MIGRATION AND HOUSEHOLD INCOME DIVERSIFICATION; THE CASE OF SETAMA WOREDA, JIMMA ZONE IN OROMIA REGION

A Thesis Submitted to the School Graduate Studies of Jimma University Partial Fulfillment of the Requirements for the Award of the Degree of Masters of Science in Economics Policy Analysis (MSC).

BY:

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JIMMA UNIVERSITY

COLLEGE OF BUSINESS & ECONOMICS

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MAY 30, 2021

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CERTIFICATE

This is to certify that the thesis entitles "MIGRATION AND HOUSEHOLD INCOME DIVERSIFICATION; THE CASE OF SETAMA WORADA, JIMMA ZONE IN OROMIA REGION "submitted to Jimma University is for the award of the Degree of Master of Economic Policy Analysis and is a record of bonafide research work carried out by Mr. Mohammedamin Umer under our guidance and supervision.

Therefore, we hereby declare that no part of this thesis has been submitted to any other university or institution for the award of any degree or diploma.

Main Advisor Name	*Date*	*signature*
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Co-Advisor Name	*Date*	*Signature*
MS.Shabu Abdulbari	_____	_____

DECLARATION

I hereby declare that this thesis entitled "*MIGRATION AND HOUSEHOLD INCOME DIVERSIFICATION; THE CASE OF SETAMA WORADA, JIMMA ZONE IN OROMIA REGION:* has been carried out by me under the guidance and supervision of Leta Sera (Ph.D.) And MS.Shabu Abdulbari

The thesis is original and has not been submitted for the award of any degree or diploma to any university or institution.

Researcher's Name   Date   Signature

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Acknowledgment

Abstract

This paper intended to study the impact of migration on household income diversification in Setema Woreda of Jimma Zone, Oromia Regional State. This paper uses limited-dependent variable methods and new data from Setema district to test the effect of intercontinental on activity choice and incomes in rural households. Econometric evidence assists our theoretical expectation that the impact of emigration varies both by migrant destination and production human activity. We find no evidence of either positive or negative effects of continental migration on any activity because all migrants are intercontinental migrants. However, intercontinental migration, which tends to be long-term and generates significantly larger remittances, stimulates livestock production and cash crop know negatively associated with non-farm activities income and positively associated with crop production but not significant. the policy recommendation is very important to continue the effect of migrants on financial gain diversification i.e. on livestock and cash crop production promotion of production working on infrastructure and search of groundwater for irrigation is most policy recommended to the district. The result of this study is expected to shed light on the current literature gap in the study area.

Keywords*: Migration, remittance, income diversification, impact, and rural households.*

List of Acronym and Abbreviation

CSA: Central Statistical Authority

GDP: Gross Domestic Product

ILO: International Labor Organization

IMF: International Monetary Fund

FAO-Food and Agricultural Organization

Hcap: Human capital endowment

HHH: Household head

Hcap: Human capital endowment

DP: Household demographic characteristic

IOM: International Organization of Migration

NELM: New Economics of Labor Migration

UN: United nation

2SLS: Two stages least square

SPSS: Statistical Package for Social Science

WB: World Investment Report

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CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Migration is broadly defined as the process of crossing a political or administrative boundary for a specific period. There is, however, much debate as to what constitutes migration and who should and should not, be considered a migrant. In line with this, recently IOM (2020) defined migration as the movement of persons away from their place of usual residence, either across an international border or within a State. On the other hand, a growing body of evidence on migration and mobility shows that migration is dramatically increased and in large part related to the broader global economic, social, political, and technological transformations that are affecting a wide range of high-priority policy issues around the world (World Bank, 2019).

Even so, it is challenging to calculate the number of migrants worldwide with exactness, recent estimations suggest that nearly almost The number of international migrants from the world in 2019: **272 million** (3.5% of the world's population) people live outside their country of birth..52 % of international travelers were male; 48% were female with world Migration Report 2020.

The diversification of incomes into non-crop production has been identified as a critical livelihood strategy for rural households, particularly in Africa (Barrett, Reardon, & Webb, 2001). Recent research suggests that household members who migrate can facilitate investments in new activities by providing rural households with liquidity, in the form of remittances, as well as income security, in the form of a promise to pay in the event of an adverse income shock. So that, migration enables rural households to overcome imperfect credit and insurance markets. If this hypothesis is correct, then other things being equal, the presence of migrants in rural

The family should be positively correlated with the diversification of production into non-crop activities. This has been put forward particularly by the New Economics of Labor Migration (NELM) and several corresponding or extended approaches. As part of other income-generating activities of a household, internal and international migration may well go into normally multiple directions and multiple sectors see in rural areas and activities.

