also point out that, opportunity entrepreneurship is higher in high income countries than in low or middle-income countries. The reason being that, mostly people are

unemployed in high income countries due to industrial restructuring or changes in production technology.

Table 4.1 Characteristics of survival and growth-oriented enterprises

Survival entrepreneurs	Growth oriented entrepreneurs
Driven by necessity, trade on streets, community of the poor, business for subsistence reasons, micro enterprises	Opportunity driven, intermediate sector microenterprises
Ease of entry, Capital requirements are low, Low skills and technology requirements	Some barriers to entry, high capital requirements, intermediate skills and technology requirements
Female majority	Male majority
Diversification strategy to supplement family income, run by idle labour	Risk taking and specialisation
Rooted in family networks with the obligation to share income generated	Rooted in business networks with the capacity to accrue portions of income generated

Adapted from; Berner, Gomez and Knorringa, (2012)

Owing to the receipt of unemployment benefits, many unemployed persons in high income countries are not forced to engage in entrepreneurial activities. For instance in the EU, of total entrepreneurial activities, necessity entrepreneurship constitutes less than 1% (Acs *et al*., 2004). In low and middle income countries, like Ghana, the lack of employment opportunities and social protection drives individuals into entrepreneurial activities.

Slum activities form part of necessity entrepreneurship. As slums house migrants and urban poor who cannot gain employment into the formal sector, the inhabitants engage in informal activities as a form of survival. Economic activities in slums, constitute the vibrant informal sector in many countries; for instance in Bangladesh's capital Dhaka, slums contribute 8% of the city's GDP as

of 2014 (Hye, 2014). Mahony (2010), is of the view that, slum areas worldwide earn large amounts of income. Economic activities in slums can range from petty trading to running private schools.

Chege and Mwisukha's (2013) study in the Kibera slum in Kenya, concluded that, slum tourism represents a vibrant income generation sector. The slum is a tourist destination and the major tourist attraction there is taking photographs and getting informed about residents' problems. Slum tourism is economically beneficial to the residents of Kibera as it creates employment for the slum dwellers. Slum tourism is also a vibrant sector in the Dharavi (India) slum which houses about half a million Indians. Tours in the slum were undertaken by 3,150 tourists in 2008, 5,370 in 2009 and 7,000 in 2010. The Dharavi slum houses about 10,000 small scale industries which together generate about US\$ 665 million in annual turnover according to Meschkank, (2011).

A survey of 500 slum households in the Khurda District of India by Das and Meher (2013) found out that, most of the slum dwellers are engaged in several economic activities including simple manufacturing, hawking, truck pushing, scrap dealing and head porting. The operators engage in these activities in order to purchase goods and services as well as acquire wealth with a view to fulfilling some wants and needs on commercial or self-reliance basis, and to enhance their quality of life. Das and Meher's study further revealed that, the slum operators can only access loans from informal sources, as it was difficult for households to meet formal paper needs and collateral security obligations insisted by banks and other formal lending institutions.

Jha, Rao and Woolcock (2007), after surveying 800 households from slums in Delhi, concluded that Indian slums are extremely productive. The Dharavi slum has become one of the largest leather producers in the world and as a result, people are becoming much more aware that a lot of sound economic activities take place in slums. Slums are not just places where only poor people live; some more financially sound residents prefer living in the slums because they are less expensive and closer to their workplaces. One area of Delhi is described by the researchers as a "five-star slum," since it has running water, electricity, and other amenities (Jha, Rao and Woolcock, 2007).

Studies in Ghana also reveal that, informal activities in slums generate income. A study conducted by King and Amponsah (2012) in 3 slums in Ghana (Old Fadama and Amui Dzor in Accra and

Akwatia Line in Kumasi) revealed the following as the economic activities taking place there: scrap metal works, communal bathhouses, local restaurants, provision stores, hair salons, dressmakers, saw mills, grinding mills, electrical and electronic shops, schools, groundnut paste production, blacksmithing, baking, sale of sachet water, auto-mechanics, entertainment centres, head porters. King (2010) also found out that, economic activities going on in most slums of Ghana include metal scrap dealers, food production and processing, private schools and carpentry.

Employment levels in Ghanaian slums are very high. King and Amponsah (2012) further discovered that the employment level in the three slums surveyed were as high as 98% with the average daily income of GH¢5.3 (equivalent to US$3.7 in 2012) per day. This is far higher than the World Bank's poverty line of US$2 a day. This information shows that most slums in Ghana are highly productive and have economic value. Research into slum activities in Ghana, however, has not looked at the factors that motivate operators to engage in slum activities, what determines their incomes, what constrains their growth and their resource needs to graduate into formal sector activities. The current study aims to fill in the knowledge gap.

4.5 MOTIVES FOR ENGAGING IN INFORMAL SECTOR ACTIVITIES

Williams (2007) points out that one of the previously dominant discourses around the motivation of individuals engaging in informal entrepreneurial activities is the "marginalization thesis" in the informal sector of England. This school of thought argues that those that engage in informal entrepreneurial ventures, do so out of necessity, as a result of them being marginalized by formal sector regulations (Williams, 2007). This means that these individuals migrate from formal business undertakings to informal ones, as a measure of last resort in the absence of favorable alternatives. It is further contended by Williams (2007) that this depiction of reasons why operators engage in informal activities is an a priori assumption rather than one founded on empirical grounds as earlier mentioned.

More contemporary studies suggest that informal entrepreneurs do so out of choice, and Gerxhani's (2004) study of informal sector activities in developing countries found tax evasion, avoidance government regulation, high cost of formal business, flexibility of informal work schedule, one's greater work satisfaction, an increase of leisure time, use of one's expertise, bypass

bureaucratic licensing procedures, high cost of formal production, the impact of international competition, and redundancy as motives prompting people to engage in informal activities.

Snyder (2004) provided evidence against the external pressures such as discrimination, unemployment and economic restructuring, transcend throughout the marginalization thesis, which is believed to heavily account for the movement of individuals from formal to informal activities. This researcher studied 50 informal entrepreneurs in a New York City locality. The main results of this investigation showed that the informal entrepreneurs involved were all doing so out of choice. Some of their reasons for engaging in informal activities included the need to transform their work identity and to expose their genuine selves.

Similar results were also reported by Cross (2000) who did a similar investigation on street vendors. This study falsified the conventional depiction of these street vendors as being in lack of other opportunities. Cross (2000) shows that many of these vendors were involved in this activity out of choice, thereby replacing the universally necessity-driven view of these informal operators, by one which also points towards these entrepreneurs being opportunity driven.

Rather than simply portraying informal operators as uniquely necessity driven or opportunity driven, research in recent years has seen the birth of a third school of thought which supports the idea that necessity and opportunity might co-exist or act together to some extent as motive for informal entrepreneurs (Aidis *et al.*, 2007). Adom and Williams's (2012) primary study in the informal sector in Ghana found out that 65% are necessity-driven where as 35% opportunity-driven.

To date, most literature on informal entrepreneurship has been immensely restricted to western and post-socialist economies (Adom and Williams, 2012). Research in this area in the African context and sub-Saharan Africa in particular has not so far gained prevalent attention. The kind of literature most common in this part of the globe depicts informal entrepreneurial activities being driven by necessity or operators expressing the need to the formal economy which is characterized by high costs and regulations which make operating in it difficult (Adom and Williams, 2012).

Focusing more on the evaluation of motives of informal entrepreneurs in third world countries, Adom and Williams (2012) investigated 80 informal entrepreneurs in Ghana. They conducted face

to face structured interviews and found that the necessity motive predominated amongst participants, especially women informal operators. In addition, the authors also found out that most men who were involved in informal activities did so out of their own free will, and that women who initially entered informal activities out of necessity eventually became more opportunity driven operators. This is in line with the third school of thought which argues that there could be an overlapping between the necessity driven motive and the opportunity driven motive.

Supplementing income, generating wealth and an operator's desire for greater independence are also some motives for informal sector activities in Latin America, Lesotho and South Africa (Maloney, 2004; Skinner, 2005; Chigono, 2012).

4.6 FACTORS DETERMINING INCOME LEVELS IN THE INFORMAL SECTOR

Slum operators engage in economic activities in order to earn income. The factors that determine the income levels of slum informal operators are discussed in the current section.

In the informal sector, women numerically outnumber men (Sethuraman, 1998; Chingono, 2012). Although there are more women in the informal sector activities than men, studies in developing countries have found that, female informal workers earn a lot less than males (Chen *et al*., 2005). These authors studied informal sector in Canada and in developing countries, including Ghana, India, South Africa, Costa Rica, Egypt and El Salvador, concluded that male-dominated informal activities earn higher than female-dominated ones. Figure 4.1 outlines the average earnings of informal activities based on gender.

Figure 4.1 breaks down informal sector activities into 5 main categories. The category of employers, regular informal wage workers, own account operators, casual and domestic workers and homeworkers. In this categorisation, it is seen that earnings are highest in the "Employers", who can also be referred to as the entrepreneurs category, which is male dominated. Furthermore, earnings are low in the "Homeworkers" category which is female dominated (Chen *et al*., 2005).

Figure 4.1 Informal sector average earning with respect to gender
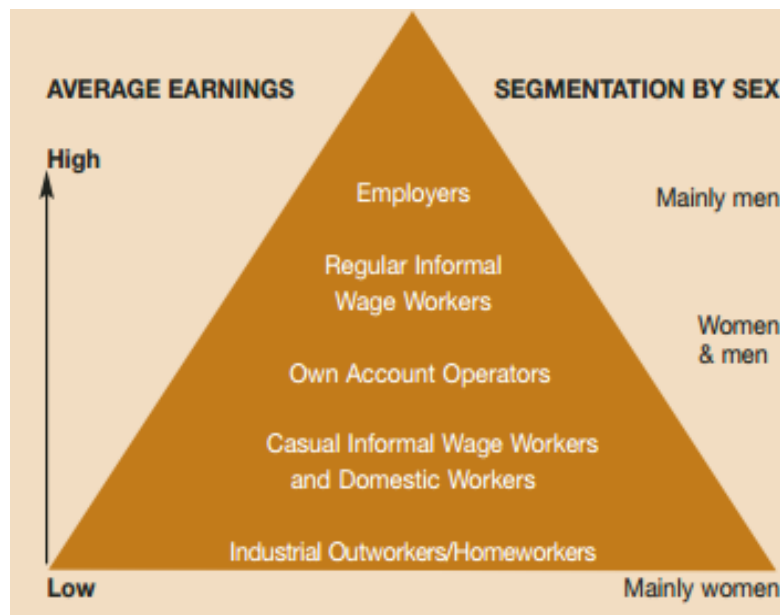
 Source: Chen *et al.*, (2005, p. 54).

One of the main reasons for the low earnings by female informal workers, according some studies, is due to the fact that women have extra responsibility of making a home (Sethuraman, 1998; Nichter and Goldmark, 2009; Ndabeni, 2013). Implications of women's responsibility means that, women will have to take time off work during crucial times of their pregnancy as well as spend time in doing household chores on a daily basis. This implies that, one's gender can be a determining factor of income levels generated in the informal sector.

Nichter and Goldmark, (2009, p. 1454) further found that education and gender are factors that influence the income of small scale enterprises in developing countries. Chingono's (2012), study singled out education as a key factor in determining the type of enterprise and incomes earned in the informal sector. According to a World Bank (2012, p. 206) report, the return on education is low in the informal sector, as many operators in Sub-Saharan Africa are people with low educational levels (Debrah, 2007). Firm age also plays a crucial role in informal sector as older firms seem to peter out and join the formal sector; this is an informal sector experience found in Kenya (Bigsten, Kimuyu and Lundvall, 2004; Gurtoo and Williams, 2009). The current study will introduce firm size as a determinant of income to see how it affects income levels in slums.

Research by Barr, (1998) in Ghana, found that operators with more networks earn more income than those with fewer. Thus, operators who have broad networks which range from family to tribal and religious affiliations tend to earn higher incomes as compared to others who have limited networks. Cornwell, Laumann and Schumm (2008) agree with the notion that, having diverse social networks helps in income generation. Mitra's (2004) study in Indian slums further concludes that, one's social networks determines the type of economic activity one engages in in Indian slums.

Studies in slum activities in Ghana have not investigated the determinants of income. Hence, the current study sought to examine the income determining factors in slum activities in Ghana.

4.6.1 Locus of Control (LOC)

Achievement of rewards is crucial to every individual in his or her everyday activities. The main causal factor to this reaction stems from the degree to which individuals attribute rewards to their own efforts as against the thinking that the reward was brought about by factors independent of one's personal actions. Locus of control refers to an individual's opinions and beliefs as to what determines the rewards or outcomes in the individual's life (Rotter 1966, p. 1). A person is said to have a high level of internal locus of control when he or she perceives occurrences to be hinged on his or her own actions. On the other hand, a person high in external locus of control perceives occurrences as a result of luck, fate or actions of others.

Maddux's (1991) literature survey, found out that, locus of control has an influence on a range of choices an individual will make in his life including vocational and career decisions. Individuals who are high in internal locus of control are generally more concerned with trying to pursue their set goals and improve their lives. These individuals more often than not, establish their own businesses (Rotter 1966; Evans and Leighton, 1989; Bandura 1990) and earn a higher income, according to Cobb-Clark, Kassenboehmer and Sinning, (2013) in Australia.

Bridge and O'Neill (2012) postulate the relevance of a personality approach to entrepreneurship. Individual personal traits determines their course of action and it makes some individuals better

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entrepreneurs as compared to others. A few of these personal traits include locus of control, achievement motivation, self-confidence and creativity. Individuals with these strong personal traits have a higher desire to achieve, hence are motivated to undertake challenging entrepreneurial tasks. The authors however hinge locus of control on an entrepreneur's experience, in that, an entrepreneur who has had good experiences in terms of accomplishing a business task is reaffirmed of his/her capacity to control matters around him/her. Those, on the other hand, with bad experiences blame external factors such as luck and fate.

The current study will therefore, find out if one's LOC determines the income earned in slum activities.

4.7 CONSTRAINTS FACED BY OPERATORS IN INFORMAL SECTOR ACTIVITIES

Operating in informal activities, comes with many constraints. These constraints inhibit the growth of these informal enterprises and their employment potential. The growth constraints are discussed in relation to infrastructure, finance, security, skill, regulation and lack of inputs problems:

a) Infrastructural challenges

Inadequate infrastructure is a major problem of small businesses, especially in the informal sector. Developing countries, especially, face inadequacy or the absence of several basic infrastructure which include clean water, adequate sanitation, well maintained roads, power and information and communication technologies (Parker, Kirkpatrick, and Figueira-Theodorakopoulou, 2008; USAID, 2012). Canagarajah and Sethuraman, (2001) found out that, lack of adequate infrastructure hinders the growth of informal businesses in developing countries. This view is corroborated by studies by Olawale and Garwe, (2010), Van Rooyen, and Antonites, (2007) and Skinner (2005) all in South Africa, that inadequacies in infrastructural provision is a major constraint of small firms.

b) Financial problems

Access to finance for small ventures is critical for firms to grow and develop. Constraints such as the high borrowing cost and unavailability of credit, possibly owing to high risks, may limit the

development of even enterprises in slums. This problem may be linked to a market failure, if financial institutions cannot assist possible lenders because of perceive high risk and lack of collateral security. This may force slum and informal operators to seek finance from friends and relatives (Blunch, Canagarajah, and Raju, 2001).

Aryeetey (2009, p. 7) found in Ghana's informal sector that, limited access to finance inhibits the growth of these firms. Similarly in Nigeria and Central America, Okpara (2011) and Pisani and Patrick, (2002) noted the difficulty in getting bank loans is a major constraint of informal operators.

c) Lack of adequate skills

For an individual to be able to run a business successfully, he/she needs adequate skills in the business. Hence, having the required technical skills in performing economic activities as well as management skills are crucial in the growth of businesses. Lack of experience and training in business management, lack of training in bookkeeping/accounting and lack of appropriate training are some skill related constraints faced by operators in Ghana, Nigeria and Fiji (Reddy, Naidu and Mohanty, 2003; Aryeetey, 2009; Okpara, 2011).

d) Government regulation

A crucial reason for the growth of informal sector activities is the stringent and bureaucratic government regulations (Schneider, 2002). Skinner (2005) and Reddy, Naidu and Mohanty, (2003) further argue that, unfavourable legislation and operators' inability to obtain business licences or permits are some of the constraints to the growth of the informal sector in Durban, South Africa and Fiji. A heavy regulatory burden creates hostile environment for firms to operate formal or to expand.

e) Security

Going into an informal venture in a slum entails investment of one's own capital. Therefore, it is important for entrepreneurs to feel safe and be secured in carrying out their economic activities.

Informal sector operators, who normally operate from encroached land lack security and can hence be evicted at any time by law enforcement. Canagarajah and Sethuraman (2001), and Aryeetey (2009) found that, the informal sector worker or operator lacks social protection and land tenure security.

f) Other factors

Tools, materials and machinery represent key components of businesses. These components are mostly lacking in the informal sector, partly because of insufficient capital (Kaliyati, 1994; Pisani and Patrick, 2002; Skinner, 2005).

The above section examined some constraints on informal activities in different countries. Unless appropriate interventions are made to equip the informal operators with relevant skills and resources, they are likely to continue operating informally. However, there are certain factors that keep them in slums.

4.8 FACTORS THAT KEEP OPERATORS IN INFORMAL ACTIVITIES

As the current study probes factors that will prompt operators to move into formal businesses, the study also finds out what keeps these operators in the slum activities. Could it be because of the motives and constraints, as mentioned above, or could it be because of non-material reasons? A non-material reason raised in the current study is a slum operator's subjective well-being.

4.8.1 Subjective Well-being (SWB)

Subjective well-being is defined as an appraisal of one's life satisfaction. Hence, subjective well-being is associated with experiencing pleasing emotions, low levels of negative moods, and high life fulfillment. High subjective well-being made up of positive life experiences is very important concept of positive psychology since it makes life worth living (Diener, Lucas and Oishi, 2002).

A study by Biswas-Diener and Diener (2001) on satisfaction in the slums of Calcutta discovered that, even though the slum dwellers were not happy with their material wellbeing, they make the most of the non-material resources available to them and find satisfaction in many areas of their

lives. This means that, even though the slum dwellers were poor and cannot satisfy most of their material needs, they were very happy and satisfied with their non-material wellbeing. Biswas-Diener and Diener (2006) further studied Subjective Well-being of the homeless in Calcutta (India), California and Portland (USA), and they found that, the homeless in all these countries were dissatisfied with their material quality of life, especially their housing, income, and health. However, they were highly content with themselves, in terms of their morality, physical appearance, and intelligence.

Blaauw's *et al.*, (2013) study of subjective well-being of operators in the informal sector in South Africa discovered that, income is an important determinant of happiness. Cummins' (2000) literature survey, and Grimes and Reinhardt's (2015) quantitative study in some European countries also conclude that income is an important determinant of happiness. Hence the present study will investigate whether income plays a significant role in influencing a slum operator's happiness. Studies on slum activities have not investigated the subjective well-being of operators in Ghana. The present study aims to address this gap.

4.9 FORMALISING THE INFORMAL SECTOR

Although the informal sector creates employment and generates a lot of revenue, operators in the sector mostly avoid paying tax to the government which would have played an important role in infrastructural development (ILO 1972; Loayza, 1997; World Bank, 2013). This leads to loss of revenue for countries like Ghana where the informal sector employs more than 80% of total labour force.

De Soto (1989; 2000) is of the view that, the only difference between the formal and informal sector is the legal status of the former. The informal sector lacks property rights hence its assets cannot be used as collateral for formal loans and this implies that many profitable opportunities to increase investment are left untapped in the informal economy. De Soto (2000, p. 32) argues that, there is a total of $9.3 trillion of dead capital in the informal sector in the developing world. This represent capital that cannot be used as leverage for credit facilities, denying the informal sector of growth.

Welch (2005), proposes that, formalisation of informal activities is crucial in job creation as well as broadening of an economy's tax base. Also, informal slum operators through formalisation, will allow them access to government programmes and services. The ILO (2009) proposes four strategies that are essential in providing a smooth transition from informality to formality. These are:

1. Rights at work – this involves the enforcement of laws that ensure individual's freedom of association and right to collective bargaining, doing away of forced labour and child labour as well as elimination of all kinds of discrimination at the workplace.

2. Employment promotion – the lack of employment opportunities is one main reason that led to the birth of the informal sector. Hence, ensuring on policies that promote employment opportunities, which informal entrepreneurs can take advantage of, can help them integrate into the formal sector.

3. Social protection – since the informal sector is outside the formal regulation, these operators do not have access to job protection and benefits such as wage protection, pension and health insurance since they do not pay tax. When these informal operators are aided to graduate into formal firms, they contribute to government revenue through tax, while the formalised firms also enjoy social protection form the government.

4. Social dialogue – in policy making processes for solving issues regarding the informal sector, the opinions of operators in the informal sector are not considered. Policies made for a sector without its members having an input is less likely to produce intended results. Involving informal operators in policy discourse can help better understand their problems and help in their formalisation.

Formalisation therefore builds a basis for investment and helps informal firms be more sustainable (ILO, 2009).

4.10 CONCEPTUAL FRAMEWORK

Figure 4.2 (the conceptual framework) shows that three levels are involved where one engages in slum activities.

Figure 4.2 Conceptual Framework
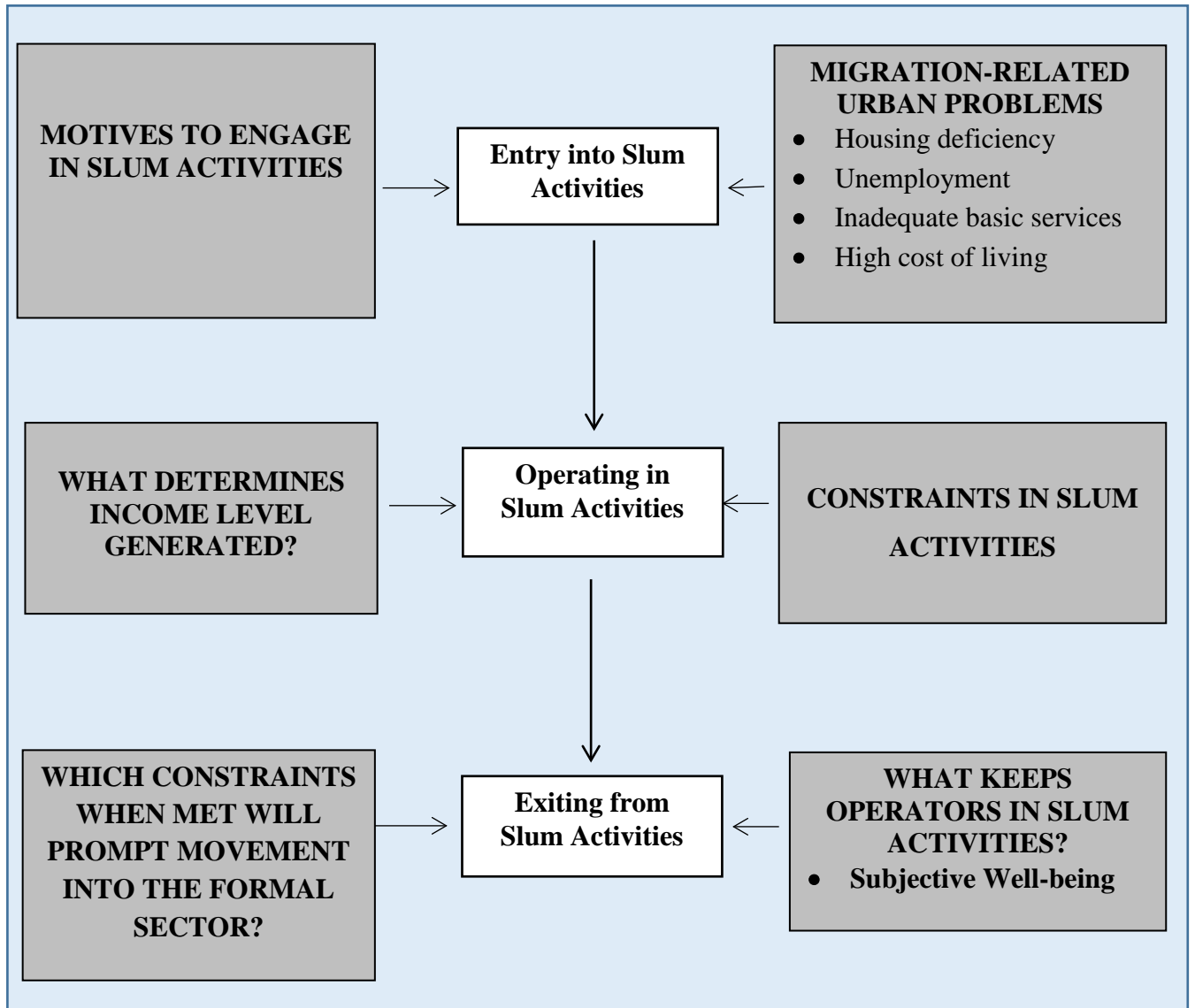
Source: Author's own

4.10.1 Entry into slum activities

Studies have shown that slums are formed due to in-migration and the urban areas' inability to absorb such in-migrants (UN-Habitat, 2003, Roy *et al*., 2014). People move because of lack of employment opportunities in their home areas. When they move, they find it hard to obtain employment in the urban areas and to find suitable shelter. Some scrape a living in the informal sector.

However, the motive for engaging in slum economic activities in an area in Ghana has not been researched and the current study seeks to fill this knowledge gap. It will also identify whether the slum activities operators are home residents from Accra and Kumasi or migrants from other regions.

4.10.2 Operating in slum activities

People operate in slums in order to earn a living. Different factors such as type of activity, gender, networks, business age and education, determine the level of income generated in the informal sector. This sets a background for the current research to ascertain what determines income levels of individuals engaged in slum activities and to determine whether income is associated with their subjective well-being. The constraints faced by operators in slum activities are also to be investigated with a view to assisting them to grow and develop into formal sector activities.

4.10.3 Exiting from slum activities

The decision of operators to exit from slum activities and move to formal firms is driven by various opportunities and challenges. The current study would find out what resources when made available will make operators move into the formal sector. It will examine the probability of informal sector operators graduating to the formal sector.

4.11 SYNTHESIS

The concept of informal activities was introduced by Keith Hart in the 1970s in his work in Kenya. The informal sector sprung up mainly because of high rural-urban migration in developing

countries, with the urban areas not having the capacity to accommodate the migrants. These economic migrants, who do not find employment opportunities in the slow growing urban formal sector tend to engage in economic activities outside the spectrum of formal authorisation. Ghana has a very large informal sector, which employs about 86% of national labour force.

Informal sector activities in the slums of Ghana constitute mostly entrepreneurship of necessity. Most Ghanaian slums are occupied by migrants from rural Northern Ghana, where there is high poverty levels. The migrants move to the urban areas to take advantage of the economic opportunities the cities provide. As there is little formal employment in Ghana, economic migrants have to survive in the city by engaging in informal sector activities. The main motive for operators' engaging in these informal activities is out of necessity, however; there are other reasons such as tax avoidance, avoiding government regulation and family networks, that push individuals to operate in the informal sector.

The informal sector operates outside formal systems, hence does not greatly contribute to tax revenue generation and development of the economies and does not get social protection from the government. Operating in the sector hence comes with certain growth constraints. Amongst these constraints are lack of capital, inadequate infrastructure, lack of business skills and land tenure security.

Formalisation of informal sector businesses can assist them to be sustainable, provide employment and increase tax revenue, according to Welch (2005) and ILO (2009).

4.12 CONCLUSION

Slum activities form part of Ghana's large informal sector. This chapter examined the characteristics of the informal sector and factors that led to its birth. Informal activities in slums were also considered to ascertain if these activities are productive.

The chapter also outlined the motives for engaging in informal activities, the constraints associated with the informal sector and determinants of income of operators in the informal sector. This information is then used to build a conceptual framework for the study. The next chapter discusses

how the objectives of the study will be achieved, building on the information gathered from the literature on slums and informal sector activities.

CHAPTER FIVE

RESEARCH DESIGN AND METHODOLOGY

5.1 INTRODUCTION

The purpose of the study is to investigate the motives for operators' involvement in informal activities in urban slums in Ghana, and to probe whether they have migrated from the rural areas to Kumasi and Accra, to gain an understanding of the constraints limiting their growth and of resource needs that can help them develop and move into formal enterprises. On the basis of the findings, policy suggestions can be made to enhance entrepreneurial capacity in Ghana. Hence, this chapter seeks to provide a systematic plan by which the research objectives set out in Chapter One, will be reached. The techniques and methods employed in conducting the study are discussed along with the rationale behind their choice. The research methodology chapter is divided into 10 sections.

The first section is an introduction. Section two discusses the research approach and design employed to achieve the research objectives. The current study is a quantitative research, based on primary data. The third section explains the sampling design, describing the population and sample. The population consists of all individuals engaged in informal activities in slums in two different areas of Ghana, S&G in Accra and AL in Kumasi.

The variable measurement that can take scales such as nominal and ordinal is covered in the fourth section. The fifth section presents the development of the research instrument. A structured questionnaire, which is the basis for the data collection for the current study, was developed, based on a literature survey on informal activities in slums worldwide. Section six presents the research hypotheses and the statistical analyses to test them.

For a research to be legitimate, it has to be valid and reliable; hence the seventh section discusses steps taken to ensure validity and reliability. Ethical considerations are discussed in section eight while the limitations of the study are presented in section nine. The chapter closes with a summary and a snapshot of what will be covered in the next chapter.

5.2 RESEARCH DESIGN

Glatthorn and Joyner (2005, p. 97) explain that, a research design is a plan which enables a researcher to answer certain research questions that define the rationale of a study. Essentially, the design is linked to the research process, indicating the methods that would be used in generating explanations from collected data that support certain theories or give cause to modify certain theories. In a research design, a structure is followed for the purpose of data collection so that the evidence obtained helps in answering the research questions (Leedy and Ormrod, 2005, p. 85).

Creswell (2002), explains that a research design framework consists of three stages: elements of inquiry, approaches to research and the design process of research. These stages are shown in Figure 5.1 and are explained below.

