

**EFFECTS OF OUT-MIGRATION ON LIVELIHOOD STATUS OF ARABLE CROP  
FARMERS IN KOGI STATE, NIGERIA.**

**BY**

**IBRAHIM Ismaila Ohikura  
M.TECH/SAAT/2018/7890**

**DEPARTMENT OF AGRICULTURAL EXTENSION AND RURAL  
DEVELOPMENT**

**SCHOOL OF AGRICULTURE AND AGRICULTURAL TECHNOLOGY,**

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**A THESIS SUBMITTED TO THE POST GRADUATE SCHOOL FEDERAL  
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## ABSTRACT

*The study analysed the effects of out-migration on arable crop production and household livelihood along gender dynamics in Kogi State, Nigeria. Five stage Sampling procedure was used to select 217 households comprising of 137 males and 80 females headed households. Primary data were collected with the aid of semi-structured questionnaire complemented with an interview schedule. Data were analyzed using descriptive statistics (frequency counts, percentage and mean) and inferential statistics (Ordinary Least Square (OLS) regression, multiple regression and ordered logit regression. The results obtained showed that (male 60.6% and female 55.0%) of the households were in their middle age of between 31 – 50 years with mean age of 47 and 48 years, respectively. The mean farm size for the male and female headed households were 2.5 and 1.5 hectares, respectively. The female headed households (18.7%) had less access to extension services as compared to the male headed household (30.7%). Out-migrants was common to both households as the male 54(39.40%) and female 35 (43.8%) headed households indicated moderate level of out-migration. Major reasons for out-migration as indicated by both male (57.7%) and female (60.0%) headed households was to acquire education and remittances sent back home. The result of the ordinary least square regression model revealed that factors influencing out-migration. Indicated by both male and female are age (0.0429), education (0.0883), cooperative membership (0.4773), remittance from migrants (0.4171), employment opportunity (0.3250) and quality of life (0.3180). The result of multiple regression model showed that the following variables had direct relationship to crop production. Improved seeds (0.2722), fertilizer (0.4215), Education (0.3332), cooperative membership (0.0897) and remittance from migrants (0.0983). Meanwhile result obtained from ordered logit regression on livelihood status shows farm size to have negative effects on the female household, education, and extension contact had positive effects on livelihood. The strategies adopted by both households to mitigate the effect of out-migration include among others engaging in community-based income generating activities ( $\bar{X}= 2.62$ ), application of modern farming technologies ( $\bar{X}= 2.55$ ) and development of entrepreneurial skills ( $\bar{X}= 2.50$ ) ranked 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup>, respectively. The study therefore recommended that funding organizations should promote skills acquisition and provide infrastructural facilities among households along gender dynamics to mitigate effects of out-migration particularly in the study area.*

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## CHAPTER ONE

### 1.0

### INTRODUCTION

#### 1.1 Background to the Study

Agriculture has been the major source of livelihood of the rural people in most African communities including Nigeria. Agriculture remains the key sector in the rural areas of Nigeria where over 70% of its population reside. Agriculture contributes about 27.68% to the Gross Domestic Products (GDP) and provides livelihood for about 70% of the population (National Bureau of Statistics (NBS), 2017). The importance of agricultural sector in the overall Nigerian economy cannot be overemphasized. Agriculture as a leading contributor to household food supply and other natural resources is being affected by out-migration along gender dynamics, particularly in the area of sustainable arable crop production.

Movement of people from place to place has been a recurrent decimal phenomenon since the errand of human history (Ibrahim and Danjunma, 2012). However, though its form has changed but it remains a very dominant issue in the global social system. In modern days, people migrate from underdeveloped areas to the developed ones in search of better employment and opportunity. The surplus labour from low productive agriculture in rural areas is transferred to high industrial areas (Liu, *et al.*, 2016), rural-urban migration thus results in drastic decrease in rural labour which in turn reduces total cropped area and quality of work, giving rise to reduced food production at the rural areas.

The impoverishment of rural areas in Nigeria is partly explainable by economic isolation and out-migration of youths in search of employment in cities, which affects the labour force for agricultural production, with males more prone to migration than females (Ofuoku, 2015). Out-migration leads to labour shortages and decline in the average quality of labour that

adversely affects output and productivity in native places. The new economics of out-migration explains that the decision to migrate is taken by larger association of related people, household or families rather than autonomous individuals.

According to Fazoranti (2019), out-migration has become of utmost importance as it has impact both on place of origin and destination. Though out-migration is not limited to a particular group yet the effects is significantly noticed on the agricultural activities and the household livelihood. There are far reaching consequences of out-migration on labour force demand of their places of origin. Keeping in view the anticipated consequences of out-migration in place of origin this study has been undertaken to examine the effects of out-migration along gender dynamics on arable crop production and household's livelihood.

A study conducted by Oluwatayo (2008), on the contribution of both gender to agricultural development in the country suggests that both contributions to farm and off-farm work is as high as between 60 and 90% of the total farm operation. The task performed by male gender ranges from land clearing, land-tilling, planting, weeding, fertilizer/manure application to harvesting, while the female undertake task such as food processing, threshing, winnowing, milling, transportation and marketing as well as the management (Dustmann and Okatenko, 2013). It is evident that the roles played by both gender are inter-dependent and complementary, hence the absence of one due to out-migration may lead to drop in required labour necessary to sustain productivity especially in the rural areas (Fazoranti, 2019).

Migration is the movement of people, either within a country or across international borders. It includes all kinds of movements, irrespective of the drivers, duration and voluntary/involuntary nature. It encompasses economic migrants, distress migrants, internally displaced persons (IDPs,) refugees and asylum seekers, returnees and people

moving for other purposes, including for education and family reunification (Donato and Gabaccia, 2015). In many African countries, more than 50% of rural households have at least one internal migrant and the larger numbers of migrant have been found to be from rural areas.

Findings by Shrestha (2017), show that out-migration is now considered as part of livelihood strategy of the poor. Out-migration of people for labour is gaining importance globally, as the remittances migrants send home to their families account for a significant share of the overall household income, particularly for poor households. Seasonal out-migration is one of the most common coping strategies adopted by poor households to stabilize their livelihoods and to adapt to climate, political and economic changes (Olawepo, 2010). It is also one of the only means for poor rural farm households to overcome shortfalls of seasonal agricultural income and employment. Since the very beginning, seasonal migration of the rural poor was a common phenomenon.

Advanced by Ekpebu and Ukpong (2013), they reviewed that agriculture employs about 73% of rural population in Africa and about 30% of the labour force in Nigeria, most of which are women. Out-migration under the background of rapid urbanization has led farmers to gradually abandon agricultural cultivation, especially among young rural laborers. In developing countries, the main labourers participating in agricultural cultivation have gradually changed from younger gender to the elderly and women. Thus, unchecked continuous migration of rural populace will have effects on sustainable crop production. Meyer (2018), stated that the impact of rural population decline on rural landscapes have shown that farmland abandonment has affected rural biodiversity and triggered the succession of ecological landscapes.

Labour out-migration has weakened agricultural cultivation and increased the areas and the possibility of farmland abandonment by farmers. López-Carr and Burgdorfer (2013), advanced that various researchers have seen out-migration as setback to increase arable crop production arguing that even with increase in technology able-bodies men and women are needed to drive those technology. Hence development should involve empowering rural population mostly women to engage in sustainable means of livelihood for instance agriculture and aquaculture (Nwabueze, 2010).

In other words, agriculture has been the major source of livelihood of the rural people in most African communities, including Nigeria (Ekpebu and Ukpong, 2013), therefore to ensure sustainable rural development, there is a need for suitable and consistent rural development policies that would promote agricultural development in the rural areas (Ita, *et al*, 2013). Sustainable agricultural development would enhance better standards of living and poverty alleviation in the rural areas. Hence, the need for greater commitment by stakeholders and the government towards designing sustainable strategies for economic development, that will encourage rural households to remain and actively take on agriculture practices and other sources of rural livelihoods (Ekpebu and Ukpong, 2013). In addition, the quest to achieve sustainable development, conservation agriculture needs to be encouraged in rural households in African communities (FAO, 2008).

Aromolaran (2013), stated that the impact of rural–urban migration on agricultural cultivation has two aspects: rural migration can change farmer household’s behaviours by labour and capital changes, while urbanization’s demand and supply to the agricultural sector can change the cost-benefit structure of agricultural cultivation by agricultural markets and technical efficiency changes. Therefore, urbanization has become the main driver of rural

social and cultivation restructuring. The linkages between rural migration and agricultural cultivation have become a key aspect of rapid urbanization in developing countries, affecting rural surplus labour release, food security, agricultural prices, rural construction, agricultural modernization, rural land use and environmental change, and even the prospects for urbanization.

## **1.2 Statement of the Research Problem**

Out-migration constitutes a major developmental and humanitarian challenge, calling for a broad and comprehensive perspective, advocacy and communication at the national, regional and global levels. In Nigeria, the drive for self-sustenance in food production can be threatened by the rate of out – migration of able hands if not taken into serious consideration and reduced. Out-migration could affect the supply of labour and the related skills mix as well as demographic composition of the remaining population. Meanwhile, out-migration could reduce pressure on local labour markets and foster a more efficient allocation of labour with higher wages in agriculture, rural areas risk losing the younger, vibrant, vital and dynamic member of their workforce. Depending on the context, women who stay behind may have taken on men’s role hence gaining greater control over productive resources and services, potentially helping to close the gender gap in agriculture (Ajaero and Onokala, 2013).

Migration itself can contribute to agriculture and rural development in the countries of origin, if the credit and/or insurance markets in rural areas are absent or function poorly; remittances relax liquidity constraints, provide insurance in case of crisis/shocks and foster investment in agriculture and other rural economic activities with potential for job creation. Moreover, diaspora organizations and return migrants can help rural areas in the countries of origin

through capital investments, skills and technology transfers, know-how and social networks (Altai consulting, 2016).

For rural areas in low and middle-income transit countries, migration and protracted forced displacement can constitute a challenge for local authorities to provide quality public services for the migrant and host populations can, amongst other things, further strain natural resources, and increase pressure on agriculture and household livelihoods. In the light of the foregoing, the following research questions were formulated to guide this study.

- i. What are the socio-economic characteristics of the farm households along the gender dynamics in the study area?
- ii. What is the level of household out-migration along the gender dynamics in the study area?
- iii. What are the factors that influence out-migration along gender dynamics in the study area?
- iv. What are the effects of out-migration on arable crop production of the farming households along gender dynamics in the study area?
- v. What is the livelihoods status of the farming households along gender dynamics in the study area?
- vi. What are the effects of out-migration on the livelihood of farming household along the gender dynamics in the study area?
- vii. What are the strategies adopted to mitigate the effects of out-migration along gender dynamics in the study area?

### **1.3 Aim and Objectives of the Study**

The major objectives of the study was to determine the effects of out-migration on Livelihood Status of arable crop Farmers in Kogi State, Nigeria.

The specific objectives of the study were to:

- i. describe the socio-economic characteristics of the farming household along the gender dynamics in the study area;
- ii. find out the levels of out-migration among the farming households along gender dynamics in the study area;
- iii. determine the factors that influence out-migration along gender dynamics in the study area
- iv. investigate the effects of out-migration on arable crop production among farming households along gender dynamics in the study area;
- v. know the livelihoods status of the farming households along gender dynamics in the study area;
- vi. determine the effects of out-migration on the livelihood status of farming households along the gender dynamics in the study area and
- vii. understand the strategies adopted by farming household to mitigate the effects of out-migration along gender dynamic in the study area.

### **1.4 Hypotheses of the Study**

The following null hypotheses were tested in the course of the study;

HO<sub>1</sub>: There is no significant difference in the crop output of the farming households along gender dynamics in the study area.



HO<sub>2</sub>: There is no significant difference in the livelihood's status of the farming households along gender dynamics in the study area.

### **1.5 Justification of the Study**

The influence of out-migration on production is complicated by the fact that migration of household members alters the labour endowment of the household and its livelihood status. Furthermore, beyond this potential effect of out-migration on household labour supply, the income-effect of remittances may also affect labour decisions negatively among the remaining members of the households, as household may re-allocate remittances received away from productive activities.

As much as it is the expectation that agriculture will employ Africa's growing youth population and particularly in Nigeria and in the study area, investment opportunities geared toward agricultural development, through infrastructure and skills enhancement is necessary to maintain the sector's job creating capacity. The driving forces that predispose able hands to out-migration from rural areas will have to be checked in order to minimize the rate.

The study unveiled the effects of out-migration on livelihood Status of Arable Crop Farmers in the face of efforts in place by the government of Nigeria for her citizens to attain self-sufficiency in food production. Out-migration in rural communities leads to loss of work force necessary for agricultural productivity and production. Thus, negatively affecting livelihood of many households. However, two conflicting hypotheses has lent itself to explain out-migration. The first being that out migration stimulates development of the origin area through remittances and by inducing technological changes which ultimately results in higher output and income in the area. Another hypothesis on the contrary states that it leads

to labour shortages and decline in the average quality of labour, which adversely affects output and productivity in native place.

This study will render it benefits to funding agents especially toward investment in value chain linked to sustainable agriculture, skills and technology transfer, know-how and social networks with focus on financial inclusion in rural area covering women and youth. Policy makers' policies and programmes play an important role in shaping the outcome of migration in terms of agriculture and rural development and ultimately, as regards poverty reduction and food production in rural areas. Hence, this study will provide data and information that will assist policy makers especially as it affects various gender, non – governmental organization, contribution to building community resilience and promoting formation of organization that saves and rebuild livelihood of rural dwellers, and to research institutes interested in the development of rural areas. Agriculture has to be able to compete with other sectors in a profitable manner in order to foster accelerated transformative change and enhance job creation, improve livelihood status and incomes for rural households. Future researchers and students will find this study useful as reference material and it will generally contribute to the advancement of the frontiers of knowledge.

### **1.6 Scope of the study**

This study covered Kogi State, Nigeria. The study concentrated on effects of out-migration and how it affects Livelihood of arable crop farmers.

### **1.7 Limitations of the study**

The study suffered several limitations among which include:

- a. Lack of funding which limited the scope of the study

b. Poor record keeping by most households from which to obtain accurate figures on some socio-economic features

c. Hoarding of data by some household heads made data collection difficult

## CHAPTER TWO

### 2.0

### LITERATURE REVIEW

#### 2.1 Concept of Out-migration along Gender Dynamics

According to Garip (2014), migration of people has been a recurrent phenomenon since the dawn of human history. However, its forms have changed, but remain very dominant phenomenon in the global social system. Out-migration simply means any departure from the neighborhood lasting one month or more for any reason. It includes moving within and outside of Nigeria. Out-migration is the movement of people from one place to another with the intention of settling permanently or temporarily at a new location. Migration as a global phenomenon is not caused only by economic factors as often assumed but also by social, political, cultural, environmental, health, education and transportation factors. Though there are various factors that promote migration but most prominent among others is the Economic factors. This has enjoyed the support of many researchers, especially in developing countries. (Liu *et al.* 2016, International Organisation for Migration (IOM) (2016))

The number of Nigerians living outside Nigeria between 2020 and 2023, from 1,346,932 to 1,899,683. In 2023, nearly two thirds of emigrants (65.5%) were residing in more developed regions. This is a relatively new pattern. For instance, in 1990 only 33.8 per cent of Nigerian migrants lived in more developed regions. By 2000, this had increased to 52 per cent, and further 56.7 per cent in 2010. That increasingly more Nigerians find their way to more developed regions is a function of employment-driven nature. It is hardly surprising that there were more Nigerian emigrants in West Africa given the ECOWAS Protocol on Free Movement of Persons

(Torneo, 2016). According to Deotti and Estnueh (2016), the uneven development between rural and urban area has prompted the large-scale out-migration from rural areas to the urban. Review by Van, *et al.* (2016) and Losch, (2016) states that perceived lack of employment or livelihood opportunities has contributed to migration aspirations: There is an emerging consensus in the evidence that a perceived lack of employment or livelihood opportunities can contribute to migration aspirations (Losch, 2016; Food and Agriculture Organisation (FAO, 2017). In addition, a desire for a higher salary or better career prospects can be a driver of out-migration aspirations particularly for the high skilled. Several high-quality quantitative and qualitative studies provide evidence that a desire for a better salary and better career advancement opportunities is correlated with aspiring to or actually migrating. (Qin, 2009). Fasoranti (2019) state that over one hundred and twenty-nine universities, plus other tertiary institutions, in Nigeria have not met the demand for tertiary education in the country. Thus, a large number of Nigerians migrate yearly in search of university education.

Alscher (2011) and Gautier, *et al.* (2016) reported that instance of conflict or environmental degradation, trigger out- migration as part of a household level adaptation strategy to mitigate risk. A combination of quantitative and qualitative studies on the effects of negative environmental trends and conflict found consistent evidence that decisions regarding migration in these situations are often made at the household, rather than individual level. In contexts where existing livelihood strategies have become insufficient to meet a household's needs or goals, because of environmental degradation or the loss of key assets due to conflict for example, households may choose to mitigate economic risk by engaging in out-migration as an alternative or complementary livelihood strategy. Negative environmental shocks and

long-term trends are likely to lead to internal rather than international migration (Torneo, 2016).

Findings by “Altai Consulting, 2016” and Williams (2016), advanced that increase in poverty is a key factor resulting to migration of farmers from rural to urban. Youths left their villages with the intention of finding work at towns and urban centres but unfortunately, many of them ended up without any work to do which constitutes problem to their livelihood some of them instead of coming back to the village result to petty-crime and stealing in order to survive. Ofuoku, *et al.* (2015) also shows that migration now involves both gender on like previous assumption that only Male counterpart do migrate. Beegle and Poulin, (2013) pointed out that younger woman in Malawi migrate more than their Male counterpart does, assumption of traditional pattern of matrilineal residence following marriage no longer holds. Both sexes now attribute their migration decision to factors as need for gainful employment, seeking independence from the place of origin and other gender specific factors emerge.

