KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY (KNUST)

DETERMINANTS OF FAMILY LOW INCOME IN URBAN ZONGO COMMUNITIES: THE CASE STUDY OF SELECTED COMMUNITIES IN THE KUMASI METROPOLIS

(Aboabo, Sawaba, Asawase and Ayigya Zongo communities in the Kumasi Metropolis)

By

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DECLARATION

I hereby declare that this submission is my own work towards the Master of Philosophy in Economics and that, to the best of my knowledge; it has neither been partially nor wholly submitted to any other institution for the award of any degree. It contains no material previously published by another person except where due acknowledgement has been made in the text.

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DEDICATION

To my family

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First and foremost, my sincere thanks goes to the Almighty Allah for being with me throughout my studies. I am greatly indebted to my Supervisor, Professor J. Ohene-Manu for his immense contributions, suggestions, guidance, support and encouragement that have made this study a success.

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ABSTRACT

The main objective of this study is to investigate the determinants of low income in Asawase, Aboabo, Sawaba and Ayigya Zongo communities all in the Kumasi metropolis. Case study was adopted to be able to understand peculiar characteristics of the selected communities. The study examined the economic and socio economic factors of households in the communities using questionnaires. Household heads were randomly selected for the study to be able come out with household characteristics for analysis. The key variables included in the study were gender, age marital status, ethnicity, religion, household composition, education, and type of occupation.

A logistic regression analysis was used to determine which variables have close association with low income in these communities. The study revealed that 61% of the people living in these communities have low income. This shows that majority of the people in these communities have low income. About 68% of the people living in these communities are into the informal sector of employment with Ayigya Zongo having the highest cases of low income. Aboabo recorded lower cases of low income among the communities.

In general, the study revealed that, gender, marital status, level of education, type of occupation, household size and ethnicity are significant determinants of low income in the zongo communities in Kumasi although there are slight variations across these communities in terms of the variables.

The key recommendation of this study is that education should be given the needed attention to be able to improve the income status of the people living in these communities. This can be done through collaboration with the various stakeholders in these communities.

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LIST OF ABBREVIATIONS AND ACRONYMS

ANOVA	Analysis of Variance
Df	Degrees of freedom
GAIT	Government Accountability Improvement Trust
GLSS 6	Ghana living standards survey, Round 6
KCDS	The Kumasi City Development Strategy
KMA	Kumasi Metropolitan Assembly
KNUST	Kwame Nkrumah University of Science and Technology
MSS	Mean Sum of squares
SS	Sum of Squares
UK	united Kingdom
UNESCO	United Nations Educational, Scientific and Cultural Organization
ZEED	Zongo Empowerment and Entrepreneurial Development

CHAPTER 1

INTRODUCTION

1.1 Background to the Study

The term 'zongo' means travelers camp in Hausa language and it was used to define the areas in which Muslims lived. The Hausa's from Northern Nigeria are the pioneer settlers of the Zongo. The early settlers constructed make-shift houses with the intention to work hard, raise some capital and return to their locality. As it has usually been with immigration, many adopted their new found places as their permanent homes. Today zongos have become a vast network of settlements, and there is at least one zongo in every urban center in Ghana. Today, the Zongo has become a multi-cultural community, because people from all walks of life and tribes are residing in such places. Zongo is a heterogeneous community with a unique cultural practice, completely different from any community and ethnic group in Ghana. The most widely known zongos in Ghana are located in Accra, Kumasi and Cape Coast and Takoradi. Asawase, Aboabo, AyigyaZongo and Sawaba, which constitute the study areas, are among the most widely known zongo communities in the Kumasi metropolis.

Majority of the people in these areas are engaged in the informal sector. These economic activities include animal rearing (especially cattle), street vending, market salespersons, transportation, wholesale and retail trade, operating chop bars, real estate. Others are machinery mechanics and repairs, car, van, heavy truck, motorcycle driving.

Agriculture, forestry and fishing industry employs the least of the labour force. Agricultural activities in these suburbs are mainly crop farming, backyard farming

and livestock/poultry farming. The main locations consigned to crop farming are the peri-urban communities. Cultivation is limited to staples like maize, leafy vegetables, cassava and plantain. Livestock rearing is however scattered in the municipality. The different species of livestock reared are sheep, cattle, goats and pigs. There are also several food processing groups which are mainly into groundnut paste and gari processing.

The dominant religion in the selected communities is Islam followed by Christianity. The most widely spoken language in these communities is the Hausa language. It is dominated by tribes of Northern descent, coupled with people from our neighboring countries like Burkina Faso, Nigeria, Mali, Ivory Coast, and Niger. The ethnic groups residing in these areas include Asante, Fante, Ewe, Gonja, Kotokoli, Dagarti, Dagomba, Kusasi, Mamprusi, Frafra, Mossi as well as other tribes.

Observation of the level of infrastructure, sanitation, housing and general layout of the Zongo communities in the Kumasi metropolis reveals the fact that majority of the people living in these areas are unable to meet their basic needs. There is lack of good environmental sanitation, inadequate water supply and inadequate social amenities (schools and health facilities), lack of good access roads and poor housing conditions. These conditions are a manifestation of people whose incomes do not permit them to access basic necessities of life.

Stakeholders in these communities are conscious of the fact that poverty ceases to be an individual problem when poor families and individuals cluster in an area such as is seen in the selected areas in Kumasi. Over the years, several interventions have been rolled out by successive governments to tackle the issue of poverty in these communities. Among these interventions are: *'Zongo empowerment and*

entrepreneurial development (ZEED). This is a module under the Ghana Youth Employment Entrepreneur Development Agency (GYEEDA) programme aimed at intervention by government to help empower the youth in Zongo communities.

Another program is Government Accountability Improvement Trust (GAIT). This model is aimed at stimulating local level development and creating awareness in poor communities in the Kumasi Metropolis. In the Kumasi metropolis, the project spanned from 2006-2009 and focused on Asawase sub-metropolitan area. The Aboabo community has benefited from *The Kumasi City Alliance Programme*. Other programs aimed at empowering the youth in these communities include *The Kumasi City Development Strategy (KCDS), Urban Poverty Reduction Project, The UN Habitat Slum Upgrading Facility.*

1.2. Problem Statement

The persistence and pervasiveness of low income status of most people in the selected urban zongo communities is significant enough to merit attention in view of the fact that several initiatives have been being pursued by successive governments to address this issue. The economic and social characteristics of the people in terms of poor infrastructure, poor sanitation, and the general living conditions in the selected communities are all indications of a deep seated problem as far as income is concerned. The income dichotomy between the zongos and the non zongo communities is glaring for any observer.

A preliminary survey conducted revealed that majority of the households in these communities earn less than GH₵150.00 a month. This is well below the current national monthly minimum wage of GH₵240.00. This is also in sharp contrast with monthly income range of GH₵ 500.00- GH₵ 1000.00 from neighboring non-Zongo

communities such as Asokwa, Amakom and Dichemso. Opinion leaders in the selected communities bemoan the fact that, although majority of the dwellers are employed in one trade or the other, these jobs are not gainful enough to cater for their basic needs. This is a source of worry for policymakers and stakeholders especially in the face of the current macroeconomic challenges bedeviling the Ghanaian economy. Most of them are therefore compelled by challenging economic circumstances to rely on incomes from other sources to be able to make ends meet.

There exists a continuing challenge to seek information based on research evidence that can be used to address the low income among the people living in zongo communities in Kumasi. It is in this regard that it has become imperative that this research work is undertaken to analyze and understand the various factors determining low income among a cluster of zongo communities in the Kumasi metropolis.

1.3. Objective of the Study

The general objective of this research work is to investigate the factors contributing to low income in the selected areas in the Kumasi metropolis.

The specific objectives are as follows:

- to investigate the ethnic composition of zongo communities
- to investigate the employment and demographic characteristics of these communities
- to identify the various income groups in these communities.
- to analyze the factors associated with low incomes with respect to the selected communities.

1.4. Research Questions/Hypothesis

The study answers the following questions:

- There is low income in the selected urban zongos communities in Kumasi.
- Income levels in zongo communities depend on factors such as educational level, gender, religious influence, family composition, activity limitations, among others.

1.5 Justification of the Study

Low income can be tackled by first having an in-depth knowledge of its contributing factors. Concerns about the issues of poverty levels in the zongos have been raised by various stakeholders in the country. Investigating the ethnic composition of the zongo communities will inform policymakers about the type and composition of people living there. Availability of information on the characteristics of ethnic composition will help in the formulation of appropriate policies towards the reduction of poverty in these communities.

Analyzing the employment and demographic characteristics of the study areas will contribute to the provision of the evidence-based information on the challenges of low-income urban zongo people living close to affluent areas of a major city.

In general this study is worth conducting because governmental and non-governmental organizations such as Ministry of Local Government and Rural Development, Kumasi Metropolitan Assembly and the Town and Country Planning Department will use its findings to develop pragmatic and sustainable solutions that will ensure the empowerment of the zongo poor to move them out of endemic poverty.

Leaders in these communities will also find this study beneficial because its findings can be used to identify areas that need support and attention. Government could further use the findings of the study to improve its policies on poverty reduction in other zongo communities in future.

1.6 Limitations of the Study

One major limitation of this study is time and financial constraints. Due to this, the study was limited to only four Zongo communities in the Kumasi Metropolis. The inclusion of more zongo communities in Ghana would have been more desirous.

Some respondents initially did not agree to be interviewed due to time consuming nature of the questionnaire. Many of respondents were not comfortable discussing their incomes. However, they were ready to talk about their daily expenditure. Nevertheless, these problems were resolve with the help of thorough explanations.

Another limitation of this study is the use of current minimum wage as the threshold for low income. Thus future studies on low income dynamics in these communities will not rely on this threshold since that would lead to inaccurate results

1.7 Scope of the Study

A total of four Zongo communities was selected from the Kumasi Metropolis in the Ashanti region for this study. The Aboabo, Asawase, Sawaba and AyigyaZongo cluster was purposively selected for the study since these communities are known to have low income characteristics in Kumasi metropolis. These communities constitute low income areas in Kumasi that have received some form of social intervention(s) over the past years. This study is limited to the zongo communities in Kumasi because of limited time and resources.

