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# The impact of remittances on consumption in Ghana

Ebenezer Adu-Darko
MSc Economics

## ABSTRACT

This thesis examines the impact of remittances on consumption and consumption patterns in Ghana using the 2012/2013 household survey data. It also analyzes the factors that affect the probability of receiving remittances in Ghana and the relationship between remittances and consumption. Using ordinary least square regression, the study finds a significantly positive relationship between remittances and consumption on food housing in Ghana. This paper confirms that remittances increase household consumption particularly consumption on food, non-food, housing, and education in Ghana, showing that households spend 76 pesewas and 42 pesewas of each GHS1 of their remittances on housing and food respectively. It also used logistic model and found that male household heads are more likely to receive remittances as compared to the female household head. Households in urban areas are more likely to receive remittances as compared to households that are in the rural areas. Measures need to be taken to reduce the cost of remitting to and within the country in order to increase the total consumption on households.



KEYWORDS: Remittances, Consumption, Household, Migration, Ghana

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# THE IMPACT OF REMITTANCES ON CONSUMPTION IN GHANA

# CHAPTER ONE

## 1.1 Introduction

The International Organization for Migration (IOM), an agency of the United Nations, defines "Migration" as the movement of a person or group of persons from one geographical area to another across an administrative or political border, with the intention of settling indefinitely or temporarily in a place other than their place of origin (IOM, 2003). This definition encompasses all persons who take up residence whether or not they take up employment and earn an income. For those migrants who do work abroad, some of their earnings are sent back to their place of origin or to communities not necessarily in their home country in the form of remittances. According to the United Nations Departments for Economic and Social Affairs (UNDESA 2017), the worldwide number of international migrants, including refugees, was 258 million in 2017. The International Labour Organization (ILO, 2017) reports there are 164 million migrants' workers in the world which account for 70.1% of the 234 million working age migrant population (15 years and over).

UNDESA's reports that the United States of America (USA) has been the country of destination for most migrants since 1970. In 2015, 46.6 million migrants went to the USA. Germany ranked as the second with 12 million international migrants. The Russia Federation, Saudi Arabia and United Kingdom ranked third to fifth, respectively (IOM, 2018*).* In 2015, two thirds of international migrants resided in high-income economies, about 157 million while 77 million resided in middle-income countries. The remaining 9 million resided in low-income countries (IOM, 2018).

Throughout history, migration has been part of people's experience in many parts of Africa (Mazzucato et al. 2015). According to the IOM, a little over 16 million Africans are living in another African county, while another about 16 million live outside the continent (IOM, 2018).

UNDESA (2017) data show that migration within Africa has increased since 2000; however, the most significant growth occurred as migration from Africa to other regions. Since 1990, the number of African migrants living outside the region has more than doubled, with 9 million Africa migrants living in Europe, 4 million in Asia and 2 million in Northern America (IOM, 2018).

Africans mostly migrate to another continent because of regional economic problems in the continent. People move in search for jobs, good infrastructure, good education, and better welfare policies. Migration flows were typically regional due to commerce, forced labor and circulatory nomadic routes. Over the last decades, however, migration patterns extended geographically with larger shares of migrants moving to Europe and North America which together account for more than 70% of African migrants (IOM, 2018). Even within these regions, African migrant's flows have been diversifying (Grillo and Mazzucato 2008).

One country that is representative of Africa's migration is Ghana. Five countries that Ghanaian mostly moved to are Nigeria, the USA, the United Kingdom, Togo and Italy, which together account for 63% of all its migrants (MGSoG 2017).

The migration of a family member has an overall effect for the household. It reduces the household labour force, which means a decrease in the household production of goods and services as all members are jointly involved in the economic activities within the household. However, a migrated household member might be employed in another occupation and can earn income to send back to the household. This income is referred to as remittances.

Migrants' remittances commonly are referred to as cross-border, private, voluntary and non-monetary (social or in-kind) transfers made by migrants and diaspora, individually or collectively (Keely and Tran 1989). Remittances occupy an important place at the intersection of migration with finance and development. It has become an important source of earnings and foreign exchange for many developing countries. Remittance flow is an important variable that

can generate a positive impact on overall income in the receiving country. It is therefore difficult to overstate the size and importance of remittance flows to developing countries. Globally, flows of remittances exceeded US$100 billion in 2017, which was higher than the total value of Official Development Assistance (ODA). Official development assistance (ODA) is defined by the OECD Development Assistance Committee (DAC) as government aid that promotes and specifically targets the economic development and welfare of developing countries. The DAC adopted ODA as the "gold standard" of foreign aid in 1969 and it remains the main source of financing for development aid. ODA does not include military aid and promotion of donor's security interest and primarily commercial objectives e.g. export credits. According to OECD (2018), developing countries received a total of $146.6 billion in 2017, a small decrease of 0.6% from 2016 (OECD, 2018). ODA was a major source of income in early 1990s for most developing countries; however, remittances overtook ODA in 1996 to become the largest source of external finance for many developing countries. While private capital mainly flows to emerging countries, remittances are particularly important in poorer countries where they can represent about one third of gross domestic product (GDP). Remittances are also an important contributor to resilience in the face of economic or humanitarian crises. For example, on average, from 2010 ODA had contributed to the GDP of the eligible countries by 6.3% while remittances from 2010 contributed to the GDP of Tajikistan by 36.3%, Nepal by 30.1%, Kyrgyz Rep by 28.9%, Tonga by 26.8% and Moldova by 25.6% (OECD, 2018). The World Bank (2017) estimated that remittances sent home by international migrants from low- and middle-income countries were estimated to be over $466 billion in 2017, an increase of 8.5% over the $429 billion sent in 2016. The World Bank (2018) shows that since 2011 remittances, on average, contributed 6% of Ghana's GDP while foreign aid contributed just under 4%.

According to the 2014 Ghana Living Standard Survey, Ghana received 776.01 million (GHS) in remittances from an estimated 1.5 million to 3 million emigrants. Brown (2018), Tanoh (2017), Tang and Bundhoo (2017), Appiah-Konadu et al. (2016) and Bondzie et al. (2013) discussed the impact of foreign aid on macroeconomic indicators in Ghana. The impact of migrants' remittances on macroeconomic indicators in Ghana has received far less attention. Remittances can also improve the income levels of the migrant's families. Will this increment in income have any effect on the consumption of the receiving households?

The study is expected to answer the following research questions

1. To what extent have remittances affected overall consumption and consumption patterns in Ghana?
2. What are the factors that affect the probability of receiving remittances in Ghana?

The thesis will answer these questions by using 2012/2013 GLSS. The 2012/2013 GLSS focuses on the household as the key socio-economic unit and provides valuable information on the living conditions and well-being of households in Ghana. It is a nationwide sample carried out to give information from households including their demographic characteristics, education, health, employment and time use, migration, housing conditions and household agriculture, access to financial services and asset ownership. The OLS regression model will be used to evaluate the extent in which the remittances affect consumption and the consumption pattern in Ghana while the logistic model will also be used to analyze the factors that affect the probability of receiving remittances in Ghana. This study will use age, employment status, area of the household head and sex in analyzing the probability of receiving remittances in Ghana. It will again use a set of independent variables for the head of household and these include age, remittances, size of the family, gender, region, highest level of education attainment and employment status in analyzing the impact of remittances on consumption and the consumption patterns in Ghana. The key dependent variable of interest in this work is the

total annual household expenditure. which comprises of expenditures on food, non-food, durables, housing, education and "other".

## 1.2 Organization of the study

This research is structured into six chapters. Chapter one introduces the problem, specifies the objectives of the research and presents the questions the study intends to answer. A background of remittances and its role within Ghana's macroeconomy is provided in Chapter two. Chapter three discusses the relevant theory and provides a literature review. Chapter four gives an account of the data, how the data were obtained and defines the variables that are constructed from the raw data before developing the method to be used. Chapter five will report and analyze the results that will be obtained from the research. Chapter six is the conclusion chapter of the research. It provides a summary of the important findings and highlights the important policy implications, as well as the limitations of the study and makes recommendations and suggestions for further research.

# CHAPTER TWO

## 2.1 Background of the Study

Remittances are not a new topic in the discussion of migration and development. However, the increase in remittances has led to a resurgence of focus on the topic, gaining more prominence in research and the policy debate on poverty alleviation and growth. There have been a number of initiatives on remittances. The G-8 summit which took place in Sea Island in 2004, for example, called for a better coherence and coordination of international organizations working to enhance remittance services and [to] heighten the developmental impact of remittance receipt (Maimbo and Ratha, 2005). The International Monetary Fund, the United Nations and the World Bank formed an interagency and intergovernmental technical group to improve remittance statistics. Regional development banks, bilateral aid agencies and other international agencies have also started programs to collect information and facilitate remittance flows. Table 1 presents the top ten countries that receive remittance in the world.