Figure 5.1 Research design framework
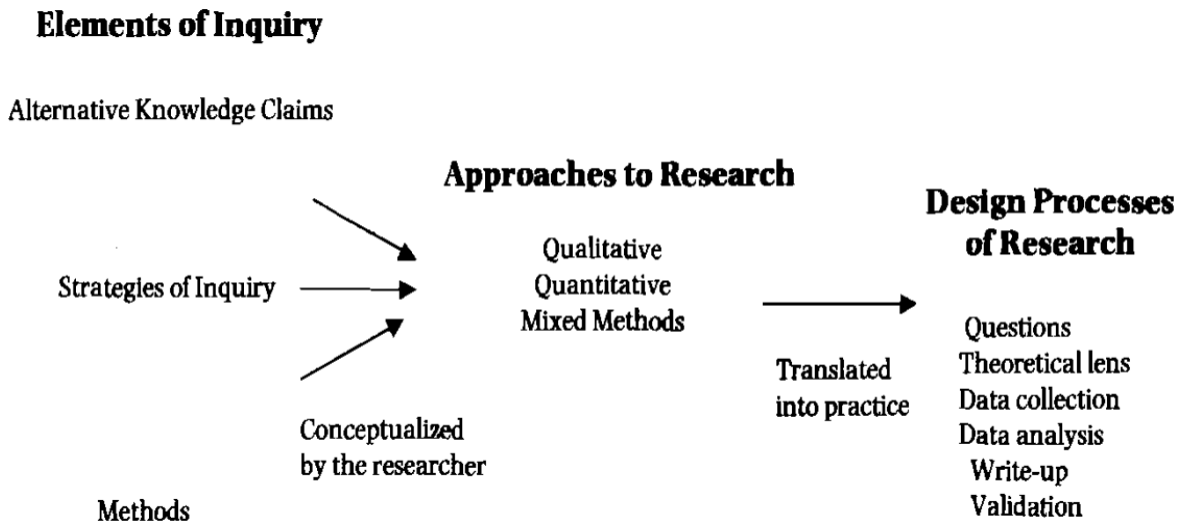
Source: Creswell (2002, p. 5).

- Elements of Inquiry – At the first stage, there are three elements of enquiry which are knowledge claims, strategies of enquiry and methods. A researcher's literature survey leads to different knowledge claims and these shape the strategies one will use to enquire about the research problem. This is the conceptualising stage of the study.

- Research approach – After determining the elements of enquiry, the researcher then considers alternative approaches to conduct the research. Here, the researcher decides whether the research will follow the qualitative, quantitative or mixed methods.

  According to Creswell (2002), quantitative research uses strategies of enquiry to collect data on known variables. Hence theories made up of variables are tested with statistical techniques to find out about their predictive ability (Abawi, 2008). Bricki and Green (2007, p. 2), refer to qualitative research as a method which aims at describing how people feel and experience about a certain research issue. Data generated for a qualitative analysis are generally in words rather than numbers. The collection of both quantitative and qualitative data represents the mixed methods approach to research. The goal of the mixed method is to maximize the strengths of these methods and eliminate the weaknesses of each method (Creswell 2002, p. 18). Hence, researchers analyse both numeric data and narrative data in solving research questions that are particular to a given study. In doing this, researchers use both open ended and close ended questions in collecting data. The current study employs the quantitative approach, as it seeks to quantify data and generalise results from a sample of slum operators in two slums of Ghana.

- Research design process – The above processes have involved the researcher settling on how the research should be carried out. At this stage however, the researcher translates all the preconsidered concepts into practice, which is, carrying out the actual study.

Matthews and Ross (2010, p. 115- 129) describe four major research design types, namely experimental, cross-sectional, longitudinal and case studies. Experimental research is scientific in nature, where the researcher sets certain hypotheses and analyses the cases being studied in order to find out whether there is support for certain hypotheses. Experimental research usually has the experimental group and the control group. The experimental group is the main group of cases on which the research is being performed while the control group contains the same cases as the experimental group but the cases are manipulated differently. The control group is therefore used as a benchmark in assessing outcomes of the experimental group. Having the experimental and control groups helps to see the variation in the cases being studied. Experimental research helps researchers identify partial causes of relationships rather than just predicting and describing cases (Fraenkel, Wallen and Hyun, 2012, p. 266).

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The cross-sectional study, typical in social research, assists the researcher to ascertain information pertaining to a phenomenon from a specific sample at a particular time. This is similar to taking a snapshot of the characteristic of a sample at a particular time (Matthews and Ross, 2010). Mann (2003) explains that cross sectional studies are primarily used to determine prevalence, hence determining the number of cases present in a sample at a particular time. Furthermore, cross-sectional studies help in inferring multiple outcomes (Mann, 2003).

Whereas the cross-sectional study gathers data at a certain time, a longitudinal study examines data pertaining to certain variables over a long period of time. Issues surrounding the sample being studied are subject to change over time, hence a longitudinal research helps to study this change (Bryman and Bell, 2014).

A case study involves the exploration of either a single case or a small number of cases in great depth over a period of time. Case study researchers, according to Hays (2004, p. 218-219), examine cases in order to uncover new interactions as well as cause-and-effect connections and, when several studies are conducted on the same phenomenon, generalisability becomes possible.

The current study employs the cross-sectional research type due to the unavailability of existing data. This study, hence, serves as a foundation on which further studies can be undertaken in the future.

5.2.1 The nature of a study

The nature of a study hinges on the type of research questions it seeks to answer, as well as the stage of existing knowledge about the research question. Research can be exploratory, descriptive and causal in nature.

5.2.1.1 Exploratory research

Exploratory research is a technique used to investigate subject areas that are under-researched or where there is little existing knowledge. In this way, new meanings, knowledge and insights, about a subject matter can be discovered. Exploratory research mostly acts as a ground breaking

investigation on which several other types of studies can be carried out. The current study is an exploratory research due to the scarcity of data on economic activities in the slums of Ghana.

5.2.1.2 Descriptive Research

Descriptive statistics entails categorizing data through the presentation of figures. No assumptions are made in descriptive statistics since the goal is just to describe and summarise a set of data (Newbold, Carlson and Thorne, 2010). Descriptive research is used to describe variables rather than testing a predicted relationship between variables, providing simple summaries about a sample. Leedy and Ormrod, (2014, p. 190) refer to descriptive research as the identification of the features of an observed occurrence and examining an event "as it is".

5.2.1.3 Causal Research

Causal research investigates whether or not a variable causes another to change; that is, does event A cause event B to change? Hence, the causal relationship between two or more variables are studied to learn about the causes of the change. Causality refers to the situation where a variable changes (the effect) due to the incidence of another variable (the cause). Causal research therefore seeks to establish the impact certain variables have on others. That is, whether a variable being removed or changed, will cause a variation in another variable (Sekaran and Bougie 2013, p. 98).

5.3 DATA GATHERING

The current study is based on primary data; however, in the literature review, secondary data was gathered to augment the primary data.

5.3.1 Primary Data

Primary data is new data obtained originally for a research and this is first-hand information (Hox and Boeije, 2005; Driscoll, 2011).

This study uses mainly, primary data. This is due to the fact that, there is insufficient secondary data to help answer the study's research questions. The Ghana Statistical Service does not provide information on the number of people operating in slum activities in the two slums under study.

5.3.2 Secondary Data

Secondary data is used to supplement primary data. Secondary data is data collected by some other researcher for another purpose (Boslaugh 2007, p. 1). Since informal sector activities in slums are a global phenomenon, secondary data from slums in countries such as Brazil, India, Kenya, Bangladesh and elsewhere will be incorporated into the current study. This will enable the researcher to identify whether the problems and challenges faced by slum operators within the informal sector in Ghana are similar to, or different from, those of other countries, and what lessons may be drawn from these for policy suggestions in Ghana.

5.3.3 Target Population

Levin and Fox (2011, p. 118) define a population as a group, entities that are linked together by at least one characteristic. This characteristic can be in terms of nationality, age group, race, gender, or residential areas. The population of the current study consists of operators engaged in informal sector activities in the slums of S&G in Accra and AL in Kumasi.

Data was gathered by means of questionnaires administered to the operators engaged in slum economic activities. There is currently no data on the actual number of people involved in informal activities in the slums of Ghana. Furthermore, the researcher cannot study the whole population, hence a sample was the target.

5.3.4 Sampling

A sample refers to a small number of entities drawn from a population with the appropriate method. This gives researchers the opportunity to make inductive references about the population (Levin and Fox 2011, p. 118).

Table 5.1 Sampling methods and statistical strength

SAMPLING METHOD	STATISTICAL STRENGTH
Probability	
Simple Random	High
Systematic	High/Medium
Stratified	High
Cluster	Medium
Non-Probability	
Quota	Medium
Convenience	Low
Judgement	Low
Snowball	Low
Respondent-driven	Medium

Source: Dahlberg and McCaig (2010, p. 178)

Table 5.1 shows the different sampling approaches available to a researcher. The probability sampling methods are based on statistical theory and the non-probability sampling methods are samples that a researcher chooses based on his/her subjective judgement, in exploring the research questions. Samples obtained by the probability sampling are therefore highly representative of the population (Matthews and Ross, 2010; Dahlberg and McCaig 2010, p. 178). The current study employs the stratified random sampling technique. According to Dahlberg and McCaig (2010), the stratified random sampling method has a high statistical strength in terms of consistency with its predictive accuracy. Hence with probability sampling methods, researchers can make accurate measurements with the data (Yeager *et al*., 2011, p. 737).

5.3.5 Sampling technique

Stratified random sampling is a probability sampling technique, which enables sampling of populations that are divided into subgroups. This helps in obtaining a sample that is representative of all the subgroups, as each subgroup is subjected to a simple random sampling (Groves *et al*., 2009, p. 113; Newbold, Carlson and Thorne, 2010, p. 771). Such subgroups are referred to as

'strata' (stratum; plural) and are mutually exclusive. Stratification divides a population into characteristic specific groups, for instance, divisions pertaining to geographical location, income bracket, and size of city (Deming 1966, p. 213; Keeping 1995, p. 152). The basis of stratification for the current study is on King and Amponsah's (2012) findings which showed, 50% of slum operators in Ghana are engaged in the manufacturing sector and 49% in services sector. These two sectors therefore, represent the two strata for the current study.

5.3.6 Sample size

As mentioned in section 5.3.1, there is no existing data on the number of operators in slum activities in Ghana. This makes it difficult in determining a representative sample size. In determining the sample size for the study, the researcher took into consideration sample requirements for factor analysis and principal component analysis. According to Gaur and Gaur, (2006) and Hair *et al*., (2010), the sample should be more than 100, whereas Tabachnick and Fidell (2013) suggest that a sample size of above 300 is appropriate for Factor and Principal component analysis. Therefore, 200 slum operators in each of the two slum regions will be selected using the stratified random sampling technique. A random sample of 200 respondents was to be selected from each slum and 100 from each activity, ensuring a fair representation of operators in both sectors (strata).

5.3.7 Data Collection Method

Data can be obtained by various methods, depending on the nature of one's research; these include observations, interviews and surveys (Driscoll, 2011, p. 154). Observations entail the researcher witnessing the 'world' around him/her and measuring it, while interviews involve questioning participants in a research in either a small group setting or on one-on-one basis. Lastly, in surveys researchers ask participants questions about a specific phenomenon, mostly through a questionnaire.

A survey, according to Sapsford (2007, p. 3), is the process of describing a population to report "what is there" as information collected; in Driscoll's (2011, p. 162) words, is "self-reported". Survey method allows for direct comparison of cases since the same information is sought from

each case leading to a structured data set. Since questionnaires are often highly structured, they are mostly used in surveys. The current study employs questionnaires in gathering data from the informal operators in the AL and S&G slums. Section 5.5 below covers in detail the subject of questionnaires.

5.4 VARIABLE SCALE OF MEASUREMENT

Collecting data often involves the use of scales that have been designed to operationalise some underlying constructs or attributes. According to Levin and Fox (2011), in conducting research, it is important to be able to measure the characteristics being studied in order to assign numbers to them. Different types of statistical procedures require data with the appropriate level of measurement (Lehman, 2005). For example, logistic regression requires the dependent variable to be a nominal variable, while the independent variables are either nominal, ordinal or interval. The major levels of measurement are discussed below.

5.4.1 Nominal Scale

Nominal scale classifies units being measured into categories and records the regularity of occurrence of those units. The nominal scale places each measurement unit into only one category and there must be a category for every case. Characters that are allotted the same number fall in the same category and those assigned different numbers fall into other categories (Welman, Kruge and Mitchell, 2005, p. 138; Levin and Fox 2011). Some variables with a nominal scale in the current study are gender, marital status, age group and regional background.

5.4.2 Ordinal scale

The ordinal scale goes beyond categorizing cases into groups to ordering cases regarding the degree to which a particular phenomenon is present. This implies that, cases that are assigned a higher number have more of the presence, or more of the phenomenon being measured than those assigned lower numbers. However the rank order can be reversed for a lower number to show a higher order. For instance, in ordering cases on a Likert scale of 1 to 7, 1 can denote a highest order while 7 denotes the least. The ordinal scale does not indicate by how much there is a

difference between the cases being studied (Gujarati and Porter 2009, p.28). Motives for engaging in informal sector activities, the constraints involved and the determination of an operator's locus of control are measured on the ordinal scale.

5.4.3 Interval scale

Similar to the ordinal scale is the interval scale; however, the intervals between numbers on the interval scale are of equal distance. The interval scale indicates ordering as well as specifying the exact distance between these orders. The distance between the points on the scale are measured by a constant unit of measurement. On the interval scale, the number zero is seen as an actual value, hence the scale does not have an absolute zero (Newbold, Carlson and Thorne 2010, p. 28). An example of the interval scale is the measurement of temperature. When temperature is 0 degrees, it does not mean there is no temperature at all. Hence, the interval scale treats zero as an actual number. There are no variables measure on the interval scale in the current study.

5.5 THE RESEARCH INSTRUMENT

As discussed in Section 5.3, the study seeks to collect primary data using a questionnaire. This section discusses what a questionnaire is and how it was employed in the study.

5.5.1 Questionnaire

Questionnaires serve as a form of communication between the researcher and respondents. Researchers develop research questions that need to be answered and questionnaires serve as communication instruments that help researchers solicit information from a population in order to answer their research questions (Peterson 2000, p 3). Poorly designed questionnaires can lead to inaccurate response, hence limiting the usefulness of the collected data. It is therefore important to keep the research questions in mind while developing a questionnaire.

Briggs and Coleman (2007, p. 226-228) emphasize the precision of wording in designing a questionnaire. These authors proposed five key points to consider in designing a questionnaire:

- Ease of concepts to be converted to variables – all questions in a questionnaire are aimed at testing a particular theory or concept. Hence, the questions should be framed in a way that will make it easy for the collected data to be captured, coded and analysed.

- Researchers should eschew all forms of ambiguity, impression and assumptions – all concepts should be clearly defined so all respondents have the same understanding of that particular concept. The researcher should not assume that all respondents have equal knowledge about the theories and concepts on which the questions are based as this might lead to respondents giving wrong answers. Words that all respondents would interpret in the same way should be used.

- Leading questions should be avoided – questions that tend to lead respondents into giving a particular answer or side with a certain school of thought should be avoided since it can lead to bias.

- Loaded questions should be avoided – loaded questions include questions that are made up of several other questions. These kinds of questions can be misleading and should be avoided.

- Memory based questions should be avoided – respondents have a limited time to fill in questionnaires hence questions that will require them to remember certain details of their lives should be avoided.

The current study took into consideration these salient points in designing the questionnaire. The validity and reliability of the research instrument is discussed in section 5.7.

5.5.2 Contents of the questionnaire

Dahlberg and McCaig (2010, p. 179) admonishes researchers to be mindful of the length of questionnaires, by keeping questions brief and relevant to a study. Having this in mind, the questionnaire for the current study is made up of 56 questions that took about 30 minutes to complete.

The questionnaire consists of eight sections;

- SECTION 1 is made up of 6 questions, seeking to acquire the respondent's biographic data.

- SECTION 2 contains 15 questions about motives for an operator's involvement in the slum enterprise.

- SECTION 3 covers 8 questions concerning the income of a slum operator.

- SECTION 4 comprises 3 questions regarding the Locus of control of a slum operator.

- SECTION 5 covers 8 questions which solicit information about the characteristics of the slum enterprise.

- SECTION 6 is made up of 14 questions regarding the constraints operators face in the informal slum activity sector.

- SECTION 7 has 1 question that seeks to find out the willingness of operators to move into the formal sector if they are helped to overcome their constraints.

- SECTION 8 comprises 1 question which finds out whether happiness plays a role in keeping operators in the informal slum sector.

A copy of the questionnaire can be found in Appendix 1 (Page 202).

5.5.3 Pretesting of the questionnaire

Pretesting a research instrument is a very important step in survey research. As Van Teijlingen and Hundley (2001, p. 1) argue, pretesting gives advanced warnings regarding aspects that might lead to the failure of the main research. Hence, pretesting alerts on sections of the questionnare that need modifications or improvements. With this in mind, a pilot study was carried out by the researcher for the current study, involving operators in informal sector activities in both the AL and S&G slums.

The questionnaire was pre tested on 10 operators in each slum. The pre testing process helped to improve the framing of some questions, especially those regarding happiness and locus of control.

5.5.4 Distributing the questionnaire

The researcher initially aimed at administering 400 questionnaires as discussed in section 5.3.6. However, on the field the researcher was only able to administer 344 questionnaires. The reason for the slightly lower number, was due to a demolition exercise carried out by Accra Metropolitan

Assembly in the S&G slum during the time of the survey (Issah, 2015). This made all slum operators very apprehensive to 'outsiders', fearing that the researchers might be collecting data for the government.

Upon the completion of the questionnaires, they were coded into Excel for statistical processing and analysis. Data coding and analysis is discussed in the next section whereas validity, reliability and ethical issues are discussed later in the chapter in Sections 5.7 and 5.8 respectively.

5.6 DATA ANALYSIS AND HYPOTHESES TESTING

Data analysis involves evaluating and interpreting data collected to answer the research questions in relation to the hypotheses under study. In doing these, researchers establish patterns and regularities in the data. Generalisation is an important facet of data analysis. As data have been collected from a sample, care is to be exercised in using the findings of the sample to infer results about the entire population. Data analysis is also done on the backdrop of a theory, hence the theory is tested against the generalisations discovered from the data. The theory might then be either corroborated or refuted by the generalisations based on the data (Fielding and Gilbert, 2000, p. 5; Driscoll, 2011).

Hypotheses testing is quantifiable and measurable in research (Good and Hardin 2012, p. 13). Mendenhall, Beaver and Beaver, (2006, p. 298) regard hypotheses testing as the process of making a decision regarding a variable, based on a defined knowledge about what the value of the parameter might be. The null hypotheses (NH/H_0) is a proposal that is subjected to verification, to ascertain if it should be accepted or rejected. The alternative hypotheses (AH/H_1) states otherwise of the null hypotheses. A hypotheses well developed, makes it testable, quantifiable and measurable.

Fielding and Gilbert (2000, p. 249-256) propose four salient steps in hypotheses testing. Step one deals with **making assumptions about a phenomenon**. Based on theory, statements are made about a sample regarding the phenomenon being measured. The second step involves the **choosing of a criteria for the test**. This stage requires the researcher to choose the test statistic that suits

the characteristic of phenomenon being measured. Step three requires the researcher to **compute the value of the test statistic** chosen in stage two and find the critical value. After these three steps are undertaken, the researcher finally **makes a decision about the hypotheses**. The researcher does this by comparing the value of the test statistic to its critical value to see if it falls in the critical region.

Before statistical analyses can be performed on the field data, it needs to be coded.

5.6.1 Data coding

Data coding involves the numeric representing of responses from a survey, for the purpose of statistical analyses (De Vaus, 2002, p.1). The statistical tools employed in the current study are Statistical Package for the Social Sciences (SPSS) and STATA.

5.6.2 Data Analysis

Data collected are analysed by using both descriptive and inferential analysis methods.

5.6.2.1 Descriptive analysis

Descriptive analysis involves the description of the general overview of the data, by computing summary values, such as, the median, mode, mean, standard deviation (Leedy and Ormrod, 2014). Descriptive analysis presents a succinct overview of data in hand through graphs, summary statistics and tables.

5.6.2.2 Inferential Analysis

Inferential statistics goes a step further than descriptive analysis. Inferential analysis enables researchers come to conclusions and make predictions about an aspect or phenomenon of a population based on a sample (Leedy and Ormrod, 2014, p. 10, 289).

Mendenhall, Beaver and Beaver, (2006, p. 4-5) recommend five steps to be undertaken when conducting an inferential analysis. The first involves specifying the research questions that needs to be answered and the population it pertains to. The next step pertains to choosing the procedure

of sampling. This involves the analysis of the various data collection techniques available and choosing the most appropriate for the study. The researcher then goes ahead to select the sample size and analyse the data. Fourthly, the information obtained from the analysis stage in used to make inferences about the population. Finally, the reliability of the inference is tested. This is a crucial step since only a portion of the population is used for the analysis; hence, the results have to be verified to ascertain the level of its accuracy and how confident the researcher is about the inference.

1. Pearson's Correlation Analysis

Correlation measures the strength of relationship between two or more variables. Pearson's correlation is a method that determines how two variables are related to each other (Hill and Lewicki 2006, p. 18).

The current study will employ Pearson's correlation analysis to test the following hypotheses:

1. NH: There is no significant relationship between slum operators' average daily income and their happiness.

    AH: There is a significant relationship between slum operators' average monthly income and their happiness.

The correlation coefficient ranges between +1 and -1. When the coefficient is positive, it implies that the variables being measured move in the same direction, while a negative coefficient shows an inverse relationship between them (Everitt and Dunn 2001, p. 6). The closer the correlation coefficient (positive or negative) is to 1, the stronger the relationship.

2. Independent Sample T-Test

The independent samples t-test is to be used to determine if the means of two independent sets of data are significantly different from each other (Sheskin, 2007). These two sets of data are mutually exclusive.

The null hypothesis for mean differences is presented as:

H_o: $\mu_1 = \mu_2$

Where μ_1 and μ_2 are the means of the first and second populations respectively. In the case that the null hypotheses is rejected, it means that there is a difference between the means of both sample, which forms the basis for accepting the alternate hypothesis (H_1: $\mu_1 \neq \mu_2$) (Levin and Fox 2011, p. 153).

In making the decision rule, the significant value (p-value) is compared to the alpha level (α) set prior to the test by the researcher. If $p < \alpha$, the null hypotheses is rejected implying there is a significant difference between the means of both sample.

The current study will employ the independent sample t-test to test the following hypotheses:

1. NH: On an average daily basis, there is no significant difference between the incomes of Males and Females.

   AH: On an average daily basis, there is a significant difference between the incomes of Males and Females.

2. NH: On an average daily basis, there is no significant difference between the incomes of operators in AL and S&G slums.

   AH: On an average daily basis, there is a significant difference between the incomes of operators in AL and S&G slums.

3. NH: On an average daily basis, there is no significant difference between the incomes of operators based on Internal or external locus of control.

   AH: Null Hypotheses: On an average daily basis, there is a significant difference between the incomes of operators based on internal or external locus of control.

3. Data Reduction Techniques

Everitt (1998, p. 93) regards data reduction as a procedure of summarising large amounts of data to a minimum size but yet, yields the same quality of analytical results. Objectives 1 and 3 of the current study seek to find out motives and constraints of operators who engage in informal activities in slums respectively.

As discussed in Section 4.5 in the literature review chapter, many motives influence individuals to engage in for informal activities and various constraints hold back their growth and development.

Some of these factors may overlap or correlate with each other. Hence, data reduction techniques are employed to achieve a reduced representation of the data. The data reduction techniques employed in the current study are the Principal Components Analysis (PCA) and the Factor Analysis (FA).

Factor and Principal Component analyses are similar in many ways and are often used interchangeably by researchers as both approaches tend to produce similar results (Pallant, 2005). Hence, a five step protocol for performing Factor Analysis, as proposed by Williams, Brown and Onsman, (2012, p. 4) is used by the current study to perform Factor and Principal component analysis, based on the aforementioned reason.

The five steps depicted in Figure 5.2 are explained below:

Step 1 – the current research ensures the data is adequate for Factor and Principal component analysis. Gaur and Gaur (2006) and Hair *et al.*, (2010) recommend that a sample size of 100 and above is adequate for conducting PCA and FA. On the other hand, Tabachnick and Fidell (2013) suggest that, a sample size of above 300 is appropriate. With a sample size of 344, the current study meets the criteria of the above mentioned authors.

Furthermore, the suitability of the data for Factor and Principal component analysis, is tested using the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy, and Bartlett's Test of Sphericity. The KMO measures the shared variance in the variables and has an index ranging from 0 to 1. An index greater that 0.50 is acceptable for Factor and Principal component analysis to be conducted (Hair *et al.*, 2010). Bartlett's test, on the other hand, tests if there is a linear combination between the variables being studied, checking if the observed correlation matrix is an identity matrix or not. Hence, when the Bartlett's test is significant ($p<0.05$), we can conclude that the correlation matrix is not an identity matrix, therefore, Principal and Factor analysis can be undertaken (Williams, Brown and Onsman, 2012, p. 5; Beavers *et al.*, 2013).

Step 2 – Extraction is the method of obtaining the underlying components of the data set (Gaur and Gaur, 2006). There are several types of extraction methods, namely, the principal components analysis (PCA), principal axis factoring (PAF), maximum likelihood (ML), uweighted least

squares, generalised least squares, alpha factoring and image factoring methods. In the current study, the principal component extraction is used for the principal component analysis. According to De Winter and Dodou (2012), if the goal of the Factor analysis is to produce as many factors as possible, then the PAF method is appropriate (De Winter and Dodou 2012, p. 708). Hence, the PAF extraction is used in the current study since the goal is to produce as many factors as possible, which motivate operators to engage in informal activities in slums.

Figure 5.2 Five step procedure for Factor and Principal component analysis

```
┌────────────────────────────┐
│  1. Is the data suitable for │
│         PCA/EFA?             │
└────────────────────────────┘
               │
               ▼
┌────────────────────────────┐
│        2. How will the       │
│  factors/components be extracted? │
└────────────────────────────┘
               │
               ▼
┌────────────────────────────┐
│    3. What criteria will assist in │
│   determining factor/components  │
│           extraction?            │
└────────────────────────────┘
               │
               ▼
┌────────────────────────────┐
│  4. Selection of rotational method │
└────────────────────────────┘
               │
               ▼
┌────────────────────────────┐
│   5. Interpretation and labelling  │
└────────────────────────────┘
```
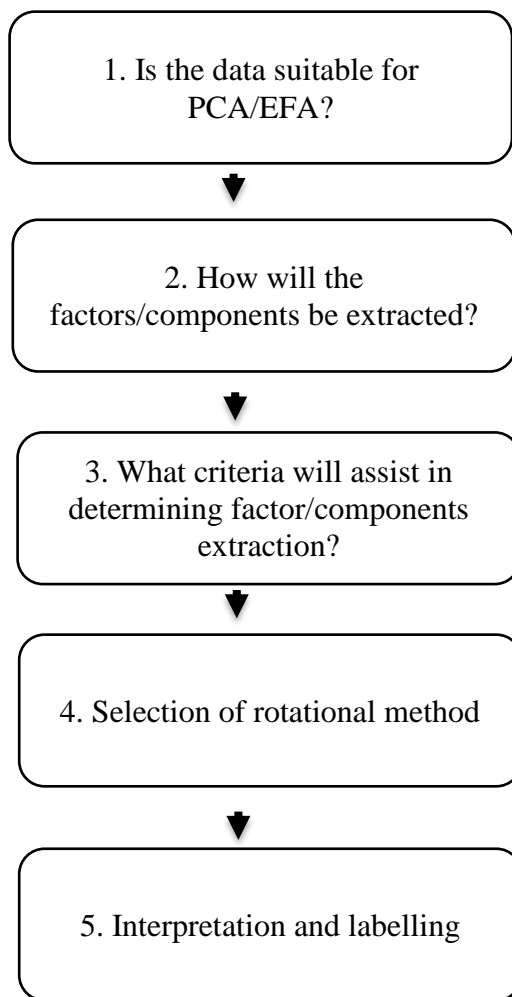
Source: Williams, Brown and Onsman, (2012, p. 4)

Step 3 – In deciding how many components to retain, the eigenvalues are assessed. Eigenvalues of a particular component is a measurement of the amount of total variance explained by that component (Tabachnick and Fidell 2013, p. 933-966). According to Kaiser (1961), only components with eigenvalues greater than 1 should be retained, and this guideline was followed in the current study.

Step 4 – According to Gaur and Gaur, (2006, p. 133) rotation helps in coming up with the basic patterns of factor loadings, as it highlights loadings with high correlations, and minimizes those with low correlations. There are two types of rotation methods, orthogonal and oblique rotations. Orthogonal rotation assumes no correlation among the underlying factors of the data set. In social science, however, factors are expected to have some level of correlation amongst themselves. Hence, the oblique rotation which assumes some correlation among the factors, renders a more accurate result (Costello and Osborne, 2005). Accordingly, the Direct Oblimin, which is a type of Oblique rotation is used in this study.

Step 5 – The final step entails labelling and interpreting the results. This will be done in Chapter Seven.

i. Factor Analysis

Factor analysis enables researchers to analyse the interrelationships among several variables and to explain the variables in terms of their common underlying dimensions (Hair *et al.,* 2010, p. 94). Factor analysis helps in exploring whether a large number of variables of interest are linearly related to a smaller number of common factors that may be grouped as a set.

There are two types of factor analysis; Exploratory factor analysis (EFA) and Confirmatory factor analysis (CFA). Confirmatory factor analysis shows how each item loads to the relevant factor while also isolating what is explained by other items in a subset. In CFA, researchers use theory and empirically based knowledge to propose relationship between certain variables a priori, then test this hypothesis statistically (Suhr, 2006).

On the other hand, EFA helps in studying the interrelationships among variables in an effort to obtain new sets of variables, which express shared characteristics among the original variables (Tabachnick and Fidell, 2013). The core purpose of EFA, according to Johnson and Wichern, (2002, p. 477-478), is to describe as much as possible the correlation relationship in set of variables on the basis of a few underlying factors, hence this method is used in the current study.