### **2.1.1 Types and reasons of out-migration along gender dynamics**

Migration include all kind of movements irrespective of the drivers and duration. IOM (2016) stated that there are different types of migration namely rural-urban migration which is when people migrate from rural area to urban area where amenities and opportunities are better. This mainly occurs in developing countries. Emigration that the movement of people from one country to another, immigration is when someone enter another country, internal migration is movement within the same country or region. It can be voluntary or involuntary. International migration is when people migrate from one country to another. Another type of migration that is gaining the attention of researchers currently is the return-migration which is the returning of individuals that migrate initially back to their native place.

Camlin, *et al.* (2014), stated that female migration is a dynamic process with inextricable links to development, affecting factors such as the development of communities, the delivery of social services, and the impact of remittances, should current trends continue, female migration within Africa would rise, particularly to regions offering economic opportunities. Ellis (2017) advanced that education is a major player among the reason that leads to out-migration. However, many reasons account for migration according to (Ibrahim and Danjunma, 2012) and Collin (2015).

Okafor (2015) reported that girls and women attribute their migrations to the need to accumulate property for marriage; to avoid harm, including female genital mutilation; and to avoid forced or arranged marriages. Oluwatayo (2008) stated that with growing social acceptance of female independence and mobility, girls and women are now the majority of migrants in many African countries, among adolescents. According to United Nation (2013), there are more female's involvement in internal migration much more than their male colleagues particularly at a younger age. The push factors are the main reason behind out-migration of individuals from a particular location, they further pointed out that situation such as crop failure, droughts, flood, war, poor education opportunities and poor services and amenities can trigger out-migration.

Adams and Cuecuecha (2010) in their findings pointed out that push factors are also a major driving force to out-migration as people are attracted to go out based on what they stand to benefit from outside their immediate community. Rural population also suffer inordinately from a lack of education with rural primary enrolment nearly 20% lower than urban enrolment (Aremu, 2014). Health wise, it has also contributed to the spread of HIV related diseases in urban centres that is affecting the labour force in Nigeria. Most of the HIV related

diseases career are the youths between the ages of 15-35 as a result it has a very great effects on the labour force. (World Bank, 2018).

In spite of the large arable lands the country has for agricultural activities, the poor state of its agricultural sector has led the country as a net importer of agricultural goods. Nigeria importation of food rise to 1.8 million tonnes of rice per year (FAO, 2017b). This make the country vulnerable to international fluctuation of food prices.

## **2.2 Effects of Out-migration on Households along Gender Dynamics**

According to Ibrahim and Danjuma, (2012), Agriculture is the main stay of the livelihood of the people of Nigeria powered by energetic and able-bodied rural dwellers, the effects of out-migration could have hampered present productive activity at the rural areas. Ibrahim and Danjuma (2012) stated that out-migration of Nigerians from rural areas also takes along with them vast amount of agricultural skills to other areas of the Federation thus starving the younger generations of adequate agricultural knowledge to cope with day to day living. The effects of out-migration on rural household is however all encompassing as it takes along with both gender. Qin and Liao (2015), stated that out-migration have effects on the environment conditions such as decline in agricultural productivity, land use and land cover changes, deforestation, natural calamities addressed in connections to Agricultural practices, incomes, assets, and consumption patterns are all critical elements of rural people's livelihood processes.

According to Shrestha (2017), one of the key areas of recent literature on the impacts of out-migration on rural livelihoods has focused on the difference of migrant and non-migrant households in agricultural production in rural areas. Mbah (2016) stated that the impacts of out-migration on agriculture is that rural labour out-migration leads to a decline in



agricultural cultivation and production. Rural households with labour out-migrants were found to have lower agricultural productivity than those without migratory workers (Qin and Liao, 2015, Schmook and Radel 2008). According to Mueller *et al.* (2015) and Slavacheska, *et al.* (2016), out-migration from smaller householder households in the rural area in most cases have direct effect on agricultural outputs. Particularly, if the individual worked on the farm prior to migration and he is involved with decision making for farm enterprises it will be affected if he is the main decision maker on what crops to cultivate.

Jones, (2012) also stated that where land rights are not fully secure out-migration lead to higher land exploitation or weaker propensity to right over land, hence household may continue to farm marginal land or not optimize their agricultural production. Nevertheless, (Losch 2016) pointed out that an opposite view contends that remittances generated from labour out-migration increase rural household incomes and enable rural households to make agricultural improvements. Abundant empirical evidence from different regions has shown that the potential negative influences of lost household labour on agricultural production, can be compensated by increased access to capital and enhanced agricultural investment (Taylor *et al.* 2003; de Haas 2010a; Crivello 2015; Deotti and Estruch, 2016 and FAO, 2017b). In addition, a “middle-path” finding from south central Ecuador showed that smallholder agriculture is not threatened by rural labour out-migration, nor were remittances invested in agricultural production and improvement (Czaika, 2015). This argument is supported by a recent survey-based study in the southern Ecuadorian Andes, which suggests that migrant-sending households do not differ from non-migrant-sending households regarding the area cultivated in subsistence crops (Gray, 2009).

According to Heinemann, Melanie *et al.* (2014), there is a consensus that migration and remittances reduce rural poverty and contribute to the improvement of household living standards. Migrant households (especially those receiving remittances) normally have higher levels of income and consumption than non-migrant households do (Taylor *et al.*, 2003; Airola, 2007; Schmook and Radel, 2008; Wouterse and Taylor, 2003). In terms of consumption patterns, several household survey based studies showed that migrant households with remittances tended to spend more than non-migrant households on durable goods and productive activities (Zarate-Hoyos 2004; Adams 2006; Taylor *et al.*, 2008, Airola, 2007).

A subset of the research on the impacts of migration on household income and consumption has also assessed the differences between rural migrant and non-migrant households in asset accumulation (Adams, 2006; Garip, 2014). In addition, several studies relevant to the environmental consequences of out-migration in rural areas revealed that rural out-migration led to local labour shortage, which in turn disrupted traditional resource conservation practices (Collins and Shubin 2015; Tirado-Alcaraz 2014; Gautam, 2017). Rural-urban migration thus result in drastic decrease in rural labour which in turn reduces total cropped area and quality of work, giving rise to reduced food production and reduced household wealth. The impoverishment of rural areas in Nigeria is partly explainable by economic isolation and out-migration of youths in search of employment in cities, which affects the labour force for agricultural production, with both males and female prone to migration (Ofuoku *et al.*, 2015).

According to Iruo, Sogo and Ukpang (2010), the impact of rural out - migration may result in the decline of the rural community economy that could lead to poverty and food insecurity,

thus increasing the vulnerability of rural households (United State Agency for International Development, (USAID) 2002). This arises owing to disproportionate exodus of the youth from the rural areas leaving only aged members and children to constitute the labour force. Therefore, efforts to address rural-urban migration would help to address food insecurity and other socioeconomic issues in the country by encouraging more youths to engage in viable economic activities, skills development and agriculture, hence promoting increased food production and improved income.

### **2.3 Effects of Out-migration on the Production Output and Livelihood of Households**

Out-migration in no doubts have negative consequences on production out-put. According to Gautam (2017), out-migration leads to labour shortages and decline in the average quantity and quality of labour that have negative effects on output and productivity in native place. More so, technology transfer is made difficult, as able hands that can easily accept and put to use new technology are not readily available for such (Olawepo, 2010). Thomas, (2016), further stated that out-migration of younger women to the urban areas in the name of marriages, in most cases constitute great reduction to output because women has been found to contribute between 60 to 70% of farm labour, more also failed marriages sometimes constitutes sexual promiscuity and un-willingness for them to return to rural areas. More also the urban areas dumped waste generated in the urban areas around the boundaries of rural areas, which eventually constitute health risk to the farmers, thereby reducing their productivity.

According to (FAO, 2016), out-migration will affect the supply of labour and the related skill mix, demographic composition of the remaining population. While out-migration may reduce

the pressure on local labour markets and foster a more efficient allocation of labour and higher wages in agriculture, rural areas of origin risk losing the younger, most vital and dynamic share of their workforce. Depending on the context, women who stay behind may gain greater control over productive resources and services, potentially helping to close the gender gap in agriculture. The effects of out-migration on rural household is However, addressed in connections to Agricultural practices, incomes, assets, and consumption patterns which are all critical elements of rural people's livelihood processes. According to Subedi (2017), livelihood comprises the capabilities, assets (natural, physical, human, financial, and social), and activities required for a meaningful living (Van *et al.*, 2016).

Comparing migrant households and non-migrant households regarding agricultural production, use of agricultural technologies, and income and consumption is a common method of examining the influences of out-migration on rural people's life. Given the environmental consequences of these factors, this line of inquiry has direct implications for the subsequent environmental outcomes of migration in rural migrant sending areas. Bellamy *et al.* (2017), stated that longitudinal data are not usually available, especially in rural areas of developing countries. Moreover, environmental changes can be attributable to a wide range of factors influencing out- migration. Therefore, a reasonable and efficient research strategy of differentiating environmental impacts of migration is to compare migrant households (or migrants) and non-migrant households (or non-migrants) with respect to activities that have important environmental impacts.

### **2.3.1 Effects of out-migration on household livelihood**

Ibrahim and Danjuma (2012), and Meyer, (2018) stated that one of the results of out-migration of farmers from rural to urban on sustainable livelihood was the increase in poverty. Youths left their villages with the intention of finding work at towns and urban centers, but unfortunately many of them ended up with no adequate skills to take on more rewarding work in towns. Qin and Liao (2015) stated that rural-urban migration affects the wellbeing of households including children. According to Xu and Xie (2015), rural-urban migration affects the wellbeing of rural schoolchildren who migrate with their parents and those left behind by their migrant parents. Pradhan (2013), maintained that migration leads to the absence of people, mainly of young men, but occasionally women alone, core or extended families, or whole households, whom when absent will have implications for agricultural and livelihood practices.

The absence of young men, who are likely to have responsibility for important elements of production and animal husbandry, reduces available labour, the relationship between labour migration and economic development is 'unsettled'. FAO (2012) advanced that the migration of young vibrant people from the rural home front, is a loss of valuable farm labour that translates into dwindling returns from agricultural sector and of course, this definitely is not healthy for a community that is largely agrarian.

Reviewed by Eze (2015) shows, there has been disagreement about the relationship between poverty and migration; however, when expected returns from remittance becomes unrealistic it could result in low standard of living. In addition, migration and sustainable livelihoods is not only a factor of poverty but also inequality. In rural African communities most of which are facing poor economic growth and poor rural development, rural population mainly,

women and children remain vulnerable to poverty. Ekpebu and Ukpong (2013) quoted that agriculture employs about 73% of rural population in Africa and about 30% of the labour force in Nigeria, most of which are women. Nwabueze (2010) stated that agriculture has been the major source of livelihood of the rural people in most African communities, including Nigeria. Hence, sustainable agricultural development would enhance better standards of living and poverty alleviation in the rural areas.

According to Ofuoku *et al.* (2015), the effects of largely male out-migration on agricultural output will vary from place to place and from time to time, and will depend to some extent on an ability to maintain labour inputs and to invest remittances productively. Rural communities share this burden through loss of work force necessary for agricultural activities and production. Osby (2015) advanced that migration can have either negative or positive effects on smallholder agricultural production, when migrant leave the house. Negative effects occur if the migrant's labour that had been used on the farm could not be replaced. If household can find other ways to replace migrant labour such as through hired labour or capital substitutes, then migration may not have effects on agricultural production. However, positives effects could come by relaxing liquidity or other constraints through remittances.

Findings by FAO (2012), stated that migration leads to the absence of people, mainly of young men, but occasionally women alone, core or extended families, or whole households. Whom absent will have implications for agricultural and livelihood practices. The absence of young men and women who are likely to have responsibility for important elements of production and animal husbandry reduces available labour. Aromolarran (2013) indicated that much migration, in various parts of the world, is circular: people continue to maintain strong links with their areas of origin over extended period of time, and family and other

personal networks are crucial in maintaining links between areas of origin and destination. This makes the effect of migration on areas of origin of primary importance, and complex. The conclusion by Osby (2015), that the relationship between labour migration and economic development is ‘unsettled’ still holds true.

### **2.3.2 Production activities of households along the gender dynamics**

According to Collier and Dercon (2014), the contribution of agriculture to economic growth and development lies in providing food to expanding population, increasing the demand for industrial products, providing local foreign exchange earnings for the import of capital goods, increasing social income, providing productive employment and improving welfare of the rural people. In the Nigerian context, women produce over 80 percent of her food products (Doss, 2018). The performance of the traditional roles of planting, weeding, harvesting and processing by women has increased to include the traditional activities of men, due to the retreat of men’s labour from agriculture to the wage sector (Singh and Singh, 2017). Recent studies by Doss *et al.* and Van, (2015) and Kieran *et al.* (2016) have challenged and provided insight on some myths about women in agriculture, which is inconsistent with a widely reported figure that women own only between 1% and 2% of the world's land. Although, they do own considerably less land than men do. Women provide 40% of the labour for crop agriculture, a lower figure than the 60% to 80% that is often cited (Palacios- Lopez *et al.* 2017).

Given women's responsibilities for household work, it is surprising to know they could produce most of the food. If women had the same access to productive resources as men, they could increase yields on their farms by 20–30 percent. This could raise total agricultural output in developing countries by 2.5–4 percent, which could in turn reduce the number of

migrant hungry people in the world by 12–17 percent (IOM, 2016a). According to Doss (2018), Apart from producing staple crops, women farmers engage in diverse income generating activities in order to ensure their household food security.

Ayanwuyi and Akintonde (2011) reported that on-farm income activities engaged by most women to support households food security includes weeding, gathering of wood and non-wood forest products, land clearing, planting/transplanting, fertilizer application, transport of farm produce for household consumption, crop harvesting, crop processing and chemical application. Olawepo (2010) stated that majority of the rural populace in Nigeria either depends entirely on farming and non-farming activities for survival and generation of income, or depends on these activities (off-farm) to supplement their main sources of income. When input expands with increased productivity, it increases the income of the farmers. Rise in per capita income leads to substantial rise in the demand for food and industrial goods. As output and productivity of exportable goods expand the export of the country increases and result in larger foreign exchange earnings.

Thus, agriculture surplus leads to capital formation when capital goods are imported with this foreign exchange. The growth of agricultural sector could be a catalyst for national output growth via its effect on rural incomes and provision of resources for transformation into an industrialized economy and reduce the tendencies for out-migration. Men are presumed dominant gender in agricultural production, but the role of women in food crops production cannot be over-emphasized. About 60–80% of rural women in Nigeria, are found to produce two-third of the food (Okafor, 2015), but they are constraint with problem of sustainability as most of them lack access to production inputs and good management practices. Therefore,



effective, efficient and sustainable strategies need to be adopted to increase food crops production.

#### **2.4 Socio-economic Effects of Out-Migration along Gender Dynamics**

There is a large literature on the social and economic impacts of out-migration in rural areas of origin. According to (Enjaibert, 2011), Effects of out-migration can best be understood by comparing migrant households and non-migrant households regarding agricultural production, use of agricultural technologies, income and consumption is a common method of examining the influences of migration on rural people's life. Given the environmental consequences of these factors, this line of inquiry has direct implications for the subsequent environmental outcomes of migration in rural migrant sending areas. "However, Kyaning (2017) and Osby, (2015)", stated that few previous studies have addressed such connections. Agricultural practices, incomes and assets, and consumption patterns are all critical elements of rural people's livelihood processes. Livelihood comprises the capabilities, assets (natural, physical, human, financial, and social), and activities required for a means of living (Carney, 2018).

According to Mbah (2016), the social effects of out-migration among others consist of change in family composition, family separation and abandonment of old people, children and women. Such effects can be noticed as lack of proper up bring of children in certain key areas of life. The rural livelihoods framework provides a solid base to synthesize the literature on migration and rural livelihoods with the research on the environmental impacts of migration in rural origin areas. In the rural livelihoods framework, migration is considered one of the most important livelihood strategies, while the environment and natural resources are incorporated into the context, capital assets, strategies, and outcomes of livelihoods.

The relationship between rural household-level population dynamics and the environment is a major area of recent population-environment research (de Sheerbinin, *et al.* 2008). The household is also the primary scale of analysis in the rural livelihoods framework. Therefore, the household is an appropriate level of analysis for synthetic research on migration, rural livelihoods, and the environment. Rural household livelihoods can be conceptualized as an integrative mediating factor into the migration and environment model.

## **2.5 Adopted Strategies to Mitigate Effects of Out-migration along Gender Dynamics**

Mitigation is the reduction of something harmful or the reduction of its harmful effects. It may refer to measures taken to reduce the harmful effects of hazards that remain in potential, or to manage harmful incidents that have already occurred. It is a stage or component of emergency management and of risk management. According to FAO (2017a), scaling up the support to smallholder family farmers and creation of other alternatives and sustainable livelihood options in rural areas with special attention on women and youth is fundamental toward arresting the challenges posted by out-migration. This was further supported by FAO (2009), that according to this framework, three factors affect the scope of livelihood opportunities available to households or individuals:

- (a) Livelihood assets (such as human or financial capital);
- (b) Vulnerability context (describing concerns such as availability of employment, conflict, or environmental degradation); and
- (c) Structures and processes (such as the legal and policy frameworks in different countries).

Public policies should focus on adoption of sustainable agricultural practices, diversification to off farm activities, effective rural services and investment in value chain geared toward sustainable agricultural practices, which can enhance steady source of income and contribute

to sustainable livelihood. FAO (2017b) stated that rural education, vocational, skill acquisition that matches labour markets needs is one of the step toward mitigating out-migration from rural area. In addition FAO (2017b), pointed out that sustainable agricultural practices that limit the impact of climate change, promote sound natural resources management and increase productivity cannot be over emphasized coupled with social protection and financial inclusion that covers rural population especially women and youth.