1.8 Research Methodology

Both primary and secondary sources of data were employed in this study. The Ghana Statistical Service data on population and housing characteristics was used. This was supported by field questionnaires in the study area. In all, 300 respondents were randomly selected. Household surveys in the four selected communities were employed in collecting the data. The study was conducted in Aboabo, Asawase, Sawaba all in Asokore Mampong Municipality, and Ayigyazongo in Oforikrom sub-metro. These communities were randomly selected based on their being classified as zongos by KMA and residents of the Kumasi Metropolis. Each zongo will be allocated 75 respondents since these suburbs have similar characteristics and population. Within the communities systematic sampling was used to selected respondents in these communities. Every fourth household in these communities was interviewed. The main variables included are household characteristics such as gender, marital status, number of people in a household, religion, educational levels, occupational characteristics and ethnicity. Both quantitative and qualitative techniques were used to analyze the data employing statistical analysis such as tabulations, percentages and averages. A logistic regression was run to determine the association between these variables and economic status of the people in these communities.

1.9 Organization of Chapters

The background to the study and problem statement together with the objectives, hypothesis and justification of the study constitute chapter 1 of the thesis. Chapter 2 contains relevant literature that reviewed to support the discussion of low income and aspects related to the objectives of the study. The profile of the study areas is also presented under this chapter. Chapter 3 focuses on the methodology used for the study

while the results and discussions were presented in chapter 4 which was followed by conclusions and recommendations in chapter 5.

CHAPTER 2

LITERATURE REVIEW

2.1. Theoretical Review

This section presents a review of relevant literature on low income dynamics, and examines the theories of regional underdevelopment. It comprises definitions, concepts and theories of growth.

2.1.1 Definitions and Concepts

Relevant definitions and key concepts are presented in this section in order to bring into focus the understanding of the theories behind underdeveloped regions and suburbs. Thus the concepts of regional problems and core 'periphery' are explained as basic concepts for the study.

2.1.1.1 Regional Problem

A regional problem exists where a region departs from or falls below the national average in terms of indices like rates of unemployment and output per head so that it becomes distinct from other regions (Fothergill et al, 1982). According to Robson (1997), differences in performance of regions in terms of employment and income per head are a demonstration of the fact that growth and development are not a general country-wide phenomenon. It is difficult to single out one cause of regional problem but available evidence suggest that, continued backwardness of some regions are as a result of a general national policy or a specific national development policy (Weiss, 1988). Other authors such as Leonardi (1995) give a wide range of causes ranging from local factors such as social norms and community values to the role played by regional and political institutions in the local economies.

Governments all over the world want city residents to have more opportunities to share in prosperity, to be able to enjoy greater freedom of choices in terms of employment opportunities and decent environment but available evidence suggest that, many a time, these opportunities are not enjoyed equally by contemporary regions and areas. This is because, governments are conscious of the fact that, the performance of the whole nations largely reflects the performance of its individual cities and suburbs and how the economies of these cities and suburbs develop and evolve largely shape the future growth path of the economy as a whole.

2.1.1.2 The 'Periphery' and 'Core Regions'

The 'periphery' consists of the regions outside the 'core regions' which are generally characterized by extreme poverty, low levels of income, low standard of living and less access to potable water than in the industrialized core. These areas also exhibit poor infrastructure manifested in slum conditions. Generally, slums are a manifestation of low income and poverty. The core regions on the other hand enjoy economic prosperity and exhibit a lot more dynamism than the periphery. The core-periphery model is not limited to a global scale. Sharp contrasts in wages, opportunities, access to health care among a local or national population are not uncommon. Regional differences exist with respect to unemployment and incomes per head. Population increases in the peripheral regions due to a number of contributing factors including high birth rate and rural-urban migration.

2.1.1.3 Poverty and low Income Nexus

A number of research papers have attempted to give several definitions of poverty. The Ontario Non-Profit Housing Association (ONPHA, 2008) consider poverty as a multi-dimensional issue, characterized by the lack of or limited to income, and is commonly associated with multiple forms of deprivation and consequently caused by

inability to purchase goods and services. Poverty occurs mainly at the individual or household level but the most visible evidence of poverty arises when poor families and individuals cluster in an area. These areas which are challenged economically and disproportionately bear the social and economic burden of unemployment, crime, deteriorated housing and poor health.

In Ghana households may be characterized as poor based on income levels, housing conditions, malnutrition, ill health, illiteracy, lack of access to safe drinking water and sanitation facilities as well as general insecurity. Taken together, these conditions would keep households and whole communities in persistent poverty (National Development Planning Commission, 2003).

Absolute poverty defines the cost of the minimum necessities needed to sustain human life. Globally, this minimum is estimated at US$1 a day while relative poverty is defined as the minimum economic, social, political and economic goods needed to maintain an acceptable way of life in a particular society. (UNESCO, 2000)

Todaro and Smith (2011), in their book '*Economic Development',* contended that it is extremely important to listen to the poor explain what poverty is like in their own words as this provides more vivid explanations of poverty than reading descriptions of it. To some people, poverty is about low income and lack of jobs. It is also not having medicine, food and clothes. To others poverty is the inability to live in good houses, attend better schools, live in decent environment and insufficient food. From the foregoing discussions on various definitions of poverty, it has becomes clear that the underlying issues of poverty have to do with the condition of having insufficient resources or income.

Since there are challenges in defining or characterizing the poor it has become increasingly difficult to attempt to quantify the number of poor that exist in any given community, district, region or nation. Whilst self-characterizations have enhanced outsiders understanding of poverty, the breadth of detail and situation specificity have lent weight to the view that measuring poverty in terms of income (as in the Ghana Living Standards Survey) provides an easier basis on which to get an understanding of the percentage and location of the poor.

The Ghana Living Standards Survey (GLSS 6) however maintains that the percentage of the population living in Conventional consumption-based methods of poverty estimation and the use of pre-determined "poverty lines" seriously under-estimate poverty levels in both urban and rural areas, but especially in the former. For example, the fact that urban dwellers often need 80% of their resources to buy food leaves them little for all other necessities. The use of non-economic indicators and the multidimensional, cumulative and dynamic nature of urban poverty, reveals much higher incidences of poverty in all of Ghana's urban centers.

The term 'low income' is adopted in this analysis. Although low income is not interpreted as poverty, this concept is used to refer to both low income and poverty broadly in this analysis. It is believed, from the conceptual point of view that, low income as defined by the Ghana Statistical Service encompasses poverty, although not every low income earner is poor.

Assessing low-income thresholds is fundamental in measuring low-income. In the literature, some authors advocate the relative approach; others advocate the absolute approach emphasizing the use of food, clothing, shelter and other essentials for defining the poverty threshold. Osberg and Xu (1999, 2000a), Myles and Picot

(2000), Morissette and Zhang (2001), Finnie and Sweetman (2003) and the World Bank Institute (2005) have adopted the relative approach. Others such as Sarlo (1996) and Pendakur (2001) advocate using the essential costs of living to construct a threshold such as market based measure. Galbraith (1998) advocates the idea that low-income thresholds must be established with reference to specific communities.

Another feature of previous studies is their use of a single low-income threshold. Authors such as Morissette and Zhang (2001) employ the Low Income Cut Off; Finnie and Sweetman (2003) came up with a relative threshold similar to the Low Income Measure. Low income cut-off and Low income measure are two low-income thresholds established by Statistics Canada. In addition, Human Resources and Skills Development Canada (HRSDC) also introduced the Market Basket Measure in the early 2000s.

Low income is identified by comparing family income with the low-income thresholds the family faces. The three low-income thresholds are Low Income Cut-Off, Low Income Measure, and Market Based Measure, which are established and regularly updated by the Canadian government and widely employed by researchers. Low income Cut off is established using data from the Family Expenditure Survey, now known as the Survey of Household Spending. When a family has to spend 20 percentage points more of its income on necessities (food, shelter and clothing) than the average family, it is classified as a low-income family. To determine whether a person (or a family of which the person is a member) is in low income, an appropriate Low income cut-off (given the family size and community size) is applied to the income of the person's economic family.

In this study, the current monthly income threshold of GH¢240.00 is adopted. This is consistent with the national daily minimum wage of GH ¢8.00

2.1.2 Convergence Theory of Spatial Development

Proponents of the theory of convergence such as Solow (1999) assert that, differences in per capita between any two regions will be transitory as long as the two regions possess identical technologies, preferences, and population growth rates. The view is held that changes in demand and supply in the economy have different effects on individual regions with their own peculiar structures. Changes in demand increase production, employment and incomes in some regions with absorptive capacity but causes a decline in production, employment and income in regions or areas with relatively less infrastructure to absorb the pattern of change in demand. Thus growing regions will normally move positively from the national average, while declining regions will move negatively from the national average. Authors such as Barro (1991) and Markiw et al (1992) have argued that in a dynamic economy (under free market system), regional/areal disparities is a short term phenomenon, in that market forces(demand and supply) will be at work in such a way as to equalize the situation across regions/areas.

It is also contended that, there will be movement of firms into high unemployment and low income regions/areas due to the attraction of low wage costs and there will be outward movement of labour from disadvantaged regions/ areas into the relatively prosperous areas where demand, employment and wages are high. Thus the convergence theory hinges on the assumptions of perfect factor mobility and no government intervention and that factor mobility will automatically secure regional/aerial adjustment. This leads to the disappearance of regional/ aerial differences since regions/areas tend to eventually converge.

2.1.3 The Divergence Theory of Spatial Development

The underlying condition for convergence of regions to occur is the existence of perfect factor mobility. But unfortunately, the market in practice does not exhibit perfect characteristics. Labour and capital are not perfectly mobile since there is lack of perfect knowledge on the part of employers and employees with regard to opportunities in other regions/areas, there is high cost of movement with respect to housing, resettlement, breaking up of social ties, and building up of new ties and relationships. There are also restrictions on factor price (of labour and capital) such as minimum and maximum price legislations. That implies that factor flow out of the disadvantaged regions/areas and flow into the advantaged regions is limited. Thus in practice, labour will find the underdeveloped areas unattractive to relocate while those who are already in these areas will have compelling reasons to leave due to the undesirable effects that come with underdeveloped urban suburbs. These imperfections serve as constraints for factor mobility thereby resulting in divergence of regions. Thus there is a dire need for government interventions to offset the market imperfections in the wake of divergence of regions/areas over time.

The ideology that development in communities and cities should be left to market forces, was strongly criticized by Robson, B (1997) when he demonstrated how Docklands, an underdeveloped suburb in London, was revamped through government-led development planning during the 1980's. Robson argued that government urban policies should be aimed at improving the quality of life of people who live in cities, especially the disadvantaged. He contended that, all projects funded out of the public sector should have a clear illustration and substantial benefit to the disadvantaged groups in the city. Failure to do so would result in job mismatch leading to the creation of some few skilled and white colour jobs among the newly

generated employment which would not benefit the disadvantaged. Thus to Robson, there has to be an interventionist institution that will allocate substantial public investment to revitalize the region leading to the creation of new and lasting job opportunities leading to higher income and improvement in quality of life for the people.