EFA is to be employed by the current study to determine the factors that motivate operators to engage in slum activities. Literature survey (Gerxhani, 2004; Maloney, 2004; Williams, 2007; Chingono, 2014) enabled the researcher to enumerate various motives for engaging in informal sector activities, and the following 15 variables are identified:

- Taking advantage of business opportunities
- Desire for greater independence
- Quest for higher income
- Avoid tax
- Avoid government regulation
- High cost of informal business
- Flexibility of informal work schedule
- Greater satisfaction
- Increase leisure time
- Greater use of one's expertise
- Redundancy
- Survival
- Supplementing income
- Networks
- Wealth generation.

The current study is interested in finding out the underlying communalities between these motives for informal activities and reduce them, so the variables can be represented by fewer factors. Benzing, Chu, and Kara, (2009) similarly used FA to evaluate motives, success factors and problems pertaining to small and medium scale entreprises in Turkey.

ii. Principal Component Analysis (PCA)

Principal Component Analysis sets out to reduce a large data into smaller sets. In doing this, PCA preserves as much as possible, the variations within the data set (Härdle and Simar 2003, p. 234). Abdi and Williams (2010, p. 3) enumerated the following as the four main goals of PCA;

a) To extract the most salient information from a large data set

b) To reduce as much as possible the size of a data set while retaining the most relevant information.

c) To simplify the explanation of a data set, and,

d) To critically analyse the variables.

In achieving these goals, the transformation process generates principal components, and each of these components is uncorrelated with each other. The components in a descending order (components with highest eigenvalue comes first), explain the variations present in the data set (Jolliffe 2002, p. 1). The firstly extracted component contains the highest possible variance, hence explains the most variation in the data.

In the literature survey (Canagarajah and Sethuraman, 2001; Skinner, 2005; Olawale and Garwe, 2010; Okpara, 2011), various factors were identified as constraints to informal sector development. In this study, the influence of the following factors as major constraints would be examined by using PCA.

- Lack of land tenure security.
- Lack of production inputs.
- Lack of production tools.
- Difficulty in accessing bank loans.
- Harassment by the municipal authority.
- Lack of expertise in financial management and planning.
- Lack of experience and training in business management.
- Lack of training in bookkeeping/accounting.
- Poor communication systems.
- Erratic electricity supply.
- Lack of networking.
- Poor state of roads.

- Lack of collateral security.

- Other infrastructural challenges.

The current study uses PCA to determine the conditions that constrain the growth of informal sector businesses in slums. Hence, in line with other studies (Olawale and Garwe, 2010; Mahadea, 2013), PCA is used for data reduction purposes.

4. Regression Analysis

Regression analysis is a statistical tool that assists researchers in quantifying how one or a set of variables (independent), influences another variable (dependent) (Gordon 2010, p. 5). The regression analysis determines the causal effect of the independent (explanatory) factors on the dependent (explained) variable. Newbold, Carlson and Thorne, (2010, p. 586-589) suggest a few steps in constructing regression models. The steps in the model building process are shown in Figure 5.3.

Figure 5.3 Stages of statistical model building

MODEL SPECIFICATION

COEFFICIENT ESTIMATION

MODEL VERIFICATION

INTERPRETATION AND INFERENCE
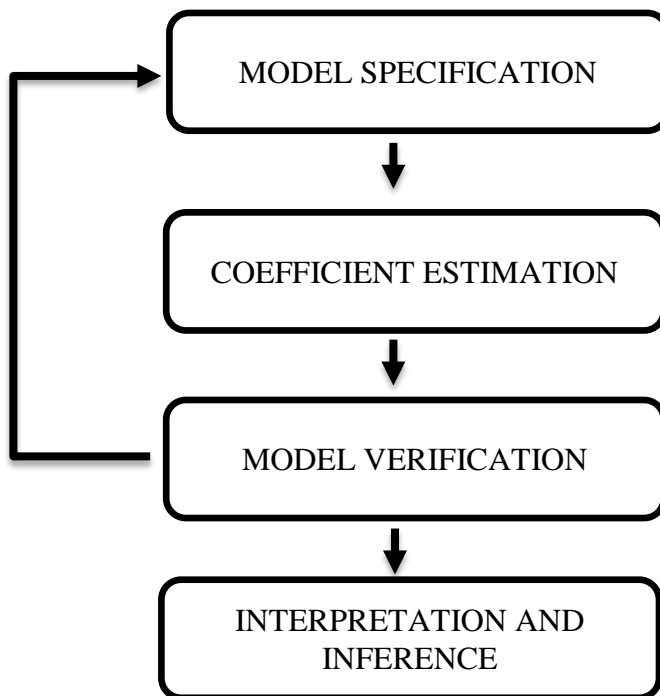
Source: Newbold, Carlson and Thorne (2010, p. 587)

The first step involves Model Specification. In specifying the model, the researcher analyses available information in order to select the dependent and independent variables that represents the system under study. A model usually stems from the rigorous review of existing literature. The next step in model building is Coefficient Estimation. Researchers use available data to estimate the regression coefficients of the variables and use them to predict what the unknown (dependent) variable will be for the independent (known) factors. As evident in section 4.6 of Chapter 4, the current study reviewed a wide array of literature in quest for determinants of income in the informal sector.

When a model is estimated, it has to be checked against its underlying theories and assumptions. This is called Model Verification. In this stage, researchers seek to ascertain if the model "makes sense" based on the existing knowledge about the outcomes of certain parameters. Hence, one has to do diagnostic checks to be certain that a research model is rigorous. If the model seems to be weak, researchers will have to go back to stage one to re-specify the model. The final stage in the statistical model building is Model interpretation and inference. At this stage, the results obtained from the model are explained and juxtaposed against existing literature and theories pertaining to the research problem being studied (Newbold, Carlson and Thorne, 2010, p. 586-589).

These steps of model building are used in the study to come up with Multiple regression and Logistic regression models to achieve research objectives regarding the factors that determine income levels generated from slum activities and the examination of the resource needs of the slum operators which may prompt them to move out of slum activities and venture into formal businesses. These models are discussed in the ensuing sections.

i. Multiple Regression Analysis

Multiple regression analysis is concerned with the study of the dependence of a variable, the y-factor, on one or more other variables, the independent factors, with the view of predicting the value of the dependent variable in terms of the known values of the independent variables (Wooldridge, 2013). The Ordinary Least Square (OLS) regression method is used in the current study. The OLS method seeks to find the line of best fit for a data set by minimising the sum of

squared vertical distances from the fitted line to the observed data points (Gujarati and Porter 2009, p. 56).

Multiple regression analysis is employed in this study to find out how factors such as type of slum activity industry, level of education, gender, networks, size of labour, age of business and locus of control influence a slum operator's average daily income.

The type of sector and gender are captured as dummy variables. The dummy variable is a method of introducing variables that are not usually measured on a numeric scale into regression analysis. Variables such as gender, religion, race and marital status, just to mention a few, are usually captured as dummies, taking the value of 1 if present, and 0, otherwise (Wooldridge 2013, p. 217).

In determining the 'best' model, the stepwise regression is used in the current research. The stepwise regression helps researchers in deciding the 'best' set of explanatory variables to include in the model. There are two types of stepwise regressions; stepwise forward regression and stepwise backward regression. The stepwise forward regression introduces the explanatory variables into the model one at a time in deciding the 'best' model, while the stepwise backward regression introduces all explanatory variables into the model, then reject one at a time until the 'best' model is arrived at. Rejecting an explanatory variable is based on its contribution to the model's explained sum of squares, determined by the F test (Gujarati and Porter 2009, p. 354). In the current study, the stepwise backward regression is used.

The model is stated as:

$$Ln\ (Income) = \beta_0 + \beta_1(Type\ of\ industry) + \beta_2(level\ of\ Education) +$$
$$+\beta_3(Gender) + \beta_4(Networks) + \beta_5(Size\ of\ labour) + \beta_6\ (Age\ of\ business) +$$
$$\beta_7(Locus\ of\ control) + \mu$$

The dependent variable (income) is log-transformed which is consistent with other studies and it can be interpreted as elasticity (Card 1999, p. 1804; Benoit 2011, p. 4).

In this study, the dependent variable represents the average daily income of a slum operator. The independent variables represent type of sector the operator is involved in, the operators' level of

education, gender, networks, size of labour, age of business and locus of control. The variable u_i is the error term.

The measurement of the dependent and independent variables is presented in Table 5.2.

Table 5.2 Regression variables and their measurement

Dependent Variable	Measurement
Average Daily Income	Ghana Cedis (Ghanaian currency)
Independent Variables	**Measurement**
Manufacturing sector	Dummy (1- involved in manufacturing, 0 otherwise)
Education	Years
Gender	Dummy (1 if male, 0 otherwise)
Networks	Scale of 1 to 5
Size of labour	Continuous
Age of business	Continuous
Locus of Control	Scale of 3 to 21

The following section gives a brief explanation of the variables.

Dependent Variable

1. Average Daily Income

Respondents were asked to state their daily income after meeting all expenses when:

1. Business is good – Good is described as a situation when demand for the good or service is high, leading to a high business revenue.
2. When business is not good – when demand is low, leading to low revenue.

The researcher then found the average of these two income streams to determine an operator's average daily income. Income is measured in Ghana Cedis (currency of Ghana).

Independent Variables

1. Sector

Two economic sectors are considered in the study: services and manufacturing. The sector a slum operator is involved in is introduced into the regression function as a dummy variable, taking a value of 1 if he/she is involved in the manufacturing sector, and 0 if not.

2. Education

Education involves the imparting of knowledge, usually in a formal setting like a school. The study seeks to find the impact that formal education has on the income of a slum operator. Education of a slum operator is measured in years. Years of education according to the Ghanaian educational system is rated as follows: 0 year (no schooling), 1 to 6 years for primary school, 7 to 9 years for junior secondary school, 10 to 12 years for senior secondary school and above 13 years for tertiary education.

3. Gender

The state of a slum operator being a male or female is represented in the regression as a dummy variable. The female group is the reference category.

4. Networks

The degree of an operator's social connectedness is measured by his/her networks. Social connectedness is defined as one's quest to being close to the social world (Lee, Draper and Lee, 2001, p. 310). One's social world consists of interaction with family, friends, colleagues through an interpersonal or electronic medium.

The degree on connectedness (networks) is measured on a 5 point Likert scale, with 5 being very connected and 1 being poorly connected. The value of networks hence ranges from 1 – 5. Goss and Lindquist (1995) suggest that, individuals migrate with the help of their social networks. The current study seeks to find out if these social networks help in determining a slum operator's income.

5. Size of labour

The size of labour is measured by the number of people a slum operator employs. It is assumed that size of labour employed impacts on the employer's income. Labour size in measured as continuous numbers.

6. Age of business

Age of business represents the number of years the business has been in existence at the time of the survey. It is assumed that the number of years of a business's operation can influence income generated. Age of business is measured in years.

7. *Locus of control*

Rotter (1966) refers to locus of control as the degree to which individuals attribute rewards they receive as a result of their own efforts (internal) as against the thinking that the reward was brought about by factors independent of one's personal actions (external). The Rotter's scale contains 23 questions used in measuring an individual's locus of control. However, literature survey by Lumpkin (1985, p. 685) indicates that, there is no unanimity on the number of questions or dimensions one could use for locus of control. Adeyemi-Bello's (2001) further concluded that 23 items were too many in measuring one construct. Hence, in line with the study of Bugaighis and Schumm (1983), 3 internal locus of control items were chosen from the Rotters scale for the current study. The respondents had to rate the variable on a 7-point Likert scale. A respondent's locus of control score therefore, ranges between the values of 3 and 21. The higher the locus of control score, the higher a respondent's internal locus of control. On the other hand, the lower the score, the higher a respondent's external locus of control.

5.6.2.3 Residual Analysis

Residuals depict the difference between the observed value of the dependent variable and the predicted variable. Hence, each data point has its own residual (Wooldridge 2013, p. 205).

Residual ($\hat{u}$) = Observed value (y) - Predicted value ($\hat{y}$)

By plotting the residuals on the vertical axis and the independent variables on the horizontal axis, a residual plot is obtained.

The residual plot helps in finding out if the linear regression is appropriate for the data set. When the graph shows points randomly dispersed around the horizontal axis, it means a linear regression is appropriate for the data set. The generated residuals of the current study's regression model will be plotted against the independent variables (type of industry, level of education, gender, networks, size of labour, age of business, locus of control and age of business). These plots are shown in the appendices 4 to 11 (Pages 207 to 211).

5.6.2.4 Some Regression Diagnostics Tests

To ensure that the regression model does not violate any of the Classical Linear Regression Model (CLM) assumptions, the current study run a couple of diagnostic tests. Gujarati (2004, p. 66-75) enumerates 10 CLM assumptions that must be present in running an OLS regression model. These assumptions are:

1. OLS is a linear estimation method, hence the regression model must be linear in the parameters.

2. The values taken by the explanatory variables are considered to be fixed in repeated samples, meaning the explanatory variables are assumed to be nonstochastic.

3. The mean of the disturbance term is zero.

4. Homoscedasticity or the variance of the error term is constant for all observations.

5. No autocorrelation, meaning the covariance of the errors over time is zero.

6. There must be zero covariance between error term and the explanatory variables (exogeneity).

7. The number of observations, must exceed the number of explanatory variables.

8. The variance of the explanatory variables must be a finite positive number.

9. The regression model must be correctly specified, meaning there must be no specification errors.

10. No perfect multicollinearity, meaning there should be no perfect linear correlation among
the explanatory variables (Gujarati 2004, p. 66-75).

The diagnostic tests in relation to homoscedasticity and multicollinearity are discussed in the subsequent sections. The study involved cross-sectional data and hence, there is no autocorrelation diagnostic test.

1. Multicollinearity

In a regression model, multicollinearity refers to a situation in which two or more explanatory variables are very closely or strongly linearly related. Multicollinearity violates the CLM assumption which bars a perfect linear relationship between a dependent variable and another (Gordon 2010, p. 385-386; Wooldridge 2013, p. 91-94). According to Studenmund (2011, p. 248-260) multicollinearity leads to large errors in estimating coefficients of dependent variables since it causes variances and standard errors to increase.

There are two ways of detecting multicollinearity. One is through inspecting the coefficient of correlation (r) amongst the dependent variables. When the r has a high absolute value, it indicates a strong correlation between two dependent variables, hence a probable cause of the multicollinearity problem. However, when there are more than two variables, it becomes difficult to use correlation coefficients to detect multicollinearity. The Variance Inflation Factor (VIF) is an alternative detector of multicollinearity. The VIF determines the severity of multicollinearity by examining to what degree a dependent variable in an equation can be explained by all the other dependent variables. Hence, it shows the degree of how inflated the variance of an estimator is due to the effects of multicollinearity. The equation for VIF is defined as:

$$\text{VIF} = \frac{1}{(1-R^2)}$$

From the equation above, it can be seen that, the higher the R^2 value, the higher the VIF value. If the VIF value is greater than 10 (equivalent to an R^2 above 0.9), then it can be concluded that the

problem of multicollinearity exists in a model (Gujarati 2004, p. 351; Wooldridge 2013, p 94). VIF test is employed by the current study to check for the severity of multicollinearity.

2. Heteroscedasticity

The homoskedasticity assumption of the CLM postulates that the error terms in a regression model have a common variance. If this assumption fails to hold, then the problem of heteroscedasticity arises. Whenever the errors at each level of predictor variable of a regression model are not constant, i.e. have unequal variances, the model ceases to be the best linear unbiased estimator (Maddala and Lahiri 2009, p. 211; Wooldridge 2013, p. 256).

The Breusch-Pagan / Cook-Weisberg test, is used to test for heteroscedasticity in the current study. The test proposes a null hypothesis of homoskedasticity. The Breusch-Pagan / Cook-Weisberg test follows a chi-square distribution and when the test statistic is lesser than the p-value of 0.05, then the null hypothesis is rejected, and heteroscedasticity is assumed.

In dealing with heteroscedasticity the Weighted Least Square (WLS) method, Transformation of Y or the Robust standard errors can be used. With the WLS method, each case of heteroscedasticity in a model, is weighted depending on its source, in the calculation of the sum of residuals. In using the WLS method, it becomes difficult to spot the portion of data causing the heteroscedasticity. The accuracy of the WLS method is based on how well the weights assigned by the researcher, matches the actual form of heteroscedasticity. Hence, if the weights are incorrectly assigned, WLS becomes inaccurate in measuring heteroscedasticity.

Log transformation of the dependent variable might also help reduce heteroskedasticity but not necessarily correct all causes of heteroscedasticity. The Robust standard errors is the most common remedy of heteroscedasticity since generally, the form of heteroscedasticity is unknown. The Robust standard errors method uses OLS method to calculate estimators, and an alternate standard error which is "robust" and can handle the possibility of heteroscedasticity (Hayes and Cai 2007, p. 711; Gordon 2010, p. 381-382). To remedy heteroscedasticity, the current study applies the Robust standard errors method.

ii. Logistic Regression

Unlike the multiple regression, Logistic regression allows a categorical variable to be predicted by both categorical and continuous variables (Osborne 2008, p. 358). If the dependent variable has exactly two categories, the analysis is a binary logistic regression. Since the logistic regression is used for predicting relationships between a categorical outcome variable and one or more categorical or continuous variables, it acts as an alternative technique to overcome the limitations of the OLS regression in handling dichotomous outcomes (Tonidandel and LeBreton, 2010).

Logistic regression derives an equation which provides a probability of an observation being a member of a specific category (Sheskin 2007, p. 1581). Probability represents the chance of an event occurring while the odds is the ratio of an even occurring divided by it not occurring (Osborne 2008, p. 365). In the current study, the odds ratio is also reported as a probability; the probability of an event occurring is found by subtracting the odds ratio of the event occurring from 1, and expressing the result as a percentage. Hailpern and Visintainer, (2003, p. 221) also used a similar approach in their study.

In a logistic regression, the model can be represented in a logit equation, as below:

Logit $_{(p)} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \cdots + \beta_i X_i$

Where p represents the probability of an event occurring; and the Xs are the explanatory variables the logit transformed function is written as:

$$\text{logit p} = ln\ (\frac{p}{1-p})$$

The dependent variable in a logistic equation is a dichotomous variable (taking the value of either (0 or 1) which the researcher wants to predict. The independent variables are the X variables that are used to predict the dependent variable. These can either be dichotomous or continuous.

Logistic regression is to be used in the study to ascertain if the slum operators will **move into formal sector or continue to operate in slum activities.** This is based on whether the operators will move into the formal sector if they are aided in addressing their constraints.

While probing what will prompt operators in slum activities to move into formal businesses, the study also would find out what keeps these operators in the slum activities. Could it be because of the constraints, as mentioned above, or could it be because of non-material reasons? A non-material reason raised in the current study is a slum operator's subjective well-being.

Hence, the factors (constraints) obtained from the Factor analysis [section 5.6.2.2.3(i)] and a slum operator's happiness are regressed on the operators' willingness **to move into the formal sector (logit ρ, with a value of 1) or continue operating in slum activities (ρ with a value of 0)**. This is presented in the equation below.

In introducing the factors into a regression equation, variables will first have to be generated from the extracted factors. SPSS's "compute variable function" is used by the current study to create variables from the factor results. This is done by entering the values of the component matrix multiplied by the questions they represent in the Principal component/ factor analysis (SPSS 2009, p. 124-125). The generated variables become predictor variables (Components 1 to n) for the logistic regression. The variable generation procedure was similarly used by Liu *et al.*, (2003, p. 145) to generate variables from the principal component analysis, and they used those variables in a regression analysis.

The logistic regression equation for the study is given below:

Logit $\quad$ (ρ) $\quad = \quad \beta_0 + \beta_1(Component\ 1) + \beta_2(Component\ 2) + \beta_3(Component\ 3) + \cdots + \beta_n(Component\ n) + \beta_{n+1}Happiness$

Coefficients of the above model are interpreted in the form of *odds ratio (OR)*. Odds ratio is the estimation of the variation in the odds of membership in the sample for one unit change in the predictor. The odds ratio is calculated by finding the exponential function (*e*) of the independent variable in the regression equation (Tabachnick and Fidell, 2013). If the odds ratio value is greater than 1, then it reflects that as the predictor increases, the odds of the outcome occurring increases. Just as was done for the OLS regression model, the stepwise backward regression technique will be used to find the 'best' logistic regression model.

1. Goodness of fit of the model: Hosmer and Lemeshow test

To test the goodness of fit of the logistic regression model, the study employs the Hosmer and Lemeshow test. This statistical test is only applicable to data obtained from a simple random survey. With the Hosmer and Lemeshow test, observations are grouped on the basis of their expected probabilities and then, a hypothesis stating that there is no difference between the expected and observed events is tested. The obtained data from the survey is clustered into ten groups based on the increasing order of projected risk. The Chi-squared statistic is calculated for each number of observed and expected event. The Chi-squared statistic ($\hat{C}$) is stated as:

$$\hat{C} = \Sigma_{k=1}^{g} \frac{(O_k - n_k^t \pi_k)^2}{n_k^t \pi_k (1-\pi_k)},$$

Where;

n_k^t = the total number of subjects in the kth group

c_{k} = the number of covariant patterns in the kth decile

O_k = the number of responses among the c_k covariant patterns

π_k = the average estimated probability

(Source: Hosmer and Lemeshow 2000, p. 148).

The distribution of the test statistic $\hat{C}$ follows a chi-square distribution with $g - 2$ degrees of freedom. A small p-value, less than 0.05 (a large chi-square value) shows a poorly fit model while a large p-value, closer to 1 (a small chi-squared value) shows a well fit model (Hosmer and Lemeshow 2000, p. 147-160).

2. R² for logistic regression

R^2 measures the usefulness of certain predictor variables in predicting the variation in a dependent variable. The R^2 value for a regression model ranges from 0 to 1. An R^2 of 0 means the independent variables are not important in predicting the outcome variable and an R^2 close to 1 shows the independent variables perfectly explain or predict the dependent variable. Logistic regression has two of such statistics, namely, Cox and Snell and the Nagelkerke R^2. The Cox and Snell R^2 assumes values less than 1. The Nagelkerke R^2, on the other hand, is an adjusted form of the Cox and Snell R^2, and is the best measurement of R^2 in logistic regression, according to Bewick, Cheek and Ball (2005).

3. Wald Test

Wald statistic involves testing of the significance of the predictor variables in a logistic regression model. The Wald statistic follows the chi squared distribution, reflecting whether the β coefficient for a predictor is different from zero (Bewick, Cheek and Ball, 2005). If the coefficients are significantly different from zero, one can argue that the predictor is making a significant contribution to the prediction of the outcome (deciding to move into formal sector or stay in slum activities). The explanatory variables are regarded as important determinants of the dependent variable when the test is significant at $p < 0.05$.

STATA's Wald test is used.

4. Interaction between explanatory variables

The explanatory variables for the logistic regression are results from PCA. It is assumed that components from a PCA are uncorrelated. However, to verify this assumption, a correlation analysis will be conducted to find out if any of the explanatory variables are highly correlated with another.

Chan (2004, p. 151) suggests an alternative way of checking for multicollinearity in logistic regression. This is by checking the Standard Errors of the explanatory variables and if they are very large (greater than 5), it implies the existence of multicollinearity (Chan, 2004). Hence, in solving for multicollinearity, one must omit variables whose standard error are larger than 5.

5.7 VALIDITY AND RELIABILITY OF THE MEASUREMENT INSTRUMENTS

A research instrument must fulfil two basic criteria in order for it to be considered scientifically acceptable for predictive or inference purposes. It must have reliability and validity. These two concepts are discussed in the section below.

5.7.1 Validity

According to Peterson (2000, p. 79-80), validity of an instrument refers to its ability to measure what it sets out to measure. This implies that, a questionnaire's validity hinges on its ability to achieve its purpose, which is seeking information required from respondents. Three aspects of validity are important in evaluating whether an instrument, for example a questionnaire, actually measures what it sets out to measure. The first is content validity. Content validity refers to the extent to which individual items from an instrument consists of a true representation of the construct it is set out to measure. Hence, there should be a detailed description of measures undertaken to ensure that the individual items depict the construct. This entails the definition of the construct, the research instrument's intended goal, the procedure used in developing the construct and the phrasing of each individual item in the instrument (Cook and Beckman 2006, p. 10).

Secondly, criterion validity represents the extent to which a research instrument is consistent with another instrument which is chosen as a benchmark (Drost 2011, p. 118). Finally, nomological validity seeks to find out why a research instrument measures what it has been designed to measure.

For the purposes of this study, the content validity is employed. The questionnaire developed for the current study, contains salient questions to measure all its objectives. The content validity of the research instrument was confirmed during the pilot study. The pre testing of the questionnaire in the two slums helped improve some contents.

5.7.2 Reliability

For an instrument to be valid, it must be reliable. Reliability refers to the stability, dependability and accuracy of a research instrument to measure what is was designed to measure across different situations (Burns 2000, p. 336). This implies that an instrument with a great level of reliability has a smaller chance of measurement errors. Peterson (2000, p. 79) proposes two measurements of the reliability. One is the internal consistency reliability and it uses the Cronbach's alpha. The Cronbach's alpha, as a test of internal consistency, ranges between 0 and 1. The closer the coefficient is to 1, the greater its reliability. Another measure of reliability, according to Peterson,

is the longitudinal stability. This is done by administering the research instrument to the sample under study at two or more times and then calculating the test-retest correlation amongst the individual research instruments.

The current study employs the Cronbach's alpha as a measure of reliability. The Cronbach's alpha is important in the evaluation and assessment of questionnaires since it adds validity to the results of the data (Tavakol and Dennick, 2011). The reliability test for the research instrument for the current study is estimated using SPSS reliability function. This gave a Cronbach coefficient of 0.732 which is above the acceptable threshold of 0.7 (Pallant, 2006).

5.8 ETHICAL CONSIDERATION

In addressing ethical issues, participants were made to sign an informed consent form before participating in the survey. An informed consent is a way of sensitising a research participant of the requirements, risks and benefits in participating in a study. Schofield (2014, p. 101), emphasizes the importance of informed consent, as being a crucial part of human based researches since it improves the researcher-participant relationship and shows respect for the participant.

Before conducting the survey, ethical clearance was obtained from the Research office of UKZN. A copy of this ethical clearance is attached in the Appendix 12 (Page 212).
Below are the contents of the informed consent form that was presented to the participants before they participated in the survey:

- **Purpose of Study:** Participants were made to understand the purpose of the research being conducted. The purpose of the study is to determine the motives for an operator's involvement in informal activities in slums, and gain an understanding of why they are operating in slums, whether they have migrated from the rural areas, what are the constraints limiting their enterprise growth, what resource needs can help them develop and move into formal enterprises and policy suggestion can be made to enhance entrepreneurial capacity in Ghana.
- **Benefits of participation:** Participants were made to understand that there was no direct financial benefits from participating in the survey. However, they were made aware that

their participation will help researchers learn more about the development constraints faced by operators in informal activities in slums and on the basis of which policy measures can be suggested to assist their activities.

- **Risk:** The researcher guaranteed respondents that there was no known risks or discomforts associated with the study.

- **Confidentiality:** The researcher assured the respondents that questionnaires will be numerically coded to maintain anonymity. The completed questionnaires will be stored safely and not made available to anyone not directly involved in this project. Furthermore, it was made clear that, there will be no mention of any name in the study.

- **The use of the findings:** The researcher informed the participants that, the results of the study will be used for scholarly purposes only. The results from the study will be presented at professional conferences, and the results might be published in a professional journal in the field of Economics.

- **Decision to quit at any time:** The researcher told participants that participation was voluntary and even when they had agreed to, they could terminate participation at any time without prejudice.

A copy of the informed consent form is attached to the questionnaire in Appendix 1 (Page 202).

5.9 LIMITATIONS OF THE STUDY

Owing to financial limitations, only 2 slums regions are considered in the current study. Slum operators are involved in 3 main economic sectors: manufacturing, services and primary sectors. However, research by King and Amponsah (2012) showed that only 1% of slum operators was involved in the primary sector. Hence the primary sector is not considered by the current study. A survey research technique, according to Kelley *et al*., (2003), often fails to yield high response rates as compared to interviews. The small sample size is a limitation of the current study. This drawback, arose partly because of a demolition exercise carried out by Accra Metropolitan Assembly during the time of the survey (Issah, 2015). The demolition led to closures of some slum businesses and made it difficult to attain the target of 400 respondents for the study.

As mentioned in section 5.3.1, the GSS has no data on the number of operators involved in informal activities in the slums under study. As such, one does not really know the population size of informal operators in Ghana and in the surveyed areas of AL and S&G. This made it difficult to choose a representative sample based on the true population. This limitation was however addressed by choosing a sample size that is adequate to perform the statistical analyses chosen for the study.

Further owing to paucity of data on informal activities in slums in Ghana, a longitudinal study could not be carried out to see the effects of the previously implemented intervention programmes (discussed in section 3.5) which aimed at addressing constraints of slum operators in the areas under study. One main disadvantage of a cross sectional study is that, it cannot separate a cause from an effect overtime (Margetts, Vorster and Venter 2002, p. 70), hence the current study's inability to draw long term policy inferences from those slum intervention programmes. The current study however serves as a basis for future studies.

5.10 CONCLUSION

Research is a systematic search for knowledge. It is organised with certain specific goals and questions. This systematic approach undertaken by the current study was presented in the research design and methodology chapter.

The chapter sought to provide clarity on how the research questions are going to be answered. The chapter describes the processes undertaken in choosing the research design, sample and statistical approaches. The method of data gathering and instruments used are then discussed. Finally, the statistical methods to be used in analysing the obtained data were explained and justified. The next two chapters present and discuss the findings of the empirical study.

CHAPTER SIX

CHARACTERISTICS OF SLUM OPERATORS

6.1 INTRODUCTION

This is essentially a descriptive chapter. It presents the demographic attributes of informal operators in the two slum regions (S&G and AL), the activities they are involved in and the characteristics of their enterprises. The chapter is divided into five main sections. The first section presents the gender, age, marital status, regional background and place of living of the surveyed operators. The second section describes their educational status. The next section considers the activities the respondents are involved in and income generated from these economic activities for the slum operators. The fourth section provides a description of the slum enterprises, their role in creating labour employment and linkages, if any, with other firms. The final section provides a synthesis of the major findings.