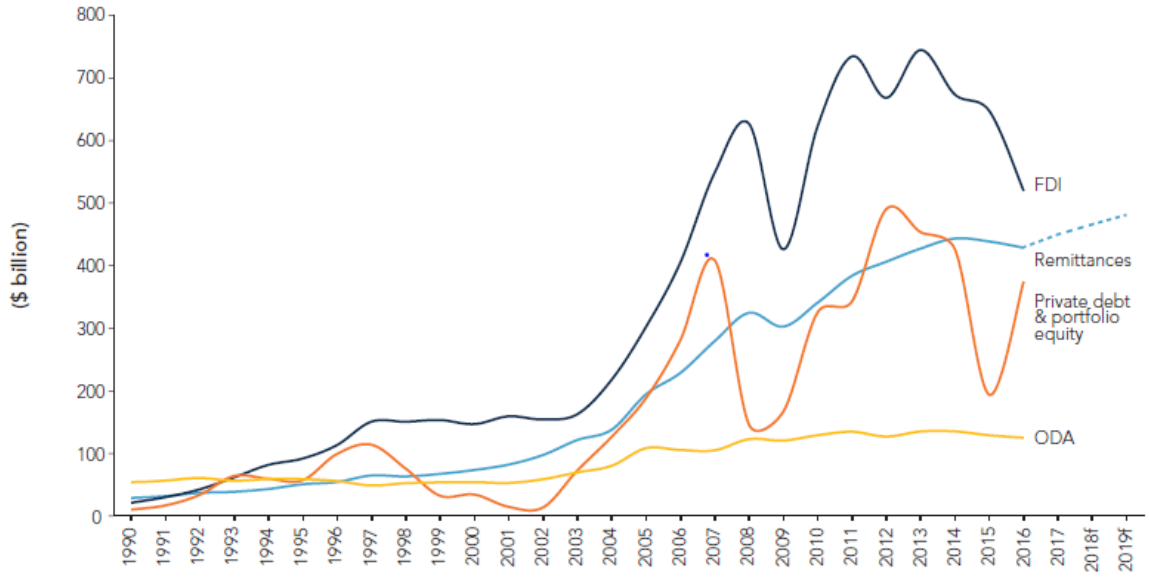
**Table 1: Top country that receiving remittances in USD and as % of GDP**

| Country | Remittances ($ billion) | Country | Percentage of GDP |
|---|---|---|---|
| India | 79.5 | Tonga | 35.9 |
| China | 67.4 | Kyrgyz Republic | 35.1 |
| Philippines | 33.7 | Tajikistan | 32.2 |
| Mexico | 33.7 | Nepal | 30.1 |
| Egypt | 25.7 | Haiti | 26.5 |
| Nigeria | 25.1 | Yemen, Rep | 24.2 |
| Pakistan | 20.9 | West Bank and Gaza | 21.3 |
| Ukraine | 16.5 | Gambia | 20.5 |
| Vietnam | 15.9 | Moldova | 20.5 |
| Bangladesh | 15.9 | Honduras | 19.6 |

**Source: World Bank (2018)**

The amount that developing countries receive in remittances has increased significantly, behind foreign direct investment (FDI), which makes it the second largest source of external financial flows. Remittances flows to low-and middle-income countries were projected by the World Bank in 2018 to accelerate by 10.8%, reaching $528 billion which was a new record. This

followed a growth of 7.8% in 2017. Figure 1 shows the trend of remittances, official development assistance and private capital flows in developing countries from 1990 to 2019.




Source: World Bank, 2018

Figure 1: Remittances, ODA and private capital flows in developing countries

Thus, remittances have an importance both on macro and micro level. On the macro level, the evidence confirm that remittances happen to be an increasingly important and relatively stable source of external finance for the countries afflicted by economic and political crisis (Kapur, 2003). Such countries regard remittances as one of the most secure and reliable sources of foreign currency than the other capital flows such as FDI and ODE. On the micro level, remittance have become an important source of finance for poor people to enhance their livelihood by providing an alternative source of income. Remittances are believed to have a direct impact on the poor and thus contributes to increasing their consumption way relative to the other sources of external finance.

Remittances are a key source of financing to most of the economies of Africa. According to World Bank (2018) estimates, Africa was estimated to receive $45bn in 2018, a projected growth of 9.8% from the $41bn in 2017. With this amount, it is estimated that Nigeria, the

largest remittances recipient country in sub-Saharan African is expected to receive more than $3 billion compared with the previous year. In table 2 are the remittances received in 2017 as a share of GDP in some selected sub-Saharan African countries.

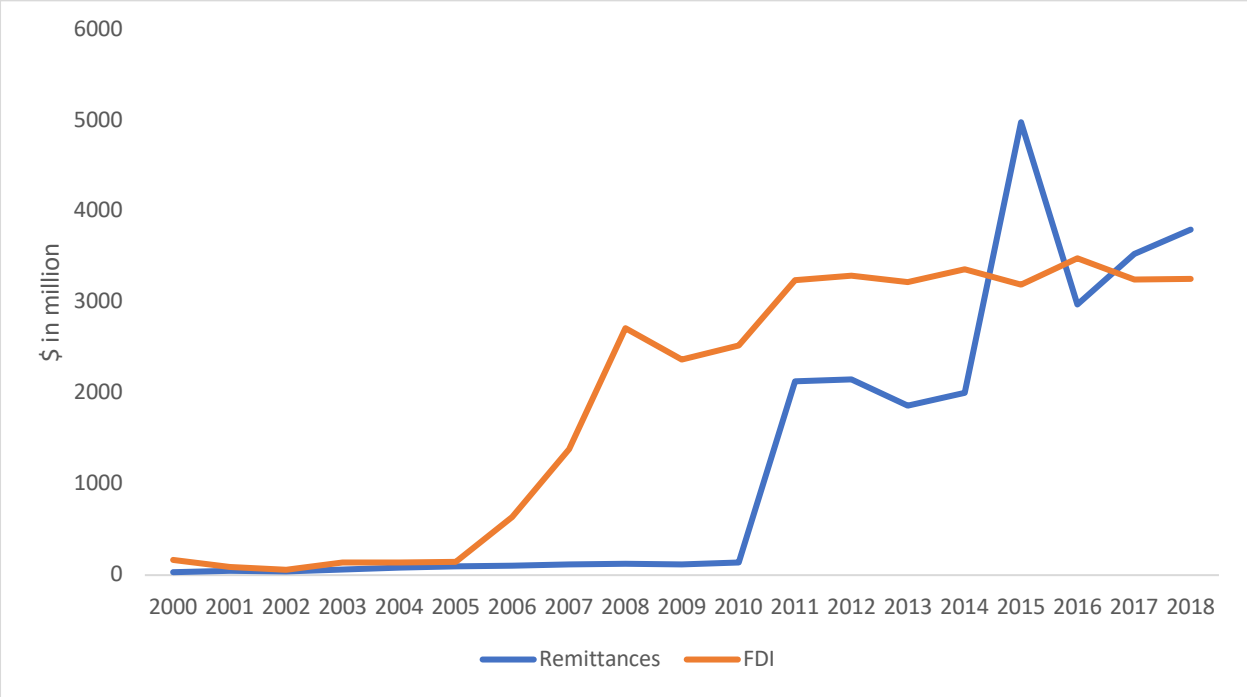
Table 2: remittances as a share of GDP in sub-Saharan African, 2017

| Country | Remittances (% of GDP) |
|---|---|
| Gambia | 20.5 |
| Comoros | 19.3 |
| Lesotho | 14.8 |
| Senegal | 13.6 |
| Liberia | 13.1 |
| Cabo Verde | 12.8 |
| Zimbabwe | 9.6 |
| Togo | 8.2 |
| Ghana | 7.4 |
| Nigeria | 6.1 |

Source: World Bank, 2018

Although the amount of money that Africa receives as remittances has reduced recently due to the global financial crises, it still remains an important source of finance on the continent. Families mostly invest remittance money in education. The World Bank (2015) showed that households that receive remittances reduced their spending on food by at least 14% and increased their spending on education by as much as 33%. A household survey conducted by IOM in partnership with the Ghana Statistical Service (GSS) in six districts in Ghana (Brong Ahafo and Ashanti Region) which covered 1200 households showed that a total amount of 1,361,678 Ghanaian Cedis (GHS) was received in the 12-month period (about $250,000). The total amount shows that each household receives GHS 4,663 (about $850) on average. The study further showed that the United States of America, the United Kingdom, Italy and Germany are among the highest remittance-sending countries to the six districts. Remittances received by these six districts were used to buy basic necessities such as food, clothing and household goods with little attention given to investments and savings (GLSS 6, 2013). Figure 2 shows the amount of remittances Ghana received from 2008 to 2017. World Development Indicators (WDI, 2018) data show that the amount of remittances that Ghana receives has

increased statistically since 2010. Although it decreased from 2011 to 2012 by less than 2%, the amount doubled between 2013 and 2014 before *a* 42% decrease between 2014 and 2015. This may be as a result of the number of policies put in place by the government to fight the illegal transfer of money into the country. Thus, it reflects the increment in the number of banks and the flexibility of sending money from abroad through mobile money. The biggest question that needs to be answered is what the impact of these remittances received by households have on their consumption and what factors affect the probability of receiving remittances in Ghana.




Source: Drawn from WDI, 2019 Data

Figure 2: Inflow of remittances and FDI into Ghana ($ million)

## 2.2 The Economic Profile of Ghana

Ghana has a market-based economy with relatively few policy barriers to trade and investment in comparison with other countries in the region, and Ghana is well endowed with natural resources. Table 3 provides selected macroeconomic statistics for Ghana.