A similar view about government interventionism is also espoused by Fothergill and Gudgin (1982). They assert that economic policies aimed at revamping underdeveloped communities in the urban centers should be a political necessity. They believe that no government is ever likely openly to abandon cities which fall below the national averages, but conscious commitments and efforts should be made by governments to improve the economic conditions of the people living in these areas.

There is a growing evidence to suggest that macroeconomic policies affect regions differently because of variations in regional characteristics with respect to indices such as unemployment and income distribution. Blake (1995) argues that, whenever there are differences in economic structure and income distributions within the country's regions, considerations should be given to the regional implications of these macroeconomic policies. He demonstrated the extent to which deliberate considerations given to individual regions was able to serve as catalyst for convergence across some regions in the UK.

2.2 Empirical Review

Literature abounds in providing evidence on low income dynamics and determinants using different thresholds. Using data from the 2000-to-2010 panel of the Survey of Labour and Income Dynamics, Jerry and Kuan (2011) showed that young people,

students, unattached individuals and lone parents are likely to fall into the low income group in Canada. Women in general are more likely to be in low income for various durations than men are. Those who experience persistent low income typically account for a very small percentage of the total population. They also revealed that certain groups are at high risk of falling into low income-people with less than high school education, people with activity limitations, members of visible minorities and recent immigrants. These findings are prevalent under all three low-income thresholds. They also found out that the life cycle factors such as family composition dynamics, number of children, age and student status affect the probability of falling into (or staying in) low income. This suggests that student status and recent immigration are more likely to be the key determinants for transitory low income, but family composition (unattached and lone parents), activity limitation and less education are more likely the key determinants for both transitory and persistent low income.

Snyder (1960) concluded in his low income study of New York that income status is related to the family as a unit, not to individual family members. He contended that, the family head traditionally bears primary responsibility for the support of the family. The family head shoulders the responsibility of the whole family, if he can, but in many a time, this responsibility is shared by the family as a whole. He argues that the income of the head of the household frequently establishes a minimum base to total family income, but where it is low relative to the family needs; other persons in the family will have to engage themselves in some economic activities to supplement the family income. To Synder, whether or not the income of the head is enough to support the family at an adequate level depends, not only on the size of his income,

but also on the number of dependents. By resorting to a per capita measure of income, it is possible to take account of the family size factor.

On this basis, Snyder (1960) revealed that normal families in which the heads income provides less than $20 per week, for each family member, sixty percent of families have supplementary income earners. Moreover, nearly half of all supplementary earners are in these families where the heads capita income is low. He finally concluded that if the family head is unemployed, underemployed, or unable to work at all, and if there are no other family members available for employment, these families for the most part will automatically fall into the low income category. These low income families will therefore become dependent on various transfer payments in order to survive.

Analytical work on the determinants of low income dynamics and causes in the zongo communities has been very sketchy. Most of the studies on poverty levels in the urban zongos in Ghana have been highly descriptive in nature.

A study conducted by Dinye and Acheampong (2013) revealed that, though majority of the people residing in Ayigya Zongo in the Kumasi metropolis were employed, the activities they engage in do not qualify to be gainful employments. It was realized that only 13.4% of the employed earn monthly income above 100 cedis. About 21.3% of the respondents earn monthly income of less than 50 cedis and this is below the poverty line of $1.00 per day. Approximately 65% earn monthly income of between 51 and 100 cedis in the Ayigya community. They also revealed that almost a third of the people living in Ayigya Zongo population lives in slums where there is generally little or no access to basic services and where substandard housing, overcrowding,

poor water and sanitation systems, as well as unemployment coexisting with crime and violence.

Other literature provides some evidence on low-income dynamics and persistence for zongo communities. Korboe, (1998) identified people living in slum communities across the country have a lower income level compared to other non-zongo communities.

Another study conducted by Hari (2006), confirmed the assertion that slums are a manifestation of poverty in urban areas. Using the human-based approach to development, Hari (2006) concluded that the lack of good environmental sanitation, inadequate water supply and inadequate social amenities (schools and health facilities), lack of good access roads and poor housing conditions are a manifestation of poverty. Accordingly, the low income of slum dwellers (GH¢40 a month) indicates that economically, slum dwellers in Kumasi are poor. Harri therefore came to the conclusion that, higher incidence of low income is recorded in zongo communities than other communities.

In their study, Mwabu et al. (2000) used logistic regression analysis identify the following variables as the key determinants of poverty in Kenya: size of household, places of residence (urban or rural), level of schooling and livestock. Their results indicate that families with large household size and low level of education are more likely to be in low income. Another study on the determinant of poverty was done by Oyugi et al (2000) using the Probit Model to analyze the Welfare Monitoring survey data in Kenya. The household characteristics used in the study included holding area, livestock unit, the proportion of household members able to read and write, household size, sector of economic activity (agriculture, manufacturing/industrial sector or

wholesale/retail trade), source of water for household use, and off farm employment. The result showed that all the variables used were important determinants of poverty.

Rodriguez and Smith (1994) used a logistic regression model to estimate the effect of different economic and demographic variables on the probability of a household being in poverty in Costa Rica. The source of the data was from National Household-Income. Their results showed that poverty was higher for the household whose heads had lower level of education.

An asset-index approach to the measuring of poverty is one alternative to income or consumption and expenditure. This approach although lacking data on income, consumption and expenditure, collects information on ownership of a range of durable assets which include; car/track, refrigerator, television, radio, bicycle, telephone and solar power, housing characteristic which includes material of dwelling floor, roof and toilet facilities and access to basic services which includes electricity supply, source of drinking water.

2.3 Spatial/Locational Review

The study focuses on some selected slum communities in the Kumasi Metropolis. Kumasi is located in the Ashanti Region and it is the second largest city in Ghana. Kumasi is a city which is highly significant to the development of Ghana due to its role in the service and industrial sector, such as production of timber, gold, hardwood and cocoa. Other services such as education and transport cannot be overemphasized. Due to its role in development, urbanization and economic activities have resulted in rapid population increase and migration. The Kumasi Metropolis functions as a nodal town as roads from the north, east and western parts of Ghana converge in it. Kumasi serves as a link between the northern part of Ghana and the southern part. This central

location of Kumasi has the potential of attracting not only trade and commerce from all parts of Ghana, but migrant settlers as well. These migrant settlers usually settle in the Zongo communities, some of which form part of the study area of this study.

The study covered Aboabo, Sawaba, Asawase and Ayigya zongo which are all suburbs in the Kumasi metropolis in the Ashanti region in Ghana. Aboabo, Sawaba and Asawase are among the suburbs of Asokore Mampong municipality whereas Ayigya Zongo comes under Oforikrom sub-metro.

2.3.1 Profile of Asawase Community

Asawase is located in about 1.5km east of the central business district (Appendix 2). It is adjacent the Manhyia Palace. It has a population 52,884 with 9, 144 households (2010 Population Census Report). Asawase occupies an area of about 2 square kilometers. The first estate built in Kumasi by the Ministry of Works and Housing for public servants is located in this locality.

The Asawase is a suburb of the Asokore Mampong Municipal Assembly. The municipality is located in the Ashanti Region. It became part of the Asokore Mampong, one of the thirty (30) Administrative districts in the region which was carved out of Kumasi Metropolitan Assembly due to increasing population in the Metropolis. The aim was to allow for smooth implementation of local government policies for the benefit of the whole citizens. The Municipal Assembly was created under the Government's Decentralization Programme in 2012 under Legislative Instrument (L.I) 2112 on June 29, 2012, with Asokore Mampong as its capital.

A greater percentage of the people in the Asawase are engaged in commerce as their main source of living. It consists of an integrated system of markets, financial

institutions, wholesalers/retailers, and transportation businesses, hotels/Restaurants, among others.

There are a number of manufacturing industries employing a number of people in the municipality. These include Pharmaceutical companies like Trade Winds Chemist Ltd, Kojach Pharmaceutical Ltd and Shalom Pharmaceutical Ltd.

The agriculture, forestry and fishing industry employs the least of the labour force. Agricultural activities in the municipality are mainly crop farming, backyard farming and livestock/poultry farming. Cultivation is limited to staples like maize, leafy vegetables, cassava and plantain. Livestock rearing is however scattered in the municipality. The different species of livestock reared include sheep, cattle, goats and pigs. There are also several food processing groups which are mainly into groundnut paste and gari processing.

The population size of Asawase is 80,258 with comprising of 37,931males and 42,327 females, with 100 percent of its residents living in urban localities. The sex ratio for the Municipality is 91.7, which means that to every 100 females, there are approximately 92 males. These sex ratios show that, at birth and the younger ages, there are more males than females, while at older ages, there are more females than males.

Approximately 67 percent of the population 15 years and older are economically active and 33.1 percent economically not active. Out of the economically active population the proportion of the employed is 92.6 percent and unemployed is 7.4 percent. On the other hand, with the unemployed persons who have worked before, seeking work and are available for work constituted 48.4 percent and those seeking

work for the first time and are available to work were 51.6 percent. These communities have a total of 19,687 households (GLSS, 6).

2.3.2 Profile of Aboabo Community

Aboabo is located in about 4.5 km east of the central business district off the Kumasi Accra road on the eastern by-pass. It has a projected total population of about 43, 148 as at 2010 and 6,626 households; occupying an area of about 1.6 kilometer square (KMA, 2010) and forms part of the Asokore mampong Municipality which is one of thirty(30) Administrative districts in the region carved out of Kumasi Metropolitan Assembly due to increasing population in the Metropolis. The aim was to allow for smooth implementation of local government policies for the benefit of the whole citizens. The Municipal Assembly was created under the Government's Decentralization Programme in 2012 under Legislative Instrument (L.I) 2112 on June 29, 2012, with Asokore Mampong as its capital.

The Municipality covers a total land area of 23.91 km^2 and it is located in the North-Eastern part of the Kumasi Metropolis. It shares boundaries with Kumasi Metropolitan Assembly (KMA) to the East, South and West, Kwabre East District to the North-West and Ejisu-Juabeng Municipal Assembly to the North-East. Aboabo, Sawaba and Asawase are among the suburbs of Asokore Mampong municipality.

A greater percentage of the people in Aboabo community are engaged in commerce as their main source of living. It consists of an integrated system of markets, financial institutions, wholesalers/retailers, airline and transportation businesses, hotels/ Restaurants, among others.