6.2 DEMOGRAPHIC CHARACTERISTICS OF SLUM OPERATORS

The demographic characteristics of the slum operators are presented in Table 6.1. The sample consisted of 344 slum operators, 172 from each of the two slums (S&G and AL). The results, in Table 6.1, show that 59.6% of the respondents are male while 40.4% are females. In terms of marital status, the married made up the majority, representing 70.6% of the respondents, while the singles were the minority, 29.4%. The most represented age group is the 26-30 years category, making up 18.9% of the sample. The least represented age group is those above 60 years (0.9%). Overall, the mean age of the sample is 37 years. The male respondents are slightly older (mean age of 38 years) than their female counterparts (mean age of 37 years). The majority of the respondents (80.2%) originate from the Northern regions of Ghana, followed by 15.4% from foreign countries notably, Mali. Due to high poverty rates in Northern Ghana, people move south in search for jobs, a phenomenon akin to Sjaastad (1962), Lee (1966) and Harris-Todaro (2015) migration theories.

Only a few (5.8%) on these slum operators live in formal settlements; the majority (81.1%) live in the slum in which they operate and others (13.1%) live in other slums (Table 6.1).

Table 6.1 Demographic characteristics of slum operators

Personal details	Category	Frequency	Percentage
1. Gender	Male	205	59.6%
	Female	139	40.4%
2. Marital Status	Married	243	70.6%
	Single	101	29.4%
3. Age in years	16-20	18	5.2%
	21-25	34	9.9%
	26-30	65	18.9%
	31-35	45	13.1%
	36-40	48	13.9%
	41-45	34	9.9%
	46-50	50	14.5%
	51-55	35	10.2%
	56-60	12	3.5%
	Above 60	3	0.9%
Sample mean age	37.41 years		
Male mean age	37.74 years		
Female mean age	36.92 years		
4. Region of origin	Eastern	3	0.9%
	Brong Ahafo	3	0.9%
	Ashanti	9	2.6%
	Northern	276	80.2%
	Outside Ghana	53	15.4%
5. Living place	In this slum	279	81.1%
	In another slum	45	13.1%
	In a formal settlement	20	5.8%

Source: Author's own computation

6.3 EDUCATIONAL BACKGROUND OF SLUM OPERATORS

In terms of educational status, the most represented are those with no formal education (42.2%). It is observed that, in the higher education category, there were fewer respondents; about 10% had secondary education and only 1.5% had tertiary education, as shown in Table 6.2.

From the surveyed sample, it can be observed that, males attained a higher education than females; 62% of males have either a primary or higher education as compared to 51% of the female operators surveyed.

Table 6.2 Educational background of slum operators

Details	Category	Frequency	Percentage
Educational status of all respondents	None	145	42.2%
	Primary	121	35.2%
	Junior Secondary	39	11.3%
	Senior Secondary	34	9.8%
	Tertiary	5	1.5%
Educational status according to gender **1. Male**			
	None	77	37.6%
	Primary	66	32.2%
	Junior Secondary	28	13.6%
	Senior Secondary	30	14.6%
	Tertiary	4	2%
Total		*205*	*100%*
2. Female	None	68	48.9%
	Primary	55	39.6%
	Junior Secondary	11	7.9%
	Senior Secondary	4	2.9%
	Tertiary	1	0.7%
Total		*139*	*100%*

Source: Author's own computation

6.4 ECONOMIC ACTIVITIES AND INCOME GENERATED IN THE SLUMS

This section is divided into two parts; the first looks at the economic activities undertaken by the respondents and the second presents the income generated from these activities.

6.4.1 Economic activities in the slums

The operators in S&G are involved in more diverse economic activities as compared to the AL counterparts. S&G operators are engaged in 15 different activities where as those in AL are only engaged in 9 different activities. With both slums put together, the services sector dominates by employing 61.6% of the operators while the manufacturing sector employs 38.4% (Table 6.3).

In S&G, foodstuff sales and peanut butter manufacturing are the most represented economic activities, each with a percentage of 15.7. The least represented economic activity was second hand car sales employing only 0.6%. There was only one operator dealing in car sales in the S&G region. The most dominant economic activities in AL are wood processing and wood sales, each accounting for 16.3% of respondents. Operators involved in livestock rearing on the other hand, are the least represented economic activity in AL, representing 3.5% of respondents.

Peanut butter manufacturing is one of the major economic activities of the surveyed operators in the S&G slum. This is due to the producers supplying peanut butter to the Agbogbloshie flea market. In AL, wood processing is the dominant economic activity, which forms part of the large wood industry in Kumasi.

In both slum regions, the services sector dominates the manufacturing sector. In S&G, the services sector represents 61% of operators, while the manufacturing sector employs 39%. In AL, services sector is larger; representing about 62% of operators.

Table 6.3 Economic activities in slums of AL and S&G.

Details	Category	Frequency	Percentage
1. Sectors	Services	212	61.6%
	Manufacturing	132	38.4%
2. S&G slum region			
	Foodstuff sales	27	15.7%
	Head porters	20	11.6%
Services sector	Seamstresses	7	4.1%
	Barbers	6	3.4%
	Electrician	8	4.7%
	Commercial motorcyclist	12	7.0%
	Cooked food seller	12	7.0%
	Truck pusher	6	3.4%
	Washroom owner	4	2.4%
	Car sales	1	0.5%
	Pub (shebeen) owner	2	1.2%
		105	*61%*
Total			
	Scrap dealer	23	13.4%
Manufacturing sector	Peanut butter	27	15.7%
	Cooking pot maker	5	2.9%
	Welder	12	7.0%
Total		*67*	*39%*
3. AL slum region			
	Kola nut seller	26	15.1%
Services sector	Maize seller	27	15.6%
	Wood seller	28	16.3%
	Petty trading	12	7.0%
	Cooked food seller	8	4.7%
	Livestock	6	3.5%
Total		*107*	*62.2%*
Manufacturing sector			
	Wood processor	28	16.3%
	Rice processor	12	7.0%
	Scrap dealer	25	14.5%
Total		*65*	*37.8%*

Source: Author's own computation

The table below provides a brief description of the above mentioned economic activities.

Table 6.4 Description of economic activities in AL and S&G

Economic Activity	Description
Barber	A person who shaves and grooms men's hair
Car salesman	One who sells second hand saloon vehicles
Commercial motorcyclist	One who uses a motorcycle as a taxi
Cooked food seller	Sales of cooked food, usually on tables or in kiosks.
Cooking pot maker	A person who manufactures local cooking pots. They usually melt aluminium and mould it into pots
Electrician	A handyperson involved in electrical wiring and repairs of electrical equipment.
Foodstuff sales	Sales of cooking ingredients
Head porter	One who carries luggage or goods for a fee
Kola nut seller	Sales of fruits from the kola tree, and ingredient used to manufacture "coca cola".
Livestock rearer	One who nurtures domestic animals like goats, cattle and sheep for sale.
Maize seller	Retail sale of maize
Peanut butter	Manufacturing and sale of peanut butter
Petty trading	Sale of mostly inexpensive items on a small scale, usually on tables. These items may include chewing gum, candy, biscuits and fruits.

Pub (shebeen) owner	A person who owns a place where alcohol is sold, mostly without a licence
Rice processor	Processing of rice
Scrap dealer	One who collects and recyclable metal left over from machines and appliances.
Seamstress	A woman who sews clothes
Truck pusher	A person who transports goods on a locally manufactured wooden truck
Washroom owner	An owner of washrooms let out at a fee
Welder	A handyman who fuses metals together
Wood processor	A person who processes timber into beams and planks
Wood seller	Sales of processed wood

Source: Author's own compilation

6.4.2 Income generated

The operators earn income from diverse tradable activities. The slum operators' income represents income, after meeting all daily business expenses (i.e., net income).

Table 6.5 Average daily income

	N	Mean	Std. Deviation
Average daily income	344	29.36	10.957

Source: Author's own computation

The mean daily income earned by an operator in both slums, as shown in Table 6.5, is Gh ₵ 29.6, equivalent to $7.72 ($1: Gh ₵ 3.83, exchange rate as of April, 2016). A daily income of $7.72 is

more than triple the World Bank's poverty line of US$2 a day. This result is in line with King and Amponsah's (2012) finding that, slum operators in Ghana earn higher than the poverty line.

Table 6.6 Average daily income in each slum

	Akwatia Line income (Gh ₵)	Sodom Gomorrah income (Gh ₵)
Mean	32.5	26.2

Source: Author's own computation

The average daily income varies between the two regions. Table 6.6 shows that, the mean daily income for AL is Gh ₵ 32.5 (US$8.5) while that of S&G slum is Gh ₵ 26.2 (US$6.8). It can be seen that operators in AL, on a daily basis, earn more than in S&G. In both regions, the average daily income earned is above the poverty line.

6.5 CHARACTERISTICS OF THE SLUM ENTERPRISE

Rockefeller Foundation (2013) emphasises the importance of the slum economy to the broader urban economy. The slum economy does not only employ labour, but it also produces goods and services for local and export markets.

This section explores the characteristics of the slum enterprise in the two slums under study. This is examined with reference to the size of labour employed by the slum operators, whether they pay municipal development levies and the slum firm's interaction with other firms outside the slums; be it formal or informal.

6.5.1 Labour employed

In order to run their slum enterprise, some operators in Ghana, employ other labour. Labour employed in the current study, does not include the slum operator.

The results in Table 6.7 show the amount of labour employed by the surveyed slum operators. Of AL's operators about 63% employ more than one worker, while in S&G only 42% employ more than one worker.

Table 6.7 Labour employed by the operators

Labour employed	Slums			
	AKWATIA LINE		SODOM AND GOMORRAH	
	Frequency	Percentage	Frequency	Percentage
0	42	24.4%	71	41.3%
1	22	12.8%	29	16.9%
2	30	17.4%	31	18.0%
3	37	21.5%	14	8.1%
4	23	13.4%	12	7.0%
5	7	4.1%	4	2.3%
6	1	0.6%	7	4.1%
7	2	1.2%	0	0.0%
8	1	0.6%	2	1.2%
9	3	1.7%	0	0.0%
10	0	0.0%	2	1.2%
12	2	1.2%	0	0.0%
13	2	1.2%	0	0.0%

Source: Author's own computation

The slum operators on average created employment for 2 individuals, excluding the self-employed operators. However, over 40% were not creating any employment in S&G, while the figure was 24.4% in AL. Operators in AL employed 3 workers on average, while those in S&G employed 2 workers. It can therefore be concluded that the operators in AL create more job opportunities as compared to their S&G counterparts.

6.5.2 Payment of municipal levies

The World Bank (2013), suggests that the informal sector in developing countries pays little or no taxes, hence robbing society of taxes necessary for infrastructural development. However, findings from the current study suggest otherwise. Table 6.8 presents the responses of the operators when asked if they paid tolls to the municipal authority. Of the respondents interviewed, 85.2% alluded to paying municipal tolls, while 14.8% did not. Each slum operator pays Gh ₵ 0.50 (US$ 0.13), a day to the municipal tax collectors for everyday they operate. This will equate to about $3.03 of monthly tolls for an operator who works for six days in a week, which most operators surveyed do. In relation to their overall average daily income, municipal toll fees represent a small cost. Therefore, the transaction cost involved in compliance with the local government levy is fairly small (about 1.7% of average daily income).

Table 6.8 Municipal levies

		Frequency	**Percentage**
Toll payment			
	Yes	293	85.2%
	No	51	14.8%
Total		**344**	**100%**

Source: Author's own computation

6.5.3 Banking

The informal sector in the slums of Ghana have linkages with the formal financial sector. As Table 6.9 below shows, the majority (74.4%) of the slum operators keep an active bank account, and make use of the financial institutions to transact business. About a quarter of the slum operators on the other hand, do not keep a bank account.

Table 6.9 Banking

		Frequency	**Percentage**
Bank Account			
	Yes	256	74.4%
	No	88	25.6%
Total		**344**	**100%**

Source: Author's own computation

This finding contradicts Straub's (2003, p. 3), which asserts that, most informal operators do not use banking accounts. With about 74% of the sample keeping an active bank account, it shows a strong linkage between Ghana's informal slum sector and the formal financial sector.

6.5.4 Consumption of products by people living outside the slum

Slum operators cater for different categories of customers. As previously mentioned, slum enterprises produce goods and services for both informal and formal markets. In order to find out if individuals outside the slum buy their products, the slum operators were asked to answer by a Yes or No, if consumers outside the slum buy their goods and services.

Outside patronage refers to individuals outside the slum consuming goods and services offered by the slum operators.

Table 6.10 Outside patronage of Akwatia Line operators' goods and services

AL economic activities	Outside patronage		TOTAL
	YES	NO	
Kola nut seller	24 92.3%	2 7.7%	26 100.0%
Maize seller	26 96.3%	1 3.7%	27 100.0%
Wood seller	28 100.0%	0 0.0%	28 100.0%
Petty trading	0 0.0%	12 100.0%	12 100.0%
Cooked food seller	0 0.0%	8 100.0%	8 100.0%
Livestock	6 100.0%	0 0.0%	6 100.0%
Wood processor	28 100.0%	0 0.0%	28 100.0%
Rice processor	12 100.0%	0 0.0%	12 100.0%
Scrap dealer	25 100.0%	0 0.0%	25 100.0%
Total	*149 86.6%*	*23 13.4%*	*172 100.0%*

Source: Author's own computation

Table 6.10 shows which goods and services, receive the most patronage from individuals outside the AL slum. Apart from petty traders and cooked food vendors who only meet demands within the AL slum. The majority (above 90%) of the remaining slum operators' goods and services are consumed by individuals living outside the slum.

Table 6.11 Outside patronage of S&G operators' goods and services

| S&G Economic activities | Outside patronage | | TOTAL |
	YES	NO	
Foodstuff sales	22	5	27
	81.5%	18.5%	100.0%
Head porters	19	1	20
	95.0%	5.0%	100.0%
Seamstresses	3	4	7
	42.9%	57.1%	100.0%
Barbers	0	6	6
	0.0%	100.0%	100.0%
Electrician	5	3	8
	62.5%	37.5%	100.0%
Commercial motorcyclist	10	2	12
	83.3%	16.7%	100.0%
Cooked food seller	1	11	12
	8.3%	91.7%	100.0%
Truck pusher	2	4	6
	33.3%	66.7%	100.0%
Washroom owner	0	4	4
	0.0%	100.0%	100.0%
Car sales	0	1	1
	0.0%	100.0%	100.0%
Pub (shebeen) owner	0	2	2
	0.0%	100.0%	100.0%

Scrap dealer	19	4	23
	82.6%	17.4%	100.0%
Peanut butter manufacturer	27	0	27
	100.0%	0.0%	100.0%
Cooking pot maker	5	0	5
	100.0%	0.0%	100.0%
Welder	12	0	12
	100.0%	0.0%	100.0%
Total	*125*	*47*	*172*
	72.7%	*27.3%*	*100.0%*

Source: Author's own computation

Table 6.11 shows how individuals living outside the S&G slum patronise goods and services produced in the S&G slum. Out of the 16 economic activities identified in S&G, 8 supply majorly (above 60%) to individuals outside the slum while the other 8 economic activities predominantly cater for individuals in the S&G slum.

The results imply that, the slum operators provide both raw and intermediary goods to individuals and industries outside the slum.

6.5.5 Ease of entry into the slum economic activity

According to ILO the (1972), one major characteristic of the informal sector is ease of entry. This section seeks to find out if this ease of entry characteristic also applies to slum operators in Ghana. Ease of entry entails the level of complexity or ease for an operator to engage in the informal sector activities the S&G and AL slums.

Table 6.12 Ease of entry into the slum enterprise

	Ease of entry					
	Very easy	Easy	Neutral	Quite Diff.	Very Diff.	**TOTAL**
Akwatia Line	35	48	49	31	9	**172**
	20.3%	27.9%	28.5%	18.0%	5.2%	**100.0%**
Sodom and Gomorrah	32	65	31	37	7	**172**
	18.6%	37.8%	18.0%	21.5%	4.1%	**100.0%**

Source: Author's own computation

From Table 6.12, it can be seen that about 48% of operators in AL consider it easy to enter into their slum activity. About 29% were neutral and 23% deem it difficult to enter into their economic activity. Similarly in the S&G slum, the majority (56%) agree that, it is easy to enter their economic activity, 18% were neutral and about 26% think it is difficult to engage in their economic activity. These results corroborate the characteristic of 'ease of entry' suggested by the ILO.

6.5.6 Level of competition in slum enterprises

Competitive markets are a characteristic of the informal sector. Table 6.13 shows that about 69% of operators in the AL slum see their markets as competitive. In S&G, about 77% of respondents allude to competitive markets. There is a high level of competition because firms can easily enter the informal sector, possibly because of a low entry capital requirement and low skill on the part of the operators and labour.

Table 6.13 Level of competition in the slum enterprise

	Level of competition					
	Not Comp.	Quite Comp.	Neutral	Competitive	Very Comp.	**TOTAL**
Akwatia Line	2	26	25	90	29	**172**
	1.2%	15.1%	14.5%	52.3%	16.9%	**100.0%**
Sodom and Gomorrah	2	21	17	88	44	**172**
	1.2%	12.2%	9.9%	51.2%	25.6%	**100.0%**

Source: Author's own computation

6.6 SYNTHESIS

The findings of the current study show an operator's mean age of 37 years in the two slums. However, the most represented (19%) age group is the 26 – 30 category, showing a relatively young labour force. Although the slum operators tend to have a limited educational background, males are more educated than females. Among the surveyed operators, about 30% of males have higher than primary education, while less than half of that proportion (12%) of females possessed a qualification higher than primary education.

The informal sector is notoriously known for avoiding the payment of taxes. However in the current study, it was found out that, about 85% of operators pay a daily toll of Gh ₵ 0.50 ($ 0.13) to the municipality. This implies that, the slums contribute to the municipal coffers of the cities; contrary to assertions by ILO (1972) and World Bank (2013), that the informal sector avoids municipal taxes.

The average daily income earned in the slums is Gh ₵ 29.6, equivalent to US $ 7.72, which is above the World Bank poverty line of US $ 2 a day. However, the AL slum operators are seen to earn more than their S&G counterparts, and also employ more labour. Finally, it was found out that the slum enterprises are linked to the formal banking sector with 74.4% of the surveyed operators keeping an active bank account.

6.7 CONCLUSION

The aim of this chapter was to find out who the slum operators in the S&G and AL slums are, and the economic activities they are involved in. The majority (59.6%) of the surveyed operators are males, while 80% originate from Northern Ghana. It was also found out that, a sizeable proportion (15.4%) of operators originate from Mali, indicating the presence of migration among slum operators from within Ghana and beyond.

Slum operators tend to be low-skilled. About two fifths had no form of formal education, while just 1.5% had a tertiary education. Of the two economic sectors considered, the services sector employs the majority of the slum operators, accounting for about 62% of total employed in both slums. The next chapter presents findings on motivations to venture into slum activities, constraints

that the operators encounter and their willingness to move out of the slum to the formal sector. These findings are based on factor and principal component analyses, multiple regression and logistic regression.

DATA ANALYSIS AND RESEARCH FINDINGS

7.1 INTRODUCTION

The current chapter presents the research findings in relation to the research questions set for the study. The chapter is divided into seven sections. Section 7.2 presents the factors that motivate operators to engage in informal activities in slum areas. As discussed in Chapter 4, Section 4.5, many factors motivate a person's engagement in informal activities. Hence to find out the fundamental factors that motivate slum operators to engage in informal activities, the study employs the Factor analysis.

Section 7.3 examines the determinants of income of operators in informal slum activities. The independent sample t-test is used to find out differences in income and whether these can be based on gender, slum and locus of control. Secondly, a Pearson's correlation is performed on the determinants of income, and lastly, a multiple regression is run to decipher the effect these variables collectively have on income.

Constraints that the slum operators face is examined in Section 7.4. Principal Component analysis is applied to the variables identified as constraints, in order to ascertain the main constraints of these operators. After the components are found, Section 7.5 begins with the generation of variables using the "Compute Variable" function in SPSS, as discussed in Section 5.6.2.4 (ii) of Chapter 5. These generated variables are then regressed on the operator's willingness to move using Logistic regression. This is to find out if the operators will move into the formal sector if they are helped and their constraints addressed.

Section 7.6 presents the slum operator's subjective well-being. Pearson's correlation analysis is employed to find out the relationship between an operator's income and his/her subjective well-being. The last section presents a synthesis of the major findings.

7.2 MOTIVES FOR ENGAGING IN SLUM ACTIVITIES

The prime objective of the current study is to find the motives for operators' involvement in informal slum activities in Ghana.

Table 7.1 Motives for informal activities in slums

Motives for slum activity		Frequency Distribution						
		Strongly disagree	disagree	Slightly disagree	Neutral	Slightly agree	Agree	Strongly agree
Q7. Taking advantage of business opportunities	Count	89	4	5	3	30	26	187
	%	25.9%	1.2%	1.5%	0.9%	8.7%	7.6%	57.4%
Q8. Desire for greater independence	Count	120	0	0	1	19	7	197
	%	34.9%	0%	0%	0.3%	5.5%	2%	57.3%
Q9. Quest for higher income	Count	22	0	0	0	21	14	287
	%	6.4%	0%	0%	0%	6.1%	4.1%	83.4%
Q10. Avoid tax	Count	117	112	58	20	6	9	12
	%	34%	35.5%	16.9%	5.8%	1.7%	2.6%	3.5%
Q11. Avoid government regulation	Count	117	122	58	20	6	9	12
	%	34%	35.5%	16.9%	5.8%	1.7%	2.6%	3.5
Q12. High cost of formal business	Count	175	15	32	33	17	3	69
	%	50.9%	4.4%	9.3%	9.3%	4.9%	0.9%	20.1%
Q13. Flexibility of informal work schedule	Count	137	37	38	11	15	2	104
	%	39.8%	10.8%	11%	3.2%	4.4%	0.6%	30.2%
Q14. Greater satisfaction	Count	134	64	46	19	20	17	44
	%	39%	18.6%	13.4%	5.5%	5.8%	4.9%	12.8%
Q15. Increase leisure time	Count	177	53	33	11	10	6	54
	%	51.5%	15.4%	9.6%	3.2%	2.9%	1.7%	15.7%
Q16. Greater use of one's expertise	Count	30	42	56	15	38	80	83
	%	8.7%	12.2%	16.3%	4.4%	11%	23.3%	24.1%
Q17. Redundancy	Count	247	35	50	2	0	1	9
	%	71.8%	10.2%	14.5%	0.6%	0%	0.3%	2.6%
Q18. Survival	Count	63	3	1	5	18	21	233
	%	18.3%	0.9%	0.3%	1.5%	5.2%	6.1%	67.7%
Q19. Supplementing income (Part time)	Count	185	48	43	15	12	6	35
	%	53.8%	14%	12.5%	4.4%	3.5%	1.7%	10.2%
Q20. Generating wealth	Count	4	0	0	0	1	10	329
	%	1.2%	0%	0%	0%	0.3%	2.9%	95.6%
Q21. Networks	Count	42	2	1	0	14	13	272
	%	12.2%	0.6%	0.3%	0%	4.1%	3.8%	79.1%

Source: Own computation

These motives, as considered below in Table 7.1, range from taking advantage of business opportunities to networking. A set of 15 motives are examined using a 7 – point Likert scale, to find out reasons why operators choose to engage in informal activities in slums. The scale ranged from 1 (strongly disagree) to 7 (strongly agree).

The majority of respondents chose "agree" or "strongly agree" to motives such as: taking advantage of business opportunities, desire for greater independence, quest for higher income, greater use of one's expertise, survival, generating wealth and networks. Generating wealth seems to be the topmost reason why most operators engage in slum activities as, 96% strongly agree to it as being their motive. Another 83% "strongly agreed" that, the quest for higher income motivated them into engaging in informal slum activities. Networks also play a major role for an operator's involvement in slum activities, as about 83% of the surveyed "strongly agreed" or "agreed" to this.

On the other hand, motives such as avoiding tax, avoiding government regulation, high cost of formal business, flexibility of informal work schedule, increased leisure time, greater satisfaction, redundancy and supplementing income, predominantly received "disagree" or "strongly disagree" as a response. Avoidance of tax or government regulation was not found to be a prime reason prompting the surveyed respondents to engage in slum activities. Only 8% of the respondents stated they went into informal activities due to tax avoidance or government regulation avoidance.

7.2.1 FACTOR ANALYSIS

Factor analysis, with oblique rotation and the principal axis factoring extraction methods is undertaken to group factors that motivate individuals to engage in informal activities into clusters. 15 variables were run for the FA.

To ensure the factorability of the variables, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and the Bartlett's test of sphericity were conducted. The results of these tests are shown in Table 7.2. The KMO value is 0.562. As suggested by Hair *et al*., (2010, p. 104), for a data set to be factorable, the KMO value must be greater than 0.5, and the KMO value for the current study,

being 0.562 meets this criteria. In the current study, the test is significant with a p-value of 0.000. Both tests suggest that the data relating to the variables collected are factorable.

Table 7.2 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		**.562**
Bartlett's Test of Sphericity	Approx. Chi-Square	857.706
	df	105
	Sig.	**.000**

Source: Own computation, results obtained from SPSS

The factor analysis results show a set of 6 extracted factors based on the Kaiser's criterion (Eigen values greater than 1) that explain about 61% of the total variation in motivation. These are shown in Table 7.3. The decision to retain these 6 components is reinforced by the scree plot (Appendix 2, page 206), which graphically shows all the 6 components with Eigen values greater than 1.

Table 7.3 Initial Eigenvalues and Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Eigen values	% of Variance	Cumulative %		% of Variance	Cumulative %
1	2.533	16.889	16.889	2.205	14.701	14.701
2	1.577	10.516	27.405	1.130	7.532	22.233
3	1.520	10.135	37.540	.938	6.254	28.487
4	1.300	8.668	46.208	.712	4.750	33.236
5	1.248	8.322	54.529	.596	3.970	37.207
6	1.022	6.816	61.346	.388	2.588	39.795
7	.973	6.489	67.835			
8	.927	6.179	74.013			
9	.843	5.623	79.637			
10	.754	5.025	84.661			
11	.630	4.202	88.863			
12	.588	3.917	92.781			
13	.555	3.697	96.478			
14	.324	2.162	98.640			
15	.204	1.360	100.000			

Source: Own computation, results obtained from SPSS

Of the 15 variables, only 12 were identified with significant loadings by the factor analysis. Only factors with weights equivalent or greater than 0.32 were considered significant as per Tabachnick and Fidell's (2013) criterion. Hence, as reflected in Table 7.4, only components that have a loading of above 0.32 are considered. Redundancy, generating wealth and quest for greater independence did not load onto any factor, as shown in Table 7.4. These variables had a loading value of less than 0.32. The 6 components, obtained through principal axis extraction method and Oblimin rotation, are presented in Table 7.4.

The first factor explains about 16.9% of the variation in the motives for engaging in slum activities, with an Eigen value of 2.533 (Table 7.3). It consisted of 3 variables; avoiding tax (loading, 0.945), avoiding government regulation (loading, 0.715) and greater satisfaction (loading, 0.472). This first set of variables is labelled as 'Avoiding government regulation'. This cluster has the highest factor loadings and with a Cronbach alpha of 0.714 (Table 7.4).

The second set, with an Eigen value of 1.577, explains 10.5% (Table 7.3) of variation in the motives for slum activity. It consists of two variables; supplementing income with a loading of 0.813 and increasing leisure time, with a loading of 0.748. However, supplementing income has a greater bearing as a motivation factor than increasing leisure time. These two motives combined, have a Cronbach alpha of 0.724 (Table 7.4) and is labelled as 'Working at one's own time'.

The third factor, which is labelled as 'Making use of one's talent and relations', consists of two variables, accounting for about 10.12% (Table 7.3) of total variance in motives for slum activity. These variables include, one's networks (loading, 0.755) and using of one's expertise (loading, 0.535). In this set, networks play a bigger role in motivating an operator to engage in a slum activity than a greater use of one's expertise and this component has a Cronbach alpha of 0.564 (Table 7.4).

Flexibility of informal business (loading, 0.636) and expensive formal business (loading, 0.426) constitute the fourth factor, labelled as 'Attractive informal sector'. Both variables have an Eigen value of 1.3 (Table 7.3), a Cronbach alpha of 0.403 (Table 7.4) and account for about 8.7% of total variation in motives for slum activity.

Table 7.4 Rotated Matrix

Variables	Factor					
	1	2	3	4	5	6
Avoid tax	.945	-.066	-.005	-.060	.075	-.002
Avoid government regulation	.715	-.101	.032	.006	.055	-.057
Satisfaction	.472	.206	-.035	-.052	-.049	-.028
Supplement income	-.182	.813	.033	-.018	.040	.016
Increase leisure time	.427	.748	-.028	.031	.049	-.090
Networks	.048	-.083	.755	-.006	-.044	-.040
Use one's expertise	-.039	.082	.535	.050	.015	.013
Flexibility of informal business	-.015	-.023	.013	.636	-.037	-.066
Expensive formal business	-.069	.021	.023	.426	.122	-.007
Redundancy	-.050	.017	-.111	-.126	.042	-.091
Taking advantage of business opportunity	.016	-.029	-.192	.202	.629	.030
Survival	-.123	-.031	.195	-.094	.338	-.206
Generate wealth	-.046	-.037	-.031	.019	-.149	-.042

Earn higher income	-.103	-.027	.002	-.071	.093	.653
Greater independence	.073	.138	-.061	.150	-.119	.176
Cronbach's alpha	**.714**	**.724**	**.564**	**.403**	**.277**	–
Labels	Avoidance of government regulation	Working at one's own time	Making use of one's talent and relations	Attractive informal sector	Opportunities	Quest for higher income

Extraction Method: Principal Axis Factoring.
Rotation Method: Oblimin with Kaiser Normalization.
Source: Own computation, results obtained from SPSS

Taking advantage of business opportunity (loading, 0.629) and survival (loading, 0.338) jointly load onto the fifth factor, known as 'Opportunities'. This factor account for about 8.3% of total variation with an Eigen value of 1.2 (Table 7.3) and a Cronbach alpha of 0.277 (Table 7.4). The sixth factor, Quest for higher income (loading, 0.653) is the only stand-alone factor accounting for 6.8% of total variation with an Eigen value of 1 (Table 7.3). A Cronbach alpha was not generated for this factor since it is a stand-alone factor.