Not only in the migrant-receiving areas but also the migrant-sending areas, migration and potential remittances can have far-reaching impacts on incomes and the production of agricultural households. On this point, there are strong arguments in the discussion on both sides of the migration-coin.

On the one hand, the large argument of the 'brain drain', namely the loss of human capital and its consequences, as well as the opportunity costs of lost labor have been continuously set out as the major effects of migration which are assumed to counteract any positive backflows, such as remittances or newly acquired know-how. On the other hand, arguments have been made on the importance of migration for the welfare of the remaining households particularly in environments with a limited job market and income and production constraints.

In more developing countries and African countries, agricultural income is an essential component of rural households' subsistence. However, this type of income shows a high seasonality and outcomes are thus uncertain, because of market prices volatility and environmental hazards. Therefore, household members partly allocate their working time to activities that provide a more firm income to cope with adverse shocks. According to Barrett et al. [*2001*], diversification refers to the allocation of assets and time to both on-farm and off-farm activities. Experimental studies in rural Africa have revealed that nonfarm income sources may account for as much as 40-45 percent of the average household income and seem to be growing in importance [Reardon, 1997; Bryceson and Jamal, 1997; Little et al, 2001; and Reardon et al., 2006].

Strongly connected to the content of the consequences of migration is that of its causes. Studies have discovered typical push-or pull factors, but in recent years have also increasingly focused on underlying characteristics of the individuals, households, and communities of the migrant population, which are assumed to play a significant role concerning the migration decision and inherently its potential benefits.so many other different studies have further pointed at the strong selectivity of migration, especially regarding physical and human capital characteristics, such as asset endowment and education.

1.2 Statement of the problem

Rural Agriculture is the primary activity of the Setema Woreda households. Cropping is characterized by one short, single cropping season per year. The result of engaging in rain-fed agriculture in a drought-prone environment is that households face substantial risk. Official crop insurance is not available to mitigate this risk. The miss of such insurance is thought to be due to the high spatial covariance of rainfall shocks and to moral hazard problems associated with crop insurance in general (Reardon et al, 1992). Uncertainty to joint with missing markets for risk creates incentives to diversity income activities; however, investment options are affected by an incomplete credit market.

Limited collateral and collateral substitutes severely limit rural households 'access to formal credit, in East Africa and elsewhere (Binswanger and Rosenz, 1986; Binswanger et al., 1989; Reardon et al., 1992; Fafchampset al., 1998). The miss of collateral is compounded by a missing land market. In Ethiopia commercial land market transactions were found to be extremely rare (Ouedgraogoet al., 1996). The lack of commercial and market a transaction implies that land cannot function as collateral for credit. Absent or imperfect markets for credit and insurance imply that risk cannot be relieved through formal institutions.

The Diversification of productive activities enables a household to reduce the risk it faces through generating income from sources not correlated with cropping income. Households in the rural area were diversifying by engaging in migration, cash crop, livestock production, and non-farm activities. When credit and insurance markets are imperfect, migration, as a diversification option, can influence household choices among income activities and technologies. Accordant to the NELM theory, migration is likely to have multiple and counteracting impacts on the productive human action of the household due to the restricting effect of imperfect market mechanisms. Migrants can be advised as financial intermediaries providing the remaining household members with a source of liquidity, through remittances.

At the same time, migration implies a loss of household labor to distant labor markets as a substitute for formal insurance. (Taylor)The assessment of incomes into non-crop production has been identified as a critical livelihood strategy for rural households, particularly in Africa (Barrett et al, (2001). With these above problems and strategy of household migrant decision and

income diversification participation in current time is questionable in Setema Woreda. A large number of household members' migrants to continental and enter continental migration with the response of remittances to their home district. What this study needed to undertake is to indicate the role of remittances on income diversification which comes from migrants in the district by using econometrics model-dependent limit variables.