There are a number of manufacturing industries employing a number of people in Aboabo. These include Pharmaceutical companies like Trade Winds Chemist Ltd, Kojach Pharmaceutical Ltd and Shalom Pharmaceutical Ltd.

The agriculture, forestry and fishing industry employs the least of the labour force. Agricultural activities in the community are mainly crop farming, backyard farming and livestock/poultry farming. The main locations consigned to crop farming are the Peri-urban communities like Parkoso, Mesuom and Asokore Mampong. Cultivation is limited to staples like maize, leafy vegetables, cassava and plantain. Livestock rearing is however scattered in the municipality. The different species of livestock reared include sheep, cattle, goats and pigs. There are also several food processing groups which are mainly into groundnut paste and gari processing.

The population size of the Aboabo community is 60,136 comprising of 28,484 males and 31,652 females, with 100 percent of its residents living in urban localities. The sex ratio for the community is 91.7, which means that to every 100 females, there are approximately 92 males. These sex ratios show that, at birth and the younger ages, there are more males than females, while at older ages, there are more females than males.

Approximately 67 percent of the population 15 years and older are economically active and 33.1 percent economically not active. Out of the economically active population the proportion of the employed is 92.6 percent and unemployed is 7.4 percent. On the other hand, with the unemployed persons who have worked before, seeking work and are available for work constituted 48.4 percent and those seeking work for the first time and are available to work were 51.6 percent. These communities have a total of 14,011 households.

2.3.3 Profile of Sawaba

The Asokore-Mampong Municipal Assembly, in which Sawaba community is located, covers the north-eastern segment of Kumasi Metropolitan area in the Ashanti Region (Appendix 2). Sawaba community is located within the Asokore Mampong Municipal and is mainly a residential area which houses people from different religious backgrounds and ethnicity. The residences of this community are mostly migrants especially from the Northern sector of the country with few indigenous people(. The Ashanti Region, in which the Asokore- Mampong Municipal is found, is centrally located in the middle belt of Ghana. It lies between longitude 1°.15”W and 2° .25”W, and latitudes 6°.50”N and 7°.46”N , with a total land area of 24,389 km2; representing 10.2 percent of the total land area of Ghana. Like the other streams in the area, river Aboabo is chocked with solid waste material.

The Sawaba community constitutes part of Asokore Mampong Municipal Assembly. The municipality is located in the Ashanti Region. It one of the 30 Administrative districts in the region. It was carved out of Kumasi Metropolitan Assembly due to increasing population in the Metropolis.

A greater percentage of the people in the municipality are engaged in commerce as their main source of living. There are a number of manufacturing industries employing a number of people in the municipality. These include Pharmaceutical companies like Trade Winds Chemist Ltd, Kojach Pharmaceutical Ltd and Shalom Pharmaceutical Ltd.

The agriculture, forestry and fishing industry employs the least of the labour force. Agricultural activities in the municipality are mainly crop farming, backyard farming and livestock/poultry farming. The main locations consigned to crop farming are the

Peri-urban communities like Parkoso, Mesuom and Asokore Mampong. Cultivation is limited to staples like maize, leafy vegetables, cassava and plantain. Different species of livestock reared include sheep, cattle, goats and pigs. There are also several food processing groups which are mainly into groundnut paste and gari processing.

The population size of the community is 23,741 comprising of 11,575 males and 12,166 females, with 100 percent of its residents living in urban localities. The sex ratio for the Municipality is 91.7, which means that to every 100 females, there are approximately 92 males. These sex ratios show that, at birth and the younger ages, there are more males than females, while at older ages, there are more females than males.

Approximately 67 percent of the population 15 years and older are economically active and 33.1 percent economically not active. Out of the economically active population the proportion of the employed is 92.6 percent and unemployed is 7.4 percent. On the other hand, with the unemployed persons who have worked before, seeking work and are available for work constituted 48.4 percent and those seeking work for the first time and are available to work were 51.6 percent. These communities have a total of 5,486 households.

2.3.2 Profile of Ayigya Zongo Community

The Ayigya Zongo is located within the Ayigya sub-locality. Ayigya is a suburb located in the eastern part of the Kumasi Metropolis within the Oforikrom Sub-Metro. It is bounded to the north by Asokore Mampong, to the west by Susuanso, to the east by Ayigya cemetery, to the south-east by Kwame Nkrumah University of Science and Technology and to the south by Bomso. According to the Kumasi Metropolitan Assembly, the population of Ayigya community was 48, 419 in 2009 with an annual

growth rate of 5.4 percent. The population increased by 60% from 2000 to 2009 as a result of migration, natural population growth, commerce and service activities in the area (Kumasi Metropolitan Assembly, 2010). Ayigya-Zongo is a community within the Ayigya suburb which is characterized by low income activities, poor housing and insufficient access to basic services such as water and sanitation. There is a market in the community and with its nearness to "Tech-Junction" and KNUST, there are a lot of commerce and services activities.

The importance of commerce and service activities, such as trading and civil work in the KNUST has attracted a lot of people to the area. This has resulted in an increased demand for land for residential purposes. There is therefore high demand for affordable housing since proximity to KNUST has increased the value of housing. This has motivated many people to live in the Zongo area of the community where there is low cost of housing.

The Ayigya-Zongo community is characterized by Muslim households. According to the 2010 Census Report, the economically active labour force in Ayigya Community represents 58 percent of the total population. From this labour force, 62.5 percent are employed while the rest are unemployed. The common economic activities of the community are mainly commerce and service provision with 82.8 percent of the total occupation. This is evident by its location along the Accra Road and the nearness to KNUST. The community has a market that presents a source of employment and commerce to Ayigya and other communities close to the area. The main commerce activity is petty trading.

CHAPTER 3

METHODOLOGY

3.1 Introduction

This chapter presents the methodology adopted for the study. A detailed procedure for the design of the research, collection of primary and secondary data required for the study as well as their analysis is explained in this chapter.

3.2 Data Sources

Both primary and secondary sources of data were employed in this study. The 2010 Ghana Statistical Service data on population and housing characteristics was sourced from the Kumasi Metropolitan Assembly (KMA). The Sixth Round Ghana Living Standards Survey Report for the Asokore Mampong sub-metro and Oforikrom sub–metro were also obtained from the Kumasi Metropolitan Assembly. The data included occupation, ethnicity, religion, gender, marital status and education of the inhabitants. This was supported by field questionnaires in the study area.

3.3 Sampling and Design Techniques

The target population consists of four (4) urban zongo communities in Kumasi metropolis, namely Asawasi, Aboabo, Ayigya and Sawaba. The study used 2010 Population Census data to obtain the various total populations of households in the urban zongo communities. From the Population Census data, the total household population of these urban zongo communities are as follows; Asawasi (19,687), Aboabo (14,011), Ayigya (5,966) and Sawaba (5,486). The study used Yamane (1967) method to determine the sample size. This formula is given as $n = \frac{N}{1+N(e^2)}$

Where n is the sample size, N is the household population size, and e is the level of precision.

For Asawasi,

$N_1 = 19{,}687$ Households

$$n_1 = \frac{19{,}687}{1 + 19687(0.05^2)}$$

$n_1 = 392$

For Aboabo

$N_2 = 14{,}011$ Households

$$n_2 = \frac{14{,}011}{1 + 14{,}011(0.05^2)}$$

$n_2 = 389$

For Ayigya

$N_3 = 5{,}966$ Households

$$n_3 = \frac{5{,}966}{1 + 5{,}966(0.05^2)}$$

$n_3 = 375$

For Sawaba

$N_4 = 5{,}486$ Households

$$n_4 = \frac{5{,}486}{1 + 5{,}486(0.05^2)}$$

$n_4 = 373$

Total population is given as $N = n_1 + n_2 + n_3 + n_4$

$N = 392 + 389 + 375 + 373$

$N = 1{,}529$

Following Yamane (1967) method to determine the sample size

$$n = \frac{N}{1+N(e^2)}$$

Where n is the sample size, N is the household population size, and e is the level of precision

$N = 1{,}529$ Households

$$n = \frac{1{,}529}{1 + 1{,}529(0.05^2)}$$

$n = 317$

The study rounded off the 317 to 300 sample size of household. Household surveys in the four selected communities were employed in collecting the data. These communities were purposively selected based on their being classified as Zongo by KMA and residents of the Kumasi Metropolis. Each community was allocated 75 respondents. Within the communities systematic sampling was used to selected respondents in these communities and questionnaires were administered to every fourth household.

3.4 Technique of Estimation

Probability model was employed in this study to establish association between the dependent variable and the independent variables. Qualitative response models, also referred to as probability models, deal with situations where the dependent variable is qualitative in nature such as whether a household is in the low income bracket or not. The response variable is a binary variable or dichotomous variable that takes two values either 1 to represent yes or 0 as no. Given that Y is the dependent variable and X is the vector of independent variables influencing Y, the dichotomous variable, then

Pi is the probability of Y occurring given a level of X. That is, this model explains how Y depends on X. The two simple approaches for developing a probability-based model for a binary variable are the Probit Model and Binary Logit Model (Gujarati, 2003). The two models are discussed in below in detail below.

3.4.1 Probit Model

Estimation of binary models carried out with the use of Cumulative Distribution Function is known as the Probit model. In order to arrive at the Probit model, an unobservable index is used and this unobservable index is determined by one or more of the explanatory variables. The higher the unobservable index, the higher the chances of obtaining success defined as the dependent variable and denoted as 1. For instance, assuming that this unobservable index is represented by an index I, then we can derive the Probit model by assuming that being in low income or not depends on the index I, which is determined by one or more explanatory variables. For example, using income of the household as the explanatory variable, it is denoted in the equation below as Xi. This is expressed as;

$$Ii = B1 + B2Xi$$

To determine how the unobservable index is related to household's income, let Y=1 if the household is a low income and Y=0 if the household is not in low income. Assuming there is a threshold level of the index denoted by *Ii**, it means that if *Ii* is greater than *Ii**, then the household has low income and the vice versa is true such that if the threshold level (*Ii**) is greater than Ii, then the household is not in the low income group.

3.4.2 Binary Logit Model

The dependent variable is the log of the odds ratio, which is a linear function of the independent variables. The model allows for estimation of parameters if the data are available in grouped form, individual or micro level provided one can explicitly take into account the possible heteroscedastic nature of the error term (Gujarati, 2003).

This model satisfies the two main conditions for estimating probability models. Using the above equation, as X increases, Pi = E (Y = 1/X) also increases but it is not outside the probability range of 0-1 interval. The relationship between Pi and Xi is non-linear. The conditional probability Pi approaches zero and one at a slower rate in the logit model as compared to the linear probability model.