In all, only the first three clusters had Cronbach alphas above 0.5 and deemed acceptable. However, the other clusters with low Cronbach alphas were retained in the analysis because of the significance to the study and because the overall Cronbach alpha was 0.732. Jointly, all 6 clusters explained over 60% of the variation in the operator's motives for engaging in slum activities.

7.2.2 DISCUSSION OF MOTIVES FOR ENGAGING IN SLUM ACTIVITIES
Results from the factor analysis show that the key motive for slum activity in the AL and S&G areas is the avoidance of government regulation. Avoidance of tax (loading, .945), satisfaction (loading, .472), and avoidance of government regulation (loading, .715) together, are the main reasons why operators engage in slum activities in Ghana. This is consistent with the literature

survey in developing countries by Gerxhani (2004), who also found out that, strict government regulation is a major reason for informalisation.

Two major motives for informal activities according to Maloney's (2004) study in Latin America, are the informal sector's flexibility, where operators are independent and work at their own time and the quest for higher income. These have also been found to be crucial motives for slum activities in Ghana. Supplementing income (loading, .813) and increase of leisure time (loading, .748) makes up the second cluster of motives for slum activities.

The informal sector is mainly characterised by family affiliated work. The results of the current study points out that, making use of one's relations and talent is a key motive pushing individuals into slum activities in Ghana. Networks (loading, .755) and making use one's expertise (loading, .535) represent the third cluster.

As one makes use of his or her family relations and talents, it is imperative that he/she takes advantages of business opportunities around. The informal sector brims with endless opportunities and taking advantage of these opportunities is one major cause of informalisation according to Gurtoo and Williams, (2009). Hence, the opportunities (loading, .629) that slum enterprises offer is one crucial motive for engaging in slum activities in Ghana. Survival (loading, .338), which stems from necessity entrepreneurship is also major reason for slum activities in Ghana.

Starting a business in Ghana is a laborious process, as the World Bank (2016d) ranks Ghana at the 102nd position amongst 190 other countries, with regards to the ease of starting a business as of 2016. Hence, the informal sector is attractive since government regulation there is not as rigorous as in the formal sector. This reinforces the first motive of avoidance of government regulation.

7.3 DETERMINANTS OF INCOME

Finding out the determinants of income of operators involved in informal activities in slums is one of the objectives of the current study. As discussed in section 4.6 of Chapter 4, there are many determinants of income. Based on a review of literature on determinants of income in the informal

sector, the current study selected some variables, in order to ascertain their impact on generating income for the operators in the AL and S&G slums in Ghana. Some studies on slum activities Ghana (King and Amponsah, 2012) only found out activities slum operators are involved in, and how much they earn from those activities. However, no study has been able to decipher the factors that determine the amount of income earned in slum activities. The current study, therefore, seeks to fill in that knowledge gap.

This section on determinants of income is divided into two parts. In the first part, the independent samples T-test is used to determine the difference in income on the basis of an operator's location (region), gender and locus of control. The second part involves the use of OLS regression analysis to determine the impact gender, networks, locus of control, sector, education, age of business and size of labour have on income.

7.3.1 Testing differences in income

1. Differences in average daily income based on gender

To test the difference between the average daily income of male and female, the following hypotheses was developed:

NH: On an average daily basis, there is no significant difference between the incomes of Male and Female slum operators
AH: On an average daily basis, there is a significant difference between the incomes of Male and Female slum operators

Table 7.5 presents the results of the independent sample T-test in testing the difference between the average daily income of males and females. The mean income of males and females is Gh ₵ 30.3 and Gh ₵ 28 respectively.

Table 7.5 Independent sample T-test of income based on gender

		Group Statistics			Levene's test		t-test for Equality of Means			
		N	Mean		F	Sig	t	df	Sig (2 tailed)	Mean difference
Average daily income	Male	205	30.3	Equal variances assumed	21.8	0.00	1.86	342	0.063	2.24
	Female	139	28.0	Equal variances not assumed			1.94	331.9	0.053	2.24

Source: Own computation, results obtained from SPSS

Firstly, the assumption of homogeneity of variance is tested with the Levene's *F* Test for Equality of Variances. The test proposes a null hypotheses that there is no difference between the variance of the two groups. When the significant value of the Levene's test is greater than our alpha of 0.05, we accept the null hypotheses and conclude that there is no significant difference in the variance of the two groups. On the other hand, if the significant value of the Levene's test is less than our alpha value, we reject the null hypotheses. In this case, the assumption of homogeneity of variance is not met, hence the table results associated with 'Equal variances are not assumed', is used.

Secondly, if the T-test's significant value is less than our alpha of 0.05, we reject the null hypothesis and accept the alternate hypothesis, that there is a significant difference between the mean income of male and female operators.

From the results in Table 7.5, one can conclude that the assumption of homogeneity of variance is violated since the significant level for the Levene's test is 0.00. This is lower than 0.05, implying that variances of the two groups (male and female) are not the same, hence we use the results of 'Equal variances not assumed', i.e., second row results in Table 7.5.

As the T-test's significant value (0.053) is greater than our alpha of 0.05, one can accept the null hypotheses. As indicated in Table 7.5, the mean daily income for male is Gh ₵ 30.3 whereas that for female is Gh ₵ 28. Thus, it can be concluded that, on an average daily basis, there is no significant difference between the incomes of males and females, at the 5% level of significance.

However, at 10% level, there is a significant difference (t=1.94), with the male operators, on average, earning more than their female counterparts.

Studies in the informal sector (Chen 2001 and Chen *et al*., 2005) have shown that, women are underrepresented in high income earning activities, hence, earning less than men. Results from the current study contradicts these studies, as it was found out that both male and female operators in the AL and S&G slums of Ghana statistically earn similar average incomes.

2. Differences in average daily income based on slum location

Income of slum operators may differ based on the location in which they operate. Hence, the Independent samples T-test is used to ascertain whether slum operator's income differ based on the slum (AL or S&G) in which they operate.

In testing the difference between the average daily income of operators in the AL and S&G slums, the following hypotheses ware developed:

NH: On an average daily basis, there is no significant difference between the incomes of operators in Akwatia Line and Sodom and Gomorrah

AH: On an average daily basis, there is a significant difference between the incomes of operators in Akwatia Line and Sodom and Gomorrah

Table 7.6 shows the results of the independent sample T-test in examining the difference between the average daily income of operators in AL and S&G slums. The mean income of operators in AL is Gh ₵ 32.5 and that of S&G is Gh ₵ 26.2.

The Levene's Test for Equality of Variances in Table 7.6 shows a p-value of 0.00, which is less than our alpha value of 0.05. Hence, we reject the null hypotheses of homogeneity of variance. We therefore read the t-test result in the 'equal variances not assumed' row, i.e., the second row. As the results of the t-test shows a p-value of 0.00 which is less that the critical value of 0.05, we can reject the null hypothesis. Hence we can accept the alternate hypothesis that there is a significant difference between the average daily income of operators in AL and S&G slums.

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Table 7.6 Independent sample T-test of income based on slum

		Group Statistics			Levene's test		t-test for Equality of Means			
		N	Mean		F	Sig	t	df	Sig (2 tailed)	Mean difference
Average daily income	Akwatia Line	172	32.52	Equal variances assumed	14.706	0.000	5.584	342	0.000	6.33
	Sodom and Gomorrah	172	26.20	Equal variances not assumed			5.584	325.5	0.000	6.33

 Source: Own computation, results obtained from SPSS

Taking a critical look at the mean difference (Gh ₵ 6.33) between the incomes of both slums, AL's average daily income (Gh ₵ 32.5) is significantly higher than that of S&G (Gh ₵ 26.2). Overall, there is a statistically significant difference in the operators' mean daily income between the two slum regions.

S&G slum is located in the Greater Accra region, which is the regional capital of Ghana and its operators are expected to earn more than AL's. However, this was not the case as AL operators earn significantly more (Gh ₵ 32.5), on an average daily basis than S&G operators (Gh ₵ 26.2). S&G operators are involved in a wider variety of economic activities than AL operators. Nevertheless, activities such as wood processing and sales, rice processing and kola nut sales dominate in the AL slum and these activities tend to have higher value-adding and hence generate higher average incomes in AL than in S&G.

3. Differences in average income based on locus of control

Locus of control refers to a person's views regarding the determinants of rewards or outcomes in the individual's life. With internal locus of control, one attributes outcomes to his/her personal actions and with external locus of control, outcomes are associated with external forces.

In this section, the T-test is employed to find out if income of slum operators differ in terms of their locus of control. In order to test the difference between the average daily incomes of operators with internal or external locus of control, the following hypotheses ware developed:

NH: On an average daily basis, there is no significant difference between the income of operators based on internal or external locus of control.

AH: Null Hypotheses: On an average daily basis, there is a significant difference between the income of operators based on internal or external locus of control.

Table 7.7 Independent sample T-test of income based on locus of control

		Group Statistics			Levene's test		t-test for Equality of Means			
		N	Mean		F	Sig	t	df	Sig (2 tailed)	Mean Difference
Average daily income	External locus of control	40	17.96	Equal variances assumed	12.470	0.000	-7.6	342	.000	-12.9
	Internal locus of control	304	30.86	Equal variances not assumed			-9.98	62.9	.000	-12.9

Source: Own computation, results obtained from SPSS

From Table 7.7, it can be seen that the mean daily income of an operator with external locus of control is about Gh ₵ 18 and that of an operator with internal locus of control is about Gh ₵ 31. The difference is almost Gh ₵ 13. Since the Levene's Test for Equality of Variances shows a p-value less than the alpha value of 0.05, we reject the null hypotheses of homogeneity of variance. Results from the 'Equal variances not assumed' row is therefore applicable.

The results of the t-test shows a p-value of 0.00, which is less than the critical value of 0.05, hence we reject the null hypotheses of equality of means. It can therefore be concluded that there is a significant difference in the average daily income of operators based on locus of control. Assessing the mean income differences between the two groups (internal and external locus of control) it can be observed that there is a substantial difference (of about Gh ₵ 13, as indicated above) reconfirming that, operators with internal locus of control earn significantly higher (Gh ₵ 31) than

those with external locus of control (Gh ₵ 18). Hence, operators who base life outcomes on their personal actions (those with internal locus of control), earn more than operators who attribute life outcomes on external factors such as luck, fate and circumstances (those with external locus of control), consistent with Cobb-Clark, Kassenboehmer and Sinning's (2013) result in Australia that, persons with internal earn more than persons with external locus of control.

7.3.2 Multiple Regression

Before running the multiple OLS regression to ascertain the impact of gender, networks, locus of control, sector, education, age of business and size of labour has on Log of income (Ln Income), a correlation analysis is performed on the aforementioned variables. This done to see the strength between the variables, giving us an indication of any problem of multicollinearity. Table 7.8 shows the results of the Pearson's correlation analysis.

The results show a strong positive and significant correlation ($r = 0.7$; p-value $= 0.00$) between Ln Income and size of labour (Table 7.8). Furthermore, there is a moderately positive and significant correlation between Ln Income and locus of control ($r = 0.53$, p-value $= 0.00$), as well age of business ($r = 0.58$, p-value $= 0.00$). Ln Income also has a significant correlation with network and sector, however, it is weak ($r = 0.27$, p-value $= 0.00$ and $r = 0.07$, p-value $= 0.00$ respectively).

Education has a significant correlation with sector, labour size, network, locus of control, gender and sector. Education's correlation with labour size and locus of control is positive and moderate ($r = 0.41$, p-value $= 0.000$ and $r = 0.35$, p-value $= 0.000$ respectively). On the other hand, network, gender and sector have a weak but significant correlation with education ($r = 0.16$, p-value $= 0.000$; $r = 0.19$, p-value $= 0.000$ and 0.26, p-value $= 0.000$ respectively) as represented in Table 7.8. Size of labour has a moderately positive and significant correlation with locus of control ($r = 0.56$) and age of business ($r = 0.46$). However, although significant, labour size has a positively weak correlation with network, gender and sector, with r less than 0.3.

Networks exhibited a positive and significant correlation with locus of control and age of business. Age of business is moderately correlated with networks ($r = 0.36$) whereas, locus of control exhibits

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a weaker correlation with networks (r= 0.23). Network also has a significant but negative and weak correlation with gender and sector (r= -0.14 and –0.04 respectively).

Table 7.8 Correlation analysis of regression variables

Pearson's correlation		Ln Income	Gender	Education	Sector	Labour	Network	Locus of Control	Age of business
Ln Income	*Corr*	1							
	p-value								
	N	344							
Gender	*Corr*	0.06	1						
	p-value	0.28							
	N	344	344						
Education	*Corr*	0.31**	0.19**	1					
	p-value	0.00	0.00						
	N	344	344	344					
Sector	*Corr*	0.07	0.39**	0.26**	1				
	p-value	0.16	0.00	0.00					
	N	344	344	344	344				
Labour	*Corr*	0.7**	0.21**	0.41**	0.18**	1			
	p-value	0.00	0.00	0.00	0.00				
	N	344	344	344	344	344			
Network	*Corr*	0.27**	-0.14**	0.16**	-0.04	0.28**	1		
	p-value	0.00	0.01	0.00	0.48	0.00			
	N	344	344	344	344	344	344		
Locus of control	*Corr*	0.53**	0.21**	0.35**	-0.00	0.56**	0.23**	1	
	p-value	0.00	0.00	0.00	0.9	0.00	0.00		
	N	344	344	344	344	344	344	344	
Age of business	*Corr*	0.58**	-0.12*	-0.03	-0.17*	0.46**	0.36*	0.34**	1
	p-value	0.00	0.02	0.63	0.03	0.00	0.00	0.00	
	N	344	344	344	344	344	344	344	344

Source: Own computation, results obtained from STATA
** –1%,
* – 5%

Locus of control is significant and positively correlated with gender (r= 0.21) and age of business (0.34). Gender has a significant and positively moderate correlation with sector (r= 0.39) and a negatively weak but significant correlation with age of business (r= -0.12, p-value =0.024). Finally, there exists a negatively weak and significant correlation between sector and age of business (r = -0.17, p-value =0.03).

After the correlation analysis, a multiple regression analysis is run to see the collective effect of gender, networks, locus of control, sector, education, age of business and size of labour on log of income.

Table 7.9 Determinants of income in slum activities (Regression results, Model 1)

Ln Income (Independent var)	β	St. Error	t	p value	Comment	VIF	1/VIF
Gender	-.0582	.0371	-1.58	0.115		1.35	0.74
Education	.0097 **	.0043	2.24	0.026	Sig @5%	1.42	0.71
Sector	.033	.0367	0.92	0.359		1.30	0.77
Labour size	.084**	.0098	8.59	0.000	Sig @5%	2.03	0.49
Network	-.017	.0227	-0.77	0.444		1.23	0.81
Locus of control	.024**	.0063	3.94	0.000	Sig @5%	1.62	0.61
Age of business	.147**	.0192	7.67	0.000	Sig @5%	1.60	0.62
Constant	2.235	.1237	18.07	0.000			
Mean VIF						1.51	

R-squared = 0.60; Adjusted R-squared = 0.592; F (7, 336) = 72.2; Prob > F= 0.0000; Root MSE = .29104

Breusch-Pagan test for heteroscedasticity

Ho: Constant variance

$Chi^2 (1)$ =   5.79

$Prob > Chi^2 =$ 0.0161

Source: Own computation, results obtained from STATA

Table 7.9 shows the initial OLS regression results of the relationship between Ln Income and gender, networks, locus of control, sector, education, age of business and size of labour. The regression results (Model 1) are summarised below:

$$Ln\ Income = 2.235 - 0.582 Gender + 0.0097 Educ + 0.033 Sector + 0.084 Labour - 0.017 Network + 0.0241 Locus + 0.147 BusAge$$

$$t = \quad (18.07)\quad (-1.58)\quad (2.24)\quad\quad (0.92)\quad (8.59)\quad (-0.77)\quad (3.94)\quad (7.67)$$

Model 1 shows a positive relationship between Ln Income and education, sector, labour size, locus of control and age of business. On the other hand, gender and network are negatively related to Ln Income.

The VIF test, as explained under section 5.6.2.4 (1) in Chapter Five, was undertaken to test for the presence of multicollinearity, since some of the explanatory variables are correlated, as discovered when the correlation analysis was undertaken. The VIF test for multicollinearity, shows tolerance levels higher than 0.1 and VIF coefficients less than 10. Since the VIF values are less than 10, it can therefore be concluded that there is no multicollinearity betwen the variables (Wooldridge, 2013).

In regression analysis, one has to check whether the variances associated with the predicted variables tend to be the same. If the spread of the residuals at each level of the predictor variable is unequal, then the regression is said to suffer from heteroscedasticity. To check for heteroscedasticity, the Breusch-Pagan / Cook-Weisberg test is used. The results of the Breusch-Pagan / Cook-Weisberg test for heteroscedasticity has a p-value of 0.0161 (Table 7.9), which is less than the critical value of 0.05; hence one rejects the null hypotheses of homoscedasticity and concludes that there is heteroscedasticity present in our data.

As discussed in section 5.6.2.4 (2), the The Robust standard errors method is used to correct heteroscedasticity. Hence, a second regression is run. This time, a Robust Backward Elimination Stepwise regression is run using STATA. The Backward Elimination Stepwise regression eliminates insignificant variables, giving us results of only significant variables. Thus, through this stepwise regression, variables such as gender, sector and network have been eliminated from the second analysis.

Table 7.10 presents results from the Robust Backward Elimination Stepwise regression. Model 2 is represented as:

$$Ln\ Income = 2.1863 + 0.0098Educ + 0.0826Labour + 0.0225Locus + 0.148BusAge$$

$$t = (20.02) \quad (6.08) \quad (2.59) \quad (3.37) \quad (7.44)$$

Model 2 is adjusted for heteroscedasticity with the robust standard errors method. The F test for the overall significance of the model is Prob > F= 0.0000, signifying that the explanatory variables (education, labour, locus of control and age of business) together, have an effect on the dependent variable (Ln Income) with an R^2 of about 60% (Table 7.10). This implies that the significant explanatory variables together explain about 60% of the variation in the dependent variable, income.

Table 7.10 Determinants of income in slum activities (Regression results, Model 2)

Robust						
Ln Income (Independent var)	**β**	**St. Error**	**t**	**p value**	**VIF**	**1/VIF**
Labour size	.0826	.0136	6.08	0.000	1.91	0.525
Education	.0098	.0038	2.59	0.010	1.35	0.74
Locus of control	.0225	.0067	3.37	0.001	1.53	0.654
Age of business	.148	.02	7.44	0.000	1.41	0.709
Constant	2.1863	.109	20.02	0.000		
Mean VIF					1.55	

R-squared = 0.597; F (4, 339) = 82.25; Prob > F= 0.0000; Root MSE = .2910

Source: Own computation, results obtained from STATA

The new model shows that, Ln Income has a positive relationship with labour size, education, locus of control and age of business. Since Ln Income is the log transformed version of income, Ln Income is interpreted as an elasticity.

In terms of labour size (β = 0.0826), the results indicate there will be an 8.3% increase in income if one additional person is hired, holding all the other variables constant. An extra year of education (β = 0.009) increases an operator's income by almost 1%. If locus of control (β = 0.0225), which Rotter (1966) refers to as the degree to which one attributes rewards to their own efforts or factors independent of one's personal actions, increases by 1 point, this is likely to increase an operator's income by 2.25%. The age of the operator's business (β = 0.148), has the highest effect on income, reflecting that, an additional year in business, increases income by about 15%, other variables assumed to be constant.

7.3.2.1 Residual Analysis

Residual analysis was performed to ascertain the appropriateness of linear regression for the data set. The generated residuals of Model 2 were plotted against the fitted model and individually with the independent variables to see the dispersion.

Firstly, the residuals were plotted with the fitted model (Model 2). The scatter plot of the residuals and fitted model (Appendix 4, page 207) shows fairly dispersed plots around the zero line. The shape of the plot might however suggest that, one of the variables might have a parabolic effect on the model (Gujarati and Porter, 2009).

Again, the residuals were plotted with the explanatory variables. The residuals plotted against labour size, as an explanatory factor, (Appendix 5, page 208) shows a biased but homoscedastic plot. It can also be observed that the plot is parabolic in nature. This is an indication that, labour might have a quadratic effect on the model and needs to the squared. Hence a new regression is run with labour squared to see if the parabolic shape will be corrected. Results of the model are shown in the next section.

The residual plot for education as an independent variable, show a fair distribution around the zero line (Appendix 6, page 208). The residual plot for Locus of control (Appendix 7, page 209) however, is slightly skewed to the right because of the high number of respondents who have internal locus of control. That aside, the plot seems fairly scattered around the zero axis. The residual plot for age of business also shows a fair distribution around the zero line (Appendix 8, page 209).

7.3.2.1.1 New regression with labour squared

As observed in the section above, the scatter plot of residuals and size of labour looks parabolic, suggesting labour might have a quadratic effect on income earned in the slum. Firstly, a bar chart of income and labour size (Appendix 9, page 210) is drawn to see if the parabolic shape will be seen. The regression is re-run with labour squared and the residual plot drawn. This helps to ascertain if labour does have a quadratic effect on income.

Plotting labour size against Ln Income on a bar chart (Appendix 9, page 210) it is observed that, as the size of labour increases, income also increases up to a point, reaches a maximum and starts decreasing. This confirms the assertion of a quadratic relationship between income and labour. One can therefore go ahead to run a new regression, with labour squared, as the third model. The new regression model is presented as:

Table 7.11 Determinants of income in slum activities (Regression model 3)

Robust						
Ln Income	**β**	**St. Error**	**t**	**p value**	**VIF**	**1/VIF**
Locus of control	.0404	.0066	6.08	0.000	1.39	0.719
Education	.0184	.0044	4.17	0.000	1.37	0.727
Sector	.0622	.034	1.83	0.068	1.12	0.891
Age of business	.207	.0210	9.84	0.000	1.26	0.791
Labour^2	0.002	.0001	1.89	0.060	1.43	0.7
Constant	1.775	0.109	16.25	0.000		
Mean VIF					1.32	

R-squared = 0.512; F (5, 338) = 71.21; Prob > F= 0.0000; Root MSE = .3189

Source: Own computation, results obtained from STATA

Model 3 is stated as:

$$Ln\ Income = \ 1.775 + 0.0404 Locus + 0.0184 Educ + 0.0622 Sector + 0.207 BusAge + 0.002 LabourSquared$$

$$t = (16.25) \quad (6.08) \quad (4.17) \quad (1.83) \quad (9.84) \quad (1.89)$$

Model 3 (Table 7.11) is adjusted for heteroscedasticity with the robust standard errors method. The VIF coefficient for the model shows no signs of multicollinearity as the tolerance levels are higher than 0.1 and VIF coefficients are less than 10, as indicated in Table 7.11. The VIF values range from 1.12 to 1.43 (Table 7.11). The residual plots in the Appendix 10 (page 210) show that the scatter plots of residuals and fitted model 3 and residuals and labour squared are no longer parabolic in nature.

Model 3 shows a positive and significant relationship between Ln Income and locus of control (β=0.0404), education (β=0.0184), sector (β=0.0622), age of business (β=0.207) and labour^2 (β=0.002). A one point increase in locus of control is likely to increase income by 4%. Income can increase by about 2% if an operator achieves an extra year of education. Operators in the industrial sector earn 6% higher than their counterparts in the services sector. An extra year in a business's age contributes about 21% increase in income, while an extra labour squared hired only increases an operator's income by 0.2%.

The R^2 of this model is 51.2%. This figure is less than the R^2 model 2 (60%), showing model 2 explains the variations in Ln Income better than model 3. However, since in our diagnostics diagrams (pages 207 – 211), Model 2 shows signs of a quadratic effect of labour on Ln Income and Model 3 corrects that effect, one can conclude that Model 3 is a better fitted model.

7.3.3 Discussion of determinants of income in slum activities

Results from Table 7.11 show that, of all the variables in the model, the most telling determinant of income in the AL and S&G slums is the age of business. An extra year in a business's age increases income by 20%. As was discussed in Section 4.8 (Chapter 4), existing literature only talks about the impact of age of business on business success and not income generated in the informal sector. The current study has therefore come out with new knowledge regarding the fact that, in Ghana, the age of a slum enterprise is crucial in determining average daily income.

The sector in which a slum operator's activity belongs, is also an important determinant of income generated. As indicated earlier, Osei-Boateng and Ampratwum, (2011) divide Ghana's urban informal activities into the services, construction workers and manufacturing sectors. This

categorisation can be further narrowed down to two sectors; services and manufacturing, as construction workers are also service providers. Regarding how a slum operator's sector affects income generated, it is found out that, operators in the industrial sector earn more (6%) than others in the services sector.

It has been established that, operators with internal locus of control earn higher incomes that those with external locus of control. In addition to this, it has also been found out that, a unit increase in an operator's locus of control increases income by about 4%. This result is consistent with Cobb-Clark, Kassenboehmer and Sinning's (2013) findings that, the more one is high on internal locus of control, it is more likely that one can earn a higher income.

Education has a significant impact on income in the slums under study (β=0.018, p-value =0.044). This result is in line with Chingono's (2012) study in Lesotho's informal sector; singling out education as a key factor in determining incomes earned. On the other hand, the results on education contradicts a World Bank (2012) report which postulates that, returns (in terms of income) on skills is low in the informal sector of developing countries.

According to Gurtoo and Williams, (2009), just a minority of India's informal sector are waged workers, meaning that, most entrepreneurs are own account workers. However, the size of labour employed is an income determinant in the informal sector. This is corroborated by the findings of the current study, as labour squared has a beta coefficient of 0.002, and this result is found to be significant at 6% and it was also significant in regression model 2 (Table 7.10).

A slum operator's gender and networks according to literature (Sethuraman, 1998; Cornwell, Laumann, and Schumm, 2008; Nichter and Goldmark, 2009; Chingono, 2012; Ndabeni, 2013) are important determinants of income in the informal sector. However, these variables were found not to be significant in the regression results of the current study.

7.4 CONSTRAINTS TO ENGAGING IN SLUM ACTIVITIES

Informal activities in slums cannot develop fast when certain operational constraints inhibit their growth. Finding out the factors that inhibit growth of slum enterprises in Ghana is one of the objectives of the current study. Section 4.7 of Chapter Four discussed some operational constraints to engaging in informal sector activities in different countries. These constraints, in the current section, are analysed with PCA to find out which pertain to slum operators in Ghana.

Table 7.12 presents a summary of responses to questions posed in Section 6 of the structured questionnaire, with regard to the operational constraints that surveyed informal operators in the slums face.

Of the respondents, 88.4% responded with a "strongly agree" with regards to erratic power supply being a growth constraint. Other infrastructural challenges also received 80% of "strongly agree". Financial difficulties, which involve problems in accessing loans and collateral security were also perceived as crucial constraints to the surveyed slum operators. Lack of collateral security attracted a 65% of "strongly agree" and difficulty in accessing bank loans had about 76% of its respondents "strongly agreeing" to it as a crucial growth constraint. Lack of land tenure security is also one of the main constraints operators in the AL and S&G slums as 61% of respondents answered "strongly agree" to it being a drawback.

In contrast, poor communication and lack of networks predominantly received "disagree" or "strongly disagree" as a response. Respondents who either "disagree" or "strongly disagree" to poor communication as a constraint formed about 88% of the surveyed. A further 79% were also of the opinion that lack of networks was not a key constraint.

Table 7.12 Constraints to engaging in slum activities

Constraints		Frequency Distribution						
		Strongly disagree	Disagree	Slightly disagree	Neutral	Slightly agree	Agree	Strongly agree
Q42. Lack of land tenure security	Count	76	6	2	2	19	28	211
	%	22.1%	1.7%	0.6%	0.6%	5.5%	8.1%	61.3%
Q43. Lack of inputs	Count	176	4	0	2	20	7	135
	%	51.2%	1.2%	0%	0.6%	5.8%	2%	39.2%
Q44. Lack of tools	Count	107	33	11	6	7	26	154
	%	31.1%	9.6%	3.2%	1.7%	2%	7.6%	44.8%
Q45. Difficulty in getting bank loans	Count	77	1	0	0	3	2	261
	%	22.4%	0.3%	0%	0%	0.9%	0.6%	75.9%
Q46. Municipal harassment	Count	80	6	0	8	49	22	179
	%	23.3%	1.7%	0%	2.3%	14.2%	6.4%	52%
Q47. Lack of expertise in financial management and planning	Count	183	1	1	1	26	4	128
	%	53.2%	0.3%	0.3%	0.3%	7.6%	1.2%	37.2%
Q48. Lack of experience and training in business management	Count	182	13	7	6	36	18	82
	%	52.9%	3.8%	2%	1.7%	10.5%	5.2%	23.8%
Q49. Lack of training in bookkeeping/accounting	Count	130	18	11	1	38	36	110
	%	37.8%	5.2%	3.2%	0.3%	11%	10.5%	32%
Q50. Poor communication systems	Count	264	38	26	5	2	1	8
	%	76.7%	11%	7.6%	1.5%	0.6%	0.3%	2.3%
Q51. Erratic electricity supply	Count	37	0	0	0	2	1	304
	%	10.8%	0%	0%	0%	0.6%	0.3%	88.4%
Q52. Lack of networking	Count	239	34	20	16	6	0	29
	%	69.5%	9.9%	5.8%	4.7%	1.7%	0%	8.4%
Q53. Bad roads	Count	25	6	3	2	18	39	251
	%	7.3%	1.7%	0.9%	0.6%	5.2%	11.3%	73%
Q54. Lack of collateral security	Count	62	14	0	0	25	19	224
	%	18%	4.1%	0%	0%	7.3%	5.5%	65.1%
Q55. Other infrastructural challenges	Count	30	8	2	1	8	19	276
	%	8.7%	2.3%	0.6%	0.3%	2.3%	5.5%	80.2%

Source: Author's own computation

7.4.1 PRINCIPAL COMPONENENT ANALYSIS

Principal component analysis, with oblique rotation and the principal component extraction methods is employed to determine the conditions that constrain the growth of informal sector businesses in slums. Fourteen variables which are represented in Table 7.12 (page 152) are initially run.