The analysis is based on a household survey conducted in the Setema district from January 2021to February 2021. By viewing migration as a household strategy and decision to diversify Income sources it follows the NELM approach. Even so, the analysis also includes the role of individual economic opportunities, which have been emphasized by the early studies of internal migration. These are partly derived back from individual migrant information, which has been collected into the study. The investigation of the impact of migration and remittances on the migrant-sending households will concentrate primarily on their effects on the households' income and resource allocation.

The study starts with an outline of the theoretical and empirical background explaining migration as a household strategy to cope with high risks and insecure incomes in risky environments of developing countries. This is followed by an assessment of migration flows out of Setema Woreda, in terms of directions, time dimensions, and motivations.

A previous study had not been conducted in Setema woreda. Then this current study was conducted to fill the contextual gap. Moreover, the previous local study was not conducted in the particular setting of this current study from which information has been obtained. Even though there are a tremendous number of migrating abroad, particularly, to the middle east (Saudi Arabia) however, from the best knowledge of the research, while the rate of migration originating from Jimma Zone is well known, very little is known about the role of migration (remittances) they send back home to poverty reduction. In this regard, no research has been conducted on migration and its impact on income diversification in Setema Woreda. Due to a lack of empirical research in the area, our knowledge about the variable in question is still blurred. In addition to this, currently, which type of activities such as nonfarm/off-farm can be an alternative source of income for these residents in the study area requires an urgent response. so

to shine a light on the gap, and the motivated to examine the impact of migration on household income diversification.

1.3. Research question

To achieve the objectives of the study, the researcher was raised the following questions:

1. What is the type of income diversification of the household family in Setema woreda?
2. Which type of income sources has been more sources of income for a household in Setema woreda?
3. What is the attitude of the household family to words migration to get income?

1.4 Objectives of the study

The general objective of this study is to assess the migration and household income diversification in the case of Setema woreda for selected kebeles.

1.4.1 Specific objectives

➢ To identify the source income from which the household family get income
➢ To assess the source income that is more used as the source of income for the household family.
➢ To examine the attitude of the household family to words migration to get income

1.5 significance of the study

In the undertaking of this study, the researcher analyzes the effect of migrant remittances on income diversification in Ethiopia in the case of a household in Setema Woreda. Thus the outcome of this study may help;

❖ The policymakers to design specific policies for Setema Woreda that control the long-run effect of migrant remittances on rural households because the current household decision toward migration particularly intercontinental migration is not permanent for a long run
❖ Open the door for further *study* on this research topic.

❖ It gives an understanding of the effect of migrant remittances on income diversification and for high school female students who were the victims of the household decision for intercontinental migration strategy in the district.

❖ In addition to this, since there has been almost no research conducted so far in this area, this study can be used at least to fill the literature gap in the district.

1.6. Scope of the Study

The study will focus only discuss the effect of migration on income source diversification of Setema district from migrants remit as an income source of non-agriculture activity from the current flooding of migrants into intercontinental migration using the dependent limit variable analysis of econometrics by making a different assumption on the behaviors and problems of migration in district

1.7. Organization of the Study

The rest part of the thesis is organized as follows. The review of relevant literature on the subject has been discussed in chapter two. Chapter three deals with data sources, methodology and econometric model specification issues, estimation of the models, and empirical analysis of the results are presented in chapter four. The last chapter has been devoted to the summary and policy implications. Supplementary information has also been annexed at the end of the paper.

CHAPTER TWO

Review of Related Literature

This chapter is organized into four major sections with sub-sections to review issues related to migration and household income diversification. The first section deals with a theoretical literature review. To this end, the first sub-section of this section reviews the basic concepts of essential definitions of terms usually used in migration and income diversification. The second sub-section overviews trends of migration in Ethiopia. The third sub-section deals with the theoretical model of this study. The fourth sub-section reviews the role of migration and remittances in Development. The second major section deals with empirical literature review. The third major section presents a summary and knowledge gap based on the review of related previous empirical studies. Finally, the fourth major section of the chapter introduces the conceptual framework of this study.

2.1. Theoretical Literature review

This sub-section reviews theoretical literature related to the topic under consideration. For this purpose, in the first subsection, the critically reviews the relevant theoretical literature to brief the basic concepts directly related to migration and income diversification, and in the second subsection, overviews trends of migration in Ethiopia.