One advantage of the logit is that it allows for the transformation of a dichotomous dependent variable to a continuous variable. Thus it gives exact statistical estimates of results. It is also simple and the estimated results are easily interpreted. But the main disadvantage of this method is that the estimated R^2 is of limited use in judging the goodness of fit and the use of the model can lead to problems of multicollinearity when the explanatory variables are closely related (Gujarati, 2003).

For this study, the binary logit model is employed to analyze the factors that determine low income in the selected communities. This is discussed in further detail in the next sub-section.

3.4.3 Logistic Regression Model

To identify key determinants of poverty we first computed a dichotomous variable indicating whether the household is poor or not. That is, 1, if household is poor and 0 if otherwise where LY denotes low income. On the basis of Chi-square statistic, we determine whether the variables: age of household head, size of household,

educational level of the household head, marital status, type of occupation, ethnicity and religion are associated with low levels of income. The logistic regression model is given by:

$Logit(Y) = \ln\left(\frac{Y}{1-Y}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + ... + \beta_6 X_8$ where $X_{1,,,,,,} X_8$ were the predictor variables: X_1= age of household head,

X_2= gender of household head,

X_3= size of household,

X_4= educational level of the household head,

X_5= marital status,

X_6= ethnicity,

X_7= religion and

X_8= type of occupation, and

$p = \ln\left(\frac{Y}{1-Y}\right)$ is the probability that the household was in low income.

The inclusion of gender, marital status, educational level, ethnicity, religion, size of household and occupation was to determine which categories of people are in the high risk of being in low income in the selected communities and to determine which communities have the highest incidence of poverty.

The Ghana Living Standards Survey (GLSS 6, 2013) has settled on an extreme poverty line of 792.05 Ghana cedis and an absolute poverty line of 1,314.00 Ghana cedis per equivalent adult per year in the January 2013 prices of Greater Accra Region. In dollar terms, the absolute poverty line is equivalent to about $1.83per day

($1.10 for the extreme poverty line). The absolute poverty line indicates the minimum living standard in Ghana while the extreme poverty line indicates that even if a household spends their entire budget on food, they still would not meet the minimum calorie requirement. A household falls within the extreme poverty group and absolute poverty group if its daily expenditure falls below 792.05 Ghana cedis and of 1,314.00 Ghana cedis.

In this study, the current monthly minimum wage of GH¢240.0 is employed as the threshold.

3.4.4 Cross Tabulation

The social economic status of households was cross-tabulated by characteristics of the household; Education, household size, religion, age of household head, ethnicity and type of occupation. The distribution of households by demographic and economic characteristics will be compared to know which communities highest number in terms of poor people. This is to determine which communities have the greater concentration of low income families.

3.5 Variables and Measurement

Data about characteristics of households in the selected communities were required from respondents. The main variables included are household characteristics such as educational levels of household heads, number of people in a household, occupational characteristics, gender, marital status, type of occupation, daily household expenditure, religious affiliation, and ethnicity. The aim is to find out the association of these variables with low income status if households.

The gender of respondents was grouped into male and female. The gender dummy is entered to investigate the gender differentials on household incomes. Female headed

households were given a dummy of 1 and 0 for men. Generally, females are weaker in terms earnings to support the family.

Similarly, a dummy for marriage is entered investigate the effect of marriage or lone individuals on income status. Those household heads who have divorced and those who have never married are all treated as 'not married'. Married household heads were given assigned a dummy of 1 because most of the household heads were married. Generally, married household heads have more economic burden than non-married.

Ethnicity was grouped into two: Northern and non-northern. This was due to the predominance of people from northern decent in these communities. Northern was given a dummy of 1, and 0 otherwise.

Household size was categorized as 1-5 people, 6-10people and 10+ people. These groups were assigned the values 1, 2 and 3 respectively. This was done to project households with higher number of people, since high number of people in households is closely associated with low income.

Educational attainment was categorized as those with basic education, secondary/ vocational and tertiary education. Because of low levels of education in these communities, basic education was assigned a value of 1, secondary/vocational was assigned 2, and finally, tertiary was given a value of 3. The tertiary was assigned of 3 due to the fact that, those who are highly educated are more aware and appreciative of their situation than those with low levels of education.

Religion of respondents was classified as Islamic on one hand and Christianity and other religions on the other hand. Islam was assigned a value of 1 and 0 for non-

Muslim. Islamic religion was given more prominence due to the predominance of Muslims in these communities. The inclusion of the religious factor is to find the association between religious beliefs and economic status of the people.

Again a dummy for occupation was created; whether household head is engaged in the formal or informal sector. The formal sector was coded as 1, the informal sector, 2, and the unemployed was given a value of 3. The informal sector and the unemployed are given prominence to the predominance of high informal sector workers in these localities.

The ages of the household head is grouped as: 18-45years, 46-60years, and 60years and above. These age groups were coded as 1, 2 and 3 respectively. People in the age groups of 46-60years and those above 60years are projected since it is believed that, they form a high risk of falling into low income due to the effects of ageing on economic activities.

Finally, a proxy for income status of the household had to be constructed. In this case, the consumption expenditures in Ghanaian cedis per month per household are used. The average monthly expenditure for families was computed from the survey. A household falls within the low income group if its average monthly income/expenditure is less than GH ₵240.00. This is in line with the current minimum wage of GH₵8.0 per day. This was computed from the household responses.

A household was defined as a person or a group of people related or unrelated to each other, who live together in the same dwelling unit and share the same source of food. The choice of household as a unit of analysis in this work is based on the assumption that household members share common resources.

CHAPTER 4

FINDINGS, ANALYSIS AND DISCUSSIONS

4.1 Introduction

This chapter discusses the results of the analysis of the survey data with regard to the determinants of low income in the zongo communities in Kumasi. Getting the income of families from an area that has a large number of labour force employed in the informal sector is problematic. Unfortunately, the nature of the information on income status in the survey leaves us no other choice than to use the household expenditure as proxy for the income levels. Using low income as a dependent variable, the association between low income and variables such as gender, age, marital status, educational levels, and size of households, type of occupation, ethnicity and religion were measured.

4.2 Analysis Of Cross Tabulation of Household Characteristics

The table below represents low income status cross tabulated across the four communities by characteristics of the household; gender, marital status, age of household head, household size, type of occupation, education, religion and ethnicity.

Table 4.1: Cross tabulation of household characteristics across the four communities all in percentages

Variables	Communities				
	Asawase	Aboabo	Sawaba	Ayigya Zongo	Total
Gender					
Male	36.0	54.7	56.0	65.3	53.0
Female	64.0	45.3	44.0	34.7	47.0
Age					
18-45 years	25.3	50.7	66.7	62.7	62.3
46-65 years	5.3	45.3	28.0	28.0	31.7
Above 65 years	69.3	4.0	5.3	9.3	6.0
Marital status					
Unmarried	42.7	38.7	48.0	46.7	44.0
Married	57.3	61.3	52.0	53.3	56.0
Family size					
1-5 people	76.0	85.3	74.7	88.0	81.0
6-10people	20.0	12.0	17.3	27.2	15.0
Above 10	4.0	2.7	8.0	17.8	4.0
Ethnicity					
Non northerner	30.7	28.0	29.3	21.3	27.3
Northerner	69.3	72.0	70.7	78.7	72.7
Religion					
Christianity and others	24.0	24.0	26.7	25.3	25.0
Islam	76.0	76.0	73.3	74.7	75.0
Education					
No education/ Basic education	46.7	46.7	44.0	69.3	51.7
Secondary education	25.3	32.0	37.3	13.3	27.0
Tertiary education	28.0	21.3	18.7	17.3	21.3
Occupation					
Formal	38.7	41.3	32.0	29.3	35.3
Informal	61.3	52.0	64.0	65.3	60.7
Unemployed	0.00	6.70	4.0	5.3	4.0

Source : Field Survey, 2016

The results revealed that households headed by women are 47% as against men's share of 53%. The male headed household population in Aboabo, Sawaba and Ayigy Zongo are higher than the mean male headed households with Asawase falling below the mean. On the other hand, the percentage of female headed households in Asawase is higher than the mean; with the rest of the communities falling below the mean.

Household heads having Northern decent account for about 72.7% of the population, and more than 75% of the population are Muslims. The percentage of the households

in the Ayigya Zongo (headed by a person from the north (78%) is higher than the mean.

Islamic religion dominates across the four communities with 75% of household heads being Muslims. Asawase (76%) and Aboabo (76%) have the highest concentration of Muslim household heads which are above the group mean percentage of 75%.

Around 93% are within the active age group and more than 55% have basic education and below. About 45% have a secondary school education and beyond. The percentage of basic education in Ayigya zongo (69.3) is higher than the group mean of 51.7%.

In terms of family composition, families comprising 1-5 membership are 81% as against 19% families having 6 and above membership. In terms of 1-5 persons in a household, Asawase and Sawaba fall below the group average, whereas Aboabo and Ayigya zongo have their individual percentages above the group mean. This is consistent with the regional average household size of 4.2. This indicated that on average there are four (4) people in a household. Also, in terms of households having more than 10 people, Sawaba and Ayigya are above the group mean.

The proportion of married individuals is 56% as against unmarried which is 44%. Sawaba (57.3) and Aboabo (61.3) are above the group mean of (56.0)

In terms of occupation, the informal sector accounts for about 67.7% as against the formal sector of 28.7% with high concentration in Sawaba and Ayigya. In all 97% are engaged in economic activities. The unemployed account for 2.7%. Households who have other members in the family working to supplement family income is only 35%. Only 23% receive transfer payments to supplement their income.

4.3 Analysis of income comparisons

Since income is the key variable in this study, the income status of households across the four communities is analyzed in the table below.