## **2.6 Review of factors that Influence Out-migration along Gender Dynamics**

According to Kyaning (2017), Various scholar studies out-migration for different purposes: sociologists have emphasized social and cultural consequences of out-migration, while geographers have laid stress on the time and distance significance of out-migration, economists emphasized on the economic aspects of migration. All these constitute factors that influence out-migration. Losch (2016), stated that finding have classified into five categories factors responsible for out migration. They are economic factors, demographic, social-cultural, political and miscellaneous factors. Migration may begin for a variety of reasons. Although the truism holds that economic and other opportunity differentials generally play a major role in out-migration, this alone cannot explain the actual, patterned and geographically clustered morphology of migration, typically linking particular places and regions.

### **2.6.1 Economic factors**

Migration, whether internal or international, has a profound effect on economic development, which could be negative or positive (IOM, 2016a). For instance, brain drain, which occurs when a significant number of highly skilled citizens of a country seek employment or establish a business abroad, has a negative effect on the economy of the country, because the

skills of the remaining nationals are not sufficient to grow the industries, the academia and other sectors of the economy.

According to Ofuoku *et al.* (2015), most of the studies indicate that migration is primarily motivated by economic factors especially in developing countries, low agricultural income, agricultural unemployment, natural disaster limited access to social protection and underemployment are considered basic factors pushing the migrants toward developed area with greater opportunities. Tacoli *et al.* (2015) advanced that almost all studies concur that most of migrants have moved in search of better economic opportunities. The basic economic factors which motivate migration may be further classified as ‘push factors’ and ‘pull factors’ (Losch, 2016).

### **2.6.2 Demographic factors**

FAO (2017a) stated that the difference in population growth rates of different regions of a nation have been found to be a determinant in the internal migration. It was further stated that fertility and natural increase in population are generally higher in rural areas, which drift the population towards the city. Other important demographic factor in internal migration is marriage because females are used to follow their spouses.

### **2.6.3 Political factors**

Sometimes political factors encourage or discourage migration from region to another. According to Czaika (2015), most of rural people migrated to urban area due to war, persecution, conflicts, violence and the absence of political rights. According to IOM (2016a) insecurity is a major challenge facing over 75% of the world’s poor and food insecure household living majorly in rural area. Hence, rural poor and smallholder family farmers, face considerable difficulties in accessing credit, services, technologies and market.

Migration becomes an important strategy of rural households for improving their livelihoods. Hence, political background, attitudes and individual viewpoint can influence out-migration of people.

#### **2.6.4 Socio-cultural factors**

Anthias (2012) stated that social and cultural factors also play an important role in migration. Sometimes family conflicts, the quest for independence can also cause migration especially in the younger generation. More also, improved communication facilities, such as transportation, impact of social-media, good network communication, entertainment, urban oriented education and resultant change in attitudes and values also promote out-migration. Structural forces majeure in the international political economy such as warfare, colonialism, conquest, occupation and labour recruitment as well as factors such as shared culture, language and geographical proximity often play a crucial role in the initiation of out-migration processes (Castles and Miller (2009), Ofuoku *et al.*, (2015).

However, once a certain critical number of migrants have settled at the destination, other forces come into play. The deliberate or more ambiguous choices made by pioneer migrants, labour recruiters or others tend to have a great influence on the location choice of subsequent migrants. According to Tacoli *et al.*, (2015), urban areas are viewed by rural dwellers with the mind that urban centres are full of economic and material gains thereby influencing out-migration decision. Advanced in support for factors that influence out-migration according to (Afolayan *et al.* 2008) is the quest for education which has made a tremendous contribution toward internal and international migration.

Afolayan *et al.*, (2008) further stated that British colonial administration in Nigeria had predisposed Nigeria to seek education mostly outside their country to other and it is estimated

that between two million to fifteen million Nigerians many highly skilled will be residing outside the country (IOM, 2010). In addition (Kline, 2003), pointed out that failure to meet socio-economics needs may result in out-migration occasioned by poor economy, unemployment, demographic pressure or impact of global economic trends. Further causes can be exacerbated by states of mismanagement which is prevalent in developing world, including poor policy planning and implementation, inequitable distribution of wealth and corruption. Who tend to follow the 'beaten track'. The idea that migration is a path-dependent process because inter-personal relations across space facilitate subsequent migration is anything but new.

Analyses by Kyani (2017), show the main basic economics actors, which motivate out-migration, are classified as 'push' and 'pull factors. Nowadays it is widely acknowledged that out-migration is best understood as a time-consuming process and not merely an event. According to Dustmann and Okatenko (2013), the theory of planned behaviour states that a general psychological theory about human decision-making and behaviour that has been applied successfully in empirical migration research and agent-based models of migration. (Lopez-carr and Burgdorfer, 2013), states that intentions are the products of beliefs that one will attain valued goals as a consequence of a certain action, like out-migration.

According to the theory, intentions are the primary determinant of behaviour. The gap between out-migration intentions and behaviour is normally seen because of various intervening factors that could constitute constraints between out-migration intentions and behaviour (FAO, 2016). Although one of the often constraints when it comes to out-migration decision lies in a misperception of individual skills and abilities, and another in environmental factors during migration decision-making, these influences are considered to

be low compared with external factors intervening between migration intention and behaviour such as not finding a job or adequate housing (IOM,2016).

Advanced by de Haas (2010), the process of migration involves costs, which can act as a barrier to migration for the low income and low asset groups of individuals. Where force migration occur, the poverty which out-migration is to overcome may be still there, Hence poverty, which is what migration process is posited to overcome, is in itself the constraint to migration. More also, the opportunity cost of out-migration may be too high and this may have led to the forfeiture of the option of out-migration out of choice. According to (IOM, 2010), The idea of income as a prerequisite for out-migration may be extended to wealth – including financial capital, social capital and human capital, which may facilitate migration by improving the possibility of accessing employment opportunities in urban areas. On the contrary, incomplete credit markets, lack of access to education opportunities, lack of universal social security may also serve as a constraint to out-migration. Reduce ability of the agents to obtain financial and human capital and being a member of lower castes and religious minority groups may deprive an agent of social capital.

#### **2.6.5 Miscellaneous factors**

Out-migration under the background of rapid urbanization has led farmers to gradually abandon agricultural cultivation, especially among young rural labourers. In developing countries, the main labourers participating in agricultural cultivation have gradually changed from young males to the elderly and women (Mbah, 2016). Carney (2018) stated that among factors that encourage migration are such as the presence of relatives and friends in urban area, desire to receive education that is available only in urban area, closeness of cultural

contacts, cultural diversity, great vitality and individual attitudes are also associated with migration.

## **2.7 Theoretical Framework**

The theoretical frame works introduce and describe the theory that explains why the research problem under study exists (Anthias, 2012). Caretta and Borjeson (2014) described theoretical framework as a collection of interrelated concepts, like a theory but not necessarily so well worked out. A theoretical framework guides the research. A theoretical perspective is important for research because it serves to organize researchers' thoughts and ideas and make them clear to others. An overview of migration theories shows that several theories have been propounded to explain the occurrence of out-migration. Briefly refer to the two strands of the migration theories literature underlying the development of the empirical model.

### **2.7.1 Neo-classical models theory**

View migration as the result of a cost-benefit analysis carried out at the individual level (Ernesto, 2018). Potential migrants compare differential income and cost of migrating and move if the decision produces a positive net present value. Differential income depends on income earning potential, the unemployment rate, and the manner in which human capital is valued in domestic and foreign labour markets. Other factors are the probability of success and the cost of migration, whether the individual is able to reach her destination and at what cost, and whether she manages to stay there as long as she wishes. The main implications of the neo-classical approach are that migration is driven by income differentials between different countries and by the cost (and probability of success) of moving, considered separately by each individual, given their particular characteristics. These analyses do not



consider potential impacts on the “sending” families. Conversely, in the new economics of labour migration literature (Losch, 2016; deHaas, 2010b).

The migration decision becomes a joint household decision, in which both remaining household members and the migrant share the costs and returns to migration, and in which migration is part of a larger household economic strategy. Under this framework, migration is used as a mechanism to diversify economic activities in the face of risk and obtain liquidity and capital in the presence of credit and insurance market failures (deHaas and DeJong, 2011 and Taylor *et al.*, 2003). Contrary to neo-classical theory, which implicitly views migration and household economic activities as substitutes at the level of the individual. The new economics of migration allows for the possibility that migration by one member can act as complement to household economic activities in the origin community for instance by relaxing liquidity and credit constraints and/or act as insurance where such markets are missing or absent. Of course, where labour constraints are severe, migration may still lead to a reduction in household economic activities.

### **2.7.2 The push and pull theory**

The pull and push theory of migration was first learned by Ravenstein of England in the 19<sup>th</sup> Century. Lee’s migration model was created in 1966 it describes the push and pull factors of migration which are reasons for emigration and immigration. A push factors is something that is unfavourable about an area that someone lives in and is a reason for them to leave, encourage people to leave their point of origin and settle elsewhere while pull factors attracts migrant to new area. The most effective theory for explaining migration, which also will be adopted for this study, is push and pull theory, which states that the migration generally takes

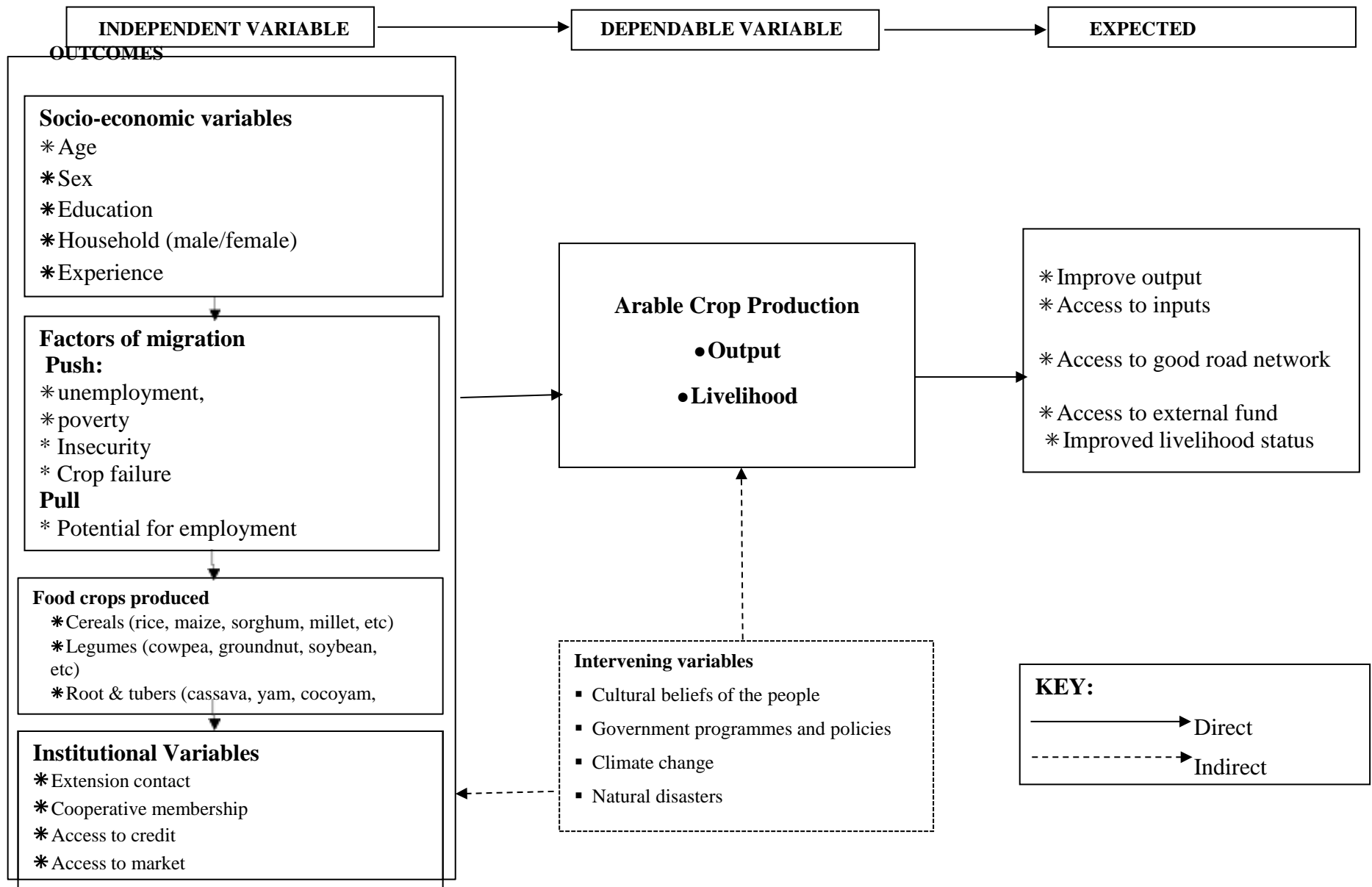
place when the positive pull factors at the place of destination are outnumbered by native push factors at the place of origin (Datta, 2004).

Ofuoku (2015) stated that reasons that bring about people's migration are determined by push and pull factors which are forces that oblige them to leave old residence for a new location and such factors include economics, Political, Cultural and Environmental. No matter what theory lies behind migration but the phenomenon is considered socially beneficial since the human resources were being shifted from areas where their social marginal products were assumed zero to places where their marginal products are not only positive but also rapidly growing because of capital accumulation and technological progress.

## **2.8 Conceptual Framework**

Conceptual framework is a systematic explanation; which is found not so much on prior research findings but largely on untested and unproved assumptions about social realities (Ekong, 2003). This is a figurative expression of the model which shows the relationship between independent variables (effect out-migration along gender dynamics and arable crop production and livelihood status (dependent variables) leading to expected outcome. In developing the conceptual framework for this study, an attempt will be made to integrate the theories and findings of various scholars (Adamade and Jackson, 2014). The casual relationship in the model started with independent variables including socio-economic characteristics such as age, level of education, farming experiences, farm size, household size, and income. The institution variables among others are access to credit, extension contact, member of cooperative and inputs for agricultural production. In addition to migration, theory (push and pull) played a significant role in influencing out-migration as it affect arable crop production and livelihood status in the study area.

The basic assumption are that respondent socio-economic characteristic, institution factors, the push and pull theory of migration played a vital role in influencing out-migration along gender dynamics in the study area. Hence, the expected outcome in terms of change in labour cost, change in size of cultivated land, change in out-put and livelihood status, change in income and change in living standard. It is also expected that intervening variables such as the government programmes and policies, cultural belief of the people, weather conditions and natural disaster could influence arable crop production and livelihood positively or negatively.



Source: Adopted and Modified from Kehinde (2019)

Figure 2.1: Conceptual Framework of effects of out migration along gender dynamics on arable crop production and livelihood of rural farmers

## **CHAPTER THREE**

### **3.0**

### **METHODOLOGY**

#### **3.1 Study Area**

The study was conducted in Kogi State which was created in 1991. The State was carved out of Kwara and Benue States. The State is located in the North central region of Nigeria. Kogi State is bounded to the South by the Federal Capital Territory (FCT), Abuja and share other boundaries with nine other States in the country, which are Nasarawa to the North East, Benue to the East, Enugu State to the South East, Anambra State to the South, Edo State to the South West, Ondo and Ekiti State to the West, Kwara State to the North West and Niger State to the North (National Population Commission (NPC), 2006).

Kogi State is popularly called the Confluence State owing to the confluence of Rivers Niger and Benue at its capital, Lokoja, which is also the first administrative capital of modern-day Nigeria. It is located between Latitude  $7^{\circ} 48^1$  and  $8^{\circ} 35^1$  North and Longitude  $6^{\circ} 44^1$  and  $7^{\circ} 49^1$  East. It has an estimated population of about 4,466,800 people in 2022 and with a growth rate of 3.2%, which projected the population to 4,636,071 in 2023 (National Bureau of Statistics (NBS), 2023). The state has a landmass of about 30,354.74 square kilometers (11,519 square miles) ((NBS, 2018).

The State comprises of twenty-one (21) Local Government Areas (LGEAs) and four Agricultural zones. The State has two distinct seasons, wet and dry. The wet season begins in March and ends in October while the dry season spans between November and early March. The annual rainfall is between 1016mm and 1524mm, while the mean daily temperature ranges from  $24^{\circ}\text{C}$  and  $27^{\circ}\text{C}$  (NBS, 2018). Kogi State has a wide stretch of Forest and arable land for farming, good grazing land for livestock production and large bodies of

water for fishing and irrigation. Food and cash crops commonly grown in commercial quantities include yam, cassava, rice, maize, beniseed (Sesame) guinea corn, cocoa, coffee, cashew, oil-palm and Vegetables.