To ensure the factorability of the variables, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and the Bartlett's test of sphericity were conducted. The results of these tests are shown in Table 7.13. A KMO value of 0.5 or above, according to Hair *et al.*, (2010, p. 104) is suitable for PCA. In this case, the KMO value is 0.625, which is greater than 0.5, hence a PCA can be undertaken.

The Bartlett's test of Sphericity proposes a null hypothesis that, the correlations in the correlation matrix are zero. In terms of the current study, this null hypothesis can be understood as meaning, there is no statistically significant interrelationship between the operational constraints in slum activities. The result of the Bartlett's test is significant with a p-value of 0.000 and a Chi-square value of 1818.143 (Table 7.13), meaning one can reject the null hypothesis. This implies that, there is a statistically significant interrelation between the growth constraints.

Both tests [KMO measure of sampling adequacy (0.625) and the Bartlett's test of Sphericity (p=0.000)] suggest that the data collected are suitable for Principal component analysis.

Table 7.13 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		**.625**
Bartlett's Test of Sphericity	Approx. Chi-Square	1818.143
	df	91
	Sig.	**.000**

Source: Own computation, results obtained from SPSS

Based on the Kaiser's criterion, only components that have an eigenvalue of 1 or more can be accepted. Accordingly, 6 components are extracted, accounting for 77.2% of the total variation in slum operation constraints, as shown in Table 7.14. The scree plot (Appendix 3, page 207) also reaffirms the extraction of 6 components as the curve inflects after the sixth factor.

Table 7.14 Total Variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Eigen values	% of Variance	Cumulative %		% of Variance	Cumulative %
1	2.782	19.869	19.869	2.782	19.869	19.869
2	2.300	16.426	36.295	2.300	16.426	36.295
3	1.912	13.657	49.951	1.912	13.657	49.951
4	1.465	10.468	60.419	1.465	10.468	60.419
5	1.216	8.689	69.108	1.216	8.689	69.108
6	1.138	8.129	77.238	1.138	8.129	77.238
7	.794	5.669	82.907			
8	.588	4.202	87.109			
9	.451	3.219	90.328			
10	.366	2.613	92.941			
11	.319	2.275	95.216			
12	.304	2.170	97.386			
13	.276	1.974	99.360			
14	.090	.640	100.000			

Source: Own computation, results obtained from SPSS

The first component explains about 20% of the total variation in constraints (Table 7.14). The rotated matrix (Table 7.15) indicates that, the first component consists of three variables; lack accounting (loading, 0.896), financial management (loading, 0.857) and business management expertise (loading, 0.849). This component is named as 'Lack of business knowledge' as shown in Table 7.15.

The second component has a Cronbach alpha of 0.801 and is represented by variables such as other infrastructural challenges, which has a loading of 0.881, electricity problems with a loading of

0.842 and bad roads, which also has a loading of 0.785. These constraints are infrastructure related and are named as 'Infrastructural challenges'.

Table 7.15 Rotated Matrix

Variables	Component 1	2	3	4	5	6
Lack accounting expertise	.896	-.006	-.018	.094	.091	.027
Lack financial mgt expertise	.857	-.122	.085	-.069	-.003	.060
Lack bus. Mgt. expertise	.849	.116	-.031	-.062	-.057	-.082
Other infrastructural challenges	.010	.881	-.006	.054	-.085	-.038
Electricity problems	.083	.842	.096	-.122	.056	-.017
Bad roads	-.077	.785	-.039	.011	.012	.040
Collateral security	.004	.004	.973	.017	-.020	.020
Bank loan difficulties	.016	.018	.970	.022	-.044	-.027
Lack inputs	.015	-.075	.033	.896	-.033	-.031
Lack tools	-.029	.041	.003	.874	.056	.027
Municipal harassment	-.014	-.189	-.043	-.003	.886	-.039
Land tenure security	.042	.348	-.016	.112	.684	.040
Lacking networks	.110	.021	-.089	.045	-.286	.781
Poor communication	-.098	-.028	.094	-.045	.290	.734
Cronbach alpha	**.841**	**.801**	**.951**	**.743**	**.560**	**.245**
Labels	Business knowledge	Infrastructural challenges	Difficulty in accessing credit	Lack of tools and materials	Security	Poor communication and social networking

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization
Source: Own computation, results obtained from SPSS

Component three entails lack of collateral security (loading, 0.973) and difficulty in assessing bank loans (loading, 0.970). This component represents 13.66% (Table 7.14) of total variation and is named as 'Difficulty in accessing credit'.

Component four, accounts for 10.47% of total variation in constraints of slum activities. This cluster has a Cronbach alpha of 0.743 (Table 7.15) and is represented by lack inputs (loading, 0.896) and lack of tools (loading, 0.874).

Municipal harassment with a loading of 0.886 and lack of land tenure security with a loading of 0.684 represent cluster five. This cluster is labelled as 'lack of security' and represents 8.69% of total variation in constraints. The last component, accounting for 8.13% (Table 7.14) of total variation in constraints is labelled as 'poor communication and social networking' and is represented by lack of networks (loading, 0.781) and poor communication (0.734). Although this last component has a low Cronbach's alpha, lack of social networks and poor communication are retained in the study because they are critical constraints in Ghana. A similar approach was used by Shin, Collier and Wilson, (2000).

7.5 WILLINGNESS TO MOVE TO THE FORMAL SECTOR ACTIVITIES

OECD (2006) is of the view that, formalising the informal sector in developing countries, is a crucial solution to eradicating poverty in the long run. Welch (2005) also reiterates the importance of formalisation, in that, formalisation helps curb unemployment as well as broadening the tax base in an economy. Based on the idea of formalisation, this section employs a logistic regression to ascertain if the slum operators are willing to move out of the informal slum activities, into the formal sector if they are helped to overcome their constraints. When asked if they will move if constraints are met, about 81% of the operators responded with a NO.

Constraints faced by the slum operators in AL and S&G slums were categorised under clusters in Table 7.15. These include lack of business knowledge, infrastructural challenges, difficulty in accessing credit, lack of tools and materials, security problems and poor communication and social networking. The current study also sought to find out if a non-material reason (happiness) also acts as a deterrent that prevents the operators from moving into the formal sector. Hence, the above

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constraints identified and happiness are regressed on an operator's willingness to move, using logistic regression.

This section is divided into two parts; the first part deals with generating variables from the principal component analysis results from Section 7.41 in order to conduct the logistic regression analysis, using a method suggested by Liu *et al.*, (2003). The second part presents results from the logistic regression of generated variables and happiness (as an additional variable) as independent factors and an operator's willingness to move, as an outcome factor.
The initial model of the dependent and independent variables is:

$$\text{Predicted log of } (Willingnes\ to\ move) = \boldsymbol{\beta_0} + \boldsymbol{\beta_1}\ BusKnowledge + \boldsymbol{\beta_2}Infras + \boldsymbol{\beta_3}\ Capital + \boldsymbol{\beta_4}Prod + \boldsymbol{\beta_5}Security + \boldsymbol{\beta_6}Poor\ Comm + \boldsymbol{\beta_7}Happiness$$

7.5.1 Generation of variables

SPSS's 'compute variable' function is used to generate variables from the principal component analysis results. To compute a variable, the component loadings (from PCA, Table 7.15) are multiplied by the question they stand for (the computed SPSS results are in the appendix 13, page 212)
The 6 variables from the 6 components are generated as follows:

1. Business Knowledge = [(0.896 * Lack accounting expertise) + (0.857 * Lack financial management expertise) + (0.849 * Lack business management expertise)]

2. Infrastructural challenges = [(0.881 * Other infrastructural challenges) + (0.842 * Electricity problems) + (0.785 * Bad roads)]

3. Capital = [(0.973 * Collateral security) + (0.970 * Bank loan difficulties)]

4. Lack of materials and tools = [(0.896 * Lack inputs) + (0.874 * Lack tools)]

5. Security = [(0.886 * Municipal harassment) + 0.684 * Land tenure security)]

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6. Poor communication and social networking = [(0.781 * Lacking networks) + (0.734 * Poor communication)].

7.5.2 Logistic regression

After the computation of the needed variables, a logistic regression is run. The explanatory variables are lack of business knowledge, infrastructural challenges, difficulty in accessing capital, lack of tools and materials, security challenges, poor communication and social networks and happiness while the predicted variable is willingness to move. The logistic regression is run to ascertain which of the constraints if addressed, will motivate the slum operators to move into the formal sector. The logistic regression results are presented in Table 7.16.

Table 7.16 Willingness to formalise: Logistic regression output

Willingness to formalise	Coefficient	Odds ratio	St. Error	z	p value
Business Knowledge	-0.01	0.99	0.03	-0.30	0.77
Infrastructure Challenges	-0.08	0.92	0.04	-2.14	0.03
Capital	0.11	1.11	0.05	2.54	0.01
Lack of tools and materials	0.05	1.05	0.04	1.22	0.22
Security challenges	0.01	1.01	0.06	0.18	0.861
Poor comm and association problems	0.07	1.07	0.1	0.71	0.477
Happiness	-0.96	0.38	0.05	-7.85	0.00
_cons	2.52	12	12.2	2.56	0.01

Pseudo R2 = 0.3144; Hosmer-Lemeshow chi2 (8) = 14.1; Prob > chi2 = 0.08

Wald chi2 (7) =   65.13; Prob > chi2 =   0.0000

Source: Own computation, results obtained from STATA

Based on results displayed in Table 7.16, the logistic regression equation is obtained. This can be represented as:

$$\text{Predicted log of } (Willingnes\ to\ move) = 2.52 - 0.01\ BusKnowledge - 0.08\ Infras + 0.11\ Capital + 0.05\ Tools\ \&\ Materials + 0.01\ Security + 0.07\ Comm\ \&\ Assoc - 0.96\ Happiness$$

From the above model, in can be seen that, willingness to move has a positive relationship with lack of capital (β=0.11), lack of materials and tools (β=0.05), security (β=0.01) as well as poor communication and social networks (β=0.07). This implies that if these problems are solved, the operators are willing to move to the formal sector. On the other hand, lack of business knowledge (β=-0.01), infrastructural challenges (β=-0.08) and happiness (β=-0.96) are negatively related to the willingness to move. Hence, even if these problems are solved, the operators are not willing to move.

In the initial logistic regression output, the p-value of the Hosmer-Lemeshow test (0.08) is greater than the critical value of 0.05, showing a well fit model. The p-value of the Wald test is also less than the critical value of 0.05, signifying that the coefficients are not simultaneously equal to zero. However, only Components 2 and 3 (infrastructural challenges and lack of capital) and happiness are significant at 5%. The model's R^2 is 0.314, meaning the explanatory variables only explain 31.4% of the total variation in the dependent variable. A stepwise logistic regression is then run in STATA, to come out with the 'best' model, and getting rid of the insignificant variables. The results from the second model is presented next.

The 'best' model shows that, infrastructural challenges (β=-0.08) and happiness (β=-0.96) both have a negative relationship with willingness to move while lack of capital (β=0.11) has a positive relationship with the dependent variable (Table 7.17).

Table 7.17 Willingness to formalise; Stepwise logistic regression output (Best Model)

Will to Move	Coefficient	Odds ratio	St. Error	z	p value
Infras. challenges	-0.08	0.92	0.03	-2.24	0.025
Capital	0.11	1.11	0.04	2.71	0.007
Happiness	-0.96	0.38	0.05	-7.95	0.00
_cons	3.1	21.56	17.74	3.73	0.00

Pseudo R2 = 0.3068; Hosmer-Lemeshow chi2 (7) = 9.16, Prob > chi2 = 0.24
Wald chi2 (3) = 64.92; Prob > chi2 = 0.0000
Source: Own computation, results obtained from STATA

The new model (best), which only includes variables significant at 5% is stated as:

$Predicted\ log\ of\ (Willingnes\ to\ move) =\ 3.1 -\ 0.08\ Infrus +\ 0.11\ Capital -$

$0.96\ Happiness$

The p-value of the Hosmer-Lemeshow test (0.24) is greater than the critical value of 0.05, showing a well fitted model with an R^2 is about 31% and a Wald chi-squared (Prob> chi2 = 0.000) less than 0.05, signifying that, the independent variables (infrastructural challenges, happiness and lack of capital) are not simultaneously equal to zero. This implies that, infrastructural challenges, lack of capital and happiness explain 31% of variation and are significant predictors of an operator's willingness to move into the formal sector.

From the results, the improvement in access to capital is the only constraint when addressed, will see operators move from the slum enterprises to the formal sector (Odds ratio=1.11). A unit increase in efforts to help slum operators in access to capital will increase a slum operator's willingness to formalise by 11% (1 – 1.11). Similarly, Blunch, Canagarajah, and Raju's (2001) literature survey concluded that, financial capital investments tend to be low in the informal sector. Hence, looking at the results of the current study, availability of capital to slum operators will help them formalise.

The log of odds for an operator moving to the formal sector if infrastructural challenges are solved is 0.92. This implies that, for 1 unit increase in efforts to solving infrastructural challenges will lead to an 8% (1 – 0.92) decrease in an operator's willingness to move. This finding, contradicts Van Rooyen and Antonites's (2007), findings that, the improvement of infrastructure in Johannesburg is likely to help informal enterprises formalise. Similarly, a happy slum operator is less likely to move into the formal sector (Odds ratio=0.38). A unit increase in a slum operator's happiness reduces his/her likelihood to moving to the formal sector by 62% (1 – 0.38). This implies that slum operators are happy with their non-material well-being similar to the findings of Biswas-Diener and Diener, (2001) and Biswas-Diener and Diener, (2006) about some slums in India and USA that, people in slums are happy.

Other factors such as lack of business knowledge, lack of some factors of production, lack of security and poor communication and social networks were expected to be major determinants in a slum operator's decision to formalise. However, these were not significant in the current study. Helping slum operators with a unit increase in their business knowledge rather reduces the likelihood of formalising by 1%. On the other hand, improving access to tools and materials, security and communication and social networks increases an operator's probability of joining the formal sector by 5%, 1% and 7% respectively (Table 7.17). These variables were however, not significant in the logistic regression model.

7.6 SUBJECTIVE WELL-BEING

Subjective well-being refers to an appraisal of one's life satisfaction, whether happy or not happy. Based on Layard's (2005) scale, respondents were asked to state if they are happy or not on a 7 point Likert scale, where 1 stands for very unhappy and 7 for very happy. A frequency table of the responses is presented below (Table 7.18).

Table 7.18 shows that, about 71% of the total respondents are either happy, moderately happy or very happy. This shows that based on the current study, majority of these slum operators are happy.

Table 7.18 Happiness of slum operators

	Happiness	Frequency	Percent
Rating	Very unhappy	18	5.2
	Unhappy	11	3.2
	Slightly unhappy	14	4.1
	Neither	57	16.6
	Happy	72	20.9
	Moderately happy	102	29.7
	Very happy	70	20.3
	Total	344	100.0

Source: Own computation

This finding corroborates other studies (Biswas-Diener and Diener, 2001; Biswas-Diener and Diener, 2006) conducted in some slums in India and USA, on whether people in slums are happy or not.

The current study goes further to ascertain if happiness is correlated with income. Blaauw's *et al*., (2013) study of subjective well-being in the informal sector in South Africa discovered that, income is an important determinant of happiness. As shown in Table 7.19, there exists a positive correlation between income and happiness, significant at 1%. This correlation is however moderate, with r = 0.4. This result is in line with other studies (Deiner *et al*., 1993; Cummins, 2000; Grimes and Reinhardt, 2015), which also found out that, there is a positive relationship between income and life satisfaction.

Table 7.19 Correlation of happiness and income

Pearson's correlation		Average daily income	Happiness
Average daily income	*Correlation* *p-value* *N*	1 344	
Happiness	*Correlation* *p-value* *N*	.381** 0.000 344	1 344

Source: Own computation, results obtained from STATA

If happiness is positively correlated with average daily income, then it is important to find out the relationship between happiness and willingness to move (formalise).

Table 7.20 Correlation of happiness and willingness to move

Pearson's correlation		Happiness	Willingness to move
Happiness	*Correlation* *p-value* *N*	1 344	
Willingness to move	*Correlation* *p-value* *N*	-.526** 0.000 344	1 344

Source: Own computation, results obtained from STATA

The results from Table 7.20 shows a negative relationship between happiness and willingness to move, significant at 1%. The correlation coefficient, r = -0.53 shows a moderately strong negative relationship between happiness and willingness to move. This implies that, the happier a slum operator is, the less likely he/she is going to move into the formal sector. As income is seen to be correlated with happiness, and given that these slum operators are earning incomes above the poverty line, it appears that, they are happy in the slums and thus not willing to move into the formal sector.

7.7 SYNTHESIS

Based on findings of the current study, the main reason for slum activities in Ghana is the quest of operators to avoid government regulation. Hence, avoiding tax and adhering to other stringent government directives drive operators into slum activities. Nevertheless, these slum operators pay daily levies to the government, meaning these slum operators contribute to the development of the regions they are located in.

In the previous chapter, it was established that slum operators generate employment and earn an income that is far above the national minimum wage in Ghana. In the current chapter, firm age is found to be the most influential determinant of income earned, suggesting that, older firms generate more income for their owners as compared to younger firms, reflecting an element of earning more by longer experience. Older firms have more experience in a trade and generate economies that impact on reducing transaction costs and developing a larger customer base relating a young firm that needs to establish itself. In addition, operators in older firms might have developed strong and loyal contacts with suppliers, customers and other stakeholders, all leading to their earning of more income than younger firms.

Slum operators' lack of business knowledge was discovered as the major constraint in slum activities in Ghana. However, aiding slum operators' access to capital was found to be the only way to help them move into the formal sector. This reinforces the point that, capital is a critical constraint for the surveyed slum operators. There might be a greater willingness to formalise if they are provided with capital.

7.8 CONCLUSION

Globally, people engage in the informal sector in rural and urban regions as well as in slums and non-slum areas. In determining the motives for engaging in slum activities, the study came up with six main motives, namely: avoidance of government regulation, working at one's own time, making use of one's talent and relations, attractiveness of the informal sector, opportunities and quest for higher income. These factors account for about 61% of the total variation in motives for slum activity. For many individuals, their involvement in informal activities is often driven by necessity, because of lack of employment and poverty.

With regards to determinants of income, a preliminary OLS regression was run and the diagnostic results (residual analysis), suggested a parabolic effect of labour on income. Another separate regression was run with labour squared and this model corrected the parabolic effect of labour on income. The surveyed operators on average, created employment for 2 individuals, excluding the slum operator. However, labour employment was not found to impact significantly on enhancing the employer's income.

Over four-fifths of respondents responded with a No, when asked if they will move to the formal sector when their constraints are addressed. The constraints that were uncovered in the study, with principal component analysis, are lack of business knowledge, infrastructural challenges, difficulty in accessing credit, lack of tools and materials, security problems and poor communication and social networking. These components represented 77% of total variation. After variables were generated with the components and regressed on operator's willingness to move with a logistic regression, only two variables were found to be significant (infrastructural challenges and lack of tools and materials).

Finally, it was also found out that, happiness and income are positively and significantly correlated, reflecting that, as one's income increases, happiness also improves. However, the correlation between happiness and willingness to move was a negative, though significant, meaning the happier the slum operator is, the less likely he is to move to the formal sector.

CHAPTER EIGHT

RECOMMENDATIONS AND CONCLUSION

8.1 INTRODUCTION

The current study sought to find out the motives that influence participants to engage in informal slum activities in Ghana, the growth constraints of the slum operators and their resource needs for formalisation. This concluding chapter initially provides a synthesis of the entire study. It then highlights the salient findings, and suggests some policy recommendations, as well as areas for further research.

8.2 SYNTHESIS

People engage in diverse economic activities to earn a living. Some work in the corporate and formal sector. In Ghana, employment in the formal sector is rather low. Accordingly, about four fifths of the population are engaged in the informal sector, both in the rural and urban areas. People migrate to the urban areas in search of employment opportunities. In Ghana, as employment is scarce, many individuals end up in the informal sector in slum areas.

The first objective of the current research was to find out the factors that motivate operators to engage in informal sector activities in slums. The literature review in Chapter 4, Section 4.5 indicates that, informal sector activities are underpinned by various motivations in different countries. The key influences were included in the structured questionnaire administered to 344 operators in the AL and S&G slums.

In finding out the underlying motives for engaging in slum activities, Factor Analysis (Section 7.2, Chapter 7) was employed. This analysis identified a set of 6 extracted factors, based on the Kaiser's criterion, as primary motivations.

The first cluster, labelled as "Avoiding government regulation", consists of 3 variables; avoiding tax (loading 0.945), avoiding government regulation (loading 0.715) and satisfaction (loading 0.472) (Table 7.4, page 136). This set explains about 17% of the total variation in the motives for slum activities and has a Cronbach alpha of 0.714. The second cluster, named "Working at one's

own time", explains about 11% of the total variation and is constituted of 2 variables; supplementing income (loading 0.813) and increasing leisure time (loading 0.748). This cluster has a Cronbach alpha of 0.724.

The third factor, labelled as "Making use of one's talent and relations", consists of two variables; using of one's expertise (loading 0.535) and networks (loading 0.755) with a Cronbach alpha of 0.564. The other clusters were related to "attractiveness of the informal sector" and "opportunities" as well as "quest for higher income".

The study formulated some hypotheses, to test if differences in operator's income are based on gender, slum areas or locus of control. It was found out that, male operators (Gh ₵ 30) earn higher than their female counterparts (Gh ₵ 28). This is partly because male operators are more involved in manufacturing related activities, such as rice processing, scrap metal recycling, wood processing and welding, which generate higher income as compared to petty trading, cooked food sales, seamstresses and hairdressing, the dominant female activities.

Operators in AL (Gh ₵ 33) were also found to earn higher income than those in S&G (Gh ₵ 26). About 50% of the surveyed operators in AL are engaged in the sale of maize, wood and kola nuts, which together provide an average daily income of about Gh ₵ 35. Maize is the second most grown crop in Ghana after cocoa, according to Srofenyoh, (2015) and kola nuts is an export product and raw material for the production of beverages. KPMG (2008) found out that, about 50% of Kumasi's industrial sector are employed in wood-related business and the wood sector in AL supports this vibrant industry. The high income generation ability of these three sectors led to the high average income in AL.

In S&G, on the other hand, operators are mainly engaged in economic activities such as the provision of basic and petty services; head porting, seamstress, barbers, electrician, commercial motorcyclist, cooked food selling and truck pushing. These tend to be low value-adding activities together generate a mean daily income of Gh ₵ 18, leading to a lower average for the region.
In terms of locus of control, operators who are high on internal locus of control (Gh ₵ 31) tend to earn a higher average income as compared to those with external locus of control (Gh ₵ 26), and

the difference is found to be statistically significant. It was also hypothesised that, happiness and income are correlated and the results of the study support this hypothesis (as r = 0.4) and the relationship was significant.

Another objective of the study was to find out the factors that determine the level of income earned by operators in slum activities. OLS regression analysis was employed to this effect. The regression results showed a positive relationship between Ln Income and education, sector, labour size, locus of control and age of business, while gender and network were negatively related to Ln Income. Residual analysis of the initial regression model, pointed out that labour had a parabolic effect on Ln Income and was hence squared. A new regression was run with all the initial variables and labour^2, and this produced the 'best model' for the study. The 'best model' produced five significant variables, showing a positive relationship between Ln Income and locus of control, education, sector, age of business and labour^2, with an R^2 of about 52%.

Amongst the variables represented in the 'best' model, age of business has the biggest impact on income. Operating for an extra year in a slum enterprise, leads to a 20% increase in income, reflecting that, a slum operator's continuous operation (learning and earning by doing) over the years, helps to increase income. Regarding how a slum operator's sector affects income generated, it was found out that, operators in the industrial sector earn more (6%) than operators in the services sector. Slum operators who are high on internal locus of control earn higher than those who are low on internal locus of control. A unit increase in an operator's locus of control is found to increase average income by 4%. An extra year of formal education increases daily income by 1.8%, while an extra labour employed only increases income by 0.2%, other factors assumed to remain constant.

Operators engaged in informal slum activities, encounter certain growth constraints. Hence the current study investigated their growth constraints. Fourteen variables were run through PCA to come up with key components that constrain the growth of the operators. Applying the Principal component extraction and direct Oblimin rotation, a set of 6 components was extracted.

The first cluster, named "Lack of business knowledge" accounts for about 19.9% of the percentage of total variation. This first cluster, with a Cronbach alpha of 0.841, consists of three variables; lack of accounting expertise (loading 0.896), lack of financial management expertise (loading 0.857) and lack of business management expertise (loading 0.849). This cluster represents the most challenging growth constraints experienced by the slum operators. The second cluster, with a Cronbach alpha of 0.801, is labeled as "Infrastructural challenges". Variables that make up this cluster include, other infrastructural challenges (loading 0.881), erratic electrical supply (loading 0.842) and bad roads (loading 0.785), (Table 7.15, page 157).

"Difficulty in accessing credit" is another constraint cluster. This set consists of two variables, namely lack of collateral security (loading 0.973) and difficulty in assessing bank loans (loading 0.970). This cluster explains 13.7% of the total variation in constraints of slum operators. "Lack of tools and materials" is the fourth cluster, consisting of variables such as, lack of tools (loading 0.874) and lack of inputs (loading 0.896). "Lack of tools and materials" accounts for 10.47% of total variation in constraints. "Lack of security" as well as "poor communication and social networking" represent the fifth and sixth cluster of constraints respectively. These two clusters together explain about 17% of total variation in constraints.

Most informal sector businesses operate on a small scale and face many growth challenges. Formalising these informal businesses however, is a major step towards sustainable employment and poverty reduction. Formalising informal sector businesses gives them the legality title, allowing them to contribute to the economy by broadening the tax base. On the other hand, formalisation makes it easy for businesses to have access to government programmes and services (OECD, 2006; La Porta and Shleifer, 2014)

The current study finds that, the slum operators are willing to formalise, if their constraints are addressed. Furthermore, a non-material factor, 'subjective well-being' (SWB) or happiness was introduced to ascertain its role in impeding formalisation.

Applying logistic regression, the 6 cluster of constraints (lack of business knowledge, infrastructural challenges, difficulty in accessing credit, lack of tools and materials, security

problems and poor communication and social networking) and SWB as independent variables, were run against a slum operator's willingness to formalise, as the dependent variable.

From the logistic regression results, only three variables are significant at 5%, namely, infrastructural challenges, happiness and difficulty in accessing credit. Infrastructural challenges and happiness depict a negative relationship with willingness to formalise. This implies that, an increase in one's happiness and efforts to solve infrastructural challenges are unlikely to cause operators to formalise. Lack of capital, however, has a positive relationship with willingness to formalise, signifying that, operators are willing to formalise if they are assisted in accessing capital. The model has an R^2 is about 31%, suggesting that, these variables explain about a third of the variation in an operator's willingness to move into the formal sector.

Amongst the three significant variables, it is only the improvement of access to capital that will cause slum operators move into formal sector activities. A slum operator's willingness to formalise increases by 11% with every unit of help in addressing the acquisition of capital. With regards to infrastructural limitations, a unit increase in efforts to solve the slum operator's infrastructure challenges is found to decrease their willingness to move by 8%, contradicting Van Rooyen and Antonites's (2007) study of the informal sector in Johannesburg. They found out that, the improvement of infrastructure in Johannesburg is likely to help informal enterprises formalise. In terms of SWB, a unit increase in an operator's happiness reduces the probability of their willingness to formalise by 62%, implying that these surveyed operators are happy with what they do in the informal sector. Thus, a happy slum operator is less likely to formalise.

The final research objective was to find out if income is a contributor to SWB of the slum operators. The Pearson's correlation results show a positively moderately correlation ($r = 0.4$) between income and happiness. This finding corroborates Diener *et al*.'s (1993) study in the USA, Grimes and Reinhardt's, (2015) in developed OECD countries and Cummins's (2000) literature survey that, there is a positive relationship between income and SWB.

8.3 POLICY RECOMMENDATIONS

The conceptual framework for the current study (Chapter 4, Section 4.10) shows three levels are involved when one engages in slum activities. Level one shows factors that cause individuals to engage in slum activities.

In-migration, is one major factor identified, which is in line with the Harris-Todaro model, which states that, people move from rural to urban areas due to income differentials and the quest for employment opportunities. In Ghana, there are high poverty levels in the Northern regions, of about 60% as compared to 20% in the south. Hence, one out of every five people born in northern Ghana is likely to migrate and settle in southern Ghana (Van der Geest, 2011; USAID/Ghana, 2012). Results from the current study show that over 80% of the surveyed slum operators migrated from Northern Ghana and a small proportion migrated to Ghana from outside (Mali). Various governments in the past have tried to put in place policies to ameliorate poverty in the Northern regions of Ghana, but to no avail. A long-term, Savannah Accelerated Development Authority (SADA) initiative (2010-2030), aimed at attracting investments to Northern Ghana for development is yet to realise this goal. In addition to the SADA project, the government of Ghana proposed a medium term development policy for 2013-2017, which plans to inject some of the oil and gas revenue into developing the agricultural sector in the north, as well as improve transport from the north to the south of Ghana.

These development policies look brilliant on paper but most often than not, fail to achieve their intended objective. The SADA project in particular, is riddled with corruption as millions of Ghana cedis have been spent over the years and yet, no project has been completed (Ghana Integrity Initiative, 2013; Armah-Attoh 2014). It is therefore recommended that, the government of Ghana puts in the measures to firstly tackle the corruption in the SADA project, which will ensure accountability and promote responsibility. Also, the government and its stakeholders must ensure that these development policies are well implemented in order to produce sustainable outcomes, especially with regard to job creation.

Another major reason for slum development is the inadequacy of housing facilities. Ghana's urban population is about 53% of total population, and 40% of these urban dwellers, reside in Kumasi

and Accra. The inadequacy of housing coupled with high rental charges tends to push people into settling in slums. In urban Ghana, about 7 million housing units have to be built by 2020 to address the existing deficit and cater for new households. This situation led to the government of Ghana putting together a housing policy, with the aim of addressing the huge housing deficit in the short term and in the long term ensure that, the low income sector is able to own or rent houses (Government of Ghana, 2015). To attain this objective, it is recommended that the government creates an enabling environment for the private sector to provide affordable housing for Ghanaians, which in turn may reduce slums and enhance graduation of firms from the informal to formal sector. The high cost of land and building materials make it difficult for individuals to build their own houses. However, if the government involves the private sector, traditional authorities, municipal and communal societies in providing housing, with the use of local and cheaper building materials, cost may be reduced to make the houses affordable.