Table 4.2 Cross tabulation of household income across the four communities (in percentages)

Variables	Communities				
	Asawase	Aboabo	Sawaba	Ayigya Zongo	Total
Gender					
Low income	58.7	54.7	60.0	72.0	61.3
High income	41.3	45.3	40.0	28.0	38.7

Source : Field Survey, 2016

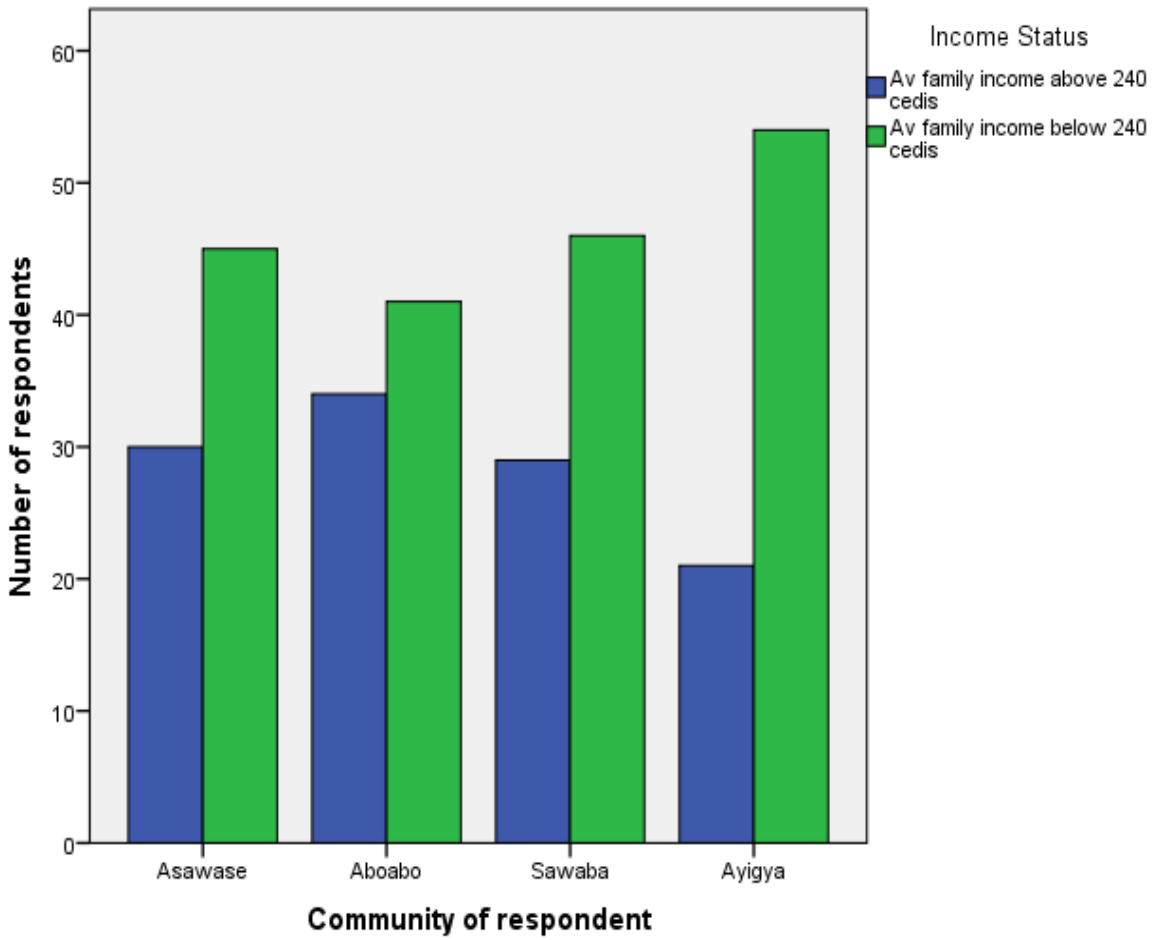

Fig. 4.1 Bar graph showing income status of communities

Source : Field Survey, 2016

From the graph above, 61.3% of the households in the study areas fall with low income category. The Ayigya zongo community stands out as the highest number of low income families (72%) among the four communities. It is the only community with a higher percentage of low income earners above the group mean of 61.3%. A relatively higher informal sector (65.3%) could account for the high levels of low income earners in this community. The remaining three communities fall below the group average with Aboabo community having the lowest number of low income earners.

4.4. Logistic regression results for the four zongo communities

The following are the regression results showing the coefficients, odds ratios and marginal effects of the explanatory variables. The marginal effects in the following logit models refer to the marginal contribution of each of the covariate to the probability of being in low income, holding all other variables constant. By way of illustration, when the variables are binary, (0, 1), we explain the marginal effects of each variable as follows: the marginal contribution of an individual variable to the probability of being in low income is caused by switching on this covariate from (0 to 1), while keeping all other covariates constant at 0.

The log odds in the logistic regression model are the coefficients or the slope values of the regression equation. Logistic regression estimates changes in the log odds of the dependent not changes in the independent values. It ranges from 0 to infinity. The log odds value tells how much more likely it is that an observation is a member of the target group rather than a member of the other group.

The odds ratio estimates the change in odds of membership in the target group for a one unit increases in the predictor. This is calculated by using the coefficients of the regression as the exponent.

4.4.1 Logistic Regression Result for Asawase Community

The logistic regression result for the Asawase community is presented in the following table. It shows the association between low income as the dependent variable and demographic and other economic factors as independent variable.

Table 4.4.1 Logistic regression results for Asawase Community with Income as the dependent Variable

Variables	Coefficient	Std. Error	P>|z|	Odds	Ratio Marginal Effects
Constant	.7758247	1.460152	0.595	2.17238	
Non-Economic Factors					
Gender [Female]	-1.449001**	.8008668	0.070	.2348047	-0.3411338
Marital status [Married]	-2.182854**	.986436	0.027	.1127194	-0.5139025
Ethnicity [Northerner]	2.460845***	.8826096	0.005	11.71471	0.579349
Religion [Islam]	-.4622875	1.050187	0.660	.6298412	-0.1088349
Age [Ref. =18- 45yrs]					
Age [46 - 65yrs]	.6969079	.9563838	0.466	2.007536	0.1554908
Family size [Ref. =1-5]					
Family size [6-10people]	1.513977	.9252197	0.102	4.54476	0.2966459
Other Economic Factors					
Educational [Ref=Basic]					
Secondary Education	.6523722	1.121202	0.561	1.92009	0.1057631
Tertiary Education	-2.503955**	1.181512	0.034	.081761	-0.5509362
Occupation [Ref=Formal]					
Informal	1.544615	1.16992	0.187	4.686166	0.3586077
Diagnostic Statistics					
Number of Observations = 75					
Likelihood Ratio chi squared = 40.66		P-value (0.0000)			
Log likelihood = -26.266192					
Pseudo R^2 = 0.4363					
Hosmer-Lemeshow chi^2 (8) = 9.12		P-value (0.3319)			

**** significant at 1%; **significant at 5% ; * significant at 10%*

According to the estimation results in table 4.3.1, gender, marital status, ethnicity and education are significant determinants of low income in the Asawase community. As far as gender is concerned, female-headed households are 3.4% less likely to fall into low income group than their male counterparts. An explanation of this may lie in the fact that females in the Asokore Mampong Municipality are more likely than the males to be engaged in services. The service sector employs the largest labour force in the Asokore mampong municipality. It is therefore not surprising to get households headed by women to be more likely in escaping the net of low income than their male counterparts.

Similarly, a married household head is 5.1% less likely to be in low income. This is perhaps due to the pooling of resources that comes with marriage. When a person gets married, most likely their income status level is enhanced if both are working to support the family.

Similarly, a person with a tertiary education is 5.5% times less likely to be in low income. The effect of education on income status is virtually similar across the four communities. This is consistent with the findings of Zhe and Kuan (2011) on low income dynamics in Canada.

The likelihood of being in low income is high among the northern-headed households. A household headed by an individual from the north is 5.7% more likely to be in low income than a non-northerner. This can be explained a problem associated with migrant workers who are less privileged in terms of finding opportunities.

4.4.2 Logistic Regression Results for Aboabo Community

The logistic regression result for Aboabo community is presented in the following table. It shows the association between low income as the dependent variable and demographic and other economic factors as independent variable

Table 4.4.2 Logistic regression results for the Aboabo Community with Income as the dependent variable

Variables	Coefficient	Std. Error	P>|z|	Odds Ratio	Marginal Effects
Constant	-1.217744	1.454087	0.402	0.2958971	
Non-Economic Factors					
Gender [Female]	-1.660885**	.7796824	0.033	.1899708	-.4091374
Marital Status [Married]	-1.564682**	.7905217	0.048	.2091545	.3854391
Ethnicity [Northerner]	1.384071	.9519948	0.146	3.991118	.340948
Religion [Islam]	.6673764	1.166712	0.567	1.949117	.1643995
Age [Ref. =18-45yrs]					
Age [46 - 65 years]	.0443041	.7992335	0.956	1.0453	.0108878
Above 65 years	-.4133748	2.184607	0.850	.6614144	-.1029495
Family size					
1-5 people	2.661281	1.643025	0.105	14.31462	.4534816
Above 10 people	.9332004	1.988999	0.639	2.542634	.2220469
Other Economic Factors					
Education [Ref. = Basic]					
Secondary	.4206376**	.9160125	0.046	1.522932	.0984197
Tertiary	-.8745801**	1.628414	0.049	.4170371	-.2141943
Occupation [Ref. = formal]					
Informal	1.928657*	1.07352	0.072	6.880266	.4467349
Unemployed	1.303517	1.652186	0.430	3.682224	.3121382
Diagnostic Statistics					
Number of observations = 75					
Likelihood Ratio chi squared = 39.90		P-value (0.0001)			
Log likelihood = -31.709268					
Pseudo R^2 = 0.3862					
Hosmer-Lemeshow chi^2 = 10.68		P-value (0.2202)			

**** significant at 1%; **significant at 5% ; * significant at 10%*

From the estimation results above, gender is a significant determinant of low income in the Aboabo community. A household headed by a female is 40.9% less likely to be in low income than a male headed household. Again this is attributed to the fact that a lot of women easily engage in the service and sales industry which is the largest employer of the labour force in the municipality. More than 21% of the labour force in the municipality are market and sales persons of which women form a greater percentage (GLSS 6). Another significant determinant is marital status. The reason

cannot be any different from that of Asawase community since the two communities are in the same municipality.

Similarly, a married household head is 38.5% less likely to be in low income. This is perhaps due to the pooling of resources that comes with marriage. When a person gets married, most likely their income status level is enhanced if both are working to support the family.

Another significant determinant of low income is the level of education. A household head with a secondary education is 9.8% times more likely to be in low income but a person with a tertiary education is 21% less likely to be in low income. This is consistent with the findings of Zhe and Kuan (2011) on low income dynamics in Canada.

A family whose household head works in the informal sector is 44.6% more likely to be in low income. Ethnicity, Religion and Age, were not found to be significant determinants of low income. A household head with a secondary school education is 0.9% less likely to be in low income. Similarly, a person with a tertiary education is 2.1% less likely to be in low income in this community although these figures are insignificant. The fact that 54% of the population are in the low income group is a source of concern. It is interesting to note that, 63.3% of the people in this community have a minimum of secondary school education, with 61.3% working in the informal sector.