### 3.2 Sampling Procedure and Sample Size

Five-stage sampling techniques was adopted for this study. The first stage involved random selection of one Local Government Area (LGA) from each of the agricultural zones to give four LGAs. The second stage involved random selection of one extension block from each of the selected local government areas to get four extension blocks. The third stage involved the random selection of three extension cells consisting of 12 villages. Stage four involved stratification of the registered households head (2,169) in the study area as obtained from Kogi State Agricultural Development Programme (KADP) into male (1,367) and female (802) headed households. The final stage involved the proportionate sampling of the household head by 10% to get the sample size of 137 Male and 80 Female households, which amounted to 217 respondents for the study. As shown in Table 3.1 and figure 3.1

**Table 3.1 Distribution of respondent in the study area**

Sample zone	Sample LGA	Sample Ext. Blocks	Sample Ext. Cells	Male		Female Agricultural	
				Frame	Size	Frame	Size
Zone A	Kabba Bunu	Okedayo	Oke-dayo	224	22	132	13
			Out	128	13	76	8
			Egbeda	161	16	94	9
Zone B	Omala	Ibado	Ibado	162	16	93	9
			Akpacha	129	13	75	8
			Efiwo	48	5	29	3
Zone C	Okehi	Obangede	Obangede	186	19	110	11
			Okaito	170	17	100	10
			Isungwe	74	7	43	4
Zone D	Ofu	Itobe	Olukudu	38	4	23	2
			Ofokr	26	3	15	2
			Alo	20	2	12	1
<b>Total</b>	<b>4</b>	<b>4</b>	<b>12</b>	<b>1367</b>	<b>137</b>	<b>802</b>	<b>80</b>

Source: Kogi State Agricultural and Rural Development Project (KSARDP), 2020

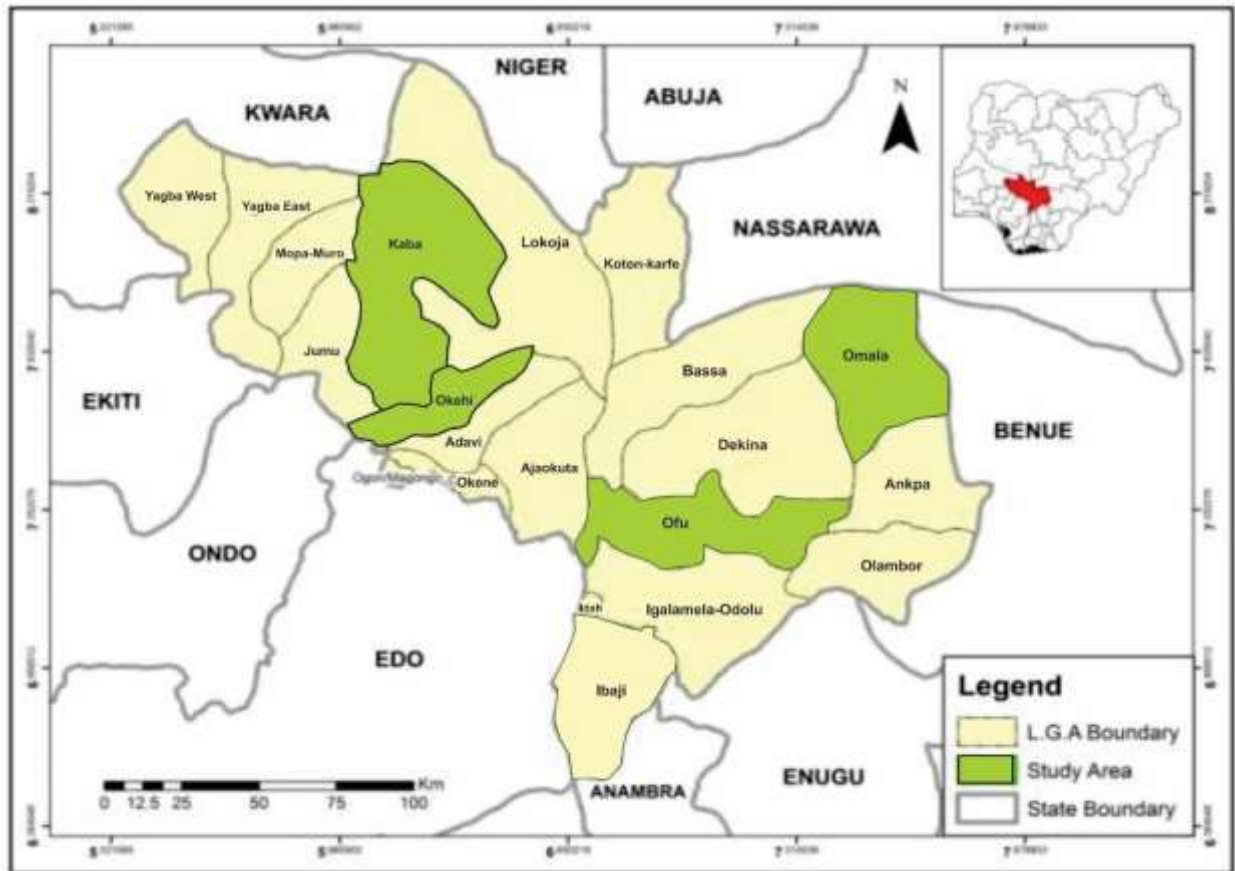


Figure 3.1: Map of Kogi State showing the study Area.

### 3.3 Method of Data Collection

Primary data was used for this study. Data were collected by the researcher and trained enumerators using semi-structured questionnaire complemented with interview schedule. Information that were obtained from the rural household include their socio-economic characteristics, household migration, arable crop produced, household livelihood status, factors influencing migration, the mitigating processes adopted by them and the effects of out-migration.

### **3.3.1 Validity test of research instrument.**

Validity of research instrument is the extent to which what to be measured is actually being measured by a given scale or index. It is an important attribute of a research instrument and is specific for a given situation. Therefore, validation of instrument (sample questionnaire) and interview schedule were design by the researcher, which was review by the supervisors and other experts in the field, who validated the contents of the data collection instruments.

## **3.4 Measurement of Variables**

### **3.4.1 Dependent variable**

The dependent variables are the arable crop production and livelihood status. Output of various crops produced by the respondents was used as proxy for arable crop production measured in kilogram, while the livelihood status was measured using households' asset of the respondents as proxy.

### **3.4.2 Independent variables**

#### **(i) Socio-economic characteristics of the respondents**

Age was measured in years

Marital status was measured as a dummy variable (1 if married, 0 if otherwise).

Gender was measured as a dummy variable (1 if male, 0 if female).

Labour was measured in man days.

Education was measured as number of years in formal schooling.

Farming experience was measured in number of years.

Household size was measured in number of people eating from same pot.

Access to credit was measured as amount received in Naira

Cooperative membership was measured in number of years as a member.



Extension visit was measured in number of contacts per annum

Farm size was measured in hectares.

Income from food crops production was measured in Naira

### 3.5 Method of Data Analysis

The data collected were analyzed using descriptive and inferential statistics. Objectives i, ii, v and vii were achieved using descriptive statistics such as mean, frequency distribution, percentage, and standard deviation. Objective iii was achieved using ordinary least square regression. Objective iv was achieved using multiple regression. Objective vi was achieved using ordered logit regression. The hypothesis i and ii were achieved using t-test statistics.

### 3.6 Model Specification

#### 3.6.1 Ordinary least square regression

The form of the regression model is expressed below: this model was use to achieved Objective iii.

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, X_{10}, X_{11}, X_{12}) \quad (3.1)$$

The explicit form of the model can bé further expressed as below:

$$Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \beta_{11} X_{11} + \beta_{12} X_{12} + e \quad (3.2)$$

Where;

Y = Out-migration among the farming households measured in number of out-migrants

$a$  = Constant

$\beta_1 - \beta_{12}$  = Parameters to be estimated

$X_1 - X_{12}$  = Independent variables

$X_1$  = Age (years)

$X_2$  = Marital status (married = 1; Otherwise = 0)

$X_3$  = Household size (number of people)

$X_4$  = Education (years)

$X_5$  = Cooperative membership (years)

$X_6$  = Extension contact (number of visit)

$X_7$  = Remittance (Naira)

$X_8$  = Modern technology (perception score)

$X_9$  = Farmland opportunity (perception score)

$X_{10}$  = Market opportunity (perception score)

$X_{11}$  = Entrepreneurship skills (perception score)

$X_{12}$  = Employment opportunity (perception score)

$X_{13}$  = Social amenities (perception score)

$X_{14}$  = Quality of life (perception score)

$X_{15}$  = Communal crisis (perception score)

$X_{16}$  = Crop failure (perception score)

$e$  = Error term

### **3.6.2 Multiple regression model**

Multiple regression analysis model is implicitly specified as: this model was used to achieved objective iv.

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, X_{10}, X_{11}, X_{12}, X_{13}) \quad (3.3)$$

The explicit functional forms of the multiple regression models were:

**Linear:**

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \dots + \beta_{13} X_{13} + U_i \quad (3.4)$$

**Cobb-Douglas:**

$$\ln Y = \beta_0 + \beta_1 \ln X_1 + \beta_2 \ln X_2 + \beta_3 \ln X_3 + \beta_4 \ln X_4 + \beta_5 \ln X_5 + \dots + \beta_{13} \ln X_{13} + U_i \quad (3.5)$$

**Semi-log:**

$$Y = \beta_0 + \beta_1 \ln X_1 + \beta_2 \ln X_2 + \beta_3 \ln X_3 + \beta_4 \ln X_4 + \beta_5 \ln X_5 + \dots + \beta_{13} \ln X_{13} + U_i \quad (3.6)$$

**Exponential:**

$$\ln Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \dots + \beta_{13} X_{13} + U_i \quad (3.7)$$

Where;

$Y$  = Crop output of the farming households measured in kilogram

$X_1$  = Farm size (hectare)

$X_2$  = Improved seed (kg)

$X_3$  = Fertilizer (kg)

$X_4$  = Agrochemical (litres)

$X_5$  = Age (years)

$X_6$  = Education (years)

$X_7$  = Household size (number)

$X_8$  = Household migrants (number)

$X_9$  = Migration period (years)

$X_{10}$  = Remittance (Naira)

$X_{11}$  = Cooperative membership (years)

$X_{12}$  = Extension contact (number)

$\beta_0$  = constant

$\beta_1 - \beta_{13}$  = coefficients of the independent variables

$X_1 - X_{13}$  = independent variables

$U_i$  = Error term

ln = Natural log

### 3.6.3 Ordered logit regression model

Ordered Logit model is generalization of the widely used Logit analysis with respect to more than two outcomes of an ordinal dependent variable (a dependent variable for which the ordering values are low (1), moderate (2) and high (3)). This model approximates the mathematical relationships between the explanatory variables and the dependent variable as expressed in equation (8): this model was used to achieve Objective vi.

$$Y = \beta_i (X_i) + e \quad (3.8)$$

The explicit form of the exponential regression model is specified as in equation (9):

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \dots + \beta_{11} X_{11} + U_i \quad (3.9)$$

Where;

$Y$  = Livelihood status of the farming households measured in an ordinal scale categorized as low, moderate and high represented by the code of 1, 2 and 3, respectively.

$X_1$  = Educational status of household head (in years)

$X_2$  = Educational status of migrant (in years)

$X_3$  = Marital status (married 1 single 0)

$X_4$  = Household size

$X_5$  = Number of dependents (number)

$X_6$  = Employment status of migrant (Yes 1 no, 0)

$X_7$  = Farm output (kg)

$X_8$  = Remittance (naira)

X<sub>9</sub> = household non-food expenditure (naira)

X<sub>10</sub> = Entrepreneurial skills prior to migration (0 no, 1 yes)

X<sub>11</sub> = years of farming

X<sub>12</sub> = number of Male headed households

X<sub>13</sub> = number of Female headed households

### 3.6.4 Test of hypothesis

The hypothesis i and ii of the study was tested using z-test. The z-test statistics formula is expressed as in equation (10):

$$Z = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}}} \quad (3.10)$$

Where;

$\bar{x}_1$  = the mean value of male farmers' output and livelihood status

$\bar{x}_2$  = the mean value of female farmers' output and livelihood status

$\delta_1^2$  = standard deviation of male farmers' output and livelihood status

$\delta_2^2$  = standard deviation of female farmers' output and livelihood status

$n_1$  = the number of selected male farmers

$n_2$  = the number of selected female farmers

## CHAPTER FOUR

### 4.0

### RESULTS AND DISCUSSION

#### 4.1. Socio-economic Characteristics of the Farmers

This section describes the socio-economic characteristics of farming household along gender dynamics and the institutional variables influencing arable crop production and household livelihood of farmers along gender dynamics in the study area. The socio-economic characteristics considered for this study were age, sex, marital status, household size, level of education, farming experience, farm size, land acquisition, labour usage, cooperative membership, extension contact, access to credit and sources of credit. The result of the analysis is shown in Table 4.1.

##### 4.1.1 Age of the respondents

Age is the number of years individual lives. Table 4.1, showed that about 32.1% of the male headed households and 45.0% of the female headed households were within the age group of 41 – 60 years with both having mean ages of 47 years. This implies that the respondents in the study area were still active and have the capacity to embrace diversification through adoption of various livelihood strategies. Although, there is no marginal difference in the mean age of the male gender as compared to that of their female counterpart. This finding is contrary to the work of Zakaria *et al.* (2022), who reported that the working age of their respondents differs across gender with the male household heads having higher mean age as compared to female household heads.

##### 4.1.2 Sex of the respondents

Table 4.1 revealed that majority (66.5%) of the respondents were male while (33.5%) were females. This could be due to the fact that in rural areas men are often involved in farming

than their female counterparts, as females are normally occupied with domestic activities such that they do not have enough time to participate. The dominance of males in farming agrees with Oyedele and Yahaya (2007). It also confirms the findings of Onuk (2008), which found that males constitute the majority in farming activities because females are mostly involved in domestic work.

#### **4.1.3 Marital status of the respondents**

The finding revealed that majority of the men are married (92.1%) while the women headed household were majorly widow (75%). This indicate that widowhood conferred more responsibilities particularly on the female gender while male respondents are responsible as married men hence, they will embrace various coping strategies especially migration to be able to address responsibilities attached to marriage and desire to have good life. This finding is in line with that of Afolayan *et al.* (2008) that married people play active roles in agricultural production, based on poverty levels.

#### **4.1.4 Occupation of the respondents**

As revealed in Table 4.1, most (69.3%) of the male household heads and 35% of the female household heads were involved in full-term farming, while 10% of the male household heads and 28% of the female household heads were into trading. This implies that most of the respondents in the study area were into active farming. Meanwhile, the male-headed household were found to participate more in farming activities than their female counterpart. Involvement of an individual in farming activities is to enhance the livelihood status. Hence, both gender play active part in farming.

**Table 4.1: Distribution of respondents based on their socio-economic characteristics**

Variables	Male (n = 137)		Female (n = 80)	
	Frequency	Percentage	Frequency	Percentage
<b>Age (years)</b>				
<21	13	9.5	1	1.3
21-30	30	21.9	6	7.5
31-40	39	28.5	8	10.0
41-50	44	32.1	43	53.7
51-60	11	8.0	22	27.5
<b>Total</b>	<b>137</b>	<b>100</b>	<b>73</b>	<b>100</b>
<b>Mean</b>	<b>47</b>		<b>47</b>	
<b>Marital status</b>				
Single	6	4.4	4	5.0
Married	125	91.2	6	7.5
Divorced	4	2.9	9	11.2
Widow	2	1.5	60	75.0
Separated			1	1.3
<b>Total</b>	<b>137</b>	<b>100</b>	<b>80</b>	<b>100</b>
<b>Occupation of respondents</b>				
Farming	95	69.3	37	46.1
Trading	14	10.2	28	35.0
Agro-processing	5	3.6	3	3.8
Artisan	9	6.6	3	3.8
Handcraft	3	2.3	1	1.3
Civil Service	11	8.0	8	10.0
<b>Total</b>	<b>137</b>	<b>100</b>	<b>80</b>	<b>100</b>
<b>Education status</b>				
Primary	24	9.4	22	27.5
Secondary	61	46.4	31	38.8
Tertiary	41	16.7	15	18.7
Adult	2	27.5	6	7.5
Non-formal	9		5	6.2
Qur'anic			1	1.3
<b>Total</b>	<b>137</b>	<b>100</b>	<b>80</b>	<b>100</b>
<b>Mean</b>	<b>12</b>		<b>7</b>	
<b>Labour usage</b>				
Hired	44	32.1	25	31.2
Family	63	46.0	31	38.8
Communal	6	4.4	6	7.5
Both hired and family	24	17.5	18	22.5
<b>Total</b>	<b>137</b>	<b>100</b>	<b>80</b>	<b>100</b>
<b>Farming experience (years)</b>				
<11	48	35.1	23	28.7
11-20	51	37.2	33	41.3
21-30	24	17.5	17	21.3
>40	14	10.2	7	8.7
<b>Total</b>	<b>137</b>	<b>100</b>	<b>80</b>	<b>100</b>
<b>Mean</b>	<b>17</b>		<b>17</b>	
<b>Household size (Number)</b>				
<6	93	67.9	42	52.5
6-10	38	27.7	36	45.0
>11	6	4.4	2	2.5
<b>Total</b>	<b>137</b>	<b>100</b>	<b>80</b>	<b>100</b>
<b>Mean</b>	<b>5</b>		<b>4</b>	
<b>Farm size (Hectares)</b>				
<3.1	115	83.9	77	96.3
3.1-5.0	12	8.8	3	3.7
>5	10	7.3		
<b>Total</b>	<b>137</b>	<b>100</b>	<b>80</b>	<b>100</b>
<b>Mean</b>	<b>3</b>		<b>2</b>	
<b>Land acquisition</b>				
Inheritance	97	70.8	35	43.7
Gift	4	2.9	5	6.3
Purchased	5	3.7	5	6.3
Rent	31	22.6	35	43.7
<b>Total</b>	<b>137</b>	<b>100</b>	<b>80</b>	<b>100</b>

Source: Field Survey, 2021



#### **4.1.5 Educational status of the respondents**

Table 4.1 revealed that majority (91.9%) of the male household heads had one form of formal education or the other (primary, secondary and tertiary) with mean of 12 years spent in formal schooling meanwhile majority (85%) of the female household heads had one form of formal education or the other (i.e., primary, secondary and tertiary) with mean of 6.5 years. This implies that there is a quite literacy level along the gender dynamics line in the study area. However, the male household heads are more educated as compared to the female household heads, which could be attributed to lack of equal opportunities for education across gender based on data obtained for the study. Education among others liberates from ignorant and is regarded as an investment in human capital needed to raise the skills and quality of an individual particularly in agricultural production. This finding is in agreement with the work of Singh and Singh (2017), that reported in their study that there is significant difference in the educational status of their respondents as the male gender were found to be more educated (i.e. could read and write) compared to the female gender.

#### **4.1.6 Household size of the respondents**

Most of the respondents (male 67.7% and female 45.70%) had household size mean of 5 and 4 respectively. This indicates that both genders had a relatively large family size this is peculiar in rural areas where family labour are utilized for crop production. This implies that family size influence diversification strategies which out-migration is considered as one. This finding is in agreement with Olufuko (2015) that stated that rural dwellers appreciate large family size to assist in farm labour.