2.1.1. Concepts of Migration and Income diversification

This section reviews the concept of migration and income diversification from both recent and earlier perspectives. It presents an overview of the concepts and definitions of migration and income diversification respectively in two further sub-sections as follows.

2.1.1.1. Migration

Early and recent scholars and economists have defined the term migration in their ways. Migration is broadly defined as the process of crossing a political or administrative boundary for a specific period. There is, however, much debate as to what constitutes migration and who

should and should not, be considered a migrant. The UN Convention on the Rights of Migrants defines a migrant worker as a 'person who is to be engaged, is engaged or has been engaged in a remunerated activity in a State of which he or she is not a national' (UN, 2005). According to UNESCO (2011), such definitions have been criticized for being too narrow, ignoring the scale of internal migration, and failing to acknowledge that decisions to move can be both voluntary and involuntary.

Elaborating on this comment, UNESCO(2011) suggest that such definitions face difficulties in distinguishing between migrants who leave countries or regions of origin due to political persecution, conflicts, economic insecurity, environmental degradation, or a combination of these, and those who do so in search of conditions of survival or well-being absent in places of origin. UNESCO has defined migrants as 'any person who lives temporarily or permanently in a country where he or she was not born and has acquired some significant social ties to this country.

In a similar vein, Marx and Fleischer (2010) commented that there is a necessity of rethinking the international framework in a way that encourages the development of a protection policy no longer focused on the refugee status, but rather on specific needs and vulnerabilities of the broad range of migrants. Given the scale of migration (both international and internal) and the diversity of push factors (both economic and non-economic), organizations such as the International Organization for Migration (IOM) have mobilized a broader definition of migration that incorporates movements within national borders of a voluntary and involuntary nature. IOM defines migration as 'the movement of a person or a group of persons, either across an international border or within a State. It is a population movement, encompassing any kind of movement of people, whatever its length, composition, and causes; it includes migration of refugees, displaced persons, economic migrants, and persons moving for other purposes, including family reunification.

Whilst capturing the multifaceted nature of population movement, this definition is less useful at capturing the decision-making processes behind decisions to move (involving push and pull factors). In general, according to IOM (2011) migration is divided into two broad categories such as internal migration and international migration. However, this study considers

only international migration, which refers to people who leave their country of origin, or country of habitual residence, to establish themselves in another country.

Within this literature, migration is viewed as a proactive, calculated strategy of adaptation to environmental distress, where households respond to an increase in the perceived insecurity of future agricultural production by sending household labor to other regions or even abroad. These perspectives are informed by New Economics of Labor Migration (NELM) theories, which conceptualize migration as a means of income diversification for rural households.

2.1.1.2. Income diversification

According to Collins Essential English Dictionary (2006), income is defined as the total amount of money earned from work or obtained from other sources over a given period. The Free online dictionary (2008) defines income as the amount of money or its equivalent received during a period in exchange for labor or services, from the sale of goods or property, or as profit from financial investments. The same source alternatively describes income as money received by a person or organization because of effort (work) or from return on investments. There have been various ways to define diversification.

There is a traditional view that the rural economy in Sub-Saharan Africa is mainly formed by farmers with their livelihood solely depending on Agriculture. However, substantial evidence shows that households diversify their livelihood into multiple activities to sustain their day-to-day needs (Dimova, and Sen, 2010.

Income diversification is a strategy whereby productive assets are allocated among different income-generating activities (Alobo 2015). There is no single agreed definition of diversification; Dedehouanou, et al. (2020) defines diversification as the increase in the number of income sources or the balance among the income sources. A household with two income sources with equal contribution is therefore considered more diversified than a household with two income sources but one source contributing 90 percent of the total income.

Diversification can be of the whole rural economy or for individual households. Rural economy diversification means a total sectoral shift from farm economy that is primarily agricultural production to the non-farm economy which is income-generating activities other than agriculture, for example; mining, commerce, and transport. Household diversification is when households increase their number of income-generating activities from different sectors and locations. It can be farm or non-farm activities, on-farm or off-farm activities and wage employment or self-employment (Mukwedeya, 2009; Gupta, et al., 2009; and Cohen, 2011). Alobo (2015) defines non-farm activities as activities that are undertaken outside agriculture including own-farming and wage employment in agriculture. The on-farm/off-farm distinction reflects the spatial distribution while the farm/non-farm reflects the sector classification derived from national accounting practices.