**Table 3: Selected macroeconomic indicators**

| Year | GDP | GDP per capita | Rate of inflation | Youth unem-ploy-ment | Govern-ment spending | GDP per sector (%) | | | Annual real GDP growth rate |
|---|---|---|---|---|---|---|---|---|---|
| | $US bln | $US | % | % | GHS bln | Service | Industry | Agric | % |
| 2000 | 5.9 | 263.1 | 25.1 | 16.3 | 276.1 | 28.8 | 25.4 | 35.3 | 3.7 |
| 2001 | 5.3 | 273.1 | 32.9 | 14.7 | 370.1 | 29.2 | 25.2 | 35.2 | 4.0 |
| 2002 | 6.1 | 309.5 | 14.8 | 13.3 | 763.0 | 29.2 | 25.3 | 35.1 | 4.5 |
| 2003 | 7.6 | 373.3 | 26.7 | 11.7 | 972.4 | 29.0 | 25.2 | 36.5 | 5.2 |
| 2004 | 8.8 | 423.2 | 12.7 | 10.2 | 1 488.8 | 28.7 | 24.7 | 37.9 | 5.6 |
| 2005 | 10.7 | 498.2 | 15.1 | 8.7 | 1 659.3 | 28.9 | 25.1 | 37.4 | 5.9 |
| 2006 | 20.4 | 923.0 | 10.9 | 7.2 | 1 973.9 | 46.5 | 19.8 | 28.9 | 6.4 |
| 2007 | 24.7 | 1 090.7 | 10.7 | 8.1 | 2 635.0 | 47.1 | 19.5 | 27.3 | 4.3 |
| 2008 | 28.5 | 1 224.4 | 16.5 | 9.0 | 2 771.9 | 46.2 | 19.3 | 29.4 | 9.1 |
| 2009 | 25.9 | 1 086.6 | 19.3 | 9.8 | 3 254.9 | 47.9 | 18.5 | 30.9 | 4.8 |
| 2010 | 32.1 | 1 312.6 | 10.7 | 10.6 | 8 247.8 | 48.2 | 18.0 | 28.0 | 7.9 |
| 2011 | 39.5 | 1 575.0 | 8.7 | 9.0 | 8 860.3 | 45.8 | 23.9 | 23.7 | 14.0 |
| 2012 | 41.9 | 1 629.8 | 7.1 | 7.4 | 13 512.3 | 47.6 | 27.1 | 22.1 | 9.3 |
| 2013 | 47.8 | 1 814.5 | 11.7 | 4.6 | 16 214.8 | 39.1 | 34.8 | 20.4 | 7.3 |
| 2014 | 39.0 | 1 449.7 | 15.5 | 4.6 | 1 7421.0 | 36.1 | 34.6 | 19.9 | 4.0 |
| 2015 | 37.3 | 1 353.7 | 17.1 | 4.5 | 18 968.7 | 39.5 | 31.9 | 20.2 | 3.8 |
| 2016 | 42.8 | 1 517.5 | 17.5 | 4.7 | 18 968.7 | 43.1 | 28.2 | 20.9 | 3.7 |
| 2017 | 47.3 | 1 641.5 | 12.4 | 4.9 | 22 562.1 | 42.3 | 30.8 | 19.7 | 8.5 |

**Source: Ghana Statistical service, 2019**

From the table, it can be observed that since 2006, the service sector has been the leading sector that support Ghana's GDP. The agricultural sector that used to be the leading force to Ghana's GDP in the 1990s has consistency reduced since 2006. This is due to the unattractiveness of the agricultural sector to the youth. Most of the youth prefer moving abroad than staying in Ghana to farm. Although, the trend of the annual real GDP growth rate in Ghana look encouraging, expanding by 9.1% in 2008, 14.1% in 2011 and 8.5% in 2017. However, this growth does not reflect the economic development of the country. The country is not creating adequate employment for its youth, this encourages the youth to move outside the country. According to the data, there is low percentage of youth employment in Ghana. However, the data can be trusted because it does not reflect the current unemployment situation in the

country. This may be due to the variables that were used to measure unemployment by the Ghana Statistical Service (GSS). Unemployment rate in Ghana are working age group in Ghana includes 15 years and older, they include those who are underemployed or temporary employed.

## 2.3 Migration and Remittances in Ghana

In Ghana, the migration movement has usually been from the north to the south and from rural area to urban areas. According to GLSS 2013, 46% of Ghanaian population has migrated. By locality of residence, Accra has the highest percentage of migrants (60.3%) followed by the rural forest (51.6%). The other urban areas have 46.7% the population who are migrants while the rural coastal regions have 44.6%. The smallest proportion of the migrant population is situated in the rural savannah. The top five countries that received Ghanaian migrants are listed in table 4.

**Table 4: Top countries that receive Ghanaian migrants**

| Country | Total number of legal migrants |
|---|---|
| Nigeria | 176,493 |
| United State of America | 149, 96 |
| United Kingdom and Northern Ireland | 81,917 |
| Cote d'lviore | 42,837 |
| Italy | 42,837 |

**Source: UNICEF, 2013**

Ghanaians migrate for a variety of reasons, the principal factors being to have better access to public services or to various recreational options, and for economic gain, education, and marriage (GLSS6, 2013).

According to the GLSS6 (2013) survey report on sources of income of households. The data revealed that almost half of Ghanaian household (48.3%) income is from non-farm self-employment. Wages from employment is the second major contributor, contributing to 35.3%. The third major contributor is household agriculture which also account for one-tenth (10.1%). Remittances and rent on average accounts for about 6.5% of household income in Ghana.

Although, the source of remittances to household's income in Ghana is relatively low, however, it is believed that remittances are mostly used on consumption rather than on investment in Ghana (Awumbila et al. 2017). It was again reported by GLSS6 that the annual estimated total value of remittances received in Ghana amounted to 1,804 million Ghana Cedis. Out of this value received, the estimated total value of remittances received by urban households (1,268.7 million Ghana Cedis) was about twice that which was received by rural households (535.2 million Ghana Cedis).

# CHAPTER 3: THEORY AND LITERATURE REVIEW

## 3.1Theoretical Review

### 3.1.1 New Economic of Migration

The new economics of labour migration theory is one of the first migration theories that has made a connection between the cause of migration and the phenomenon of economic remittances. It is unlike the neo-classical economic theory that sees migration as the results of wage differentials between the destination country and the arrival country. This theory suggests that migration decisions are not made by only the individuals but by larger units of related people, typically families or households, who act collectively to maximize expected income, minimize risks, and loosen constraints associated with a variety of market failures, apart from those in the labour market. While some families can be assigned economic activities in the local economy, others may be sent to work in foreign labour markets where wages and employment conditions are better than that of the local economy. In the event that local conditions deteriorate, household can rely on migrant remittances for support (Fredericks et al. 2015). In advanced countries, risks to household income are generally minimized through private insurance markets or government programs, but in developing countries institutional mechanisms for managing risk are imperfect, absent, or inaccessible to poor families, giving them incentives to diversify risks through migration.

New labour migration economic theorists argue that households send workers abroad not to improve income in absolute terms, but also to increase income relative to other households, and reduce deprivation compared with some reference group. Thus, a person who is more relatively deprived can be expected to have a stronger incentive to migrate than a person who is less relatively deprived. Also, a reference group characterized by more income inequality is likely to generate more relative deprivation and higher propensities to migrate.

This theory considers the household as a single unit in the analysis for migration. The individual migrant worker is considered as a member of a family. The costs and benefits of the

migration decision is shared with the migrant and his whole household. The individual migrant is part of the beneficial contract of the household members (Stark and Bloom, 1985). The household and the migrant make an agreement: the household invests in the migration and the migrant contributes with remittances after migration. The theory does not reduce the importance of individual activity in decision-making for migration. The actions and performances of individuals could be explained in the framework of decision-making unit with his whole household (Stark, 1991). Remittances are therefore integral to migration under the new economics of labour migration.

According to the economics of migration, the main purpose of migration is to receive remittances. It is an opportunity for household to improve its income status and to create a buffer for the non-migrating members by receiving remittances. The remittances will help the household to overcome market constraints or failures (Fredericks et al. 2015). Massey et al. (1999) suggest that international and national migration are not mutually excluding. One member can move to a city and another can move abroad. The main purpose is to secure the household income. This means that the family is very important when it comes to migration. This thesis will focus on remittances and it will attempt to explain remittances and its impact on household consumption.

### 3.1.2 Livelihood and remittances

The livelihoods approach studies how households combine a set of assets that they have access to in a set of activities, in the context of institutions, social relations and a vulnerability context. These activities form households' livelihoods strategies and yield a set of livelihoods outcomes, such as food security, income and land use (Ellis, 2000). The livelihood approach claims that to understand the choices that people make, such as migrating, one needs to understand their means of livelihood. Livelihood is defined as encompassing, not only the household's income-generating activities, but also the social institutions, intra-household relations and mechanisms of access to resources through the life cycle. Livelihood approaches

argue that people develop a livelihood. A livelihood strategy is defined as a strategic or deliberate choice of a combination of activities by households and their individual members to maintain, secure and improve their livelihoods (De Haas, 2010). Under livelihood theory the household emerged as the most useful unit of analysis. It was connected to the insight that people organize their livelihood, not in solitude but within a wider social context, such as households or communities to improve their means of living. Livelihood theories have mainly focused on rural-urban migration, but De Haas suggests that it could be extended to also involve international migration (De Haas, 2007).

The focus of migration has therefore shifted from the individual to the household, and migration can thus be studied with the livelihood approach. Remittances allow a non-migrating household member to continue living at the same income level and hence increase their consumption. Randazzo and Piracha (2014) confirmed that international remittances have a stronger effect on household expenditure behavior. Remittances also increase household savings and hence investment. With the focus of migration shifting from individual to households, this study will therefore use household data in analyzing the determinants of remittances and the impact of remittances on consumption.

### 3.1.3 Pure Altruism

Altruism is the willingness to give part of one's time or resources for a good cause. The willingness to give becomes obligatory if it is not from the utility function of the giver. Altruism focuses on a motivation to help a specific individual or a specific organization without reward. Pure altruism is giving without regard to reward or benefits of recognition and need (Becker, 1981). This theory suggests that people remit because they care for his/her remaining household members. Lucas and Bloom (1985) said that migrants enjoy remitting because they care about household consumption. Glytsos (2002) argued that while temporary migrants remit mostly because of investment and future consumption, permanent migrants also remit for

altruistic purposes. It has been argued in the literature that people migrate from developing countries due to poverty. The altruism model suggests that sending remittances gives pleasure to the migrant out of the social welfare of his family, community and country. Thus, the migrant cares about poverty, shocks, etc. of the family and consequently sends remittances (Bashir, 2014). The theory therefore suggests that remittances should increase with migrant income, thus migrants send more, if their income increases. It also decreases when the recipient's income increases (Funkhouser, 1995). The thesis will therefore add to this debate by finding out the factors that affect the probability of receiving remittances in Ghana.

## 3.2 Empirical findings

### 3.2.1 Determination of Remittances

Biyase and Tregenna (2016) identified the determinants of remittances in South Africa over from 2008 to 2014-2015. They used random-effects Tobit, Hackman selection, and two-part model approaches using data from National Income Dynamics Survey (NIDS) in their analyses. They used these methods because of the biasness and inconsistency associated with the OLS model. Thus, some migrants do not remit at all, and those who do can be considered to self-select themselves non-randomly into the state of remitting. The result of their study showed that the age, race, education level, and employment status of the household head, and the income and the type of area of the household are the factors that influence the probability to remit. It also showed that the gender of the household head and the size of the household have a positive effect on the probability of remitting money to South Africa. This study uses age, employment status, area of the household head and sex in analyzing the probability of receiving remittances in Ghana. However, it will use logistic model rather than the Tobit, hackman selection and two-part model approaches that was used by Biyase and Tregenna (2016). The logistic model will be more appropriate for the study because of the cross-sectional nature of the data.