#### **4.1.7 Farm size of the respondents**

The size of the farms is low sized considering majority (male 83.9% and female 96.3%) had farm sizes less than three hectares at a mean value of 2.47 and 1.62 respectively per farmer. This implies that both gender had the resources for productivity; however, the men had more access to land than their female counterpart. This finding corroborate that of Ayoade *et al.* (2011) that women are constrained with access to land and rarely own land and when they do, their holdings tend to be smaller and less fertile than those of the male.

#### **4.1.8 Land ownership by the respondents**

The result from Table 4.1 shows that land tenure is not a problem in the area as (70.8%) of the male headed households owned the land they use for farming through purchase or inherited. Meanwhile, the female headed households (43.8%) owned the land for farming through rent and inheritance. Although, the size of the farms are low sized considering majority (73.9%) had farm sizes of 1-4 hectares at a mean value of 3 hectares per farmer. This implies that if other production resources are available, they have the potential for high productivity and enhanced livelihood. This is consistent with the findings of Langyintuo and Mekuria (2019) who stated that availability of farm input will encourage more land utilization.

#### **4.1.9 Farming experience of the respondents**

The study revealed that both male and female headed household had good farming experience of mean of 17years. (male 37.2% and Female 41.3%) this indicates that both sexes engaged in farming activities and played active role. This is in collaboration with finding of Ayoade *et al.* (2011) that men and women both contribute between 60-90% of farm labour and other production activities.

#### **4.2.1 Cooperative membership by the respondents**

The result in Table 4.2 shows that most of the respondents' male-headed household (57.5%) and female-headed household (42.5%) were members of cooperatives society. This implied that huge numbers of the farmers were members of cooperative in order to help themselves out in time of trouble and most times information is disseminated which may aid to boost their agricultural productivity. This result corroborate that of Carney (2018), who reported that household head membership of an association/group increases access to information, which is important in participating in farmers group.

#### **4.2.2 Extension contact by the respondents**

Contact with extension agent exposes the farmers to current innovations; the study reveals that most of the respondents both male headed households (69.3%) and female headed households (81.3%) had no extension contact. This implies that the importance of extension agents to farmers are not well felt in the study area. Contact with extension services provide more access to improved crop production techniques, inputs and other livelihood diversification strategies which would positively affect farmers' outputs and income-generating ability, thereby mitigating the likelihood for increased number of out-migrants. This is in corroborate the finding by FAO (2017a), who stated that extension service are more of men focus than women.

**Table 4.2: Distribution of respondents' socio-economic characteristics continues**

Institutional Variables	Male (n = 137)		Female (n = 80)	
	Frequency	Percentage	Frequency	Percentage
<b>Cooperative membership</b>				
Yes	79	57.7	34	42.5
No	58	42.3	46	57.5
<b>Total</b>	<b>137</b>	<b>100</b>	<b>80</b>	<b>100</b>
<b>Mean</b>	<b>1.16</b>		<b>1.18</b>	
<b>Extension contacts</b>				
Yes	42	30.7	15	18.7
No	95	69.3	65	81.3
<b>Total</b>	<b>137</b>	<b>100</b>	<b>80</b>	<b>100</b>
<b>Mean</b>	<b>1.95</b>		<b>2.40</b>	
<b>Access to credit</b>				
Yes	46	33.6	25	31.3
No	91	66.4	55	68.7
<b>Total</b>	<b>137</b>	<b>100</b>	<b>80</b>	<b>100</b>
<b>Mean</b>				
<b>credit commercial Bank</b>				
Yes	3	2.2	2	2.5
No	134	97.8	78	97.5
<b>Total</b>	<b>137</b>	<b>100</b>	<b>80</b>	<b>100</b>
<b>Mean amount (₦)</b>	<b>833,333.33</b>		<b>365,000.00</b>	
<b>Cooperative</b>				
Yes	35	25.5	16	20.0
No	102	74.5	64	80.0
<b>Total</b>	<b>137</b>	<b>100</b>	<b>80</b>	<b>100</b>
<b>Mean amount (₦)</b>	<b>216,000.00</b>		<b>148,437.50</b>	
<b>Thrift</b>				
Yes	1	7	3	3.7
No	136	99.3	77	96.3
<b>Total</b>	<b>137</b>	<b>100</b>	<b>80</b>	<b>100</b>
<b>Mean amount (₦)</b>	<b>150,000.00</b>		<b>110,000.00</b>	
<b>Money lender</b>				
Yes	9	6.6	5	6.3
No	128	93.4	75	93.7
<b>Total</b>	<b>137</b>	<b>100</b>	<b>80</b>	<b>100</b>
<b>Mean amount (₦)</b>	<b>345,000.00</b>		<b>274,000.00</b>	
<b>Agric. Bank</b>				
Yes	-	-	-	-
No	137	100	80	100
<b>Mean</b>	<b>0</b>		<b>0</b>	
<b>Micro-finance</b>				
Yes	6	4.4	2	2.5
No	131	95.6	78	97.5
<b>Total</b>	<b>137</b>	<b>100</b>	<b>80</b>	<b>100</b>
<b>Mean amount (₦)</b>	<b>216,428.57</b>		<b>510,000.00</b>	
<b>Family and friends</b>				
Yes	12	8.8	7	8.8
No	125	91.2	73	91.2
<b>Total</b>	<b>137</b>	<b>100</b>	<b>80</b>	<b>100</b>
<b>Mean amount (₦)</b>	<b>296,250.00</b>		<b>162,857.14</b>	

Source: Field Survey, 2021

### **4.2.3 Access to credit by the respondents**

Table 4.2 revealed that majority (66.4%) of the male headed households and (68.7%) of female headed households in the study area had no access to credit. This implies that since credit is a catalyst for increased agricultural production and technology adoption, farmers in the study areas are likely to face difficulty when it comes to increase investment, production and improve livelihood. This is because households with access to credit could easily acquire more productive resources and invest in income generating livelihood strategies that will enhance the overall household welfare reduce the number of out-migrants

This finding is in collaboration with the finding of Dustmann and Okatenko (2013) that reported that access credit is key to production.

## **4.2 Level of Out-migration Among the Respondents**

### **4.2.1 Gender of household migrants**

Table 4.3 shows that both male (43.8%) and female (50.0%) headed households reported that both genders are involved in out-migration from their homes. This implies that migration is common. This finding agrees with the finding of Ofuoku (2015), who reported that with growing social acceptance of female independence and mobility, girls and women are now the majority of Ghana's internal migrants.

### **4.2.2 Reason for out-migration**

Most out-migrant left their community majorly in pursue of education as indicated by male (42.3%) and female (35.0%) headed households. Mostly, agile hand leaves their area in pursuits of education which leave non-migrant with difficulty in decision making regarding to what crops to cultivate and shortage of labour. This is in agreement with the finding by

Afolayan *et al.* (2008), who reported that abled bodies leave the rural areas leaving behind aged ones in search for Western and Islamic education.

#### **4.2.3 Pattern of out-migration**

Most (67.2% of male and 58.8% female) of the headed households indicated that out-migration is mostly from rural to urban area in anticipation for better opportunities. This is in line with the findings of Ibrahim and Danjuma (2012) who reported that most migration is toward the urban areas where better livelihood are abundant.

#### **4.2.4 Contribution of out-migrants**

The out-migrant contributes toward their origin in terms of remittance as indicated by 57.7% of male headed household and 60.0% of female headed households. This agrees with the finding of FAO (2016) that most migrant contribute to their home through remittance. The remittance could be used by the non-migrants' households to purchase other inputs that can be used in the farm to boost their production capacity.

**Table 4.3: Distribution of respondents based on out-migrants**

Variables	Male (n = 137)		Female (n = 80)	
	Frequency	Percentage	Frequency	Percentage
<b>Gender of household migrants</b>				
Male	56	40.9	23	28.7
Female	21	15.3	33	41.3
Both	60	43.8	24	50.0
<b>Reason for out-migration</b>				
Education	58	42.3	28	35.0
Government employment	20	14.6	13	16.3
Health challenges	-	-	21	26.3
Private worker	21	15.3	2	2.5
Apprenticeship	9	6.6	6	7.5
Wage labour	29	21.2	10	12.5
<b>Pattern of out-migration</b>				
Rural-rural	33	24.1	17	21.3
Rural-urban	92	67.2	47	58.8
Seasonal	12	8.8	12	15.0
Permanent	-	-	4	5.0
<b>Contribution of out-migrants</b>				
Remittance	79	57.7	48	60.0
Modern technologies	20	14.6	9	11.3
Information sources	38	27.7	23	28.7

Source: Field Survey, 2021

#### 4.2.5 Level of household out-migrants

More so, Table 4.4 revealed that the level of migration was low as indicated by 51.8% of the male and 50.0% of the female-headed households, while 39.4% of the male and 43.8% of the female-headed households report moderate level of out-migration. This implies that out-migration becomes necessary in order to attract favorable opportunities which are absent in the rural area. This finding is in corroborate report by FAO (2017b), that rural people are drawn to urban areas where they expect to have better employment opportunities and improved access to health, education and other basic services.

**Table 4.4: Distribution of respondents based on level of household out-migrants**

Variables	Male (n = 137)		Female (n = 80)	
	Frequency	Percentage	Frequency	Percentage
Low	71	51.80	40	50.00
Moderate	54	39.40	35	43.80
High	12	8.80	5	6.20

Source: Field Survey, 2021

### 4.3 Factors Influencing Out-Migration along Gender Dynamics

Table 4.5 revealed the perceived factors influencing out-migration in the study area. All the factors enumerated were perceived to influence out-migration for both genders. However, the male-headed households indicate problem of unemployment ( $\bar{X} = 2.86$ ), problem of poverty ( $\bar{X} = 2.80$ ) and inadequate social amenities ( $\bar{X} = 2.79$ ) ranked 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> respectively as the major factors. Also, the female-headed households perceived inadequate social amenities ( $\bar{X} = 2.96$ ), problem of unemployment ( $\bar{X} = 2.95$ ) and problem of poverty ( $\bar{X} = 2.80$ ) ranked 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup>, respectively as the major factors influencing out-migration. This implies that several factors influence the quest for a better living standard which is a major driver for out-migration. This finding is in agreement with that of FAO (2016) that major driver for out-migration is educational and remittance received from migrants.



**Table 4.5 perceived factors that influence out-migration among male and female headed households**

Variable	Male gender (137)							Female gender (80)						
	II (1)	ID (2)	SI (3)	WS	WM	D	Rank	II (1)	ID (2)	SI (3)	WS	WM	D	Rank
Problem of unemployment	0(0.0)	19(13.9)	118(86.1)	392	2.86	SI	1 <sup>st</sup>	0(0.0)	4(5.0)	76(95.0)	236	2.95	SI	2 <sup>nd</sup>
Problem of poverty	4(2.9)	19(13.9)	114(83.2)	384	2.80	SI	2 <sup>nd</sup>	3(3.8)	10(12.5)	67(83.8)	224	2.80	SI	3 <sup>rd</sup>
Lack of social amenities	5(3.6)	19(13.9)	113(82.5)	382	2.79	SI	3 <sup>rd</sup>	0(0.0)	3(3.8)	77(96.3)	237	2.96	SI	1 <sup>st</sup>
Problem of safety and insecurity	4(2.9)	43(31.4)	90(65.7)	360	2.63	SI	4 <sup>th</sup>	2(2.5)	18(22.5)	60(75.0)	218	2.72	SI	4 <sup>th</sup>
Problem of potential for employment	17(12.4)	42(30.7)	78(56.9)	335	2.45	SI	5 <sup>th</sup>	8(10.0)	26(32.5)	46(57.5)	198	2.47	SI	7 <sup>th</sup>
Community crisis	17(12.4)	44(32.1)	76(55.5)	333	2.43	SI	6 <sup>th</sup>	8(10.0)	16(20.0)	56(70.0)	208	2.60	SI	6 <sup>th</sup>
Crop failure	15(10.9)	49(35.8)	73(53.3)	332	2.42	SI	7 <sup>th</sup>	5(6.3)	21(26.3)	54(67.5)	209	2.61	SI	5 <sup>th</sup>
Attractive quality of life	18(13.1)	56(40.9)	63(46.0)	319	2.33	SI	8 <sup>th</sup>	8(10.0)	34(42.5)	38(47.5)	190	2.38	SI	8 <sup>th</sup>
Problem of flood and drought	27(19.7)	42(30.7)	68(49.6)	315	2.30	SI	9 <sup>th</sup>	12(15.0)	29(36.3)	39(48.8)	187	2.34	SI	11 <sup>th</sup>
Farmland infertility	20(14.6)	60(43.8)	57(41.6)	311	2.27	SI	10 <sup>th</sup>	15(18.8)	26(32.5)	39(48.8)	184	2.30	SI	12 <sup>th</sup>
Attractive climatic environment	26(19.0)	53(38.7)	58(42.3)	306	2.23	SI	11 <sup>th</sup>	9(11.3)	32(40.0)	39(48.8)	190	2.38	SI	8 <sup>th</sup>
Safer atmosphere	28(20.4)	51(37.2)	58(42.3)	304	2.22	SI	12 <sup>th</sup>	15(18.8)	37(46.3)	28(35.0)	173	2.16	SI	13 <sup>th</sup>
Low crime rate	31(22.6)	53(38.7)	53(38.7)	296	2.16	SI	13 <sup>th</sup>	15(18.8)	39(48.8)	26(32.5)	171	2.14	SI	14 <sup>th</sup>
Political instability	34(24.8)	48(35.0)	55(40.1)	295	2.15	SI	14 <sup>th</sup>	9(11.3)	34(42.5)	37(46.3)	188	2.35	SI	10 <sup>th</sup>
Less risk of natural Hazard	31(22.6)	54(39.4)	52(38.0)	295	2.15	SI	14 <sup>th</sup>	15(18.8)	39(48.8)	26(32.5)	171	2.14	SI	14 <sup>th</sup>

Source: Field Survey, 2021

Note: II = Insignificant influence, ID = Indifference; SI = Significant Influence, WS = Weighted Sum and WM = Weighted Mean. Bench Mean Score = 2.0

Meanwhile, the results of the OLS estimate on the effects of factors influencing out-migration is presented in Table 4.6. The R-squared value of 0.7174 for the male household heads and 0.5820 for the female household heads implies that about 72% variation in the factors influencing out-migration of the respondents in the study area was explained by the explanatory variables specified in the model.

The F-stat value of 19.04 for the male household heads and 5.48 for female household heads were significant at 1% probability level indicating the model's overall goodness of fit. Out of the sixteen explanatory variables specified in the model, twelve variables (household size (0.1284), education (0.0883), cooperative (0.4773), extension contact (0.5919), remittance (0.4171), modern technology (0.4978), farm land (-0.3446), market opportunities (0.4118), entrepreneurship skills (0.3142), employment (0.3250), quality of life (0.3180), and crop failure (0.2927) significantly are factors influencing out-migration of the male headed household.

while nine variables (age (-0.0429), marital status (1.2315), household size (0.1501), cooperative (0.0861), remittance (0.6886), modern technology (0.6936), market opportunities (0.8198), employment opportunities (1.1898) and quality of life (1.1204) significantly influenced out-migration of the female headed household.

Age (-0.0429) of the female household heads was negative and significant at 1% probability level implying an inverse relationship with out-migration. An increase in age of the female household heads will decrease the likelihood of out-migration. This could be due to the fact that capacity to cope with out-migration requirement (cost of relocation, climatic changes, adaption) decreases with old age. Unlike younger female who can easily make decisions to migrate compare to older ones.

Marital status of the female household heads was significant at 10% probability level implying direct relationship with out-migration. An increase in marital status of the female household heads will increase the likelihood of out-migration. Getting married connotes tendency to out-migrate. This finding corroborates with Thomas (2016), that states that younger women migrate to urban area due marriage.

The household size (0.1284) of the male headed household was significant at 1% probability level. Also, (0.1501) the female headed household was significant at 10% probability level. This implies that an increase in household size of both household heads will lead to an increase in out-migration. As the number of household members increases, the need to diversify their livelihood activities through out-migration becomes invertible. This finding is in agreement with the work of Tacoli *et al.* (2015), who reported that household size significantly influence out-migration as a coping strategy.

The education (0.0883) of the male headed household was positive and significant at 1% probability level. This implies that a unit increase in educational status of the male household heads will lead to an increase in out-migration. Education plays a significant role toward out-migration. Thus, the level of educational attainment by an individual determines his ability to adopt different livelihood strategies. This finding is in corroborate with the work of Aremu (2014), who reported in his study that a larger number of Nigerians migrate yearly in search of education. This could be due to the fact that educated individuals are exposed to lots of opportunities outside his area. Thus, household heads with higher education have a higher probability of engaging in different income generating activities including out-migration.

The cooperative membership (0.4773) of the male headed household was negative and significant at 1% probability level, while cooperative membership (0.0861) of the female headed household was also positive and significant at 5% probability level. This implies that a unit increase in membership of cooperative of the female household will lead to a decrease in number of out-migrants of the female

The extension contacts of the male headed household was positive and significant at 1% probability level, coefficient of extension contact (0.1412) of the female headed household was also positive and significant at 1% probability level. This implies that a unit increase in extension contact of the male and female gender will lead to an increase in out-migration. Access to extension services through contact with extension agents is usually aimed at improving productivity and profitability which enhances migration. Thus, male and female headed households with access to extension services have a higher likelihood for migration. This finding corroborates that of Aworemi *et al.* (2011), that access to extension have a positive and significant influence.

The coefficient of remittance (0.4171) of the male headed household was positive and significant at 5% probability level, while coefficient of remittance (0.1304) of the female headed household was also positive and significant at 5% probability level. This implies that a unit increase in remittance of the male and female headed household will lead to out-migrate Thus, male and female headed households with increase access to remittance have higher likelihood for out-migration. This finding corroborates that of Heinnemann *et al.* (2014) that access to remittance reduce rural poverty and contribute to improvement of household living standard.