A diversified household is generally seen as a household that moves away from only growing crops (that is, being pure cultivators) into non-farm labor such as rearing livestock or into off-farm activities through migration of some members of the household to cities. A variation of this approach makes an additional distinction between crops grown for pure subsistence and commercial (both traditional and high-value) crops (Dimova and Sen (2010)).

While the move from farm activities to non-farm activities would be beneficial to the household in most contexts, measuring diversification only as a transition to more rewarding sources of income or a move away from subsistence agriculture is problematic. First, it becomes a tautological matter that diversification is associated with accumulation if the former is measured as a movement from less productive to more productive sources of income. Second, it is not obvious why a household that derives, say, most of its income from one source should be seen as being more diversified than another household that derives equal shares of income from different sources(Khan and Morrissey,2020).

For this reason, the use of indicator variables to denote the degree of diversification in different income portfolios is problematic: the construction of such indicator variables is sensitive to the assumptions made about the precise thresholds of income shares used to assign different households to different income portfolios categories.

Two measures of income diversification have been popularly used in literature: the Herfindahl Simpson (HS) index and the Shannon-Weiner index. Despite the differences in their emphasis, they both measure the richness of used income sources and consider the evenness in their distribution (Joseph et al. 2010). In their paper, the researchers choose to employ the normalized HS index, as it emphasizes the evenness and dominance of a certain strategy rather than rare events or the variety of the strategies available, as in the Shannon-Weiner index (Ellis, 2010). The HS index also does not necessitate the arbitrary assignment of households to different income diversification categories. An advantage of the HS measure is that it does not assume that a higher degree of diversification is necessarily related to greater household engagement in more remunerative non-farm activities, so by construction, higher values of the measure do not mean greater income accumulation (Dedehouanou & McPeak 2020).

2.1.2. Overview of migration in Ethiopia

Ethiopia is a landlocked country with approximately 109 million people, making it the second-most populous nation in Africa. Its population is expected to double in the next 30 years; making it one of the fastest-growing nations in the world (IOM, 2020). The working-age population increased from 55.6 million in 2013 to 65 million in 2020 which can be related to the entrance into the labor market of a large number of who completed their education. With 40% of the population currently under the age of 14 years, creating enough jobs for this increasing and overwhelmingly young population is a critical challenge for the nation (World, 2020).

Despite being one of the fastest-growing economies in the region, Ethiopia continues to remain one of the poorest countries globally, with a per capita income of USD 790. Approximately one-quarter of the population still live below the national poverty line (Fejerskov, and Zeleke, 2020). Sustaining its positive economic growth and accelerating poverty reduction requires significant progress in job creation as well as improved governance, as high labor force participation rates are essential in developing economies like Ethiopia, owing to low incomes and the absence of social security systems(Eresso, 2019).

Whilst inequality in urban areas of Ethiopia has declined in recent years, there has been rising inequality in rural regions as well as increased internal conflict, exacerbating unemployment and poverty. Compared to their urban counterparts, young people growing up in rural areas are more likely to be from economically worse-off households, leave school early, lack access to basic services, and are more susceptible to adverse events. With limited educational, employment, and financial opportunities in rural villages, migration offers a solution for young people aspiring to improve their lives (Adugna, 2019).

Migration has become such a prevalent phenomenon in Ethiopia in recent years that remittances have become a key source of foreign exchange earnings, rivaling and/or exceeding export revenues, foreign aid, foreign direct investment, or other private capital flows. In 2018, recorded remittances totaled USD 5 billion and made up 7.4% of the country's GDP. However, the real figure is likely to be substantially higher, as informal remittance inflows into the country are estimated to be as much as 78% of total remittances in some corridors (World Bank, 2019).

Whilst those that are university-educated and wealthy are heading to Europe and the United States of America, early school leavers with little financial resources are migrating to the Middle East(). With Middle Eastern countries being located close to Ethiopia, as well as their high demand for low-skilled labor like domestic workers, construction workers, and farm laborers, Ethiopia has become renowned as a major exporter of labor to the Middle East. From a study with 1,450 Ethiopian returnee migrants, it was found that more than 70% of migrants come from rural Kebeles with 89% of them aiming to migrate to Saudi Arabia, although other Middle East countries such as the United Arab Emirates and Kuwait are still significant in terms of destination countries to overcome household income distress (IOM.2020).