### 3.2.2 Remittances and Poverty Reduction

Remittances have been known as the third pillar of development as their value is second to FDI and higher than ODA. Studies have shown that remittances contribute to poverty reduction in home countries. Adams (2006) used a large, nationally-representative household survey to analyze the impact of remittances on poverty in Ghana and found that both internal and international remittances reduce the level, depth and severity of poverty in Ghana. He highlighted that the size of the poverty reduction depends on how poverty is measured. He also found that poverty reduction is more in line with international remittance than that of internal remittances. Households in the poorest decile group receive 22.7% of their total income from international remittances, as against only 13.8% of such income from internal remittances. This shows that international remittances increase the income of the poorest households and has a large effect on them as compared to other income groups.

Owiafe (2008) reports that remittances have a significant impact on poverty reduction through increasing income, smoothing consumption and easing the capital constraints of the poor. She found that remittance have no direct impact on economic growth but have an indirect impact on economic growth through investment and human capital development. She used an OLS regression model with variables such as a poverty measure, real GDP, inequality, remittances, human capital, inflation, openness and a constitutional regime proxy. She used a data from World Bank's Development Indicators and Ghana Statistical Service from 1980 to 2002. The coefficient on remittances shows that an increase in remittances by a unit (one cedi) decreases poverty by 0.08 pesewas. The coefficient of the remittances was also seen to be significant at 1% level. She recommended that a good policy that aims at sustained increases in remittances through formal channels is needed if countries want to sharpen the impacts of remittances, particularly to the poorest households.

Banga and Sahu (2014) used Ravallion and Chen's poverty model in examining the impact of remittances on poverty in developing countries. The Ravallion and Chen poverty model takes poverty as a function of per capita income, some measure of income distribution, and the remittances-to-GDP ratio. They also used variables such as poverty, trade openness (e.g., the trade-to-GDP ratio), literacy levels and lagged remittances. Their model used an unbalanced panel data for 77 countries from 1980 to 2008 using result a 3-stage least squares estimation. They conclude that there is a statistically significant inverse relationship between remittances and the poverty headcount ratio. That is, a 1% increase in remittances reduces the poverty headcount ratio by 31%. However, the impact of remittances on the poverty gap and squared poverty gap was not statistically significant at the 10% level. The study concluded that remittances reduce poverty in the recipient countries, but what actually makes remittances work for poverty reduction was not clear. Thus, host-country policies, channels of sending remittances and the proper use of remittances is important for sustainable reduction in poverty.

Ellyne and Mahlalela (2017) study the relationship between remittances on poverty in 32 African countries from 1981 to 2012. They find that remittances significantly reduce poverty in Africa. The study used Ravillion and Chen growth-poverty model and a dataset from the World Bank's PovcalNet which releases estimates of global poverty from 1981 to 2012. They modelled poverty as a function of income, income inequality, remittances, export and ODA, and the income group was used as a dummy variable. They used a standard OLS model for the poverty headcount and the poverty gap. Their study highlighted the importance that remittances shave on poverty over that of exports and ODA. This is because export and ODA were found not to be significant in reducing poverty in the 32 selected African countries.

This thesis used a nationally representative household survey as used by Adams (2006) in finding out the impact of remittances in consumption in Ghana. It, however, uses consumption

as dependent variable rather than poverty as was used by Adams (2006). It is expected that remittances will increase household consumption in Ghana. Also, the thesis will follow the OLS model modelled by Owiafe (2008) and Ellyne and Mahlalela (2017). It uses variables such as households' size, head of households, employment status, sex of households', educational level of households' head, region and remittances on total consumption of each household instance of poverty measure, real GDP, inequality, remittances, human capital, inflation, openness and a constitutional regime proxy as used by Owiafe (2008). Unlike the time series data that were used by Owiafe (2008), Banga and Sahu (2014) and Ellyne and Mahlalela (2017), the thesis uses cross sectional data from Ghana living standard survey data (2005/2006 and 2012/2013) to study the effect of remittances on consumption.

### 3.2.3 Remittances and investment

Bjuggren et al. (2010) study the impact of remittances on investment in 79 developing countries from 1995 to 2005. They specifically seek to analyze whether remittance inflows have a casual effect on investment expenditure. They run regressions through a variety of estimation techniques: pooled OLS, the fixed-effect, random effect, difference GMM and system GMM. The results from all the models show that remittance inflows have a significant positive impact on investment except for the fixed effects model. Thus, an increase in remittances by 1% increases investment by 0.791 under the pooled OLS model, by 0.587 under the random effects model, 0.585 under the fixed effect model, 0.872 under the difference GMM and 0.509 under the system GMM. The impact of remittances on investment is stronger under the fixed effect model and the pooled OLS model. However, they concluded that the marginal importance of remittances as a financial source for investment decreases with an improved institutional framework.

Incaltarau and Maha (2012) report that the impact of remittances on investment is stronger than the impact of remittances on consumption in Romania. It was seen that an increase in

remittances by a local currency unit, increase household consumption by 0.05 Romanian leu while an increase in remittances by 1% will also increase investment by 0.44 Romanian leu. They used a series of secondary data between the period of 1990 and 2009 and an OLS regression to analyze the impact of remittances on consumption and investment in Romania. They used variables such as wages, credit, GDP, remittances and investment on household consumption. They confirm that the contribution of remittances increased both household consumption and investment in Romania.

Riabikina (2012) used a probit model and a propensity score matching method in analyzing the links between remittances and small business development in Moldova. She used a 2018 household data set for Moldova and concluded that remittance-receiving households have a higher likelihood of owning a business than non-remittances-receiving households. Thus, 11% of remittance-receiving households expressed their desire of launching their own business as compared to 8.8% of non-receiving households.

Tung (2018) investigated the impact of remittances on domestic investment in developing countries. He used annual panel data from 1980 to 2015 from World Development Indicators of the World Bank for 13 countries in Asia and 6 countries in the Pacific. He used two estimation methods including OLS and 2-SLS in analyzing the data. The study finds that there is a negative impact of remittances on domestic investment using both OLS and 2 SLS regressions. Thus, an increase in remittances by a unit decreases domestic investment by 0.51 using OLS and 0.39 under 2SLS. His result therefore shows that remittances have a significant adverse impact on domestic investment in the Asia-Pacific development countries over the study period. The result of his study also suggests that remittances can be used to increase the household consumption in the Asia-Pacific region.

Issifu (2018) analyzed the impact of remittance on domestic investment in five sub-Saharan African countries from 1984 to 2014. He used OLS model and examined independent variables

such as remittances, domestic credit on investment, political risk, lending interest rate and GDP on gross fixed capital formation (investment). The result of his study shows a positive and significant effect of remittances on investment rate. This implies that investment decision drives migrant decision to remit.

Bjuggren et al. (2010), Incaltarau and Maha (2012), Riabikina (2012), Tung (2018) and Issifu (2018) analyzed the impact of remittances on investment in their respective studies. This work looks at the impact of remittances on consumption in the OLS model by Issifu (2018). Issifu's model serves in analyzing the impact of remittances on domestic investment in five sub-Saharan African, though the variables (domestic credit on investment, political risk, lending interest rate and GDP on gross fixed capital formation (investment). In this study, variables such as household size, household head age, household head sex, employment status, household head educational will be use on total household consumption.

### 3.2.4 Remittances, savings and consumption

Schrieder and Knerr (2000) defines international remittances as the part of international migrants' incomes sent back from the destination country to the origin country and where the remitter indirectly compensates by a counter of goods and services. However, Van Doorn (2001) explains that such remittances includes in-kind transfer as the migrant usually sends in cash to their left behind household members as well communities at the origin country. Moreover, Levitt (2001) explains that international remittances have effects in social capital, concepts, ideas, practices and identities from destination country to the originating place which may impact household consumption.

Zhu et al. (2014) in China found the impact of remittances on consumption. Their study found that the marginal propensity to consume (MPC) from remittances is close to unity and is greater than that of MPC from non-migrant earnings or farming. This implies that remittance-receiving households consume more than households that do not receive remittances in China. The study

grouped remittances under households that receive remittances and households that do not receive remittances.

Randozzo and Piracha (2014) study remittances and household expenditure behavior in Senegal. They used propensity score matching and OLS estimation to assess the average impact of remittances on a households' budget. Their results showed that international remittances have an effect on household expenditure behavior. However, they do not find any statistically significant impact between remittances and spending behavior in Senegal. This means that households treat remittances just as any other source of income. They used variables such as household size, population structure, agriculture land ownership, household head sex, age of household head, education of the household head and remittances on household expenditures. This thesis uses households' size, household head sex, age of household head, education level of household head, it is expected that remittances will have positive effect on household expenditure (consumption) as was seen by Randozzo and Piracha (2014). However, this study does not include population structure and agriculture land ownership in the model as was used by Randozzo and Piracha (2014) as they are not available in the data.

Haider et al. (2016) analyzed the impact of remittance on consumption and savings behavior in rural areas of Bangladesh. They had primary data from 120 households in Bangladesh and used a pair-wise correlation analysis among the explanatory variables. The results from the correlation analysis indicate a high multicollinearity. The study used a linear structural equation modelling approach and revealed that a remittance-receiving household's monthly food expenditure and savings are higher than that of a non-remittance-receiving household. The study used remittances, household income, family size, education level and asset value on food consumption expenditure and savings. They concluded that remittances have a positive impact on consumption and savings in the selected rural areas of Bangladesh. Haider et al. (2016) used a linear structural equation modelling approach which will differ from the OLS

model that will be used. The aim of both studies is the same. Thus, to find the impact of remittances on consumption.