4.4.3 Logistic Regression Result for Sawaba Community

The logistic regression result for Sawaba community is presented in the following table. It shows the association between low income as the dependent variable and demographic and other economic factors as independent variable

Table 4.4.3 Logistic regression results for Sawaba community with income as the dependent Variable

Variable	Coefficient	Std. Err.	P>|z|	Odd Ratio	Marginal Effect
Constant	1.21069	1.284762	0.346	3.355799	
Non-Economic Factors					
Gender [Female]	-.2788664	.91466	0.760	.756641	-.0147266
Marital status [Married]	-.7927507	.8053216	0.325	.4525981	-.04186
Ethnicity [Northerner]	1.428043*	.8417631	0.090	4.170	.0754133
Religion [Islam]	-.8448352	1.075009	0.432	.4296282	-.0446148
Age (Ref. 18 - 45)					
46-65yrs	-.5723579	.7869717	0.467	.5641936	-.0161604
Above 65 years	-15.37763	3057.099	0.996	2.10	-.978245
Family Size [Ref 1 - 5]					
6-10 people	.9977809	1.155591	0.388	2.712256	.0063048
Above 10 people	-24.24586	4307.727	0.996	2.95	-.9899758
Economic Factors					
Education (Basic)					
Secondary	-2.036383**	.8677623	0.019	.1304999	-.0947625
Tertiary	-2.856478**	1.253813	0.023	.0574708	-.204474
Occupation					
[Ref = Formal]					
Informal	.9024182	.8612517	0.295	2.465558	.0579666
Unemployed	1.833772	1.56941	0.243	6.257447	.0841815
Diagnostic Statistics					
Number of observations = 75					
Likelihood Ratio chi squared (13) = 39.06			P-value (0.0002)		
Log likelihood = -30.512126					
Pseudo R^2 = 0.3903					
Hosmer-Lemeshow $chi^2(8)$ = 1.65			P-value (0.9899)		

**** significant at 1%; **significant at 5% ; * significant at 10%*

The regression results for the Sawaba community reveal that education is a significant determinant of low income. A household head with a secondary school education is 0.9% less likely to be in low income whereas a household head with a tertiary level of education is 2.0% less likely to fall into low income whereas a person with tertiary education is 20.4% less likely to escape the net of low income in this community. This indicates that higher levels of education increase the likelihood of escaping the net of low income in the Sawaba community. In general, chances of being in low income decreases when individuals increases their stock of human capital through education. Again this is consistent with literature.

4.4.4 Logistic Regression Result for Ayigya Zongo Community

The logistic regression result for the Ayigya community is presented in the following table. It shows the association between low income as the dependent variable and demographic and other economic factors as independent variable

Table 4.4.4 Logistic regression results for Ayigya zongo Community with Income as the dependent variable

Variable	Coefficient	Std. Error	P>|z|	Odds Ratio	Marginal Effects
Constant	-4.765414*	2.473798	0.054	.0006	
Non-Economic Factors					
Gender [Female]	.3617127	.7285388	0.620	7.828149	6.9422
Marital status [Married]	1.006008	.7304486	0.168	5.254425	5.7262
Age [Ref =18 - 45yrs]					
46-65years	.4253039	.7150596	0.552	5.382509	.491170
Above 65years	-.3537219	.9597879	0.712	1.68315	4.15
Religion [Islam]	1.403667	1.142197	0.219	4.0701	4.029317
Ethnicity [Northerner]	2.275156*	1.255688	0.070	9.7294	.1143509
Other Economic Factors					
Occupation [Ref = Formal]	3.227919***	.7029057	0.000	50.54765	.26169
Education [Ref = basic]					
Secondary	-2.125142*	1.141849	0.063	.1869071	.2040
Tertiary	-5.145107**	2.074522	0.013	.0199313	.500
Family size (Ref = 1 - 5)					
Above 6 people	6.77835**	2.696018	0.012	2323.446	.325

Diagnostic statistics
Number of observations = 75
Likelihood Ratio chi squared = 53.05 P-value (0.0000)
Log likelihood = -17.61412
Pseudo R^2 = 0.6010
Hosmer-Lemeshow $chi^2(8)$ = 9.94 P-value (0.2694)
**** significant at 1%; **significant at 5% ; * significant at 10%*

The regression results for the Ayigya zongo community reveals that type of occupation; education, ethnicity and household size are significant determinants of low income. Compared to working in the formal sector, a household head working in the informal sector is 26% more likely to be in low income. The Ayigya community has the largest informal sector (92%) among the four communities.

Similarly, a household containing 6-10 people is 32.5% times more likely to be in low income. This can be explained by the fact that a household with a higher number of

people exerts more economic burden on the household than a household with smaller family size.

Similarly, a household headed by an individual from the north is 11.4% more likely to be in low income than a non-northerner. This phenomenon can be linked to the problems associated with migrant workers who enjoy fewer privileges in terms of finding opportunities to work.

A household head with a secondary school education is 2.4% times less likely to be in low income whereas a household head with a tertiary level of education is 50.0% times less likely to fall into low income. Again this is an indication that higher levels of education increase the likelihood of escaping the net of low income. In general, chances of being in low income decreases when individuals increases their stock of human capital through education. Again this is consistent with literature.

4.4.5 Logistic Regression Result for the Combined Total of the Four Communities

The logistic regression result for the combined total of all the communities under study is presented in the following table. It shows the association between low income as the dependent variable and demographic and other economic factors as independent variable

Table 4.4.5 Logistic regression results for all the Communities with Income as the dependent variable

Variables	Coefficient	Std. Error	P>|z|	Odds Ratio	Marginal Effects
Constant	-.0493901	.5870397	0.933	.9518098	
Non-Economic Factors					
Gender [Female]	-.7392664**	.3270356	0.024	.4774641	-.1658776
Marital status [Married]	-.6505684**	.3310329	0.049	.5217491	-.1459755
Ethnicity [Northerner]	1.392059***	.3856555	0.000	4.023127	.3123523
Religion [Islam]	.1095891	.4227151	0.795	1.115819	.0245897
Age [Ref =18 – 45]					
46 – 65 years	-.4829179	.3488851	0.166	.6169805	-.109615
Above 65 years	-.6616861	.7663417	0.388	.5159806	-.1533913
Family size [Ref = 1 – 5]					
6 – 10 people	1.481391***	.555279	0.008	4.399062	.2638495
Above 10 people	-.0028436	.8041973	0.997	.9971604	-.0006776
Other Economic Factors					
Education [Ref = Basic]					
Secondary	-.8662538**	.3818167	0.023	.420524	-.1750629
Tertiary	-2.149451***	.499595	0.000	.1165482	-.4836811
Occupation [Ref = Formal]					
Informal	1.171162***	.386202	0.002	3.225738	.2712341
Unemployed	1.945699**	.8620048	0.024	6.998524	.391831
Diagnostic test statistics					
Number of observations		300			
Likelihood Ratio chi squared (10)		129.91		P-value (0.0000)	
Log likelihood		-134.26434			
Pseudo R^2		0.3260			
Hosmer-Lemeshow chi^2 (8)		8.40		P-value (0.3956)	
Percentage correctly classified		80.67%			

**** significant at 1%; **significant at 5% ; * significant at 10%*

The overall regression estimate in the four communities produced an R^2 of 0.3260 being significant at one percent level. The diagnostic statistic tests show that the regression has a good fit to the data.

Turning to the statistical significance of the variables, gender has a coefficient of -0.739 which means a unit increase in either male or female decreases the probability of being in low income. The odds ratio indicates that a household headed by woman is 0.477 times less likely to be in low income than when headed by their male counterparts. The marginal effect for gender indicates that, holding all the other

variables constant, a woman is 16.5% less likely to be in low income. This is consistent with the results of the 2010 population and housing census that Females (51.5%) are more likely than males (20.7%) to be engaged in service and sales work whereas males (37.1%) are more likely than females (17.1%) to be engaged as craft and related trade. Since the service and sales industries dominate employs the largest labour force in the municipalities in Kumasi, women are more likely to be engage in these services than men, and hence can escape the low income bracket. Generally, female-headed households appear to be better off than male-headed households in terms of poverty incidence (GLSS 6)

Married household heads are 14.5% less likely to be in low income, all other variables held constant. The coefficient is -.65000. This can be explained to the effect that married couples engage in economic activities in order to supplement family income than an unmarried person. This may reflect the fact that, when getting into married life, fathers may not be as well-off as lone mothers in terms of pooled family income from the income perspective. In other words, new life partners tend to help their families more to get out from low income than unmarried people.

The educational level of the household heads with a secondary school education has negative coefficients of -.8636 and is significant at 5% which implies that a household head with a Secondary School education is 17.5 % times less likely to be in low income, all other variables held constant. Similarly, tertiary level of education has a coefficient of -2.1126 and it implies that an individual with a tertiary education is 48.3% less likely to fall into low income group. Thus individuals with less than Senior High school education are in the high risk group. This is consistent with the findings of Zhe and Kuan (2011) on low income dynamics and determinants under different thresholds in Canada. As the theory of human capital predicts, when workers have

less education, they get lower rewards for their human capital and are more likely to fall into low income. About 55% of the respondents have very low level of education.

Also, informal sector occupation has a coefficient of 1.17 and is significant at 1% which means individuals working in the informal sector are more likely to be in low income group. Working in the informal sector increases the likelihood of being in low income by 27.1%. The informal sector has the most irregular flow of income. The unemployed is 39.1% more likely to be in low income. This indicates that to be unemployed is even more serious as far as income is concerned.

Another significant factor is ethnicity. It has a coefficient of 1.39. It implies household heads with northern decent are 31.2% more likely to be in low income. In general, immigrants have had to contend with challenges in terms of opportunities in their chosen destination.

Also, the results indicate that low levels of income is highest for household with 5-10 or more members and lower for households of smaller sizes. A household of 5-10 membership is 26.3% times more likely to fall in the low income group. The result correlates with the study of Thomas et al (2010) which used the same household size categories to determine incidence of poverty in Kenya. Religion was not a significant factor in determining low income in this study.

4.5 Comparative analysis of Findings

In this section, the statistical equality of the mean marginal effects of demographic and other economic factors on income across the four communities is computed using ANOVA (Two-way classification). The average marginal effects for both the demographic factors and other economic factors are computed for the four communities. The values are presented below.