To recap, migration in Ethiopia has become steadily feminized. The demand for domestic household labor in the Middle East is a major pull factor (IOM, 2011). Females are traditionally considered more suitable for domestic work and the gendered division of labor from an early age in Ethiopia has better equipped young females for these positions. In addition, the gendered socialization pattern in Ethiopian households conditions daughters to be more obedient and sensitive to the needs of their family than boys (Eresso, 2019). This means that females are often

considered a "better" migrant, as they are generally expected to be more altruistic and remit a larger share of their income to support their parents and families back home (FAO, 2012).

2.1.3. A theoretical model of migration impacts

This is intended to examine the impact of migration on the households' income diversification of rural householders in sitemap Woreda. To this end, the Study uses the perspectives of the new economics of labor migration (NELM) theory. This section reviews this prevailing theory of migration and emphasizes the key methods and findings in the literature that are relevant to the analysis undertaken in this study. For this purpose, the new economics of labor migration (NELM) theory is highlighted in the following few paragraphs.

2.1.4. The New Economics of Labor Migration (NELM) Theory

The NELM Approach pioneered by Todaro (1969).takes into account the critical joint role of the migrant and the family in the decision to migrate. Migration is perceived as a "household risk-spreading strategy to stabilize income" (Taylor, 1999.) and a source of investment capital to overcome market constraints. Hence, unlike the neoclassical equilibrium and historical structuralism approach, NELM considers remittances as "one of the most essential motives for migrating" (Taylor, 1999), which are motivated by pure altruism, pure self-interest, or elements of both. This approach is more appealing as there is credible empirical evidence to support it and because it considers the wider social context.

The new economics of migration theory as mentioned above asserts that migration decisions are made by households, not by individual actors. Households attempt to maximize income and minimize risks resulting from market failures in unstable economies to improve their income relative to the rest of the community (Todaro 1969). The migration decisions result from the volatility or failures of local markets, as portrayed by a lack of access to credit and livelihood risk insurance. These imperfect or incomplete markets typically characterize rural areas in developing countries.

Therefore, in NELM, households are hypothesized to use migration as a means to overcome missing markets or market failures locally, which compel households to self-finance investments in production and self-insure against income risk. Households send migrants out a part of a strategy to diversify income sources, obtain capital for investment and provide insurance against production and income risks for non-migrating household members. Taylor (1999) argues that remittances set in motion a development dynamic by relaxing production and investment constraints that households face. Here remittances may be used to boost production through the financing of inputs, new production technologies, and activities. They also act as insurance by providing households with income that may be uncorrelated, negatively correlated, or not highly correlated with farm income.

The NELM theory leads to specific hypotheses about the effects of remittances on migrant-sending households. If credit and risk constraints are binding, and migration helps households to ease these constraints, then migration and remittances should have a positive effect on local production and incomes of migrant-sending households. The more liquidity-constrained a household is the greater is the marginal income effect of remittances. This theory analyzes migration as a household decision rather than an individual decision (Ellis, 2010). Continuing interactions between migrants and rural households imply that a household model would be more suitable than an individual-level model of migration decisions.

Taylor (1999) explains that NELM entails a new view about how interactions between migration and development are conceptualized and modeled. Earlier research tended to separate the determinants of migration on migrant-sending households. However, in NELM, the origin of migration (represented by households' desire to overcome credit and risk constraints) implies certain outcomes of migration for development. For instance, migration is expected to have a positive effect on local production, as remittances enable households to overcome production constraints. NELM implies that there are potential correlations between migration and other income sources, and therefore migration cannot be modeled separately from other aspects of the farm household. Further, Taylor (1999) points out that "often, the factors encouraging people to migrate also limit the productive potential of migrant remittances. Poor public services and

infrastructure seriously limit the potential for remittances to contribute to local production". It is also argued that migration is likely to have a larger impact on migrant owner households.

2.1.5. The Role of Migration and Remittances in Development

The impacts of migration and remittances on diversification depend on the motivations for diversification, the constraints on diversification, and migration's effect on both. Migration, if it results in remittances for the household, can be viewed as a livelihood diversification strategy, as remittances are a source of income that is likely to be uncorrelated with household income from agriculture. That is, it could reduce the "push" to diversify for risk reasons. On the other hand, if new activities are perceived as risky, and if a lack of liquidity constraints investment, the presence of migrants in rural households could stimulate diversification into non-staple activities.