The coefficient of modern technology (0.4978) of the male headed household was positive and significant at 1% probability level. While the female household coefficient of (0.6936) was positive and significant at 5% probability level. This implies that a unit increase in modern technology of the male and female household heads will lead to increase in number of out-migrants from the household. This finding is in line with that of Anthias (2012), that improved communication facilities as transportation, social media and urban orientation education can promote an increase in number of out-migrants.

The coefficient of farm land (-0.3446) of the male headed household was negative and statistically significant at 1% probability level, while coefficient of farm land (-0.0975) of the female headed household was also negative. This implies that a unit increase in access to farm land of the male and female gender will lead to a decrease in the number of migrants. This finding is in corroboration with the work of Ofuoku *et al.* (2015) who found that low agriculture income, land deregration contribute to out-migration.

The coefficient of market opportunities (0.4118) of the male headed household was positive and significant at 1% probability level. While female with coefficient (0.8198) was significant at 5% probability level. This implies that a unit increase in market opportunities of the male household heads will lead to the tendency for migrant. Good marketing for agricultural produces has been issue in the rural area. This finding is in agreement with the work of Ayanwuyi and Akintonde. (2011) who reported significant influence of income on livelihood diversification strategies among male-headed households in their study area are potential income earners than female-headed households.

The coefficient of employment opportunities (0.3250) of the male headed household was positive and significant at 1% probability level, as well as that (0.2911) of the female headed

household and also positive and significant at 1% probability level. This implies that a unit increase in employment opportunities of the male and female gender will lead to increase in out migrants from both genders. Most of the rural household out-migrant are drive for better opportunities outside their areas. This finding is in agreement with the work of Olufuko. (2015), who reported that push and pull factors which include employment opportunities attract people outside their area.

**Table 4.6: OLS estimates of the factors influencing out-migration**

Variables	Male (n = 137)			Female (n = 80)		
	Coeff.	Std. error	t - value	Coeff.	Std. error	t- value
Constant	-0.7155	0.8694	-0.82	5.577	2.4196	2.30**
Age	0.084818	0.0096	0.88	-0.0429	0.0167	-2.58***
Marital status	-0.3833	0.3144	-1.22	1.2315	0.6257	1.97*
Household size	0.1284	0.4201	3.05***	0.1501	0.0899	1.71*
Education	0.0883	0.0298	2.97***	-0.0210	0.0362	-0.58
Cooperative	0.4773	0.1779	2.63***	0.0861	0.03798	2.27**
Extension contacts	0.5919	0.1930	3.07***	0.1412	0.1304	1.08
Remittance	0.4171	0.1673	2.49**	0.6886	0.3412	2.02**
Modern technology	0.4978	0.1480	3.36***	0.6936	0.3028	2.29**
Farmland opportunities	-0.3446	0.1247	-2.76***	-0.0975	0.2819	-0.35
Market opportunities	0.4118	0.1386	2.97***	0.8198	0.3655	2.24**
Entrepreneurship skills	0.3142	0.1664	1.89*	0.7748	0.3288	0.62
Employment opportunities	0.3250	0.1269	2.56***	1.1898	0.2911	4.09***
Social amenities	0.0326	0.1669	0.20	-0.368	0.7974	-0.46
Quality of life	0.3180	0.1503	2.12**	1.1204	0.3087	3.63***
Communal crisis	0.0222	0.1582	0.14	-0.1087	0.2402	-0.45
Crop failure	0.2927	0.1489	1.97*	-0.0890	0.2338	-0.38
R-squared	0.7174			0.5820		
Adj. R-squared	0.6798			0.4758		
F-stat	19.04***			5.48***		

Source: Field Survey, 2021

Note: \*\*\* implies significant at 1%, \*\* implies significant at 5%, \* implies significant at 10 %.

#### 4.4 Effects of Out-Migration on Output of the respondents

##### 4.4.1 Mean crop output of the respondents

The mean value from crop production in kilogram is presented in Table 4.7. It revealed that the male household heads in the study area realized mean annual crop production (output) of 2,541.33Kg from cassava production, mean annual production (output) of 1,298.4Kg from Rice production; mean annual production (output) of 1,091.67Kg from beni-seed production. Similarly, the female headed household realized mean annual crop production of 1528.93Kg from cassava production, mean annual production of 742.86Kg from rice production and mean annual production of 678.04Kg from maize production. This implies that the male household heads realized more crop yield from cassava, rice and beni-seed production among other crops than their female counterparts in the study area.

**Table 4.7: Distribution of respondents based on mean output of crop production**

Variables	Male gender (n = 137)		Female gender (n = 80)	
	Mean	Std dev.	Mean	Std dev.
Maize harvested	896.48	863.362	678.04	511.946
Rice harvested	1298.44	1296.21	742.86	1070.63
Bean harvested	365.00	152.84	466.67	321.45
Yam harvested	630.00	318.83	383.85	255.09
Cassava harvested	2541.33	4620.16	1528.93	2078.57
G/corn harvested	550.00	320.94	421.43	270.58
G/nut harvested	550.00	308.22	700	-
Beni-seed harvested	1091.67	1612.58	700	952.63
Sorghum harvested	171.07	46.6	156.67	40.41

Sources: Field survey, 2021

##### 4.4.2 Mean income from crop output of the respondents

The mean income realized from crop production in naira is presented in Table 4.8. It revealed that the male headed household in the study area realized mean annual income of ₦141,200

from yam production, mean annual income of ₦140,773.44 from rice production; and mean annual income of ₦126,827.73 from cassava production. Similarly, the female household heads realized mean annual income of ₦67,230.7 from yam production, mean annual income of ₦61,625 from rice production and mean annual income of ₦101553.57 from cassava production. This implies that the male headed household realized more income from yam, rice and cassava production among others than their female counterparts in the study area. This is in corroborate with Okafor (2015) that states that wit right inputs production can be increased. but the role of women cannot be over-emphasized.

**Table 4.8: Distribution of respondents based on mean income from crop production**

Variables	Male gender (n = 137)		Female gender (n = 80)	
	Mean	Std dev.	Mean	Std dev
Maize	104705.11	136974.7	74312.5	81234.0
Rice	140773.44	204490.67	61625	149591.4
Bean	80500	44249.92	170333	133978.8
Yam	141200	91589.9	67230.7	50570.3
Cassava	126827.73	178408.65	101553.57	126507.9
Guinea-corn	35500.00	29036.18	63285.7	62356.4
Groundnut	110000	120281.3	259000	-
Benniseed	73333.33	60221.8	226666.	288675.1
Sorghum	16250.00	4219.66	14000	3464.10

Sources: Field survey, 2021

#### 4.4.3 Mean quantity of input used in crop production of the respondents

Quantity of inputs used by the respondents are presented in Table 4.9 and the result revealed that the male headed household uses improved seed with mean quantity of 25kg/ha, Fertilizer with mean quantity of 4.6 bags/ha, and herbicides with mean quantity of 4.78litres/ha. Similarly, the female household head uses improved seed with mean quantity of 7.86kg/ha, Fertilizer with mean value of 3.42bags/ha. This implies that the male headed household had adequate access to farm inputs that can enhance increased production but have more access



to production inputs than their female counterparts. This finding corroborate that of Palacios-Lopez *et al.* (2017) that stated that men have more access to production resources than their women counterpart.

Herbicides with mean quantity of 3.10 8litres and insecticides with mean quantity of 1.11litres. This implies that female house head had access to farm input but not as their male counterpart. This is in collaboration with findings by Okafor (2015) that rural women are faced with the problem of sustainability as most of them lack access to production inputs and good management practices.

**Table 4.9: Distribution of respondents based on mean quantity of inputs used**

Variables	Male gender (n = 137)		Female gender (n = 80)	
	Mean	Std dev.	Mean	Std dev
Herbicide	4.78	4.276	3.10	2.310
insecticide	3.21	2.843	1.57	.787
Fertilizer	4.63	4.737	3.42	1.982
Organic matter	8.82	6.434	3.71	1.11
Improved seed	25.00	22.91	7.86	4.67

Sources: Field Survey, 2021

#### 4.4.4 Mean cost of input used in crop production of the respondents

The mean cost of inputs used in production in Naira is presented in Table 4.10. It revealed that the male headed household in the study area spent an average of ₦121,307.69 on organic matter, fertilizer with mean value of ₦45,055.56, and improved seed with mean value of ₦23,600. Similarly, the female headed household spent on organic matter with mean value of ₦56,000, Fertilizer with mean value of ₦36,240.85 and improved seed with mean value of ₦6,271.43 this implies that the male headed household spent more on production inputs compared to their female counterparts in the study area.

**Table 4.10: Distribution of respondents based on mean cost of inputs used**

Variables	Male gender (n = 137)		Female gender (n = 80)	
	Mean (₦)	Std dev.	Mean (₦)	Std dev
Herbicides	12569.72	12603.47	8410.17	7675.41
Insecticides	8458.33	12930.33	2957.14	2491.22
Fertilizer	45055.56	47730.15	36240.85	32875.33
Organic matter	121307.69	108598.18	56000	66530.69
Improved seed	23600	24130.89	6271.43	4595.18

Sources: Field Survey, 2021

#### 4.4.5 Sources of input used by the respondents

Input sources is critical to increase production Table 4.11 revealed that majority of the male headed household 95.6% and female headed household 93.8% source their inputs from the open market. This implies that both headed households obtained their inputs from a common source. This finding corroborate that of Okafor (2015), that stated that sustainable crop production can only be achieve if farmers have access to production inputs and good management practices.

**Table 4.11: Distribution of respondents based on sources of inputs**

Variables	Male gender Frequency* (%)	Female gender Frequency* (%)
Open market	131 (95.6)	75 (93.8)
Research Institute	15 (10.9)	1 (1.3)
ADP	38 (27.7)	23 (28.7)
Inputs Dealer	-	2 (2.5)

Sources: Field Survey, 2021 \* Figures in parathesis are in %

\*Multiple responses

#### 4.4.6 Perceived effects of out-migration on crop output of the respondents

The perceived effects of out-migration on crop output of the respondents are reported in Table 4.12. It is revealed that the male headed households had reported a positive effect of out-

migration as 85.4% shows that increase farming activities, enhanced decision making 56.6% and technology adoption 51.8%. Meanwhile, the female headed household had positive effects on farming activities 76.3%, enhanced decision making 56.3% and improvement in technology adoption 60%, respectively. However, the negative effects as reported by male headed households are Shortage of family labour 78.8%, reduction in land cultivated 56.6% and increased aged people in farming 62%. Also, the female headed households reported negative effects to include shortage of family labour 82.5% followed by reduction in land cultivation 76.3%, decrease in crop production 50% and increase in aged people engaging in farming. This implies that both male and female headed households had experienced positive and negative effects of out-migration. This finding is in line with that of Meyer (2018), who stated that the impact of rural-urban migration on rural landscapes had led to farmland abandonment which has affected rural biodiversity, triggered the succession of ecological landscapes and the possibility of farmland abandonment by farmers.

**Table 4.12: Distribution of respondents based on perceived effects of out-migration on output**

Variables	Male gender (n = 137)		Female gender (n = 80)	
	Frequency*	Percentage	Frequency*	Percentage
<b>Positive effects</b>				
Farming activities	117	85.4	61	76.3
Increase Crop production	22	16.1	25	31.3
Increase family labour	7	5.1	6	7.5
Cultivation of more land	6	4.4	1	1.3
Enhanced decision making	78	56.6	45	56.3
Improved technology adoption	71	51.8	48	60
Increase income	27	19.7	5	6.3
<b>Negative effects</b>				
Low participation of aged people	4	2.9	-	-
Decrease crop production	63	46.0	40	50.0
Shortage of family labour	108	78.8	66	82.5
Reduction in land cultivation	87	63.5	61	76.3
Difficulty in decision making	30	21.9	28	35
Low technology adoption	41	29.9	25	31.3
Decreased income	48	35.0	36	45.0
Increased aged people in farming	85	62.0	52	65.0

Source: Field Survey, 2021

\*Multiple responses

#### 4.4.7 Effects of out-migration on crop output of the respondents

From the regression analysis result presented in Table 4.13, Cobb-Douglas was used for analysis because it captured more variable than the other functions. the coefficient of determination ( $R^2$ ) value was 0.6953 implying that about 69% variation in output of food crop by the respondents was explained by the independent variables included in the model. The coefficient for farm size (0.5775) was positive and statistically significant at 1% probability level. This implies that a unit increase in farm size will lead to increase in the crops output of the respondents. This has the expected a priori, to decrease the number of out-migrants. The coefficient for improved seed (0.2722) was positive and statistically

significant at 5% probability level. This implies that a unit increase in access to improved seed will increase the food crop output of the respondents. Improved seed plays an important role in determining overall output on the farm. Access to improved seed will lead to increase output which have the tendency to decrease the number of out-migrants. Thus, the productivity of farmer is expected to improve.

The coefficient for fertilizer (0.4215) was positive and statistically significant at 1% probability level by the male household. This implies that a unit increased in access to fertilizer will lead to increases in food crop output of the male household's respondent. This is expected that access to fertilizer will lead to increase in crop production which will favour decrease in number of out-migrants. The coefficient for education (0.333) was positive and statistically significant at 1% probability level by the male household. This implies that a unit increased in desire to education will lead to increase or greater number of migrants by the male headed household in the study area.

The coefficient for household migrants (0.2695) was positive and statically significant 1% probability level, while the female household with coefficient of (0.3848) was positive and statistically significant at 1% probability level which implies that an increase in household migrants will increase the crop production of household in the study area. The coefficient for remittance for the male headed household (0.0983) was positive and statistically significant at 10% probability level. While the coefficient for remittance for female headed household (0.2664) was positive and statistically significant at 1% level of probability. This implies that a unit increase in remittance will increase the productivity of food crop by the respondents. This indicate that as remittance increase there is the tendency for increase in crop production, which can lead to better output that causes reduced number of migrants.

The coefficient for cooperative for the male headed household (0.0983) was positive and statistically significant at 10% probability level. While the coefficient for cooperative for female headed household (0.2664) was positive and statistically significant at 1% level of probability. This implies that an increase in cooperative membership by the respondents will increase the likelihood of not poor. Cooperative societies play crucial roles in poverty alleviation due to various benefits accruable to members such as credit facilities and access to information. Thus, membership in an organization can stimulate investment in livelihood activities for improved livelihood status. And reduced out-migration. This indicate that as cooperative membership increases there is the tendency for increase in crop production.

**Table 4.13: Regression estimates of the effects of out-migration on crop production**

Variables	Male gender (n = 137)				Female gender (n = 80)			
	Linear Coef & t-value	Semi-log Coef & t-value	Cobb-Douglas Coef & t-value	Exponential Coef & t-value	Linear Coef & t-value	Semi-log Coef & t-value	Cobb-Douglas Coef & t-value	Exponential Coef & t-value
Farm size	1649.7 (9.72***)	0.2835 (7.13)	0.5775 (5.83***)	2416.5 (5.10***)	1202.7 (3.72***)	0.6418 (3.70***)	0.3599 (1.73*)	699.5 (1.81*)
Improved seed	-5.9972 (-0.15)	-0.01215 (-1.26)	-0.0689 (-.72)	730.0 (1.50)	163.8 (1.77*)	0.0411 (0.83)	0.2722 (2.12**)	1104.6 (4.62***)
Fertilizer	35.3209 (0.60)	0.03498 (2.52)	0.4215 (5.57***)	1096.5 (3.03***)	-106.7 (-1.30)	-0.03799 (-0.87)	0.0497 (0.36)	-65.2 (-0.25)
Agro chemical	144.7978 (2.43**)	0.02348 (1.68*)	0.0492 (0.73)	323.9 (1.01)	40.0 (0.43)	0.0250 (0.50)	0.0476 (0.38)	-80.3 (-0.35)
Age	18.3642 (0.64)	0.02248 (3.35***)	-0.5660 (-2.06)	-1527.9 (-1.16)	4.6 (0.18)	0.0217 (1.61)	0.4522 (1.14)	-354.8 (-0.48)
Education	-106.1801(-1.29)	-0.01617 (-0.84)	0.3332 (2.36**)	-3295.5 (-4.8***)	27.7 (0.52)	0.0013 (0.05)	-0.1446 (-1.09)	429.6 (1.74*)
Household size	18.4418 (0.14)	-0.00147 (-0.05)	0.0889 (0.68)	810.0 (1.29)	65.5 (0.56)	-0.004 (-0.07)	-0.0162 (-0.09)	229.4 (0.60)
Household migrant	-68.5912 (-0.36)	0.01767 (0.40)	0.2695 (2.65***)	1064.3 (2.19**)	62.3 (0.44)	0.0108 (0.14)	0.3848 (2.57***)	450.7 (1.62)
Migration years	-114.1278 (-1.90*)	-0.0129 (-0.92)	-0.1335 (-2.01**)	-229.2 (-0.72)	22.7 (0.81)	-0.0003 (-0.02)	-0.1687 (-1.83)	54.6 (0.30)
Remittance	-249.1942 (-0.49)	0.2243 (1.87*)	0.0983 (1.81*)	417.1 (1.61)	340.2 (0.62)	0.0555 (0.19)	0.2664 (3.50***)	397.2 (2.80***)
Cooperative	555.1051 (0.98)	0.1285 (0.96)	0.0897 (2.00**)	760.3 (3.54***)	1.24 (0.02)	-0.0475 (-1.62)	0.1844 (2.00**)	-195.6 (-1.14)
Extension contacts	496.1589 (0.80)	-0.0048 (-0.03)	-0.2677 (-0.52)	32.9 (0.13)	-338.0 (0.73)	-0.1147 (-1.01)	0.0865 (0.43)	-191.6 (-0.15)
Constant		5.4550 (15.71***)	4.9067 (4.95***)	1227.7 (2.59***)	-1015.7 (-0.73)	5.3722 (7.33***)	5.2712 (3.48***)	2982.09 (1.06)
Adj. R-squared	0.5506	0.5440	0.6629	0.5455	0.2659	0.2002	0.5895	0.6252
F-stat	14.88***	14.52***	20.54	14.60***	3.38***	2.65***	10.45***	11.98***

Sources: Field survey, 2021

\* Number in parenthesis are t-values

Note: \*\*\* implies significant at 1%, \*\* implies significant at 5%, \* implies significant at 10%.