Table 4.5.1 Cross Tabulation of Average Marginal Effects

	Communities				
	Asawase	Aboabo	Sawaba	Ayigya zongo	Mean(X_{ibar})
Demographic factors	0.33	0.25	0.26	2.67	0.87
Other Economic Factors	0.25	0.26	0.11	0.26	0.22
Mean (X_{jbar})	0.29	0.25	0.18	1.5	(X_{bar} = 0.55)

Source : Field Survey, 2016

From the table above

$$SSrow = 4\{(0.87 - 0.55)^2 + (0.22 - 0.55)^2\} = 0.84$$

$SS_{Column} = 2\{(0.29 - 0.55)^2 + (0.25 - 0.55)^2 + (0.18 - 0.55)^2 + (1.5 - 0.55)^2\} =$

2.39

$$SSe$$

$$= \left\{ \begin{matrix} (0.33 - 0.29 - 0.87 + 0.55)^2 + (0.25 - 0.29 - 0.22 + 0.55)^2 + (0.25 - 0.25 - 0.87 + 0.55)^2 \\ +(0.26 - 0.25 - 0.22 + 0.55)^2 + (0.26 - 0.18 - 0.87 + 0.55)^2 + (0.11 - 0.18 - 0.22 + 0.55)^2 \\ +(2.67 - 1.5 - 0.87 + 0.55)^2 + (0.26 - 1.5 - 0.22 + 0.55)^2 \end{matrix} \right\}$$

$$= 2.06$$

$SS_t =$

$$\left\{ \begin{matrix} (0.33 - 0.55)^2 + (0.25 - 0.55)^2 + (0.25 - 0.55)^2 + (0.26 - 0.55)^2 + (0.26 - 0.55)^2 + (0.11 - 0.55)^2 \\ +(2.67 - 0.55)^2 + (0.26 - 0.55)^2 \end{matrix} \right\}$$

$$= 5.29$$

Table 4.5.2 Figures for the ANOVA table

Sources of Variation	SS	Df	MSS	F* value
Rows	0.84	1	0.84	(0.84/0.7)=1.2
Columns	2.39	3	0.8	(0.8/0.7)=1.14
Residuals	2.06	3	0.7	
Total	5.29	7		

- Hypothesis testing of equality of marginal effects with regard to demographic and other economic factors (i.e the row effect) is as follows:

H_0: $\mu D = \mu E$

H_1: not H_o

The F*= 1.2 But $_{F0.05, 1, 3}$= 10.1

Since F* is less than the critical value, H_o is not rejected. This implies that the marginal effects of both demographic and other economic factors with respect to on the four communities are the same.

- Hypothesis testing for the equality of marginal effects of variables across the four communities (ie the column effect)

H0: $\mu_{Asawase} = \mu_{Aboabo} = \mu_{Sawaba} = \mu_{Ayigya}$

H1: not H_0 i.e not all the μs are equal

The F*= 1.14 But $\mathbf{F}_{0.05, 3, 3}$= 9.28

Since F* is less than the critical value, and therefore H_0 is not rejected. Thus the hypothesis of equality of the marginal effects of both the demographic and economic factors is validated on the basis of sample evidence.

The marginal effects of the variables in the analysis are statistically equal as far as demographic and other economic factors are concerned. The same can also be said about the marginal effects with regard to the four communities. The marginal effects are statistically equal regardless of the community we are dealing with. This implies spatial differences do not matter as far as marginal effects of demographic and other economic factors are concerned.

4.6 Stability and diagnostic test

Together, all the socio – economic variables have significant impact income because the Hosmer and Lemeshow test (8.40) has a P-value (0.396) which is statistically significant at P > 5% error level. The Likelihood ratio (LR) Test = 129.91 (P – value: 0.000) indicates that the model has a poor fit with the model containing only the constant indicating that the independent variables or the explanatory variables do have a significant effect on the dependent variable (income).

The F-test of stability of regression samples (equality of coefficients) is given below:

H_0: $\beta_{10} = \beta_{20} = \beta_{30} = \beta_{40}$

$\beta_{11} = \beta_{21} = \beta_{31} = \beta_{41}$

. . . .

. . . .

$\beta_{18} = \beta_{28} = \beta_{38} = \beta_{48}$

H_1: Not H_0

$$F^* = \frac{(RRSS - URSS)/(k+1)}{(URSS)/(n_1 + n_2 + n_3 + n_4 - 4k - 4)}$$

$$RRSS = S_{yy}(1 - R_R^2)$$

$$URSS = S_{yy}(1 - R_u^2)$$

RSS_1= 0.4363, RSS_2=0.3862, RSS_3=0.3903, RSS_4=0.6010, RRSS= 0.3260

$F^* = \frac{0.03(1-0.3260)-0.03(1-1.8138)/9}{1.8138/264}$ = 0.72

But $F_{0.05,9,264}$=1.88

Since $F^* < F_{\propto,v1,v2}$, H_0 is not rejected. There is therefore parametric equality of the sample coefficients and therefore there is the need to pool the regression equations of the four communities.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.1. Summary of Major Findings

In this study, there has been an attempt to explore the determinants of low income in Urban zongo communities in the Kumasi Metropolis. The community characteristics were cross tabulated and logistic regression was used to establish close association of household characteristics such as gender, marital status, household size, ethnicity, religion, educational level and type of occupation.

1. Holding all other variables constant, female-headed households are 16.58% less likely to fall under low income category.

2. Married household heads are 14.59% less likely to be in low income category, holding all other variables constant.

3. Household heads with secondary levels of education are 17.50% less likely to fall into low income group.
4. Household heads with tertiary levels of education are 48.37% less likely to fall into low income group.
5. The larger the household size, the higher the probability of a family falling in low income group due to excessive economic burden exerted by large family sizes. Large household sizes are 26.3% more likely to fall under low income.

6. Household heads working in the informal sector are 27.12% more likely to be income group, holding other variables constant. This is due to the fact that the informal sector is characterized by irregular flow of income.

7. The ethnicity variable is statistically significant and this variable increases the odds of a household headed by a northerner being in low income significantly.

8. About 61% of the people living in these communities have low income. About 68% of the people living in these communities are into the informal sector of employment with Ayigya Zongo having the highest cases of low income. Aboabo recorded lowest cases of low income.

5.2 Recommendations

In view of the findings in this study, the following recommendations are outlined for consideration by various stakeholders in the communities.

5.2.1 Specific Recommendations

In view of the major findings of the study, the following recommendations are outlined for consideration by various stakeholders in the zongo communities.

1. First and foremost it was revealed that low levels of education account for higher probability of falling into low income bracket. Thus high school and tertiary education are central in addressing problems of low income in the zongo communities. There is therefore the need for government to ensure the provision of better and quality education in these communities. This will empower the inhabitants of these communities in terms of job opportunities to be able to improve their marginal productivities to move into high income.
2. There is also the need to seriously consider female education. The study revealed that, female heads in these communities are more likely to engage in services than their male counterparts and hence less likely to be in low income. Thus promoting female education in the zongo communities will bring about improvement in productivity. Studies have revealed a negative

correlation between female education and fertility. Thus promoting female education will lead to small family size which will have far reaching effects on income levels.

3. Thirdly, it is important to note that policies and programs may have different effects on areas with peculiar characteristics and structures, due to different marginal effects of variables that affect income. But in view of the analysis of the mean marginal effects across the communities, policies and programs should be formulated having the demographic and other economic factors in mind.

5.2.2 General Recommendation.

1. There is the need to establish Youth centers and vocational modules within the Zongo communities with the basic functions of offering career guidance and counseling services.
2. There is the need to focus on improving educational levels when considering policies to improve income levels of people in the zongo communities
3. The Kumasi Metropolitan Assembly, in collaboration with other key stakeholders, can enter into partnerships with companies inside and outside the communities to help train the youth in acquiring skills in various fields.

5.3 Concluding Note

Most households with low income earnings are concentrated in the informal sector which employs unskilled and semi-skilled labour. These households, because they are unfit for training due to their educational background, earn very minimal remunerations by way of income. It has been proven beyond doubts in other

jurisdictions that many workers in low-paying or outmoded jobs can be retained and upgraded. But incentives for providing such opportunities for advancement to all those who could benefit probably will continue to be limited as long as there is effective demand for the lower paid labor. If the problems of unemployment and underemployment were conquered, it would mean an effective break in the self-perpetuating cycle of low income earners.

Low-income families breed poverty. The inadequacy of the household head's earnings exerts considerable economic pressure on other family members, including the teenage children, to enter the labor market. These extra earners, like the household head, are relatively untrained and have limited earning power. On the average, they are able to contribute only relatively small amounts to the family income although in many instances it is just enough to keep the family off the poverty line. Among the children in these communities, many drop out of school sooner than their abilities would warrant. They enter upon their working life with an initial handicap that in the years ahead will be increasingly difficult to overcome. As these children, who leave school today because of economic necessity, grow older and form new families, there is a high probability that they will show up in future research works as the heads and wives in low-income families.

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APPENDICES

APPENDIX 1-QUESTIONAIRE
DEPARTMENT OF ECONOMICS
KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

This questionnaire is part of the research "The determinants of low income in Urban Zongo communities in Kumasi Metropolis' for the Master's Degree Programme in Economics. The objective of the questionnaire is to solicit information from respondents for the purpose of research.

QUESTIONNAIRE FOR THE COMMUNITIES

Date: _____

Basic information:

1. Name of the Community: _____
2. Status of the Respondent: _____
3. Sex: M ☐ F ☐
4. Age: 18-45years ☐ 46-65 years ☐ above 66 years ☐
5. Marital status: Married ☐ Single ☐ Divorced ☐
6. Number of people in the household:

A. 0-5 ☐
B. 6-10 ☐
C. Above 10 ☐

7. No of Adults……No of minors……..
8. Ethnicity:……..

9. Religion: Islam ☐ Christianity ☐ Others ☐

Socio-economic information

10. Level of Education No Education ☐ Basic ☐ Secondary ☐ Tertiary ☐

11. Occupation: Formal ☐ Informal ☐

Self-employed ☐ Employee ☐ Casual worker ☐ Unemployed ☐

12. Does any member(s) of the household engage in any economic activity?

Yes ☐ No ☐ If yes, Occupation……..Income (……)

13. Daily Expenditure of household:

Between 0-₵7 ☐ Between ₵8-₵20 ☐ More than ₵20 ☐

14. Household Monthly Expenditure:

Between 0 - ₵239 Between₵ 240-₵500

Between ₵501-₵1000 Between ₵1001-₵1500 More than ₵1500

15. Does household receive any supplementary income? Yes ☐ No ☐

Appendix 2

Map of Kumasi Showing the study areas