Considering the high unemployment and the low labour absorption rate of the formal sector (14%), the informal sector serves as the best employment alternative enabling individuals to earn a living in Ghana. Lack of employment opportunities and avoidance of government regulations were identified as the primary underlying reasons for pushing individuals into slum activities in Ghana. De Soto (2000), points out that, cumbersome and costly bureaucratic procedures are responsible for most micro-entrepreneurs going into informal sector activities. Hence, policies geared towards removing some of the stringent procedures of operating in the formal sector may help curb the growth of the informal slum sector. Furthermore, policies geared towards the creation of sustainable jobs are needed. For instance, projects aimed at training the youth in modern agricultural practices is very crucial as the Ghana's Ministry of food and agriculture refers to the country's farming population as ageing. Life expectancy in Ghana is about 60 years, whereas the average age of a farmer was 55 years in 2011. As agriculture is one major sector for Ghana's development, engaging youth in it will in the long run, lead to economic development and job creation.

The second level of conceptual framework describes the operation in slum activities. While operating in these slum activities, operators face many growth constraints, namely, lack of business knowledge, infrastructural challenges, difficulty in accessing credit, lack of tools and materials,

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security problems, poor communication and social networking. Slum operators' lack of business management, accounting and financial management expertise hamper their growth, as it was found out that about 79% of these slum operators either have no formal education or only had primary education. Hence, the human, social and financial capital of the surveyed operators need to be strengthened by appropriate institutions in Ghana. Demeke and Amha (2000) also reiterate the idea of training, suggesting that governments should put in place policies that encourage the private sector and NGOs in increasing the establishment of technical training, which is crucial in the SME business sector. Training workshops from people who have practical business knowledge are recommended. This will assist the informal slum operators in learning the "best practices" in conducting business, from skilled resource persons. Kirsten and Sindane (1994), suggest that, training programmes for informal operators must be practical and consider participants' educational level. The programmes must also be suitable in terms of time, affordable and relevant to trainee needs.

The average daily income earned by operators in the AL and S&G regions were found to be significantly different. This stemmed from the differing income generating capabilities of the economic activities present in the slums. AL operators are mostly involved in the trading of agricultural goods, such as maize, rice and kola nuts as well as a wood, which is a raw material for industries in Kumasi. Government's assistance with the acquisition of storage facilities for rice, maize and kola nuts will help these enterprises grow. In terms of the wood enterprises, the provision of tools and machinery is crucial, as the lack of tools and materials is one main constraint faced by the surveyed operators. Hence, government and private sector partnership in the provision of basic tools and machinery that enables operators carry out their daily activities more efficiently, is critical in assisting these slum enterprises grow. In S&G, it was discovered that the majority of the operators are engaged in the provision of basic services, as earlier stated. The provision of training programmes for the operators in these activities will help them improve in their service provision. Therefore, training workshops to assist operators in activities, such as sewing, hairdressing, electricals and food catering, can help improve their income generation.

Exiting slum enterprises represent the third level of the conceptual framework. At this stage, operators' resource needs for formalisation, as well as factors that prevent the slum operators from

formalising are presented. According to Welch (2005), the formalisation of informal activities helps curb unemployment as well as broadens the tax base of an economy. Also, informal slum operators through formalisation, will allow them access to government programmes and services.

In order to realise the objective of formalising informal activities, the current study found that, if slum operators are helped with capital acquisition, they will be willing to formalise. The ILO (2014), found limited access to finance in the informal sector as a reason why it lacks the ability to expand and improve productivity. Hence, it is recommended that, policies that will encourage the provision of micro-finance services to the informal sector are crucial in helping slum enterprises grow into the formal sector. On the other hand, even though helping the surveyed slum operators overcome infrastructure challenges will not prompt them to formalise, addressing infrastructure may help them grow in the economic activities they perform. Hence, the improvement of basic infrastructure in Ghana, such as access to clean water, sanitation, good roads, adequate supply of power, storage facilities and information and communication technologies, is key to helping informal operators grow.

8.4 AREAS FOR FURTHER RESEARCH

There are ten regions in Ghana, each having some slum settlements. The current study however, only focused on two of the biggest slums in two regions of Ghana. Hence, similar studies which can incorporate slums in the other eight regions of Ghana, as well as a larger sample size, are recommended. Furthermore, there is the need for a longitudinal study which will help understand in more detail, the growth constraints of slum operators over time and their resource needs to formalise.

Happiness was found to play a major part in a slum operator's decision not to move to the formal sector. Income is found to be one determinant of happiness as per the results of the current study. It is therefore important to find out other determinants of happiness amongst slum operators to enhance citizens' quality of lives. It is also recommended that, further studies be undertaken regarding the role the provision of infrastructure in aiding informal slum operators to develop and possibly formalise. In the current study, it was found out that infrastructural challenges are key growth constraints; however, overcoming infrastructural challenges is not likely to help informal

slum operators formalise. It is therefore important that researchers engage in further studies to find out why slum operators in the surveyed regions are unlikely to formalise even if one of their key constraints (infrastructure challenges) is solved. These will help policy makers come up with better policies and programmes to helping the informal sector to progress and slum operators move into formal activities.

8.5 CONCLUSION

Slum enterprises in Ghana are very vibrant, providing their operators with an average income that is higher than the national daily minimum wage and the poverty line. These enterprises also have some employment creation potential; a slum operator on average, employs two additional individuals. The informal sector in Ghana collectively plays a crucial employment generation role; without it, 86% of the labour force will probably be unemployed. Since the informal slum sector has a growth potential, it is crucial that their major constraints are addressed.

The high-productivity slum enterprises in Ghana may have better growth prospects than their low value-adding counterparts. The latter may struggle to survive and generate high income in the long run as they are vulnerable to problems concerning capital, infrastructure, management and business skills as well as to government regulations. Many of the slum operators are likely to stay in the informal sector for long, unless the barriers to their enterprise growth are addressed by the Ghanaian authorities. The informal sector and slum enterprise can flourish better if Ghana experiences higher levels of economic growth in the future. This much needed economic expansion would contribute to enhance the sustainability and growth of slum enterprises in Accra and Kumasi.

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APPENDIX

Appendix 1 Questionnaire

QUESTIONNAIRE

Thank you for participating in this research project; your time is greatly appreciated.

Purpose of Study: The purpose of the study is to determine the motives for an operator's involvement in informal activities in slums, and gain an understanding of why they are operating in slums, whether they have migrated from the rural areas, what are the constraints limiting their growth, what resource needs can help them develop and move into formal enterprises and policy suggestion can be made to enhance entrepreneurial capacity in Ghana.

What will be done: The questionnaire has 56 questions and should take about 30 minutes to complete.

Decision to quit at any time: You do not have to participate at all, or, even if you agree now, you can terminate your participation at any time without prejudice.

Benefits of participation: There are no direct financial benefits to the subjects. However, it is hoped that your participation will help researchers learn more about the development constraints faced by operators in informal activities in slums and on the basis of which can suggest policy measures to assist your activities.

Risk: There are no known risks or discomforts associated with this study.

Confidentiality: Questionnaires will be numerically coded to maintain anonymity. The completed questionnaires will be stored safely and not made available to anyone not directly involved in this project. There will be no mention of nay name in the study.

The use of the findings: The results of the study will be used for scholarly purposes only. The results from the study will be presented at professional conferences, and the results might be published in a professional journal in the field of Economics.

In terms of the University's policies governing research, you are requested to sign the following statement indicating your willingness to participate in the research project.

I ……………………………………… (full name of participant) hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project.

I understand that I am at liberty to withdraw from the project at any time, should I so desire.

SIGNATURE OF PARTICIPANT…………………………………..   DATE…………………

SECTION 1; BIOGRAPHIC DATA

1. Slum. Sodom and Gomorrah [1] Akwatia Line [2]

2. Gender; Male [1] Female [2]

3. Marital status: Married [1] Single [2]

4. Age 16-20 [1] 21-25 [2] 26-30 [3] 31-35 [4] 36-40 [5] 41-45 [6] 46-50 [7] 51-55 [8] 56-60 [9] 60+ [10]

5. Regional background. G. Accra [1] Volta [2] Eastern [3] B. Ahafo [4] Central [5] Western [6] Ashanti [7] Northern [8] U. East [9] U. West [10]

6. Where do you live? In this slum [1] In another slum [2] In a formal settlement [3]

SECTION 2; MOTIVES FOR SLUM ACTIVITY

Rate from 1-7; 7 - Strongly agree, 6 – Agree, 5 - Slightly agree, 4 - Neither agree nor disagree, 3 - Slightly disagree, 2 – Disagree, 1 - Strongly disagree

7. Taking advantage of business opportunities

8. Desire for greater independence

9. Quest for higher income

10. Evade tax

11. Avoid government regulation

12. High cost of informal business

13. Flexibility of informal work schedule

14. Greater satisfaction

15. Increase leisure time

16. Greater use of one's expertise

17. Redundancy

18. Survival

19. Supplementing income (Part time)

20. Generating wealth

21. Networks

SECTION 3; INCOME

22. What is the highest grade completed?......... None [0] Primary [1-6] JSS [7-9]   SSS/ Voc/Tech [10-12] Tertiary [13+]

23. What slum activity are you involved in? ………………..

24. How many years of experience do you have performing this activity? ………

25. Daily income after taking care of daily expenditure

How much is earned when business is (A) Good.............. (B) Bad……………

Under 5 Ghana Cedis [1] 6-10 Ghana Cedis [2]   11-15 Ghana Cedis [3] 16-20 Ghana Cedis [4]

21-25 Ghana Cedis [5]   26-30 Ghana Cedis [6]   31-35 Ghana Cedis [7]   36-40 Ghana Cedis [8]

41-45 Ghana Cedis [9] 46+ Ghana Cedis [10]

26. How many days do you work in a week? [1] [2] [3] [4] [5] [6] [7]

27. Size of labour………..

28. Rate how connected (in terms of networks) you are with others involved in slum activities?

Very Connected [5] Connected [4] Neutral [3] Quite Connected [2] Not Connected [1]

29. List the networks you belong to in slum activities.

……………………………………………………………………………………….

SECTION 4; LOCUS OF CONTROL

Rate from 1-7; 7 - Strongly agree, 6 – Agree, 5 - Slightly agree, 4 - Neither agree nor disagree, 3 - Slightly disagree, 2 – Disagree, 1 - Strongly disagree

30. How my life takes course is entirely dependent on me.

31. Success is gained through hard work

32. To take one's own decisions is most important in life.

SECTION 5; CHARACTERISTICS OF SLUM ENTERPRISES

33. Age of the business.

0-1 years [1] 2-5 years [2] 6-10 years [3] 11-20 years [4] 20years + [5]

34. Do you give/ receive work orders from firms outside the slum? Yes [1] No [2]

35. Are the goods you produce Raw [1] Intermediary [2] Finished [3]?

36. Do people living outside the slum consume your product? Yes [1] No [2]

37. Rate the level of competition.

Very Competitive [5] Competitive [4] Neutral [3] Quite Competitive [2] Not Competitive [1]

38. Ease of entry into your activity

Very Difficult [5] Quite Difficult [4] Neutral [3] Easy [2] Very Easy [1]

39. Do you pay any tolls to the local assembly? Yes [1] No [2]

40. Do you have a Bank account? Yes [1] No [2]

SECTION 6; CONSTRAINTS IN SLUM ACTIVITIES (Factor Analysis)

Rate from 1-7; 7 - Strongly agree, 6 – Agree, 5 - Slightly agree, 4 - Neither agree nor disagree, 3 - Slightly disagree, 2 – Disagree, 1 - Strongly disagree

41. Lack of land tenure security

42. Lack of inputs

43. Lack of tools

44. Difficulty in getting bank loans

45. Municipal harassment

46. Lack of expertise in financial management and planning

47. Lack of experience and training in business management

48. Lack of training in bookkeeping/accounting

49. Poor communication systems

50. Erratic electricity supply

51. Lack of networking

52. Bad roads

53. Lack of collateral security

54. Other infrastructural challenges

SECTION 7; MOVEMENT INTO FORMAL SECTOR

55. If your constraints are met, are you willing to move into the formal sector?

Yes [1] No [2]

SECTION 8; WHAT KEEPS OPERATORS IN SLUM ACTIVITIES

Rate from 1-7; 7 - Strongly agree, 6 – Agree, 5 - Slightly agree, 4 - Neither agree nor disagree, 3 -
Slightly disagree, 2 – Disagree, 1 - Strongly disagree

56. Taking all things together, would you say you are……

Very Happy [5] Happy [4] Neither Happy nor Unhappy [3] Unhappy [2] Very Unhappy [1]

Appendix 2 Scree Plot for motives for slum activities
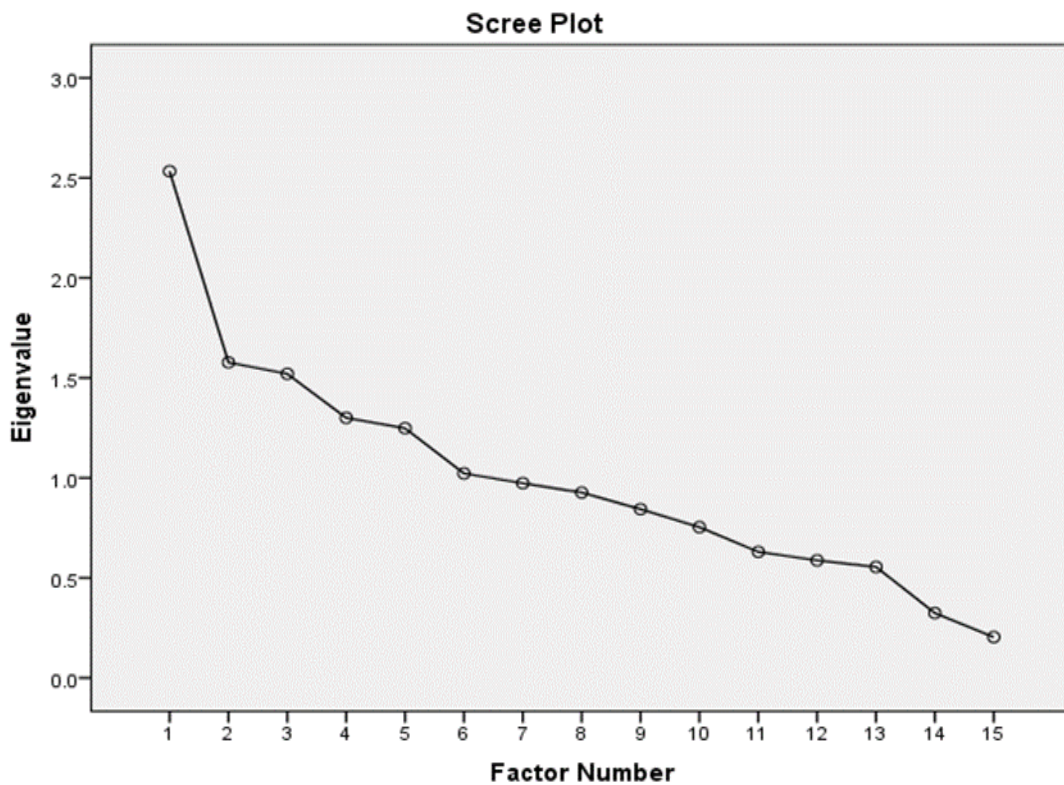
Appendix 3 Scree plot for constraints for engaging in slum activities
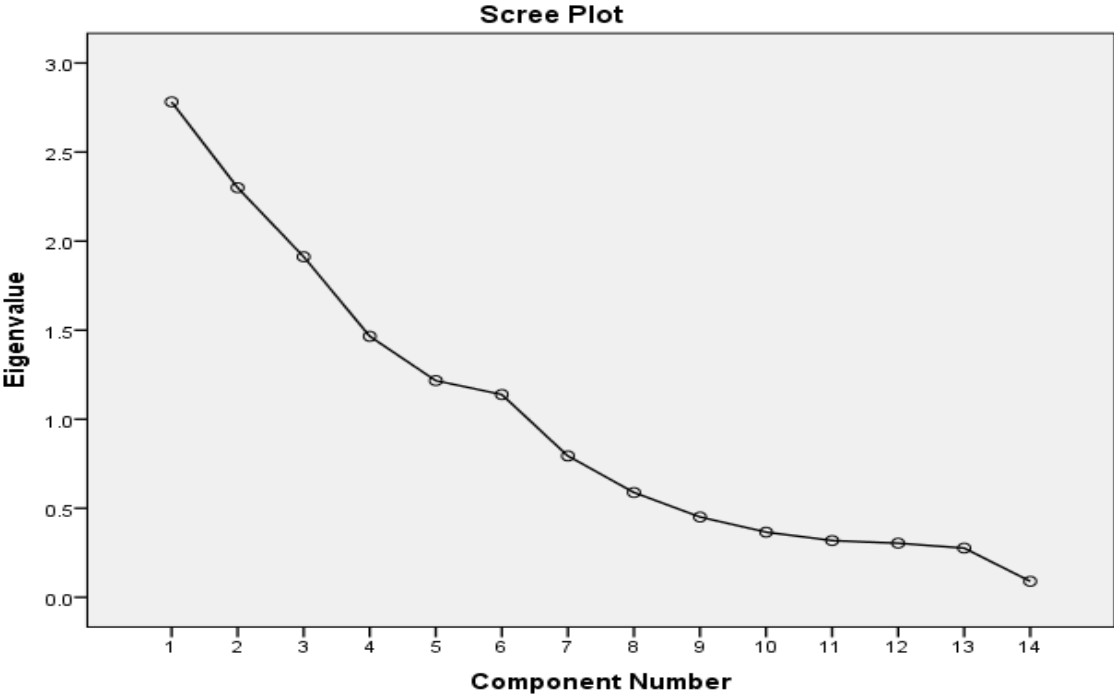
Appendix 4 Scatter plot of residuals and fitted model
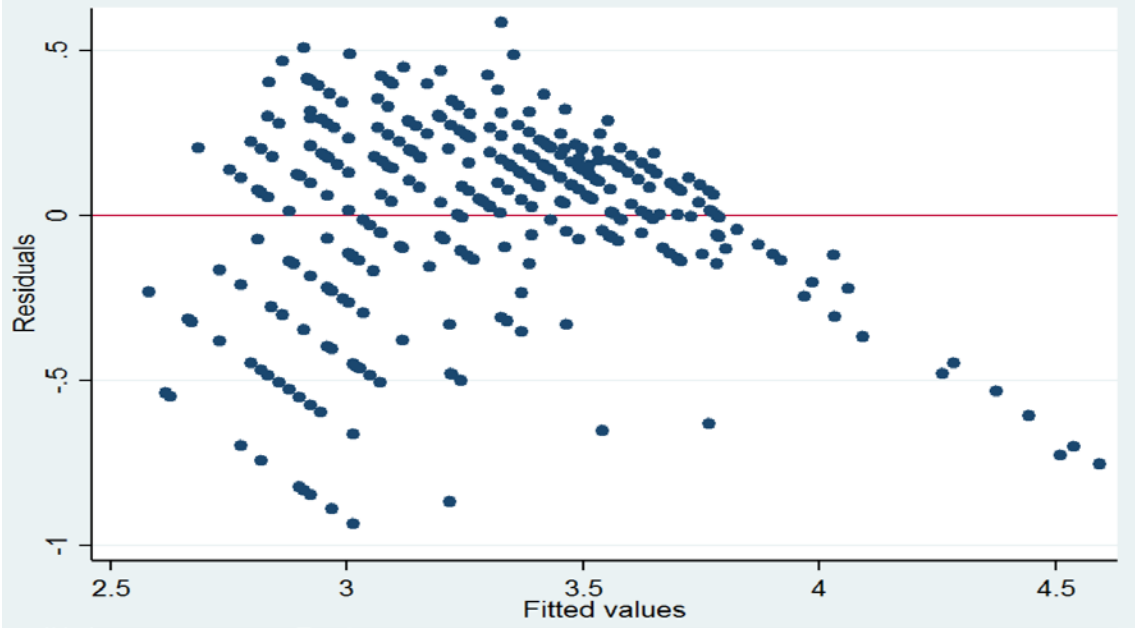
Appendix 5 Scatter plot of residual and labour size
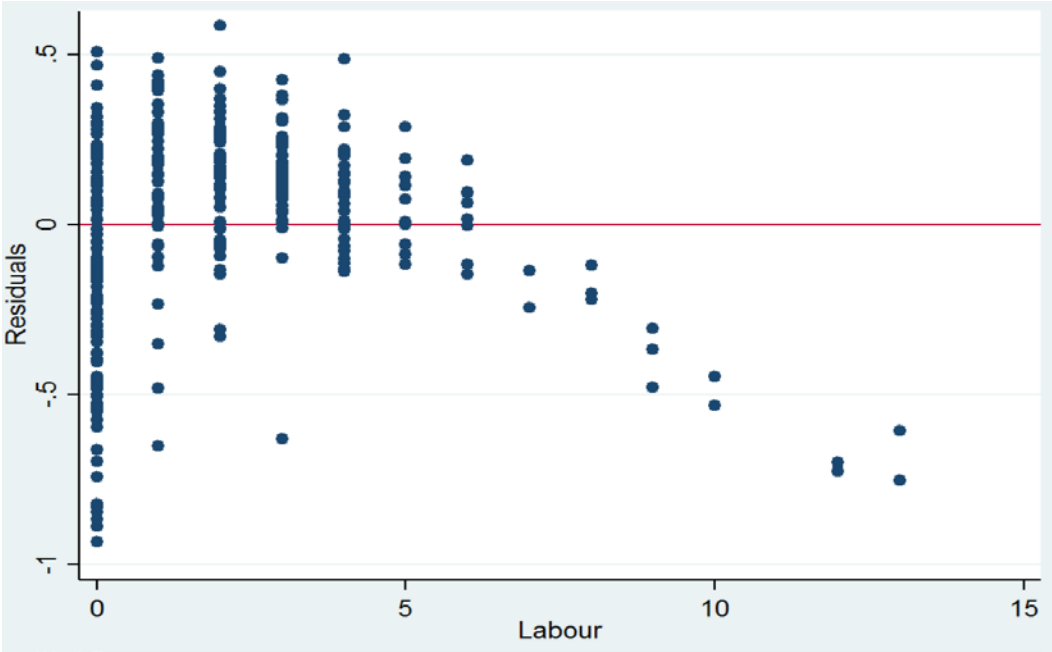
Appendix 6 Scatter plot of residuals and education
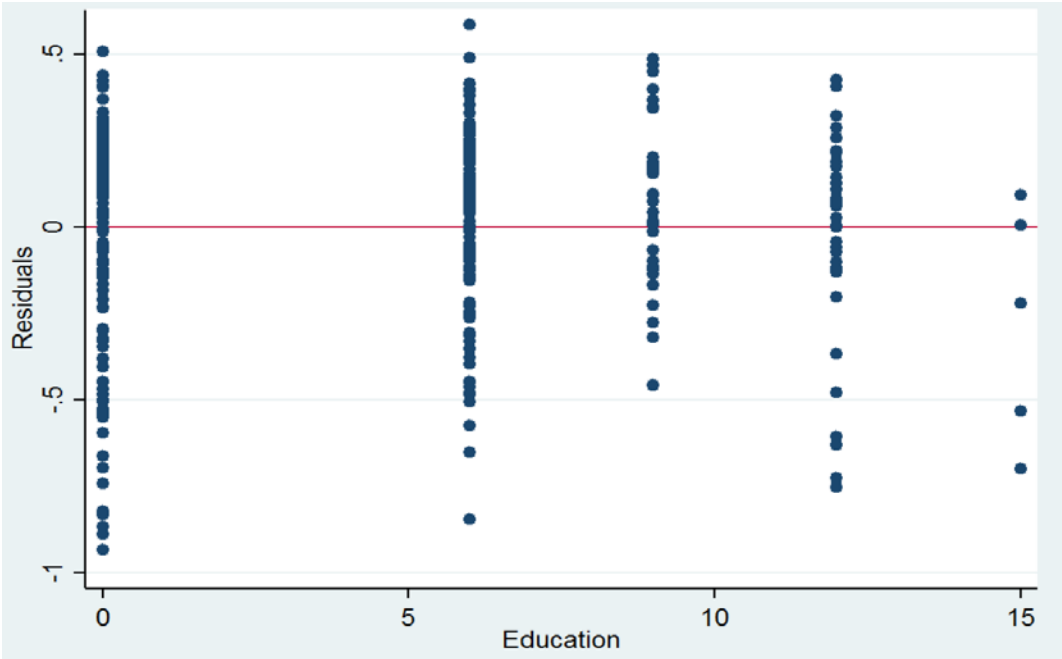
Appendix 7 Scatter plot of residuals and locus of control
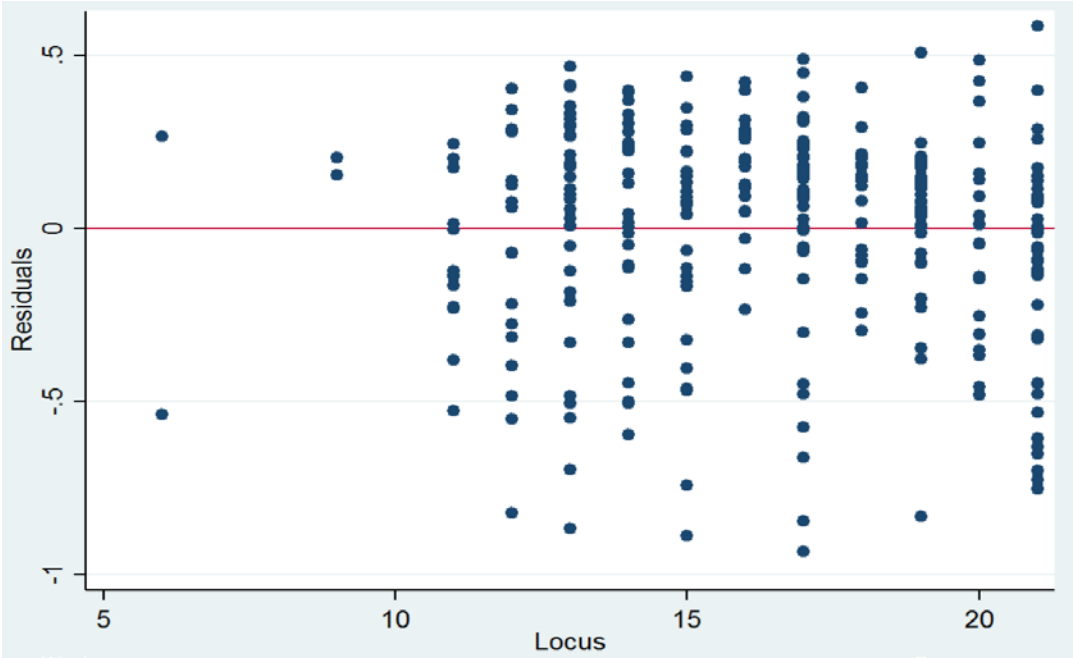
Appendix 8 Scatter plot of residuals and age of business
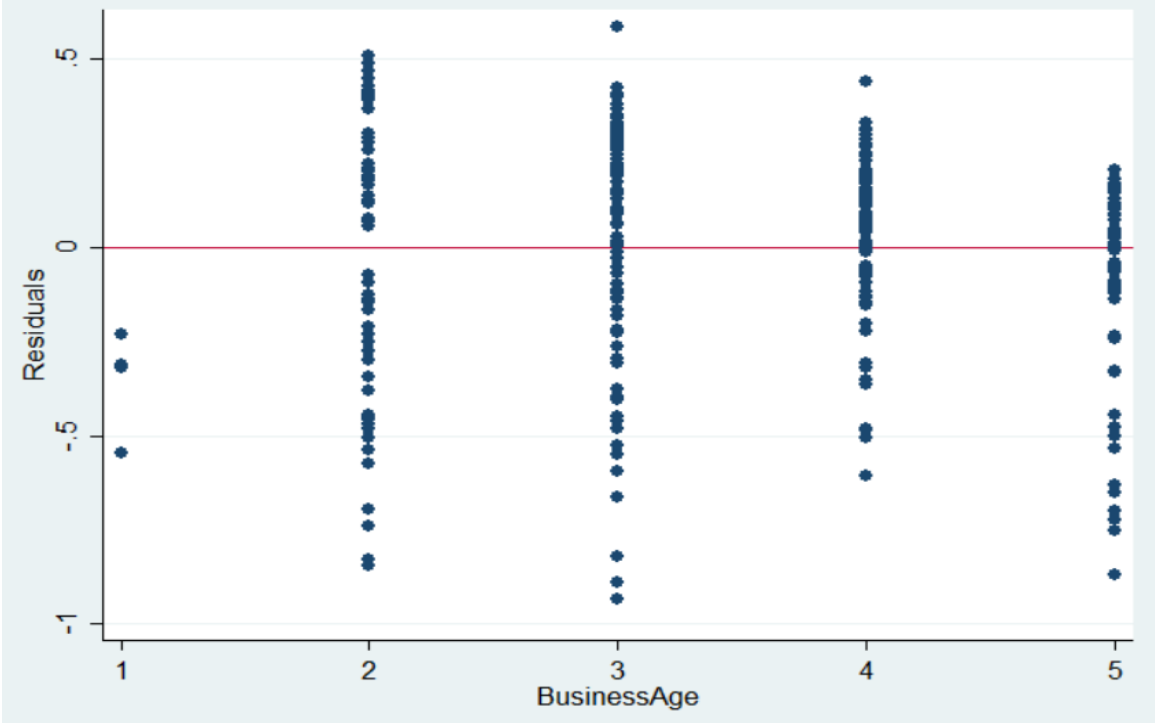
Appendix 9 Bar graph of income and size of labour
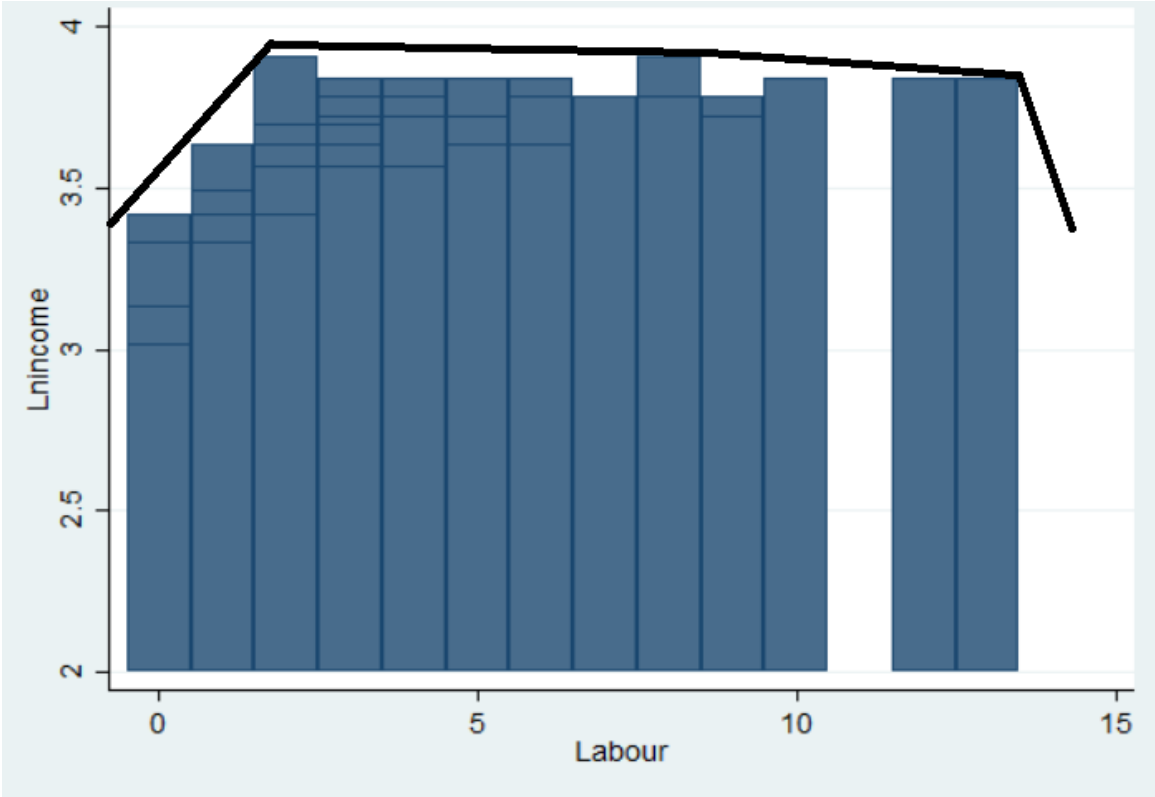
Appendix 10 Scatter plot of residuals and fitted model for model 3
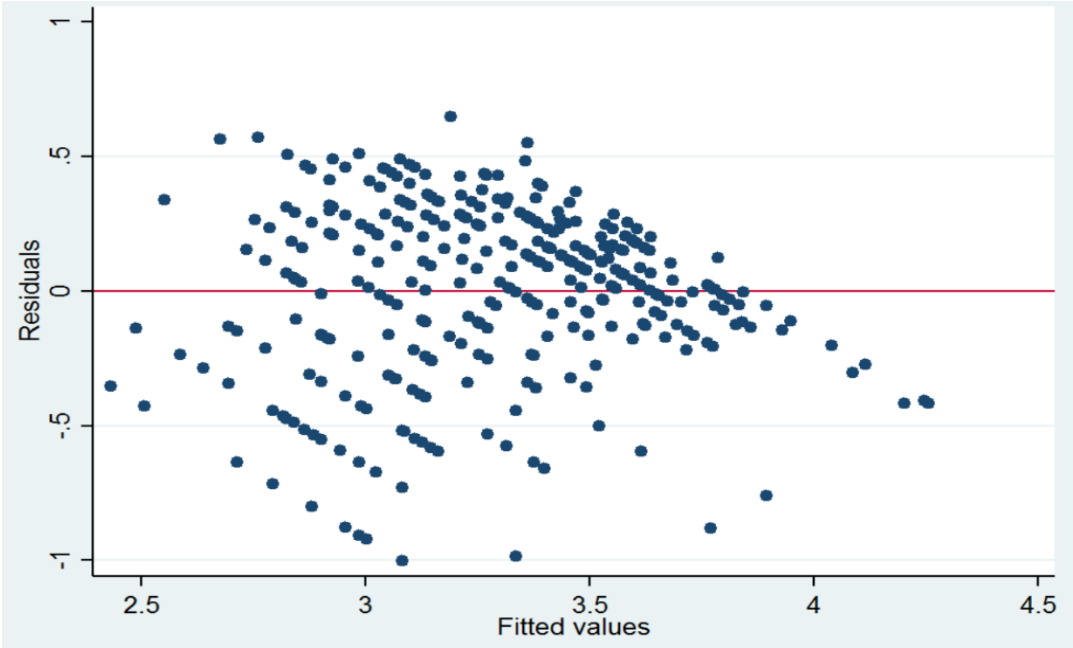
Appendix 11 Scatter plot of residuals and labour squared
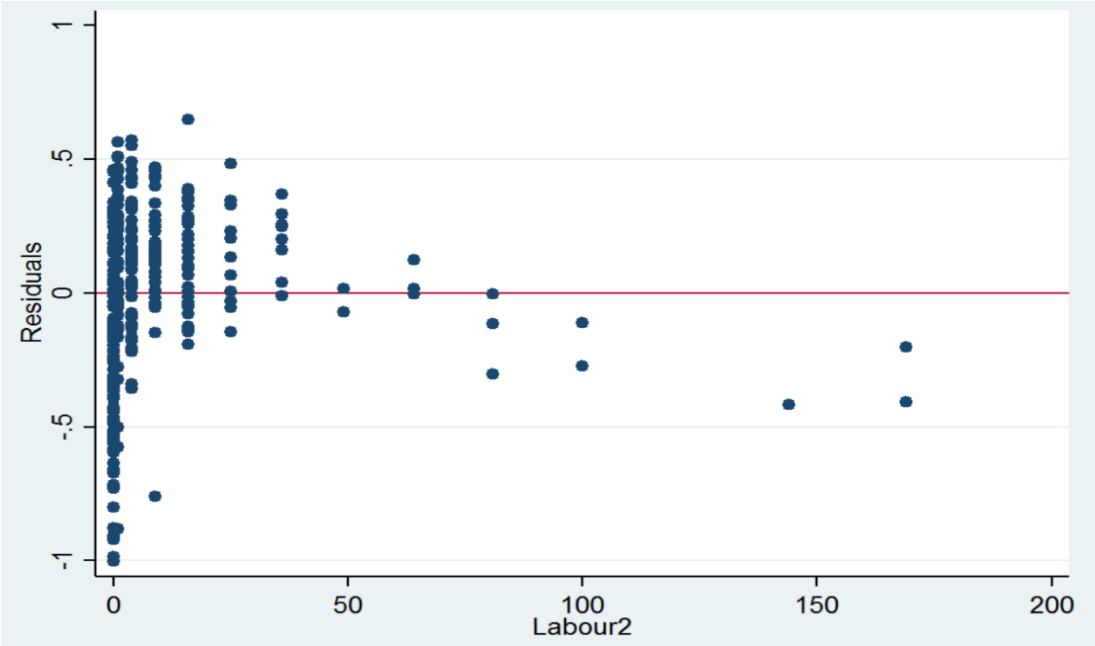
Appendix 12 Ethical Clearance letter