## 4.5 Livelihoods Status of the Respondents along Gender Dynamics

### 4.5.1 Household income by the respondents

The income realized from other sources in Naira is presented in Table 4.14. It revealed that the male headed household in the study area realized from agricultural activities 75.9% (₦32990.38) mean annual income and income from remittance with mean income of 56.2% (₦17,649.35). In the same vein, the female headed household realized income from agricultural activities of 73.8% (₦23,525.86) and remittances 41.3% (₦16,619.57) This implies that the male household heads realized more income from agricultural activities than the female and almost same from remittances with the female headed household in the study area. This finding corroborate that of Shrestha (2017), reported that out-migration is now considered as part of livelihood strategy of the poor as the remittances migrants send home to their families account for a significant share of the overall household income, particularly for poor households. This further agrees with the finding by FAO (2016) that most migrant contribute to their home through remittance.

**Table 4.14: Distribution of respondents based on sources of household income**

Variables	Male gender (n = 137)			Female gender (n = 80)		
	Freq.	%	Mean (₦)	Freq.	%	Mean (₦)
Agriculture activities	104	75.9	32990.38	59	73.8	23525.86
Private business	58	42.3	51067.80	21	26.2	26258.06
Wage labour	20	14.6	24200.00	49	61.3	17093.75
Pension	3	2.2	33333.33	16	20	60000
Help from family	8	5.8	30750.00	5	6.3	19700.00
Artisan	28	20.4	31050.00	13	16.3	2000.00
Teaching	9	6.6	31050.00	1	1.3	100000.00
Remittance	77	56.2	17649.35	47	41.3	16619.57
Mixed work	45	32.8	38150.00	21	26.3	38285.71

Source: Field Survey, 2021



#### 4.5.2 Utilization of remittance by the respondents

The result of respondents on the utilization of remittance in the study area is presented in Table 4.15. Result shows that the male household heads majorly spent their income from remittance on food consumption 86.1%, followed by education 47.4%, medical care as the top most while others to include agric. Production 47.4%, education 57.7%, loan repayment, investment 44.5% and ceremonies. On the other hand, the female house hold head utilized remittances on food consumption 87.5%, education 75% and Medicare 62.5% This implies that the female household heads in the study area utilized their resources on education to than male. This finding is also in corroboration with the work of Adams and Cuecuecha (2010) who reported that financial asset influenced farmers' livelihood.

**Table 4.15: Distribution of respondents based on utilization of remittance**

Variables	Male gender (n = 137)		Female gender (n = 80)	
	Frequency	Percentage	Frequency	Percentage
Food consumption	118	86.1	70	87.5
Agric. Production	65	47.4	33	41.3
Farmland purchase	31	22.6	29	36.3
Residential land	67	48.9	27	33.8
Education	79	57.7	60	75.0
Medical care	82	59.9	50	62.5
Loan repayment	41	29.9	23	28.7
Investment	61	44.5	21	26.3
Ceremonies	33	24.1	16	20.0

Source: Field Survey, 2021

#### 4.5.3 Contribution to community development by the respondents

Community development is a key strategy to retaining able bodies in the rural area. The result in Table 4.16 revealed the contribution of the respondents toward community development in the study area. Majority (74.5%) of the male household heads were in support of skill

acquisition. Similarly, majority (72.5%) of the female household heads contributed toward skill acquisition. This implies that both genders support a common view which is skill acquisition as way of community development to reduced out-migration. This in line with findings by FAO (2017b) that stated rural education, vocational, skill acquisition that matches market need is one of the steps toward mitigating out-migration.

**Table 4.16: Distribution of respondents based on contribution to community project**

Variables	Male gender		Female gender	
	Frequency*	Percentage	Frequency*	Percentage
Access road	85	62	34	42.5
School building	89	65	39	48.8
Recreation centre	98	71.5	39	48.8
Skill acquisition centre	102	74.5	58	72.5
Power generation	82	59.9	38	47.5

Source: Field Survey, 2021

Note: \* implies multiple responses

#### 4.5.4 Mean production assets owned by the respondents

Production assets owned by the respondents are presented in Table 4.17 the result revealed that the male headed households has sprayer 79.6%, in the same vein the (60%) female headed household has sprayers. This implies that both gender uses similar production asset but the male had more access to production assets than the female counterparts. This corroborate the finding by Palacios-Lopez *et al.* (2017) that stated that men have more access to production resources than their women counterpart.

**Table 4.17: Distribution of respondents based on production assets owned**

Variables	Male gender (n = 137)		Female gender (n = 80)	
	Frequency	Percentage	Frequency	Percentage
Sprayer	109	79.6	60	60
Cutlass	131	95.6	76	95
Hoes	123	89.8	73	91.3
Wheel-barrow	38	27.7	15	18.8
Planter	6	4.4	1	1.3
Tractor	5	3.6	0	0
Thresher	7	5.1	1	1.3
Harvester	12	8.8	1	1.3
Motorbike	72	52.6	13	16.3

Source: Field Survey, 2021

#### **4.5.5 Mean value of production assets owned by the respondents**

Table 4.18 revealed that motorbike has mean value of ₦140, 7055.56 ranked 1<sup>st</sup> for male headed households. On the other hand, the female headed households had motorbike with mean values of ₦167,307.69 ranked 1<sup>st</sup> this study implies that ownership of numerous production assets could indicate improved livelihood among the small-scale farmers. This finding agreed with Ayoade *et al.* (2011) who reported that majority of farmers in Kaduna State of Nigeria have different types of household assets for their livelihood.

**Table 4.18: mean value of production assets owned by the respondents (₦)**

Variables	Male gender (n = 137)		Female gender (n = 80)	
	Mean	Std dev.	Mean	Std dev
Sprayer	21350.46	23256.92	16829.17	13266.99
Cutlass	5454.20	4279.01	4738.16	4374.99
Hoe	8024.39	6679.31	6175.68	4873.69
W/barrow	34115.79	31673.65	25100.00	11945.11
Planter	14333.33	12612.16	45000	-
Tractor	23000.00	15247.95	0	0
Thresher	102142.86	157105.52	30000	30000
Harvester	34333.33	15922.16	35000	35000
Motorbike	147055.56	101746.56	167307.69	124776.72

Sources: Field survey, 2021

#### **4.5.6 Mean household assets owned by the respondents**

Household assets owned by the respondents are presented in Table 4.19 result revealed that the male headed households had fans 75%, handset 73.0%, radio 70.1% and television 57.7%. Similarly, the female headed households also had handset 76.3%, fan 58.8%, television and radio 48.8%. This implies that both genders possess similar household assets. The implication of this finding is that fan and handset was the commonest household assets owned by respondents in the study area. This finding agreed with that of Fasoranti (2019) who stated that fan and other household assets were found common to most household. These assets bring comfort and help to improve the quality of life of respondents.

**Table 4.19: Distribution of respondents based on household assets owned**

Variables	Male gender (n = 137)		Female gender (n = 80)	
	Frequency	Percentage	Frequency	Percentage
Air conditioner	12	8.8	3	3.8
Fan	103	75.2	47	58.8
Television	79	57.7	39	48.8
Radio	96	70.1	39	48.8
Handset	100	73.0	61	76.3
Laptop	12	8.8	6	7.5
Washing machine	7	5.1	5	6.3
Vacuum cleaner	0	0	1	1.3
Gas cooker	34	24.8	22	27.5
Pressing Iron	67	48.9	36	45

Source: Field Survey, 2021

#### 4.5.7 Mean value of household assets owned by the respondents

Result in Table 4.20 showed the mean value in (naira) of household assets owned by the male headed household in the study area. The study revealed that mean value of laptop is ₦91250.00. This followed by air conditioner with mean value of ₦81333.33 and mean value of ₦48265.82 for television. Others were television ₦48265.82, washing machine ₦43,571.43, handset ₦29044.66, gas cooker ₦14373.51, fan ₦13962.26, and pressing iron ₦5758.21. This implies that the male headed household incurred more on laptop, air conditioners and television in the study area.

Similarly, the female headed household indicated having air conditioner with mean value of ₦75000.00 in the study area. This is followed by laptop with mean value of is ₦55,666.6 and mean value of ₦35,589.7 for television. Others were handset with mean value of ₦16085.3, fan with mean value of ₦8,916.67 and radio with mean value of ₦6,412.82 gas cooker ₦14,373.51, Fan ₦13,962.26, and pressing iron ₦5,758.21. This implies that the female headed household incurred more on laptop, air conditioners and television in the study area.

**Table 4.20: Mean value of household assets owned by the respondents (₦)**

Variables	Male gender (n = 137)		Female gender (n = 80)	
	Mean	Std dev.	Mean	Std dev
Air conditioner	81333.33	44675.26	75000.00	13228.76
Fan	13962.26	13649.63	8916.67	5720.75
Television	48265.82	50762.32	35589.7	17855.37
Radio	7558.85	7842.07	6412.82	5406.78
Handset	29044.66	28550.99	16085.3	17277.43
Laptop	91250.00	56210.85	55666.6	37558.84
Washing machine	43571.43	26881.57	32200.0	16589.15
Vacuum cleaner	0	.000	10000	10000
Gas cooker	14373.53	7642.83	12477.27	7638.37
Pressing iron	5758.21	3320.15	4547.22	1959.23

Sources: Field survey, 2021

#### **4.5.8 Mean livestock assets owned by the respondents**

Table 4.21 revealed the livestock assets owned by the respondents to include chicken 34.3% ranked 1<sup>st</sup>, followed by goat 31.2% ranked 2<sup>nd</sup>. Other findings showed that cattle, sheep, Duck, pig and, guinea fowl, rank 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup>, and 7<sup>th</sup>, respectively. This implies chicken and goat were the most valued livestock assets in the study area. This result tallies with that of Danbaba (2016) who stated that larger proportion of farmers in Kaduna State owned local chickens and other livestock assets for their livelihood.

**Table 4.21: Distribution of respondents based on livestock assets owned**

Variables	Male gender (n = 137)		Female gender (n = 80)	
	Frequency	Percentage	Frequency	Percentage
Cattle	13	9.5	2	2.5
Sheep	12	8.8	6	7.5
Goat	43	31.4	39	48.8
Pig	4	2.9	3	3.8
Chicken	47	34.3	52	65
Duck	8	5.8	5	6.3
Guinea fowl	1	0.7	0	0

Source: Field Survey, 2021

#### 4.5.9 Mean value of livestock assets owned by the respondents

The mean income realized from livestock assets in Naira is presented in Table 4.22. It revealed that the male household heads in the study area realized mean annual income of ₦532,307.69 from Cattle production. This is followed by mean annual income of ₦146,250.00 from Pig production; mean annual income of ₦132,255.81 from Goat production and mean annual income of ₦101,000 from sheep production. Others were Chicken production with mean annual income of ₦28,948.9, Guinea-fowl with mean annual income of ₦22,500.00 and Duck production with mean annual income of ₦22,437.5. This implies that the male household heads realized more income from Cattle, Pig and Goat production among other livestock they engaged as livelihood in the study area.

Similarly, the female household heads realized mean annual income of ₦155,000.0 from Pig production. This is followed by mean annual income of ₦100,000 from Cattle production; mean annual income of ₦63,153.85 from Goat production; mean annual income of ₦40,833.3 from Sheep production and mean annual income of ₦22601.92 from Chicken production and mean annual income of ₦12,200.0 from Duck production. This implies that the female household heads realized more income from Pig, Cattle and Goat production

among other livestock they engaged in as cushioning effects of out-migration in the study area.

**Table 4.22: Mean value of livestock assets owned by the respondents (₦)**

Variables	Male gender		Female gender	
	Mean	Std dev.	Mean	Std dev
Cattle	532307.69	291437.64	100000	.000
Sheep	101000	84171.9	40833.3	54810.27
Goat	132255.81	151716.5	63153.85	81891.31
Pig	146250.00	72269.75	155000.0	63835.73
Chicken	28948.9	26099.42	22601.92	22460.07
Duck	22437.50	12832.54	12200.0	7224.96
Guinea fowl	22500.00	-	0	0

Sources: Field survey, 2021

#### 4.5.10 Livelihood status of the respondents

Table 4.23 showed that 67.88% of the male headed households had moderate livelihood status similarly the female headed households of 47.5%, meanwhile 25.55% male headed households and 41.25 of female headed households had low livelihood status. Also, only (9%) both male and female headed households had high livelihood status. This finding implies that majority of the respondents had moderate livelihood status this, finding corroborate that of Fazoranti (2019) who revealed that most of the rural farmers in Oyo State, Nigeria, had moderate livelihood.

**Table 4.23: Distribution of respondents based on their livelihood status**

Livelihood status	Livelihood class	Male (137)	Female (80)
		Freq (%)	Freq (%)
High	0.51 – 0.75	9(6.57)	9(11.25)
Moderate	0.26 – 0.50	93(67.88) *	38(47.5) *
Low	< 0.26	35(25.55)	33(41.25)
Total		100.00	100.00

Source: Field survey, 2021



#### **4.6 Effects of Migration on Livelihood Status of Respondent along Gender Dynamic**

Results of the ordered Logit regression estimate on the effects of out-migration on livelihood status of respondents is presented in Table 4.24. The pseudo R – square value of 0.2904 for the male household heads and 0.5413 for the female household heads implies that about 54% variation in the effects of migration on status of the respondents in the study area was explained by the explanatory variables specified in the model. The chi-square value of 62.90 for the male household heads and 83.55 for female household heads were significant at 1% probability level indicating the model’s overall goodness of fit. Out of the eleven explanatory variables specified in the model, six variables (education, marital status, extension contact, access to credit, remittance, household out migrant) significantly influenced number of migrants from the male household heads, while eight variables (farm size, household size, education, cooperative, extension contact, access to credit, remittance, household migrant) significantly influenced number of migrants of the female household heads.

Farm size of the female household heads was negative and significant at 10% probability level implying an inverse relationship with number of migrants. An increase in farm size of the female household heads will decrease the likelihood to migrate. This could be due to the fact that capacity to engage in higher productive activities is tied to land. farmers who have access to land may not likely migrate.

Household size of the female household heads was negative and significant at 5% probability level implying an inverse relationship with livelihood status and increase in of number of migrants. Increase in number of household size means larger household sizes and responsibilities. However, where the dependency ratio is high, there will be increase in the household consumption needs that could probably cause the migration of household member.

**Table 4.24: ordered regression estimates on effect of out-migration on livelihood status**

Variables	Male (n = 137)			Female (n = 80)		
	Coeff.	Std. error	z - value	Coeff.	Std. error	z - value
Constant	-5.5343	2.8339	-1.95*	1.0497	6.1796	0.17
Farm size	-0.0258	0.1287	-0.20	-0.6669	0.3632	-1.84*
Household	-0.0747	0.0973	-0.77	-7.4558	3.3441	-2.23**
Education	0.1580	0.0711	2.22**	0.2105	0.0998	2.11**
Marital status	-1.5184	0.8997	-1.69*	0.4952	1.3194	0.38
Occupation	-0.3429	0.4919	-0.70	-0.2795	0.7469	-0.37
Cooperative	-0.0955	0.4577	-0.21	0.3834	0.2222	1.73*
Extension	0.9070	0.4836	1.88*	2.3643	1.0171	2.32**
contact						
Access to credit	1.2240	0.5796	2.11**	1.9447	1.0619	1.83*
Remittance	0.8688	0.4577	2.03*	1.9547	0.9141	2.14**
Household	0.4040	0.1755	2.30**	0.7251	0.3040	2.39**
migrant						
Migration years	-0.0628	0.0519	-1.21	0.008	0.5702	0.14
Pseudo R <sup>2</sup>	0.2904			0.5413		
Chi – square	62.90***			83.55***		
Log likelihood	-76.8435			-35.3999		

Source: Field Survey, 2021

**Note:** \*\*\* implies significant at 1%, \*\* implies significant at 5%, \* implies significant at 10%.

Education of the male household heads was positive and significant at 5% probability level, while the female headed household was also positive and significant at 5% level of probability implying a direct relationship. An increase in demand for education of the respondents will increase the likelihood of number of migrants. Households that had access to education tends to make inform decision to migrate other with better opportunities. This

finding corroborates with report by Ellis (2017) that education is a major player role among the reason that leads to out-migration.

Extension contact of the male household heads was positive and significant at 10% probability level while the female household headed was positive and significant at 5% level of probability. This implying a direct relationship with livelihood status. An increase in extension contact to the respondent will increase livelihood status which can lead to decrease in the level of out-migrants.

Access to credit of the male headed household was positive and significant at 5% probability level while that of the female headed household was also positive and significant at 10% probability level implying a direct relationship with livelihood status. An increase in access to credit by the respondent will increase the likelihood status. More access to credit will lead to better livelihood status of the respondents and this will decrease the in number of out-migrants

remittance of the male household heads was positive and significant at 10% probability level, while that of the female headed household was also positive and significant at 5% probability level implying a direct relationship with livelihood status. An increase in remittance will increase the likelihood status of the respondents. Households with larger remittance were more likely to have less number out-migrants.

Household out-migrant by the male household heads was positive and significant at 5% probability level, while that of the female headed household was also positive and significant at 5% probability level implying direct relationship with livelihood status. It therefore implies

that, an increase in household out-migrant by the respondents, will lead to higher likelihood of better livelihood.