Keho (2017) measured the effect of remittances on household consumption in nineteen African and eight Asian countries. He used annual times series data from 1981 to 2013 for the African countries and 1987 to 2013 for the Asian countries. He used a quantile regression method to study remittances and consumption with variables such as real GDP, domestic credit, trade openness, import and export. The finding of the study shows that remittances increase consumption in developing countries and it also contributes to poverty alleviation in African and Asian countries. Thus, an increase in the share of remittances in income by 10% increases consumption by 0.3% in African countries while an increase in remittances by 10% increases consumption by 0.11% in the Asian countries. The studies also find that credit and trade are significant variables that influence consumption in developing countries.

Sam et al. (2013) in a study on the contributions of international remittances to household in Ghana found that remittances increased consumption in Ghana. They reviewed that remittances are spent mainly on food, education, church activities and funerals. Data on foreign remittances are obtained by sampling households in the suburbs in Kumasi, Ghana using a structured questionnaire. He reported that the main channels of international remittances to Ghana are banks, private companies and individuals. Akpa (2018) found that remittances positively affected household consumption in Ghana in both the short and long-run. Using secondary data from World Development Indicators (WDI), he also employed an autoregressive distributed lag (ARDL) estimation technique to examine the relationship that exists between consumption and private remittances in Ghana. Private remittances, the exchange rate, and inflation rate are the independent variables that were used on the household consumption expenditure. Although, there is a positive relationship between remittances and consumption in both the short and long run, the impact was not statistically significant. Quartey et al. (2019) examined the inter-

linkages between remittances and savings in Ghana using the 2012/2013 Ghana Living Standard survey. He used a probit model to estimate the relationship between remittances and the likelihood of savings. His results suggest that receiving remittances significantly affects household's propensity to save. Thus, households that receive remittances are likely to save compared to households that do not receive remittances in Ghana.

Sam et al. (2013), Akpa (2018) and Quartey et al. (2019) used different methods in studying the impact of remittances on consumption in Ghana. While Sam et al. (2013) used qualitative methods, Akpa (2018) used an autoregressive distributed lag estimation technique and Quartey et al. (2019) used a probit model in their studies. In addition to the 2012/2013 Ghana Living Standard survey data that was used by Quartey et al. (2019), the thesis will use 2005/2006 Ghana Living Standard survey. Again, the dependent variables that are used differ from the variables that were used by Sam et al. (2013), Akpa (2018) and Quartey et al. (2019). Thus, my thesis will use households' size, head of households, employment status, sex of households' head, educational level of households' head, region and remittances. This is in contrast to the exchange rate, and inflation rate that was mostly used in the reviewed literature.

Alem (2018) studied the impact of shocks and remittances on a panel of households in Ethiopia using the system GMM estimation technique. The study corroborates that international remittances played a positive and significant role in household consumption in Ethiopia.

By contrast, there are other studies that purport that households which receive remittances do not increase their consumption as compared to households that do not receive remittances.

Castaldo and Reilly (2007) analyzed migrant remittances and its effect on the consumption patterns of Albanian households. They measured household size, age, sex, religion, employment status, educational attainment, social assistance and remittances on food, non-food, durables and utilities on consumption. They used OLS to estimate the effect of remittances, external and internal. They find that external remittances increased a household's

budget share of expenditures on durable goods and utilities by 25% and 16%, respectively, and decreased their budget shares of expenditures on food by 4.5%. The estimated coefficient on international remittances was statistically significant except on food expenditure. However, the coefficient for internal remittances was not statistically significant. They also found that a household that receives international remittances, on average, spent a lower share of their expenditure on food as compared to a household that does not receive international remittances. Their result again shows that age, religion, occupation are significant factors that influence consumption in Albania.

Adams Jr. et al. (2008) used 2005/2006 Ghana Living Standard Survey (GLSS 5) to analyze remittances, consumption and investment in Ghana. They used a multinomial logit selection model on two equations. The choice equation predicts the receipt of remittances and the income equation which determines the household income. They find out that household receiving remittances in Ghana do not spend more on food, education and housing than households that do not receive remittances. Their work concluded that households that receive remittances treat those transfers just as any other source of income, implying that there is no marginal change in consumption patterns.

Mubarik et al. (2016) investigated the impact of international remittances on household expenditure patterns in Ghana. The study used data from Ghana Living Standard Survey (GLSS5) counted in 2005/2006, they used variables such as marital status, gender, education, employment status, region, dependency ratio on remittances. They used a Tobit regression model to analyze their data. Their results suggest that households that received international remittances decrease their budget shares on some consumption items and investment goods, but it increases their budget share on housing, in particular.

Unlike Adams Jr. et al. (2008) that focused on both household that received remittances and households that do not receive remittances, this work will focus on households that receive

remittances. It will specifically assess the impact of international remittances on the household consumption. In addition to the 2005/2006 Ghana Living Standard survey data that was used by Adams Jr. et al. (2008), and Mubarik et al. (2016), the thesis will use 2012/2013 Ghana Living Standard survey data in analyzing the impact of remittances on consumption in Ghana. Also, the study will use OLS model in analyzing the data, that will differ from the methods that was used by both Adams Jr. et al. (2008), and Mubarik et al. (2016). It will however use household size, household head age, household head sex, employment status, household head educational, these variables were used by Castaldo and Reilly (2007) in analyzing the migrant remittances and its effect on the consumption patterns of Albanian households.

# CHAPTER 4: DATA AND METHODOLOGY

## 4.1 Data

The study uses secondary data from the Ghana Living Standards Report Survey (GLSS). The 2012/2013 GLSS focuses on the household as the key socio-economic unit and provides valuable information on the living conditions and well-being of households in Ghana. It is a nationwide sample carried out to give information from households including their demographic characteristics, education, health, employment and time use, migration, housing conditions and household agriculture, access to financial services and asset ownership. The survey also collects information on the households' perception of governance, and peace and security in the country, child labour. It also includes additional indicators pertaining to the Northern Savannah Ecological Zone where a major government initiative, the Savannah Accelerated Development Project (SADA), was initiated. The 2012/2013 GLSS survey is the sixth survey of its kind in Ghana. The 2013 survey covered a nationally representative sample of 18,000 households of which 16,772 were successfully enumerated leading to a response rate of 93.2%.

The surveys used five sets of questionnaires: (1) a household questionnaire, (2) a non-farm household questionnaire, (3) a community questionnaire, (4) a governance, peace and security questionnaire, and (5) a questionnaire concerning prices of food and non-food items. The survey used a two-stage sample based on the population and housing census and was designed to produce key indicators for each of the ten regions in Ghana. Data were collected within one year. The information obtained was processed by Ghana Statistical Service officers who took part in the main fieldwork training. The data were processed using CSPro version 3.3 software. The Ghana Statistical Service conducted the survey in partnership with the International Labour Organization, United Nations Development Programme, UNICEF, Department for International Development. The GLSS was chosen for this study because it has data on

migration and consumption. It is a part of the worldwide survey which allow both inter and intra comparison of the results. Permission for the use of the data was sought from the Data and Data-Related Resources of the Ghana Statistical Survey on December 8, 2018.

## 4.2 Data Analysis

The study employed both descriptive and quantitative analysis. Charts such as graphs and tables were employed to aid in the descriptive analysis.

As the focus of the thesis is the impact of remittances on household consumption and consumption patterns in Ghana, the unit of interest is the household. Once the missing observations on the variables are excluded, the number of observations used for each category are 11,481 for both food and non-food, 10,351 for housing, 7,817 for education and 11,453 for "other". The key dependent variable of interest in this work is the total annual household expenditure. which comprises of expenditures on food, non-food, durables, housing, education and other. These categories constitute almost 98% of the consumption aggregate that has been constructed by the World Bank (Castaldo and Reilly, 2007). The food category includes purchased food and non-purchased food, non-food categories include consumer goods and household durables. The value of housing was used for the housing expenditure. Education expenses was also used to measure education while utilities, health, transport, and communication were used in the "other" expenditure category. In table 5 the description of the dependent variables is provided.

Table 5: Description of the dependent variable

| Category | Description | Examples |
|---|---|---|
| Food | Purchased food | Cassava, plantain, meat, rice, milk, fruit. |
| | Non-purchased food | Food from: own production, gifts, donations, social programs |
| Non-food | Consumer goods | Clothing, shoes, fabric |
| | Household durables | Annual use value of stove, refrigerator, furniture, television, car, motorcycle, truck, computer |
| Housing | Housing value | Annual use of housing (calculated from rental payments or imputed values) |
| Education | Educational expenses | Books, school supplies, uniforms, registration fees, travel to school |
| Other | Utilities | Water, gas, electricity, telephone |
| | Transport, communications | Bus and taxi fees, gasoline, faxes, postage, telephone |
| | Health | Doctor and dentist fees, medicine, hospitalization, antibiotics |

Sources: 2012/2013 GLSS 6 survey

A set of other independent variables was constructed for the head of household and these include age, gender, region, highest level of education attainment and employment status. A measure for the household size was also constructed form the data. A set of settlement type controls (i.e., residing in either urban or rural areas) are also included. Finally, a set of variables indicating the amount that households receives as remittances. Remittances are defined as money received by Ghanaian households in the past 12 months prior to the survey in the form of cash or in-kind form someone leaving abroad.