UNIVERSITY OF ™
KWAZULU-NATAL

INYUVESI
YAKWAZULU-NATALI

27 May 2015

Mr Luther-King Jnr Zogli (214560977)
School of Accounting, Economics & Finance
Pietermaritzburg Campus

Dear Mr Zogli,

Protocol reference number: HSS/0457/015D
Project title: Informal Economic Activities in Ghana: A case study of slums in Kumasi and Accra

Full Approval – Expedited Application

With regards to your application received on 08 May 2015. The documents submitted have been accepted by the Humanities & Social Sciences Research Ethics Committee and **FULL APPROVAL** for the protocol has been granted.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number.

Please note: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

....
Dr Shenuka Singh (Chair)

/ms

Cc Supervisor: Professor Darma Mahadea
Cc Academic Leader Research: Dr H Ngwala
Cc School Administrator: Mr Sihle Khuzwayo / Ms Jeursha Singh

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Appendix 13 Data extract from variable generation (SPSS)

Number	Lack of Bus. Knowledge	Infrastructure Challenges	Capital difficulties	Tools and inputs	Security	Comm & Assoc probs
1	2.60	15.89	12.63	1.77	9.22	2.30
2	2.60	13.15	13.60	1.77	10.99	2.98
3	17.32	17.56	13.60	1.77	6.89	1.52
4	12.84	17.56	13.60	7.15	9.22	3.03
5	7.74	13.15	13.60	1.77	10.99	1.52
6	17.32	16.68	13.60	1.77	9.22	2.30
7	18.21	17.56	13.60	1.77	10.99	1.52
8	13.12	11.49	13.60	1.77	10.99	2.98
9	7.98	16.77	13.60	6.14	10.99	3.08
10	8.80	17.56	13.60	7.04	10.10	1.52
11	2.60	16.68	1.94	1.77	10.99	3.08
12	7.74	15.89	13.60	7.01	10.10	5.28
13	13.12	13.15	12.63	5.27	6.00	6.70
14	17.32	17.56	13.60	1.77	6.89	2.30
15	17.32	17.56	13.60	7.15	10.99	3.81
16	12.84	12.85	13.60	1.77	6.89	2.30
17	15.61	17.56	13.60	2.64	10.99	2.25
18	13.91	7.56	13.60	7.15	10.99	5.28
19	18.21	16.77	13.60	1.77	6.89	2.30
20	10.51	16.68	13.60	1.77	10.99	5.92
21	11.22	17.56	13.60	2.67	10.10	1.52
22	10.44	17.56	13.60	1.77	10.10	5.97
23	10.32	17.56	13.60	3.54	10.99	1.52
24	9.58	15.79	13.60	1.77	6.00	5.23
25	11.99	17.56	13.60	1.77	10.99	5.92
26	6.89	17.56	13.60	7.15	10.10	10.61
27	2.60	17.56	13.60	3.54	10.99	1.52
28	12.22	2.51	13.60	10.62	6.89	3.08
29	7.74	7.22	13.60	7.01	6.00	2.25
30	2.60	7.22	13.60	7.01	6.89	3.08
31	2.60	2.51	1.94	7.01	6.89	4.50
32	13.12	7.22	13.60	12.39	6.89	1.52
33	7.74	2.51	13.60	10.62	6.89	2.30
34	2.60	2.51	1.94	7.15	6.89	3.03
35	18.21	7.56	13.60	1.77	10.99	1.52
36	6.19	2.51	12.63	6.25	4.23	3.08
37	2.60	2.51	13.60	7.15	6.89	2.25
38	7.74	2.51	11.66	5.35	6.89	1.52

39	7.74	2.51	13.60	1.77	4.23	3.81
40	2.60	7.22	1.94	7.15	6.89	1.52
41	14.72	7.22	13.60	12.39	6.89	3.08
42	7.98	2.51	13.60	12.39	4.23	3.08
43	2.60	2.51	13.60	7.01	5.11	5.33
44	13.12	4.27	13.60	7.15	6.89	1.52
45	7.74	2.51	1.94	6.14	6.89	3.86
46	7.98	7.22	12.63	11.49	5.11	2.25
47	11.33	15.99	13.60	12.39	10.99	5.37
48	7.74	17.56	13.60	12.39	10.99	1.52
49	12.22	17.56	13.60	12.39	10.10	3.03
50	8.63	12.85	13.60	12.39	10.99	1.52
51	7.08	16.68	13.60	12.39	10.31	2.30
52	7.08	17.56	13.60	12.39	9.22	5.33
53	11.41	16.68	13.60	12.39	10.99	1.52
54	12.22	12.85	13.60	12.39	10.99	5.33
55	13.12	12.85	13.60	7.01	10.99	1.52
56	2.60	17.56	13.60	7.01	10.10	2.98
57	13.12	17.56	13.60	7.01	10.99	7.67
58	7.08	12.85	13.60	7.01	10.99	3.08
59	2.60	17.56	13.60	12.39	10.99	2.25
60	2.60	12.50	13.60	12.39	8.33	10.61
61	13.07	12.85	13.60	7.01	6.89	1.52
62	18.21	17.56	13.60	7.01	10.99	3.81
63	18.21	17.56	13.60	7.01	1.57	6.94
64	13.12	17.56	13.60	12.39	8.33	6.20
65	2.60	17.56	1.94	7.01	10.99	6.94
66	2.60	17.56	1.94	7.01	10.99	2.98
67	2.60	17.56	1.94	7.01	10.99	1.52
68	18.21	17.56	13.60	12.39	9.22	1.52
69	2.60	12.50	13.60	12.39	6.89	1.52
70	2.60	17.56	1.94	7.01	5.11	2.25
71	13.12	17.56	13.60	7.01	10.99	1.52
72	2.60	17.56	13.60	12.39	10.99	1.52
73	2.60	17.56	1.94	7.01	10.99	2.25
74	2.60	17.56	13.60	12.39	9.22	2.30
75	2.60	17.56	13.60	7.01	10.99	1.52
76	2.60	17.56	1.94	7.01	9.22	3.76
77	13.07	17.56	13.60	7.01	10.99	1.52
78	2.60	17.56	1.94	7.01	10.99	2.30
79	18.21	17.56	13.60	7.01	6.89	2.98
80	2.60	17.56	13.60	7.01	10.99	6.94
81	13.12	17.56	13.60	7.15	10.99	1.52

82	7.98	17.56	1.94	12.39	10.99	2.98
83	2.60	17.56	1.94	12.39	10.99	2.30
84	2.60	17.56	13.60	7.01	5.11	1.52
85	7.98	17.56	13.60	12.39	10.99	3.81
86	2.60	17.56	1.94	7.15	6.89	2.30
87	18.21	17.56	13.60	12.39	10.99	1.52
88	2.60	17.56	1.94	7.15	10.99	2.25
89	2.60	2.51	1.94	7.15	5.67	3.86
90	18.21	17.56	13.60	12.39	10.99	1.52
91	2.60	17.56	13.60	7.01	10.99	2.25
92	13.07	17.56	13.60	12.39	10.99	3.86
93	2.60	12.50	1.94	7.01	5.11	1.52
94	2.60	12.50	1.94	7.01	6.89	3.03
95	7.98	12.50	1.94	12.39	6.89	1.52
96	2.60	12.50	1.94	7.15	6.89	3.76
97	2.60	12.50	1.94	12.39	6.89	1.52
98	13.07	17.56	13.60	12.39	10.99	5.33
99	18.21	17.56	13.60	7.15	10.31	1.52
100	18.21	17.56	13.60	1.77	10.99	3.81
101	18.21	17.56	13.60	7.01	10.99	1.52
102	7.98	17.56	13.60	7.01	10.99	4.55
103	13.07	17.56	13.60	1.77	10.99	2.25
104	7.98	17.56	13.60	1.77	10.99	1.52
105	18.21	17.56	13.60	1.77	10.99	3.76
106	7.98	12.50	1.94	12.39	10.99	1.52
107	13.07	17.56	13.60	12.39	10.99	3.03
108	2.60	12.50	1.94	12.39	10.99	1.52
109	7.98	17.56	1.94	12.39	6.00	2.30
110	6.19	12.50	1.94	12.39	10.10	1.52
111	9.58	17.56	1.94	7.01	10.99	1.52
112	9.61	17.56	13.60	7.15	10.99	3.08
113	10.51	15.79	1.94	7.01	6.89	2.25
114	7.08	15.99	1.94	10.62	10.99	1.52
115	9.58	17.56	13.60	12.39	10.99	3.81
116	2.60	16.77	1.94	11.52	10.99	1.52
117	9.58	17.56	13.60	11.49	10.99	1.52
118	13.87	17.56	13.60	11.49	10.10	5.33
119	9.58	15.79	1.94	12.39	10.99	1.52
120	11.37	17.56	1.94	8.85	10.99	1.52
121	6.00	17.56	5.84	12.39	10.99	3.76
122	9.43	17.56	13.60	8.85	10.10	1.52
123	2.60	15.79	1.94	12.39	10.99	3.72
124	7.74	17.56	13.60	12.39	10.99	5.23

125	13.01	15.79	7.78	12.39	10.99	1.52
126	18.21	15.99	13.60	10.60	10.99	1.52
127	2.60	17.56	1.94	12.39	10.99	6.06
128	14.80	17.56	13.60	12.39	9.22	2.25
129	13.01	17.56	13.60	12.39	10.99	1.52
130	18.21	17.56	13.60	12.39	9.22	1.52
131	9.61	17.56	13.60	12.39	10.99	4.59
132	8.72	17.56	13.60	8.02	9.22	2.25
133	11.33	17.56	13.60	8.85	10.99	5.33
134	11.41	17.56	11.66	10.60	9.22	1.52
135	13.01	17.56	13.60	12.39	9.22	1.52
136	16.52	17.56	13.60	8.85	10.99	3.03
137	12.16	17.56	13.60	12.39	9.62	1.52
138	7.98	17.56	13.60	7.01	10.99	1.52
139	11.41	17.56	13.60	12.39	10.99	2.98
140	6.19	17.56	13.60	10.60	10.99	2.30
141	11.28	17.56	13.60	10.60	10.99	2.98
142	13.01	17.56	13.60	12.39	10.10	1.52
143	6.19	17.56	13.60	12.39	10.99	2.98
144	6.19	17.56	13.60	12.39	9.62	2.30
145	11.37	17.56	13.60	10.60	10.10	2.25
146	6.00	17.56	13.60	12.39	10.99	1.52
147	14.80	17.56	13.60	10.60	10.99	4.59
148	6.19	17.56	8.75	7.01	10.99	1.52
149	6.03	17.56	13.60	10.60	9.62	1.52
150	2.60	17.56	13.60	12.39	9.62	3.03
151	8.73	17.56	11.66	12.39	10.99	1.52
152	12.15	17.56	13.60	10.60	10.99	2.98
153	2.60	17.56	1.94	12.39	10.99	2.30
154	14.80	17.56	13.60	12.39	10.99	2.98
155	13.88	17.56	13.60	10.60	10.99	1.52
156	6.03	17.56	13.60	12.39	10.99	3.76
157	2.60	17.56	13.60	12.39	10.99	1.52
158	9.58	17.56	13.60	7.01	10.99	2.30
159	13.12	17.56	13.60	7.01	10.99	2.25
160	6.00	17.56	13.60	12.39	10.10	1.52
161	18.21	15.79	13.60	12.39	10.99	3.86
162	6.19	17.56	13.60	10.60	10.99	2.25
163	11.33	17.56	13.60	12.39	10.10	3.08
164	6.19	17.56	13.60	12.39	10.99	1.52
165	7.98	17.56	13.60	10.60	10.99	2.25
166	2.60	17.56	1.94	12.39	10.10	3.86
167	2.60	17.56	13.60	12.39	10.99	2.25

168	6.19	17.56	13.60	7.01	10.99	2.98
169	11.33	17.56	13.60	7.01	10.99	3.08
170	7.98	17.56	13.60	12.39	9.22	2.98
171	11.41	17.56	13.60	7.01	10.99	1.52
172	11.37	17.56	13.60	12.39	10.99	4.59
173	3.45	15.11	12.63	2.64	10.10	1.52
174	18.21	16.68	13.60	2.64	5.67	1.52
175	2.60	16.68	12.63	11.52	5.67	1.52
176	2.60	15.89	13.60	12.39	1.57	1.52
177	17.37	15.99	12.63	12.39	6.56	1.52
178	18.21	17.56	13.60	6.14	5.67	1.52
179	18.21	15.99	11.66	1.77	5.67	1.52
180	17.37	17.56	13.60	9.72	1.57	1.52
181	2.60	16.77	11.66	1.77	10.99	1.52
182	4.35	17.56	13.60	12.39	8.53	1.52
183	2.60	16.77	12.63	12.39	10.99	1.52
184	3.45	17.56	13.60	9.72	8.53	1.52
185	2.60	15.99	12.63	12.39	1.57	1.52
186	2.60	17.56	1.94	11.52	9.22	1.52
187	18.21	15.79	2.92	12.39	10.99	1.52
188	3.45	15.89	13.60	11.52	8.53	1.52
189	2.60	17.56	13.60	12.39	10.99	1.52
190	10.46	16.77	11.66	9.72	10.99	1.52
191	2.60	16.77	13.60	2.64	9.22	1.52
192	18.21	16.77	13.60	1.77	5.67	1.52
193	7.70	17.56	11.66	2.64	10.99	1.52
194	2.60	11.49	13.60	1.77	10.99	1.52
195	6.85	17.56	11.66	11.52	9.22	1.52
196	4.30	15.99	13.60	1.77	10.31	1.52
197	2.60	15.99	13.60	4.39	2.25	1.52
198	15.67	12.27	11.66	1.77	1.57	1.52
199	4.30	17.56	13.60	12.39	5.67	1.52
200	3.45	16.77	1.94	4.39	10.99	1.52
201	17.37	16.68	11.66	1.77	10.99	1.52
202	2.60	17.56	13.60	11.52	7.85	1.52
203	18.21	16.77	13.60	1.77	1.57	1.52
204	15.57	17.56	11.66	7.08	6.28	1.52
205	18.21	16.77	13.60	6.14	10.99	1.52
206	18.21	17.56	13.60	1.77	7.85	1.52
207	17.37	15.11	2.92	3.52	10.99	1.52
208	13.01	17.56	12.63	1.77	8.53	1.52
209	17.37	15.01	13.60	3.52	7.85	1.52
210	18.21	17.56	12.63	1.77	1.57	1.52

211	17.32	15.99	8.74	3.52	6.89	1.52
212	17.37	17.56	13.60	12.39	6.96	1.52
213	15.67	16.68	12.63	1.77	8.53	1.52
214	2.60	9.02	1.94	3.52	10.99	1.52
215	18.21	16.77	13.60	6.21	5.11	1.52
216	2.60	17.56	2.92	1.77	4.31	1.52
217	15.67	17.56	13.60	2.64	10.31	1.52
218	3.45	15.11	13.60	1.77	4.31	1.52
219	2.60	17.56	11.66	2.64	1.57	1.52
220	16.52	15.99	13.60	2.64	10.99	1.52
221	18.21	17.56	1.94	1.77	7.85	1.52
222	2.60	17.56	13.60	1.77	10.99	1.52
223	13.01	6.43	9.72	2.64	2.46	1.52
224	2.60	3.39	13.60	1.77	10.99	1.52
225	18.21	2.51	1.94	1.77	2.46	1.52
226	2.60	7.31	13.60	2.64	9.22	1.52
227	4.39	17.56	11.66	1.77	1.57	1.52
228	2.60	17.56	1.94	1.77	7.85	1.52
229	3.50	12.37	2.92	2.64	10.10	6.20
230	17.32	17.56	1.94	1.77	7.85	1.52
231	18.21	17.56	2.92	2.64	10.99	1.52
232	7.08	16.77	1.94	12.39	5.67	6.20
233	18.21	17.56	1.94	1.77	1.57	1.52
234	2.60	16.68	2.92	1.77	10.99	5.92
235	7.08	16.77	1.94	2.64	7.85	6.20
236	2.60	17.56	2.92	1.77	10.99	1.52
237	18.21	17.56	1.94	1.77	4.99	1.52
238	17.32	15.89	13.60	2.64	1.57	6.20
239	18.21	17.56	13.60	3.52	1.57	6.20
240	18.21	17.56	2.92	2.64	4.99	6.20
241	17.32	16.77	8.74	1.77	1.57	1.52
242	2.60	17.56	13.60	4.39	4.99	6.20
243	18.21	15.99	13.60	1.77	1.57	1.52
244	17.32	17.56	1.94	1.77	4.99	1.52
245	18.21	17.56	1.94	2.64	1.57	1.52
246	18.21	15.99	13.60	1.77	4.99	1.52
247	2.60	17.56	13.60	1.77	4.99	1.52
248	17.32	16.77	13.60	1.77	10.99	1.52
249	3.50	16.77	1.94	2.64	10.99	1.52
250	2.60	16.77	13.60	1.77	10.99	6.20
251	17.32	17.56	5.84	1.77	1.57	1.52
252	18.21	17.56	1.94	2.64	10.99	6.20
253	2.60	17.56	5.84	3.52	1.57	6.20

254	18.21	17.56	1.94	1.77	10.99	1.52
255	3.50	15.99	5.84	3.52	1.57	1.52
256	2.60	17.56	13.60	1.77	1.57	1.52
257	2.60	17.56	8.74	3.52	1.57	1.52
258	3.50	16.77	13.60	1.77	7.85	1.52
259	2.60	17.56	8.74	4.39	10.99	1.52
260	18.21	17.56	13.60	1.77	1.57	1.52
261	3.50	17.56	12.63	2.64	10.99	1.52
262	2.60	16.77	6.81	1.77	1.57	1.52
263	3.50	17.56	13.60	2.64	10.99	1.52
264	2.60	16.77	1.94	1.77	10.99	1.52
265	3.50	17.56	12.63	3.52	10.99	1.52
266	2.60	17.56	13.60	1.77	10.99	1.52
267	3.50	17.56	1.94	1.77	10.99	1.52
268	2.60	17.56	13.60	7.98	10.99	1.52
269	2.60	17.56	13.60	1.77	1.57	1.52
270	3.50	17.56	11.66	2.64	9.42	1.52
271	2.60	16.77	13.60	1.77	10.99	1.52
272	2.60	17.56	13.60	2.64	10.99	1.52
273	3.50	17.56	13.60	1.77	1.57	1.52
274	2.60	17.56	1.94	1.77	10.99	1.52
275	18.21	17.56	13.60	2.64	10.99	1.52
276	2.60	16.77	13.60	1.77	10.99	1.52
277	3.50	17.56	13.60	1.77	5.67	1.52
278	2.60	17.56	13.60	2.64	7.85	1.52
279	3.50	17.56	13.60	1.77	10.99	1.52
280	17.37	17.56	13.60	12.39	5.67	1.52
281	3.45	17.56	1.94	11.52	10.99	1.52
282	18.21	17.56	12.63	1.77	6.28	4.64
283	3.50	16.77	13.60	1.77	10.99	1.52
284	2.60	17.56	13.60	2.64	5.67	6.20
285	17.32	17.56	12.63	1.77	2.25	6.20
286	2.60	17.56	13.60	1.77	4.99	3.86
287	16.52	15.20	13.60	2.64	4.99	4.64
288	18.21	17.56	13.60	1.77	8.53	6.20
289	4.39	17.56	13.60	2.64	2.25	6.20
290	16.52	17.56	13.60	1.77	1.57	4.64
291	4.39	17.56	13.60	1.77	8.53	4.64
292	3.45	17.56	13.60	1.77	1.57	1.52
293	16.42	14.42	13.60	1.77	1.57	1.52
294	18.21	17.56	13.60	2.64	1.57	1.52
295	2.60	17.56	13.60	1.77	7.85	1.52
296	18.21	14.42	13.60	3.52	1.57	1.52

297	16.47	17.56	13.60	1.77	2.25	1.52
298	18.21	17.56	11.66	12.39	1.57	6.20
299	17.32	17.56	13.60	1.77	10.99	1.52
300	6.85	17.56	13.60	12.39	5.67	1.52
301	18.21	17.56	12.63	1.77	4.99	6.20
302	17.37	17.56	13.60	1.77	10.99	1.52
303	17.32	17.56	13.60	1.77	1.57	1.52
304	18.21	17.56	1.94	1.77	4.99	6.20
305	18.21	17.56	9.72	1.77	8.53	6.20
306	16.47	17.56	13.60	12.39	1.57	4.64
307	18.21	17.56	13.60	8.02	5.88	1.52
308	2.60	14.42	13.60	10.64	7.85	2.30
309	16.47	17.56	13.60	12.39	2.25	1.52
310	18.21	17.56	13.60	12.39	6.56	1.52
311	13.78	17.56	13.60	10.64	2.94	1.52
312	18.21	17.56	11.66	12.39	8.53	1.52
313	18.21	17.56	13.60	11.52	5.67	10.61
314	2.60	17.56	13.60	12.39	2.94	1.52
315	13.92	13.63	13.60	12.39	5.67	1.52
316	18.21	16.77	11.66	11.52	5.67	1.52
317	2.60	17.56	13.60	12.39	5.67	5.92
318	13.78	17.56	13.60	11.52	9.22	1.52
319	2.60	17.56	13.60	12.39	1.57	1.52
320	16.52	3.39	13.60	12.39	10.99	1.52
321	2.60	5.06	11.66	11.52	10.99	1.52
322	4.39	3.39	1.94	1.77	10.31	1.52
323	4.30	17.56	13.60	12.39	9.22	1.52
324	3.50	7.70	13.60	12.39	5.67	1.52
325	2.60	17.56	11.66	11.52	5.67	1.52
326	17.32	13.63	1.94	12.39	5.67	6.20
327	4.30	8.23	13.60	11.52	10.99	1.52
328	2.60	17.56	13.60	12.39	9.22	1.52
329	6.09	17.56	13.60	12.39	9.22	1.52
330	2.60	12.27	11.66	12.39	10.99	1.52
331	6.09	16.77	1.94	1.77	7.85	1.52
332	3.45	17.56	13.60	12.39	10.99	1.52
333	4.39	8.35	1.94	12.39	5.67	1.52
334	2.60	17.56	12.63	12.39	1.57	1.52
335	18.21	3.29	13.60	12.39	10.99	6.20
336	17.32	17.56	8.74	12.39	5.67	1.52
337	16.52	17.56	13.60	1.77	9.22	1.52
338	2.60	17.56	1.94	12.39	5.67	1.52
339	5.24	17.56	12.63	12.39	5.67	1.52

340	2.60	17.56	13.60	11.52	2.25	1.52
341	17.32	17.56	2.92	2.64	5.67	1.52
342	3.45	17.56	13.60	12.39	5.88	1.52
343	3.50	16.77	13.60	12.39	1.57	1.52
344	15.62	16.77	12.63	11.52	4.99	6.20