As a substitute for formal insurance, i.e., by remitting in the event of an adverse income shock, migrants may facilitate the adoption of new technologies as well as entry into new activities with higher expected returns but also higher risk than traditional ones. As a substitute for formal or informal credit, migrant remittances may enable households to overcome liquidity constraints on investing in new technologies and activities.

Migration also may compete with other household activities for scarce family resources, including time. By reducing the supply of household labor, migration could negatively affect both the "push" and "pull" to invest in labor-intensive activities. Migration constitutes by its self a way to diversify income in rural areas. Seasonal migration off-farm to engage in wage employment and provision of agriculture services is an important source of off-farm income for rural households (Asmah, 2011).

In general, NELM predicts that the effects of migration on activity choice and production in an incomplete market environment may be important. This stands in contrast to separable agricultural household models (e.g., Taylor,1999), in which migration, by assumption, simply increases household use of hired labor and remittance transfers affect only consumption, leaving production and investment decisions unchanged.

A significant effect of migration on production would be evidence against the separable household-farm model and in favor of a NELM approach. Tests of the NELM theory have appeared in the literature. Rozelle, Taylor, and de Brauw (1999) find evidence that migration and remittances affect crop production in China, and Taylor, Rozelle, and de Brauw (2003) extend the test of the NELM theory for China to include non-farm self-employment. Their findings that remittances partially compensate for a negative lost-labor effect and stimulate crop and possibly self-employment production provide evidence in favor of the NELM theory.

Taylor (1999), using longitudinal data, finds evidence suggesting that migrant remittances affect income in households of rural Mexico differently in the short and long run, and remittances affect incomes indirectly through asset accumulation. In Africa, Lucas (1987) investigates the consequences of emigration to South Africa's mines for agricultural activities in Botswana, Lesotho, Malawi, Mozambique, and the South African homelands. He finds that emigration reduces crop production in the subsistence sector in the short run, but remittances enhance both crop productivity and cattle accumulation in the long run in all but one of the five countries studied. These studies include a single variable for migration and do not consider that the impacts of migration and remittances may be different for different migrant destinations.

Alonso (2011). Indicated that remittances play an important role through the provision of liquidity that helps rural households invest in more productive activities and nonfarm sectors. In addition, migration and remittances have been used to maximize and diversify income, minimize risks and loosen liquidity constraints and reduce poverty (Alonso, 2011). Studies on income diversifications in Africa have shown that rural households have been investing in nonfarm activities to sustain their livelihood (Lokshin et al., 2010).

Haggblade et al., (2010) argue that in rural Sub-Saharan African countries, income from nonfarm activities represents 35% to 50% of the total household income. Many studies have highlighted the role that migration and remittances can play in reducing risk and credit constraints faced by rural households in developing countries (Prabal, 2012 and Mendola, et al., 2012), According to these studies, households with migrants and remittances can invest in more risky and profitable activities, particularly in the non-farm sector, to diversify their sources of income. It is always assumed that all migrants are able or willing to send remittances. However,

this is not always going to be the case. For instance, a recent study on migrants in the Netherlands showed that only between 13% (migrants from Afghanistan) and 51% (migrants from Ethiopia) sent remittances (Bilgili, 2013).

2.2. Empirical Literature Review

This section reviews the previous empirical studies conducted in different countries on the impact/effect of migration on household income diversification, for this purpose relevant and recent empirical studies are reviewed separately in the following couple of paragraphs.

Dimova and Sen. (2010) examined the impact of migration on the income diversification decision based on a household survey of four villages of Burkina Faso. She finds that the number of migrants in a rural household hurts the probability of participating in nonfarm activities. The author concluded that the negative impact from the decrease in the supply of household labor due to migration outweighs the positive impact that the eventual remittances, sent by those migrants, would have on liquidity constraints. Migration, however, does not always result in remittances being received by the rural household because no tall migrants leave home for reasons related to remittances.