Table 6: Description of Variables

| Variable | Variable Description |
|---|---|
| Total Household Expenditure (Texpend) | The logarithm of the total (monthly) food, non-food, housing, education and other expenditure of the household in Cedi |
| Remittance (REM) | Dummy variable where the value is one if households receive remittances and zero otherwise. |
| Household size ($HH_{Size}$) | The total number of individuals in the household |
| Household head's age ($HH_{Age}$) | HH head's age is grouped into three categories, taking on a value of zero for a HH head aged under 25, one for the age interval of 25-65, and two for one aged over 65. |
| Household head's gender ($HH_{Sex}$) | Dummy variable for gender of household head where value of one if male, zero otherwise |
| Household head's employment status ($HH_{Emp}$) | Dummy variable for HH head's employment status where a value of one is assigned if unemployed or temporarily laid off, zero otherwise |
| Region ($HH_{RGN}$) | Dummy variable for regional location of the HH head where a value of one is assigned if located in south of Ghana, zero if in the north |
| Settlement type (URB) | Dummy variable for settle type where a value of one is assigned to an urban area, zero if rural |
| Education ($HH_{EDU}$) | The number of years that the household head had spent in education |

Sources: 2012/2013 GLSS 6 survey

The study employs an OLS regression model approach in finding the impact of remittances, households' size, age of the head of household's head, employment status of the household head, gender of the head households', educational level of households' head, and religion on total consumption of each household. All estimations are carried out using STATA version 15. The results will be analyzed into descriptive and multivariate analysis. The descriptive analysis was carried out for the variables to investigate the remittances and other demographic factors on consumption. It comprised frequency distribution and percentage proportions of the respondents.

## 4.3 Multivariate Analysis

The main purpose of this study is to assess the impact of remittances on consumption in Ghana and consumption patterns in Ghana. Thus, there is the need to specify a consumption equation and incorporate into its remittances to find the impact of remittances on total consumption. The study modifies the model used by Owiafe (2008) in her work on the impact of external remittances on poverty reduction in Ghana. The model will take into consideration important variables indicated by other researchers in determining the impact of remittances on consumption. The study postulates a consumption equation as follows:

$$y = f(REM, URB, X) \quad (1)$$

where y is the log of either total food or non-food or education or housing or other monthly expenditure of each households, REM is the monthly remittances received from each household in Ghana cedis, URB is the urban settlement type of the household and X are control variables which includes household size ($HH_{SIZE}$), years of age of the household head ($HH_{AGE}$), sex of the household head ($HH_{SEX}$) , region of the household head ($HH_{RGN}$), employment status of the household head ($HH_{EMP}$) and the number of years that the household head had spent in education ($HH_{EDU}$ ).

Thus, an econometric model is formulated as follow

$$y = \alpha_i + \beta_1 \ln REM_i + \beta_2 URB + \beta_3 HH_{SEXi} + \beta_4 HH_{SIZEi} + \beta_5 HH_{AGE} + \beta_6 HH_{EDUi} + \beta_7 HH_{RGNi} + \beta_8 HH_{EMPi} + \varepsilon_i \quad (2)$$

where all variables are as previously defined except ε, which represents the usual error term. Total household expenditure and total remittances received by households are in natural logarithm. Log transformation can reduce the problem of heteroscedasticity because it compresses the scale in which the variables are measured, thereby reducing a tenfold difference

between two values to twofold difference (Gujarity, 1995). It is expected, a priori that all the $\beta_{s,}$ estimated coefficient will have a positive sign.

Another logistic model was built to analyze the factors that affect the probability of receiving remittances in Ghana. The model used remittances as the dependent variable with URB is the urban settlement type of the household, age (years) of the household head ($HH_{AGE}$), sex of the household head ($HH_{SEX}$), religion of the household head ($HH_{RLG}$), and employment status of the household head ($HH_{EMP}$). The logistic regression was used because remittances was grouped into binary response, thus 1, a value of one is given if the households receives remittances and 0 if the households does not receive remittances. The logistic model also helps to overcome many restrictive assumptions of the OLS regression (Berry and Feldman 1985).

The logistic model is formulated as follow. Let P(Y=1) the probability of the households receiving remittances and P(Y=0) be the probability of the households not receiving remittances and X's be the independent variables.

$$\text{Logit } P(Y) = \alpha + \sum \beta i Xi \quad (3)$$

The individual independent variables given be X can be compute using equation (3). The influence of each variable can be known using the odd ratio (OR).

The OR is given by OR = exp ($\beta$), where the $\beta$ is the estimates of the parameters.

The econometric model can be formulated as

$$REM = \alpha_i + \beta_1 HH_{SEXi} + \beta_2 URB + \beta_3 HH_{RGNi} + \beta_4 HH_{EMPi} + \beta_5 HH_{AGE} + \varepsilon_i \quad (4)$$

Where (where REM is remittances which takes on a value of 1 if household receive remittances and 0 otherwise)

This is regressed for the purpose of finding the probability of receiving remittances in Ghana.

# CHAPTER 5: RESULTS

## 5.1 Descriptive Analysis

Table 6 measures the descriptive statistics of the independent variables, thus, the total number of respondents for each variable and its frequency. The 2012/2013 GLSS data show that the proportion of male headed households (72%) is higher than that of female (28%). This is the case because in most of the households in Ghana, males are regarded as the family heads, accept with the husband has died or has been separated from his wife. Table 7 also reviewed that 56% of the respondents live in urban areas while 44% live in the rural areas. Many families have moved to the urban areas in search of jobs, good education, and good health care facilities. The educational level, on the other hand, showed that about 28% have had no education, 25% have had primary education only while 47% have had senior high school or university certificate. With respect to the remittances received by the households, about 40% of the households receive remittances while 60% of the households do not receive remittances.

Table: 7 Descriptive statistics of the relevant variables

| | Frequency | % |
|---|---|---|
| Remittances | | |
| Households receiving | 5 678 | 34 |
| Households not receiving | 11 094 | 66 |
| Gender of head of household | | |
| Male | 12 043 | 72 |
| Female | 4 729 | 28 |
| Regional location of household | | |
| Northern part | 4 548 | 27 |
| Southern part | 12 224 | 73 |
| Employment of household head | | |
| Not employed | 59 | 0 |
| Employed | 16 202 | 100 |
| Locality | | |
| Urban | 7 445 | 56 |
| Rural | 9 327 | 44 |
| Household head age interval | | |
| Under 25 | 1 194 | 7 |
| 25 - 65 | 13 126 | 78 |
| Above 65 | 2 452 | 15 |
| Education level, household head | | |
| No education | 4 755 | 28 |
| Primary education | 4 102 | 24 |
| Junior High School | 4 840 | 29 |
| Senior High School | 2 203 | 13 |
| University and higher | 867 | 5 |

Source: constructed from 2012/2013 GLSS

Table 8 measures the summary statistics of both the dependent variable and the independent variables, it measures the average, standard deviation, minimum and maximum of each variable. The average household expenditure on food, according to the GLSS 6 is GHS4062 while the standard deviation is GHS3871. This means that on average each household spend about GHS4000 on food while the standard deviation shows that most households expenditure on food deviate from the mean by GHS3871. This is possible because about 25% of Ghanaian population live below the poverty line while the income inequality between the poorest group and the richest group is wild. Thus, the poorest group earned 5.2% of national income while the richest group earn 48.3% of the national income (GLSS 6). These factors are possible for the almost 50% deviation of the household food expenditure from the mean (GHS4062).

Table 8: summary statistics of the variables

| | Unit | Mean | Std. Dev | Min | Max |
|---|---|---|---|---|---|
| Dependent variables: | | | | | |
| Food expenditures | GHS | 4 062 | 3 871 | 15 | 135 233 |
| Non-food expenditures | | 3 940 | 5 202 | 0 | 116 035 |
| Education expenditures | | 712 | 1 645 | 0 | 60 160 |
| Housing expenditures | | 640 | 1 638 | 0 | 73 117 |
| Other expenditures | | 1 716 | 3 103 | 0 | 111 253 |
| Independent variables: | | | | | |
| Remittances | | 797 | 2 233 | 1 | 97 000 |
| Region | | 1.271 | 0.445 | 1 | 2 |
| $HH_{Sex}$ | | 0.718 | 0.449 | 0 | 1 |
| Household size | | 4.264 | 2.784 | 1 | 29 |
| Locality (urban/rural) | | 1.445 | 0.497 | 1 | 2 |
| Education | | 9.412 | 3.793 | 0 | 19 |
| $HH_{age}$ | | 45.839 | 15.893 | 15 | 93 |

Sources: constructed from 2012/2013 GLSS
Notes: Number of observations for 2012/2013 is 16,772

According to the GLSS6, the average non-food household expenditure for Ghanaian is about GHS3940 while the standard deviation for non-food expenditure is GHS5202. Thus, the average annual expenditure consumer goods such as clothes, shoes, fabric, refrigerator and television and household durables such as stove, refrigerator, furniture and televisions are about GHS3940. The standard deviation on the other hand showed that on average each households non-food expenditure deviate from the mean by GHS5202. This is possible because the difference between non-food expenditure of the rich and the poor is expected to by high since people can love without most of the items listed under the non-food expenditure. It can be seen from table 8 that some of the households spend nothing on non-food while some households also spend more than GHS10,000 in the same category. The table shows that the average educational expenditure for households in Ghana is around GHS710 with a standard deviation of GHS5202. Thus, most of the household expenditures are more spread out. This is possible because from table 6, about 72% of the respondent had junior secondary school education or less which is almost free in Ghana. The average household housing expenditures in Ghana is

GHS640 with the standard deviation of GHS1638. With respect to the remittances received by the households, table 8 shows that, the average remittances received by the households is a little below GHS800 with a standard deviation of about GHS2230.

The family with the highest members is 29 while the average family size in Ghana is around 4.3 with a standard deviation of 2.8. The average age of the household heads in Ghana, according to GLSS6 is around 46 years with its standard deviation of 16 years. The oldest household head that was interviewed was 93 years old while the youngest household head was 15 years old. Lastly, the average age spent in education in Ghana is 9.4 years with its standard deviation of 3.8 years. This shows that most of the respondents had at least a junior high school certificate. On average, households spend more of their annual income on food, than on non-food such as clothing, shoes, fabric, refrigerator, furniture, television, cars, and computers. Households, however, spend less on education. This might be because the public basic school and secondary schools are free in Ghana.

## 5.2 Multivariate Analysis

### 5.2.1 Remittances and Consumption

Table 9 is a variance inflation factors (VIF) that analyze the correlation that exists between the independent variables in the model. The correlation between the independent variables is a problem because independent variables should be independent. From the table below, it can be observed that the VIF for all the variables is little above one. This shows that multicollinearity does not affect the independent variables and the p-value of the coefficients can be trusted.