#### 4.7 Strategies Adopted to Mitigate Out-migration by the Respondents

Table 4.25 revealed the strategies adopted by the respondents as categorized using 3 – point Likert rating type scale of not adopted (1), adopted (2) and highly adopted (3). The strategies adopted by the male-headed household includes application of modern farming technologies ( $\bar{X} = 2.66$ ), development of entrepreneur skill ( $\bar{X} = 2.56$ ) and engagement in community activities ( $\bar{X} = 2.49$ ) ranked 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup>, respectively. Also, the female-headed household adopted engagement in community activities ( $\bar{X} = 2.62$ ), application of modern farming technologies ( $\bar{X} = 2.55$ ) and development of entrepreneur skill ( $\bar{X} = 2.50$ ) ranked 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup>, respectively. This implies that the rural households adopt several strategies to mitigate out-migration in order to achieve greater progress and foster better livelihood (Beegle and Poulin, 2013).

**Table 4.25: Distribution of respondents on strategies adopted to mitigate out-migration**

Variables	Male gender (n=137)				Female gender (n=80)			
	WS	WM	Decision	Rank	WS	WM	Decision	Rank
Engagement in community activities	341	2.49	Adopted	3 <sup>rd</sup>	210	2.62	Adopted	1 <sup>st</sup>
Application of modern farming technologies	364	2.66	Adopted	1 <sup>st</sup>	204	2.55	Adopted	2 <sup>nd</sup>
Development of entrepreneur skill	351	2.56	Adopted	2 <sup>nd</sup>	200	2.50	Adopted	3 <sup>rd</sup>
Reduced area of land cultivated	323	2.36	Adopted	5 <sup>th</sup>	201	2.51	adopted	4 <sup>th</sup>
Market development and services provision	334	2.44	Adopted	4 <sup>th</sup>	196	2.45	Adopted	5 <sup>th</sup>
Practicing of communal farming	267	1.95	Not Adopted	6 <sup>th</sup>	158	1.98	Not Adopted	6 <sup>th</sup>

Source: Field Survey, 2021

**Note: WS = Weighted Sum, WM = Weighted Mean, R = Rank & Bench Mean Score = 2.0.**

## 4.8 Test for Hypotheses

### 4.8.1 Hypothesis I

The null hypothesis I stated that there is no significant difference in livelihood status of the respondents' households along gender dynamics in the study area tested using t – test statistics. The result of the pair-wise t – test is presented in Table 4.26 and it showed t – statistic value of 1.9124 at 10% level of probability. This implies that there was a significant difference in the mean in livelihood status of the respondents' households along gender dynamics in the study area. The null hypothesis was therefore rejected, while the alternative hypothesis which stated that there is a significant difference in the livelihood status of the respondents' households along gender dynamics in the study area was accepted.

**Table 4.26: T-test estimate for null hypothesis I**

	<b>Mean</b>	<b>Standard dev.</b>	<b>t – value</b>	<b>Decision</b>
Livelihood status of male	1.8102	0.5359	1.9214*	Rejected
Livelihood status of the female	1.7	0.6637		
Mean difference	0.1875	0.0975		

Source: Field survey, 2021 \* = **significant at 10% probability level**

### 4.8.2 Hypothesis II

The null hypothesis II stated that there is no significant difference in the crop output of the farming households along gender dynamics in the study area was tested using t – test statistics. The result of the pair-wise t – test is presented in Table 4.27 and it showed t – statistic value of 2.4512 at 5% level of probability. This implies that there was a significant difference in the crop output of the farming households along gender dynamics in the study area. The null hypothesis was therefore rejected, while the alternative hypothesis which stated that there is a significant difference in the crop output of the farming households along gender dynamics in the study area was accepted.

**Table 4.27: T-test estimate for null hypothesis II**

	<b>Mean</b>	<b>Standard dev.</b>	<b>t – value</b>	<b>Decision</b>
Crop output of male household	3407.875	5037.75	2.4512**	Rejected
Crop output of female household	2048.75	1961.48		
Mean difference	1359.13	4959.45		

Source: Field survey, 2021    \*\* = **significant at 5% probability level**

## CHAPTER FIVE

### 5.0 CONCLUSION AND RECOMMENDATIONS

#### 5.1 Conclusion

This study concluded that both the male and female household heads were in their advance stage of life and will need to diversify their livelihood through adoption of various livelihood strategies. There is a moderate literacy level among the gender with the male gender found to be more educated compared to the female gender. Both male and female headed household have experience in farming which could easily influences their decision-making process to adopt different livelihood strategies including out-migration. Household size was not large with both male and female, while male household heads had small farm size as well as their female counterpart also. However, access to extension services and cooperative membership the male headed households had more access as compared to female headed household.

The pattern of out-migration is from rural area to urban while migrants contribute back in form of remittance. Major reasons responsible for out-migration were to send remittance back home and for employment opportunity. The level of household migrants for both male and female headed households were found to moderate in the study area. The factors influencing out-migration for both male and female household were age, marital status, household size, and education status, member of cooperative, access to extension services, remittance, modern technology adoption, farm land opportunity, market opportunity, entrepreneurship skills, employment opportunity, quality of life and crop failure. Farm inputs used by both gender include improved seed, organic matter, fertilizer, herbicide and insecticide. Which were sourced from open market. The perceived effects of out-migration are reported as positive to include farming activities, enhanced decision making and improved technology

adoption, while the negative effects were decrease in crop production, shortage of family labour, reduction in land cultivation and increased aged people in farming. Meanwhile, sources of male headed household income were from agricultural activities, private business and remittance similarly, the female headed household source of income were agricultural activities, wage labour and returns from remittance. Remittance utilization by male headed household were for food consumption, agriculture production, residential land, education, medical care and investment also the female household utilized remittance on food consumption, education, medical care.

Production assest owned by both male and female headed household were sprayers, cutlasses, hoes, wheel barrows and motor bike. The male and female headed household owned household assests were fan, television, radio, handset and pressing iron. Both male and female household heads owned livestock include mainly of chicken and goats among others. The contribution of both male and female headed household to community projects were access road, school building, recreation centre, skills acquisition centre and power generation. Effects of out-migration had both positive and negatives impact on arable crop production. Strategies engagement by both male and female headed household in mitigating the effects of out-migration in the study area were engagement in community income generating activities, adoption of modern farming technology, development of entrepreneur skill, reduced area of land cultivated, market development and services provision.



## **5.2 Recommendations**

From the findings of the study, the following recommendations among others are put forward:

The study revealed that both genders had limited access to extension services. It is therefore recommended that there is need for NGOs and extension agency to educate and develop the skills of the rural households through capacity building and skills acquisition. This could help to mitigate out-migration.

Stakeholders and policy makers should create awareness on the effects and consequences of out-migration on the rural communities.

Migrants should consider the possibilities of association cooperative and other association that can bring about development rather than leaving their communities

Relevant stakeholders including Government at all levels should partner to formulate and promote livelihood enterprise diversification intervention (project or programme) involving mixed farming (crop and livestock interaction) to serve as an effective strategy for mitigating the effects of out-migration in the rural study area.

The study recommended that Government and other funding organizations should promote skills acquisition and provide infrastructural facilities among household along gender dynamics to mitigate out-migration particularly in the study area.

The female household heads were found to have less access to productive assest than their male counterpart, hence the need for rural stakeholders to create a level playing ground for female to accessed productive inputs more readily with less cost in order encourage them.

Several factors were found to influence out-migration of both male and female household heads in the study area. It is therefore recommended that rural households, government and non-governmental agencies should promote effective social networks and social investment policy that will reduce the level of out-migrants.

Both the male and female household heads identified inadequate access to credit as a constraint. It is therefore recommended that, formal financial institutions especially Bank of Agriculture (BOA) and Bank of Industry (BOI) should come up with flexible policy on credit that will enhance access to credit by resource poor rural households who do not have suitable collaterals for engagement in livelihood diversification strategies.

### **5.3 Contribution to knowledge**

Migration is a subject that has attracted the interest of my scholars over the years. The contributions of this study to the body of knowledge are as follows:

This study has revealed that women out-migration from rural to urban area had consequences on arable crop production as they play a critical role in value addition processes. Results show that 43.8% indicate a low level of female out-migration while 35% of female-headed households show that decision making in farming becomes difficult with female out-migration.

The study also shows that effective extension service, access to land and capital can go a long way in improving arable crop production and improvement of household livelihood status as reported by 66.3% in the study area.

Rural development and skill acquisitions will help reduce the number of migrants to about 72.5% in the study area.

The study revealed that factors (unemployment, social amenities and insecurity) contribute to out-migration. These can be addressed by stakeholders engagement in community project as reported in (Table 4.16) in the study area.

In addition, the revealed that proper awareness creation on adoption of technology in agricultural targeted at the women and youth can go a long way to reduce out-migration in the study area (Table 4.13).

The study will find it application with Government on rural development; rural stakeholders, non-governmental organisation and it will direction to rural extension agents.

#### **5.4 Suggestion for further studies**

1. Effects of remittance utilization on technology adoption in rural area: gender dynamics approach.
2. Effects of adoption of improved crop production technologies on reduction of out-migration along gender dynamics.

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**APPENDIX I**

DEPARTMENT OF AGRICULTURAL EXTENSION AND RURAL SOCIOLOGY,  
SCHOOL OF AGRICULTURE AND AGRICULTURAL TECHNOLOGY,  
FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA,  
NIGER STATE, NIGERIA.

**RESEARCH QUESTIONNAIRE**

Dear respondent,

I am a postgraduate student of the above-named Department and Institution undertaking a research study on the “EFFECTS OF OUT MIGRATION ON LIVELIHOOD STATUS OF ARABLE CROP FARMERS IN KOGI STATE, NIGERIA”. Please kindly assist in completing this questionnaire. The information supplied by you will be treated confidentially for the sole purpose of the research.

Yours faithfully,

**IBRAHIM ISMAILA OHIKURA**  
**M.TECH/SAAT/2018/7890**

**RESPONDENT IDENTIFICATION**

- (i) Local Government Area.....
- (ii) Village .....
- (iii) Name of farmer (optional) .....
- (iv) Questionnaire number.....

**SECTION A: PERSONAL CHARACTERISTICS:**

- (1) Age of farmer .....
- (2) Sex of farmer : (a) Male [ ] (b) Female [ ]
- (3) Marital status:
  - (a) Single [ ]
  - (b) Married [ ]
  - (c) Divorced [ ]
  - (d) Widow [ ]
  - (e) Others (specify).....
- (4) How many wives do you have?.....
- (5) What is your position among the wives? .....
- (6) What is the number of your children?  
.....
- (7) What is your primary occupation?
  - (a) Farming [ ]
  - (b) Trading [ ]
  - (c) Processing [ ]

- (d) Artisan [ ]  
 (e) Handcraft [ ]  
 (f) Others (specify).....
- (8) For how long have you been into farming? .....
- (9) What is your farm size .....
- (10) How did you acquire farm-land?  
 (a) Inherited [ ]  
 (b) Gift [ ]  
 (c) Purchased [ ]  
 (d) Rent [ ]  
 (f) Others (specify).....
- (11) Educational qualification  
 (a) Primary [ ]  
 (b) Secondary [ ]  
 (c) Tertiary [ ]  
 (d) Adult education [ ]  
 (e) Non-formal education [ ]  
 (f) Others (specify).....
- (12) How many years did you spend in school?.....
- (13) What is the source of your farm labour?  
 (a) Family labour [ ]  
 (b) Hired labour [ ]  
 (c) Communal labour [ ]  
 (d) Others (specify).....
- (14) Do you belong to any cooperative society? (a) Yes [ ] (b) No [ ]
- (15) If yes, for how many years? .....
- (16) If yes, how many? .....
- (17) Do you have contact with extension agent? (a) yes (b) No
- (18) If yes, number of extension contract.....
- (19) Do you have access to agricultural credit? (a) Yes [ ] (b) No [ ]
- (20) If yes, from which sources and how much did you received?

S/N	Source	Tick	Amount
1	Commercial bank		
2	Cooperative		
3	Thrift Institution		
4	Local money lenders		
5	Bank of Agric.		
6	Microfinance		
7	Family and friends		
8	Others (specify).....		

**SECTION B: EXAMINE THE HOUSEHOLD OUT-MIGRATION ALONG THE GENDER DYNAMICS**

- (21) Number of household that migrated.....
- (22) How many years have they been out of the community? .....
- (23) Kindly indicate your household members based on the following category
- (a) Male ....., female .....
  - (b) Less than 8years.....
  - (c) 11-20years.....
  - (d) 21-30years.....
  - (e) 31-40years.....
  - (f) 41-50 years.....
  - (g) Above 50years
- (24) What is the gender of your household that migrated? (a) Male [ ] (b) female [ ]
- (25) What age group of your household that migrated?
- (26) What class are your household that migrated?
- (a) Education [ ]
  - (b) Government work [ ]
  - (c) Private Job [ ]
  - (d) Health challenges [ ]
  - (e) Apprenticeships [ ]
  - (f) Others (specify) .....
- (27) What is the pattern of migration among household?
- (a) rural-rural migration [ ]
  - (b) rural-urban migration [ ]
  - (c) Seasonal [ ]
  - (d) Permanent [ ]
  - (f) Others (specify) .....
- (28) What is the contribution of out-migrant in your household?
- (a) Remittance [ ]
  - (b) Help with modern technologies [ ]
  - (c) Information sources [ ]
  - (d) Others (specify) .....



**SECTION C: EXAMINE THE PRODUCTION ACTIVITIES OF THE HOUSEHOLD ALONG GENDER DYNAMICS**

(29) Which of the following crops do you cultivate?

Crop type grown	Farm size	Quantity harvested (kg)	Quantity consumed	Quantity sold (₦)	Price/bag (₦)	Total value
Maize						
Rice						
Beans						
Yam						
Cassava						
Guinea corn						
Groundnut						
Benniseed						
Others (specify)						

(30) Which of these farm input did you use for crop production

S/N	Names of inputs	Quantity bought	Unit price(₦)	Total amount
1	Herbicides			
2	Insecticides			
3	Fertilizer			
4	Organic manure			
5	Improved seed/planting materials			
6	Others (specify) .....			

(31) Where do you Sources your farm inputs

- (a) Open market [ ]
- (b) Research Instituted [ ]
- (c) Agricultural programme [ ]
- (d) Others (specify).....

**SECTION D: DETERMINE THE EFFECTS OF OUT-MIGRATION ON THE LIVELIHOOD ALONG GENDER DYNAMICS**

(32) Does the out- migration of your household affect your farming activities?

- (a) Yes [ ] (b) No [ ]

(33) If yes, indicate the positive effect(s) on your farming activities.

- (a) Increase in crop production [ ]  
 (b) Increase family labour [ ]  
 (c) Cultivation of more land [ ]  
 (d) Enhance decision maker on crop to produce [ ]  
 (e) Improved technology adoption [ ]  
 (f) Increase in income [ ]  
 (g) Low involvement of ageing people in farming activity [ ]

(34) Indicate the negative effects of out- migration on your farming activities.

- (a) Decrease in crop production [ ]  
 (b) Shortage of family labour [ ]  
 (c) Reduction in size of land cultivated [ ]  
 (d) Difficulty in choosing what crop to plant [ ]  
 (e) Low level of technology adoption [ ]  
 (f) Decrease in income [ ]  
 (g) Increase of ageing people in farming activity [ ]

(35) Sources of household income

S/N	Income sources	Tick	Amount weekly	Amount monthly
1	Agriculture			
2	Private business			
3	Wage labour			
4	Pension			
5	Help from family			
6	Work as artisan			
7	Teaching			
8	Remittances			
9	Mixed (activities)			
10	No answer			

(36) Tick accordingly how you spend your remittance from out-migrants

S/N	Area	Tick as apply
1	Food	
2	Agriculture	
3	Agriculture land	
4	Residential land	
5	Educations	
6	Medical cares	
7	Loan repayment	

8	Investment	
9	Electronics/pleasure	

(37) Production assets

S/N	Asset	Tick	Unit	Price	Total
1	Sprayer				
2	Cutlass				
3	Hoes				
4	Wheel barrow				
5	Planter				
6	Tractor				
7	Thresher				
8	Harvester				
9	Motorbike				
10	Other(specify).....				

(38) Household assets

S/N	Asset	Tick	Unit	Price	Total
1	Air conditioners				
2	Fan				
3	Television				
4	Radio				
5	Handset				
6	Laptops				
7	Washing machine				
8	Vacuum cleaner				
9	Gas cooker/kerosene stove				
10	Pressing Iron				
11	Others (specify).....				

(39) Livestock assets

S/N	Asset	Tick	Unit	Price	Total
1	Cattle				
2	Sheep				
3	Goats				
4	Pigs				
5	Chickens				
6	Ducks				
7	Guinea fowls				
8	Others specify).....				

**SECTION E: ASSESS THE STRATEGIES ADOPTED TO MITIGATE EFFECTS OF OUT-MIGRATION**

- (40) . Do you contribute to community development projects (a) Yes [ ] (b) No [ ]
- (41) If yes, indicate by ticking as appropriate  
 (a) Access road [ ]  
 (b) Building of school [ ]  
 (c) Recreation centres [ ]  
 (d) Skill acquisition Centre [ ]  
 (e) Alternative power generation [ ]
- (42) Do you have an off- farm job? (a) yes [ ] (b) No [ ]
- (43) What strategies do you adopt to mitigate effects of out-migration

S/N	Strategies	Highly Adopted	Adopted	Not Adopted
1	Adopt modern technology in farming			
2	Reduced area of land cultivated			
3	Entrepreneurship			
4	Engage conflict resolution			
5	Communal farming process			
6	Market development and services provision			

**SECTION F: DETERMINE THE FACTORS THAT INFLUENCE OUT-MIGRATION ALONG GENDER DYNAMIC**

- (44) How many of your household migrated out of the village lately?.....
- (45) Indicate the perceived factors that influence out-migration

S/N	Factors	Significant influence	Undecided	Insignificant influence
1	Unemployment			
2	Lack of services and amenities			
3	Poor safety and insecurity			
4	Crop failure			
5	Poverty			
6	Community crisis/war			
7	Drought/flooding			
8	Political instability			
9	Potentials for employment			
10	Fertile land			
11	More attractive climate			
12	Attractive quality of life			
13	Less risk of natural hazards			
14	Low crime rate			
15	Safer atmosphere			