Table 9: multicollinearity test

| Variable | VIF | 1/VIF |
|---|---|---|
| Remittances | 1.04 | 0.9575 |
| Region (south) | 1.06 | 0.9448 |
| $HH_{sex}$ (female) | 1.12 | 0.8908 |
| $HH_{AGE}$ | 1.11 | 0.9013 |
| Household size | 1.13 | 0.8812 |
| Urban | 1.12 | 0.8949 |
| Education | 1.08 | 0.9257 |

Source: GLSS 6

Table 10 on the other hand is the OLS regression that analyzes the impact of remittances on consumption and consumption patterns in Ghana. The coefficient of determination ($R^2$) measures the proportion of the variance for a dependent variable that's explained by the independent variables in the regression model. The $R^2$ of the model for food expenditure is 0.22 which shows that 22% of the observed variation can be explained by the independent variables. Again. the $R^2$ for the household non-food, housing, education and "other" expenditure also shows that the independent variables explained the respective models by 36%, 25%, 29% and 22%, respectively. The F test for the food, non-food, education, housing and other household expenditure proves that the regression model provides better fit to the data than a model that contains no independent variables. The table again provides a test for heteroskedasticity, the white test was used to test whether the variance of the errors in the model is constant. The result from the white test shows that the homoskedasticity hypothesis should be rejected, thus, the variance of the error term is not constant. In other to correct the heteroskedasticity problem, the robust standard error was used.

The OLS regression shows a direct relationship between remittance and food expenditure in Ghana. The regression of GLSS6 data shows that an increase in remittances by GHS 1, increases household consumption on food by 0.042. The p-value also shows that the relationship between remittances and consumption is significant at the 1% significant level. An increase in remittances by GHS1 increases household expenditure on housing by 0.076. The

relationship between remittances and household housing expenditure was seen to be significant at the 1% significant level. However, the relationship between remittances and non-food expenditure, remittances and education expenditure, remittances and other expenditure was seen to be negative. Thus, an increase in remittances by GHS1 decreases non-food expenditures, education expenditure, and other expenditure by 0.074, 0.030 and 0.167 respectively. The relationship between remittances and education expenditure was seen not to be significant. This means that remittances are a factor that influence household expenditure on food, non-food, housing and other expenditure. This is the case because remittances had been one of the major sources of income for most households in Ghana, especially in the northern part of Ghana. Many families sell their assets to invest in the migration of its member and in return expect remittances from the migrant in order to take care of the rest of the family.

Table 10: OLS estimation results of remittances on consumption in Ghana

| | Food | Non-food | Housing | Education | Other |
|---|---|---|---|---|---|
| Remittances | 0.042*** | -0.074*** | 0.076*** | -0.030 | -0.167*** |
| (receive) | (0.013) | (0.016) | (0.025) | (0.032) | (0.021) |
| Region (South) | 0.308*** | 0.355*** | 0.198*** | 0.729*** | 0.392*** |
| | (0.018) | (0.023) | (0.035) | (0.047) | (0.302) |
| $HH_{Sex}$ (female) | -0.019 | -0.016 | 0.129*** | 0.294*** | -0.203*** |
| | (0.015) | (0.017) | (0.025) | (0.037) | (0.023) |
| $HH_{AGE}$ | 0.001 | -0.001*** | 0.054*** | 0.006*** | -0.002*** |
| | (0.002) | (0.0001) | (0.003) | (0.001) | (0.001) |
| Household size | 0.122*** | 0.156*** | 0.108*** | 0.199*** | 0.110*** |
| | (0.003) | (0.003) | (0.005) | (0.007) | (0.023) |
| Urban | 0.232*** | 0.584*** | 1.105*** | 1.006*** | 0.461*** |
| | (0.013) | (0.016) | (0.025) | (0.033) | (0.020) |
| Education | 0.024*** | 0.084*** | 0.005*** | 0.114*** | 0.098*** |
| | (0.002) | (0.002) | (0.001) | (0.004) | (0.003) |
| Constant | 6.972*** | 6.092*** | 3.942*** | 2.706*** | 5.344*** |
| | (0.032) | (0.039) | (0.061) | (0.088) | (0.053) |
| No. of obs. | 11481 | 11481 | 10351 | 7817 | 11453 |
| R square | 0.22 | 0.36 | 0.25 | 0.29 | 0.22 |
| F test | 420.11*** | 823.93*** | 477.61*** | 462.68*** | 404.49*** |
| White test | 211.48*** | 366.05*** | 504.19*** | 420.87*** | 282.01*** |

Sources: GLSS6

*** denotes statistical significance at the 1% level

The finding of the study is supported by the finding of that of Akpa (2018) who used an ARDL analysis in finding the impact of remittances on household consumption in Ghana. It was also supported by the findings of Sam et al. (2013) on the contribution of remittances to households in Ghana. It was also in line with Keho (2017) who used annual time series data from 1981 to 2013 for 19 African countries and 1987 to 2013 for 9 Asian countries to review that remittances significantly have effect on consumption in developing countries. It was, however, not consistent with the previous studies in Albania by Castaldo and Reilly (2007). They used OLS regression and found that remittances do not significantly affect household consumption. Adams Jr. et al. (2008), who used GLSS 5 and proved that remittances do not significantly influence remittances in Ghana. Again, an increase in remittance will mean households will spend more on housing rather than food. The pattern therefore shows that households that receive remittances will spend more on housing rather than food and other consumption categories.

The size of the household and household consumption on food, non-food, housing, education and "other" show a positive relationship. Thus, from the models it can be seen that an increase in the size of the household by a unit increases the household's consumption on food, non-food, housing, education and "other" by 0.122, 0.156, 0.108, 0.199 and 0.110, respectively. Thus, an increase in household remittances by GHS1 will increase the household food consumption by 0.12 pesewas. An increase in remittances by GHS1 will also increase household non-food consumption by 0.16 pesewas. An increase in the size of household increases household consumption on education more than in non-food, food, housing and "other". The relationship between the size of the household and consumption on food, non-food, housing, education and "other" in Ghana are significant at 1%. The result is plausible because any additional member of a family is likely to increase the family expenditure. The finding is in line with the study by Haider et al. (2016) on the impact of remittances on

consumption and saving behavior in Rural areas in Bangladesh. They reviewed that the size of family and consumption has a significant positive relationship in Bangladesh. The study was also in line with the findings by Randozzo and Piracha (2014) on the remittances and household expenditure behavior in Senegal. They also reviewed a significant positive relationship between the size of family and consumption in Senegal.

The study also reviewed that the household head that resides in the urban area and consumption on food, non-food, housing, education and "other" has a positive relationship. The result showed that a family living in the urban area will increase it consumption on food, non-food, housing, education and "other" by 0.232, 0.585, 1.105, 1.006 and 0.461. Thus, people who reside in the urban areas increase their household food consumption by 0.23 pesewas. Families that reside in the urban areas are also more likely to increase their household consumption on non-food by 0.58 pesewas. Again, households that reside in the urban areas increase their consumption on housing and education by approximately the same amount they receive from remittances. It was seen that household in the urban area is likely to spend more on housing and education and less on food. The impact for all the categories is statistically significant at 1%. The result is likely because the cost of living in the urban areas is higher than that of the rural areas in Ghana. Thus, the cost of renting a room in the urban sector is far more than that of the rural area. This mean that someone who is living in the urban areas will be expected to spend more on housing. Again, the urban areas have a lot of expensive private schools which people prefer to send their children to as against sending them to government schools which is free. As results of this people in the urban areas spend a lot of money in educating their children as compared to rural households.

The study results indicate that the sex of the household head (female) has a positive impact on consumption on housing and education. Thus, a household that is headed by a female is likely to increase its consumption on housing by 0.129 and consumption on education by 0.294.

However, the relationship between sex (female) and household consumption on food, non-food and other are negative. Thus, a household that is headed by female is likely to decrease its consumption on food, non-food and "other" by 0.019, 0.016 and 0.203 respectively. The household's consumption on food decreases by 2 pesewas if the households is headed by female as compared to a family that is headed by a male. The household expenditure for non-food is likely to decrease by 2 pesewas if the household is headed by female. Lastly, a female that is headed by female is likely to reduce household consumption by 20 pesewas. Consumption on housing, education and "other" are statistically significant at 1% significant level. The is likely because a female a female headed females in Ghana are averagely poor. These females are mostly windowed or have been separated from their marriage. The empirical study also provided evidence of the role of the age of the household head on consumption of non-food, housing, education, and "other" in Ghana (at 1% significant level). It reviewed that the age of the household head has a negative relationship with consumption on non-food and "other" in Ghana. It was, however, seen that the age of household head on food, housing and education has a positive relationship. The study by Randozzo and Piracha (2014) on the remittances and household expenditure behavior in Senegal also showed a significant negative relationship between age of household head and consumption in Senegal. The result also in line with the study by Dhakal (2012) remittances, household expenditure and saving in Nepal. He proved that sex has a positive relationship with consumption in Nepal.

The results also reviewed that households in the southern part of Ghana has a positive relationship to household consumption in Ghana. Thus, household in the southern part of Ghana spend more on consumption than that of the northern part of the country. A household in the southern part of Ghana increases it consumption on food, non-food, housing, education and "other" by 0.308, 0.355, 0.198, 0.729 and 0.392 respectively. Thus, households in the southern part of Ghana increase their consumption on food by 31 pesewas as compared to the

household in the northern part of Ghana. Also, households in the southern part increases their consumption on cloths, fiber, furniture, and other household and consumer goods by 36 pesewas. Lastly, households in the southern part increases their housing expenditures by 73 pesewas as compared to households in the northern part of Ghana. The result was expected because the cost of living in the southern part of the country is higher than that of the northern part of the country. It is also known that those who are in the northern part of the country mostly used their own farm produce to feed their family. Again, education and housing expenditure in the northern part of the country is less as compared to that of the southern part of the country. This means that the head of households in the northern part of Ghana are more likely to invest remittances they receive in their farm rather than consuming them.

Another variable that was seen as determining factor in household consumption is education. it was observed that as the years spend in school increase by 1, the household consumption on food, non-food, housing, education and "other" increase by 0.024, 0.084, 0.005, 0.114 and 0.098 respectively. All categories were seen to be significant at 1% significance level.

### 5.2.2 Determinants of remittances

The demographic factors that influence the remittances in Ghana. It specifically analyzed the effect on sex, employment status, region, locality, and age interval on the likelihood on the head of household in receiving remittances in Ghana. Table 11 presents the logistic results that show the likelihood of receiving remittances in Ghana. The likelihood ratio (LR) chi-square test which show that at least one of the predictors' regression coefficient is not equal to zero in the model proves that all the variables in the model are useful. Thus, at least one of the variables is not equal to zero. The odd ratio from table 11 shows that household head who is male is about 2 times more likely to receive remittances than that of female household head (OR= 2.19). The p-value for the model confirms that sex is a significant factor in receiving remittances in Ghana. This result is not surprising because most households is Ghana are headed by males so it is likely that they will receive remittances from their family members

abroad rather than that of females. However, these remittances are more likely to be used by all the family members including the wife or the family members of the family.

Table 11: Logit results showing the likelihood of receiving remittances in Ghana

| | Odds Ratio | Std. error | P > [z] |
|---|---|---|---|
| HH head's gender | | | |
| Female (ref) | | | |
| Male | 2.19 | 0.08 | 0.000*** |
| HH head's employment status | | | |
| Unemployed (ref) | | | |
| Employed | 1.64 | 0.44 | 0.066* |
| Region | | | |
| Northern (ref) | | | |
| Southern | 0.89 | 0.39 | 0.817 |
| Locality | | | |
| Rural (ref) | | | |
| Urban | 1.15 | 0.04 | 0.000*** |
| Age interval | | | |
| 15 – 25 (ref) | | | |
| 25 – 65 | 1.32 | 0.09 | 0.000*** |
| Above 65 | 0.54 | 0.04 | 0.000*** |
| Constant | 0.69 | 0.19 | 0.173 |
| LR chi2 (6) | 880.04 *** | | |
| Pseudo R2 | 0.0426 | | |

Source: GLSS6

*** denotes statistical significance at the 1% level
*denotes statistical significance at the 10% level

The odds ratio also shows that the head of a family who is employed is about 3 times more likely to receive remittances than the household head who is unemployed. The relationship is seen to be 10% significant level. This result was expected because it is likely for the head of family who is employed to support their family member to travel abroad than the family head who is unemployed. Most of the families in Ghana invest in their children to travel abroad and the children in return send the family remittances. It is therefore likely for head of families who are employed to bear the cost of travelling abroad.

Another interesting result is the region, it is reviewed that the family head in the southern part of the country are 12% less likely to receive remittances than the family head in the northern

part of the country. The poverty rate in the northern part of Ghana is higher compared to that of the southern part of Ghana. It is also difficult to get job in most part of the northern region because of its difficulty in attracting industries and companies due to inadequate infrastructure and social amenities. Therefore, it is likely for most families to depend on the remittances of family members abroad. However, these remittances are mostly invested in their farm due to the low cost of living in that region as compared to the cost of living in the southern part of Ghana. Apart from the region, people who resides in the urban areas are 15% more likely to receive remittances than people that live in the rural areas. This result was expected because people that live in the urban areas get easier access to money transfer shops and banks where they can pick up their money. Whereas those family residing in the rural areas lack these banks and money transfer shops. This make it more likely for people in the urban areas to receive remittances than those in the rural areas.

Lastly, according to the results, age is a factor that influence the likelihood of receiving remittances in Ghana. The head of households that falls between the age of 25 and 65 years are more likely to receive remittances than those that falls below 25 years of age. The result is plausible because the expenses and need of a family head who is under 25 years will be quite lesser than the family head who is above 25 years old. The head of family who is above 25 years will mostly have a higher dependency ratio than those who are below 25 years of age. This makes it highly possible for their family members abroad in helping them with remittances.

# CHAPTER 6: CONCLUSIONS

## 6.1 Summary of the work

The study investigates the impact of remittances on consumption in Ghana, and consumption patterns in Ghana. As well as the factors that affect the likelihood of receiving remittances in Ghana using 2012/2013 GLSS. The study sought to develop an OLS regression for consumption using remittances, households' size, age of the head of household's head, employment status of the household head, locality of the household head, sex of the head households', region and the years spend in education. It also developed a logistic model for remittances using age of the head of household's head, locality of the household head, employment status of the household head, sex of the head households' and region. All estimations were carried out using STATA version 15.

The results obtained from the estimation show that remittances increase household consumption on food and housing. A significant negative relationship was found between remittances and consumption on both non-food and "other". The results, however, shows that households that receive remittances are more likely to spend more on housing than on food.

The OLS regression shows that an increase in remittances by GHS1 increases household consumption on food and housing by 42 pesewas and 76 pesewas, respectively. This shows that remittance is importance determinant of household consumption in Ghana. The pattern of consumption on the hand shows that households that receive remittances will spend more on housing rather than food and other consumption categories. Because of the huge housing deficit in Ghana, it makes it more expensive for families in renting housing or apartment. This is because most house owners take two years advance payment before they rent their houses to people. The size of the household was also seen to have a significant positive relationship with household consumption on food, non-food, housing, education and "other". Thus, an increase in the size of household increases household consumption on food, non-food, housing,

education and “other” in Ghana. A household head that resides in the urban area and those who are in the southern part of Ghana has a significant positive relationship with consumption. Thus, people who live in the urban area are more likely to increase their consumption than those who live in the rural area when they receive remittances. Another variable that influence consumption in Ghana is Education. Thus, the additional years that will be spend on education increases consumption on food, non-food, housing, education and “other” by 0.024, 0.084, 0.005, 0.114 and 0.098 respectively.

This paper confirms that remittances increase household consumption particularly consumption on food, non-food, housing, and education in Ghana. Households spend most of their remittances on housing and food. Measures therefore need to be taken to reduce the costs of remitting to and within Ghana. The cost of remitting money to Ghana currently 10% needs to be reduce, because it discourages migrants from remitting to their family. It also reduces the amount which the households will be likely to receive as remittances which in effect reduces their consumption.

From the logistic model, it was seen that household head who are male are more likely to receive remittances than household head who are female. The sex of the household head is therefore a factor that affects the likelihood of receiving remittances in Ghana. Household heads who are employed are likely to receive remittances than household heads who are not employed. This is likely because household heads that are employed are more likely to afford the cost involve in sending a family member abroad. Employment was also seen to be a factor that increases the change of receiving remittances in Ghana. Household heads that reside in the urban areas are 12% more likely to receive remittances than household heads that live in the rural areas. The locality is also a factor that increases the chance of households receiving remittances in Ghana. The age of the household head is also a factor that increases the probability of receiving remittances in Ghana. According to the results, household heads that

are within the age group of 25 and 65 years are more likely to receive remittances in Ghana. This is because the expenses and need of a family head who is within the age group of 25 and 65 will be high as compared to family head who is below 25. Again, the family size for family head within the age group of 25 and 65 will be higher which in effect requires a higher household income. The work confirms that sex, region, locality, employment status and age of the household head are the factors that affect the likelihood of receiving remittances in Ghana. Authorities should encourage microfinance institutions and rural banks to play a greater role in the remittances market in Ghana. This will help the rural and the households in northern part of Ghana to get easy access to their remittances since microfinance institutions and rural banks are mostly in the rural areas.

With regard to policy implications, it was found that remittances have a significantly positive impact on household consumption on food, non-food, housing, and education in Ghana. This means that remittances can be regarded as another key growth avenue such as exports and FDI. Thus, remittances can promote growth through increasing consumption as established in this study.

The results indicate that region is a factor that influences the likelihood for a household to receive remittances. Thus, households in the southern part of Ghana are less likely to receive remittances that household in the northern part of Ghana has important policy implications. Since the availability of banks and mobile transfer shops increases the probability of receiving remittances (Ganyo, 2013), it is important to initiate measures that will increase the number of banks and mobile money shops in the northern region of Ghana. It also important to reduce the cost of receiving remittances associated with northern region. Reduction of transaction costs associated with receiving remittances such as transactions costs and bank charges will increase the flow of remittances, thereby increasing household's consumption and help to alleviate poverty.

## 6.2 Limitation of the study

First, the information used for this study were obtained from the household head which limited the analysis to the household head rather than the migrant who send the remittances. If the data includes information from the migrants it could have made the analysis more interesting and deeper. For example, variable such as the educational level of migrants, the migrant's marital status and the migrants age could have been of important to this type of study.

Secondly, the data lack important variable which was needed for the study. For example, the survey questionnaire did not ask about the age of the household members which made it difficult to calculate the dependency ratio which is useful for these types of studies.

Lastly, the study used one set of GLSS data because the other GLSS data set was lacking some important variables. However, the pattern could have been clearly shown if at least two different data sets were used. Again, the use of remittances requires a long-study of the household regarding their migration history. Therefore, it could have been useful if the observation and variables measured for the GLSS data sets were the same.

## 6.3 Recommendation for future studies

The study analyzed the effect of migrant remittances on expenditure on food, non-food, housing, education and "other". However, a further analysis is required to explore in more detail of which members of a household benefit most from remittances (e.g., children, adults, the elderly, etc.). This is because a poorly determined effect of migrant transfers on this conflated category might disguise the important variation in effects within more finely defined categories.

A broader applicability of the findings needs to be interrogated further and this could be done by adding at least two different GLSS data set to the analysis. This, in addition to the consumption category will give a clearly picture of the pattern of consumption in Ghana.

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**Norges miljø- og biovitenskapelige universitet**
Noregs miljø- og biovitskapelege universitet
Norwegian University of Life Sciences

Postboks 5003
NO-1432 Ås
Norway