The empirical literature on migration covers not only the overall impact of migration on poverty but also examines specific channels, such as remittances. This paper does not formally model the transmission mechanisms of, for example, remittances. Hence, the literature on remittances is only briefly mentioned as interesting insights on the methodology can be drawn from them. However, the bulk of this literature review centers on the aggregate impact of migration on household income diversification. On the whole, the literature supports the view that migration and remittances increase the income of migrant households and reduce poverty. However, one should be cautious of such findings as the poverty-reducing impact depends on the country and type of migration flow, remittances are more likely to have a poverty-reducing effect when received by poorer households (Gupta et al, 2009). In addition, not all migrant-sending households receive remittances. Hence, migration does not always have positive and poverty-reducing impacts on household levels.

In this regard, according to Adams (2011), there are four main methodological problems encountered by any economic research on migration and their impacts on consumption expenditure are as follows. Firstly, selection bias, which refers to the selectivity of people who tend to migrate. For instance, if more educated and wealthier households are more likely to produce migrants ("positive selection") or less likely to produce migrants ("negative selection"), then it would be wrong to identify the effects of migration by simply comparing the consumption expenditure of migrant and non-migrant households. Secondly, the omitted variable problem, which commonly arises, as households may produce migrants based on unobservable characteristics: these are difficult to obtain so are omitted from the analysis resulting in biased results. The third problem is reverse causality. While migration may help improve households' consumption expenditure, the level of consumption expenditure may also influence whether the household produces migrants. Thus, it is essential to consider reverse causality; otherwise, this may lead to erroneous results. Fourth, many decisions on migration and consumption are made simultaneously. Hence, variables that "cause" migration also "cause" changes in household consumption expenditure (Adams, 2011).

For instance, to examine the income gains from international migration, McKenzie et al. (2010) used household survey data for 438 households in Tonga. To address potential selection bias, the authors use a migrant lottery system whereby New Zealand allows a certain quota of Tongans to migrate each year. The authors find that migrants are positively selected in terms of both their observable and unobservable skills. Using distance from the New Zealand consulate in Tonga as an instrument for migration when looking at impacts on the migrant in New Zealand provides better estimates of the income gains from migration. Adams (2011) concluded that this is the only randomized experiment to be conducted thus far and overcomes the methodological issues highlighted earlier as it yields unbiased estimates.

In their study of remittances and income diversification in rural Bolivia, Lokshin (2011) found that households with remittances tend to diversify more than those without. Their results confirm the hypothesis that remittances can relax credit constraints usually faced by rural farmers (Mendola, 2012), through migration and remittances, rural family labor is no longer

limited to farming activities. Studies on the relation between remittances and rural development suggest that remittances can be used as insurance in case of adverse income shock (Ibn).

Beegle et al. (2011) evaluate the impact of migration on poverty and wealth by using a panel dataset covering periods 2004-2010, by tracking internal and international migrants in Tanzania before and after migration. The authors address unobserved heterogeneity by producing a difference-in-difference estimation of the impact of migration by constructing fixed effects regressions to control for any fixed individual factors that affect consumption. Second, they control for initial household fixed effects (IHHFE) in the growth rate of consumption, hence identifying the impact of migration on income using within household variation in migration. The authors extended the analysis to 2SLS estimates, to deal with potential endogeneity, using three types of variables as instruments for the decision to migrate: pull factors (age), push factors (economic shocks), and social relationships (household head). Results show that migrants experienced a large and robust 36-percentage point higher consumption growth compared with those who stayed behind. This approach addresses many possible sources of heterogeneity (Khan and Morrissey, 2020).

To examine the impact of international migration on income distribution, pioneer researchers in the field of economics such as Bilgili,(2013), used household survey data from 152 Nicaraguan households. However, since migration and remittances may be endogenous, the authors estimate counterfactual incomes for migrants had they stayed and worked at home while controlling for selection bias using a two-stage Heckman procedure. The authors find no evidence of selection bias in the migration process, suggesting that migrants are randomly selected from the population. However, in most cross-sectional datasets, it is proven to be quite difficult to identify an exogenous variable in the first stage selection model that 'causes' migration, but has no direct impact on income in the second stage equation.

Regarding income diversity, authors find that income diversity is higher when international remittances are included in the household income. However, this study does not control for selection in the receipt of remittances and imputes migrant incomes at home, which is not easy (Cohen, 2011).

Summary and Gap in empirical studies

To sum up, based on the above discussion of theoretical literature and empirical studies the following conclusion has been made. In theoretical literature, the concepts of migration, remittance, and income diversification, as well as trends of migration in Ethiopia, were overviewed. To this end, regarding the theoretical Literature review, the new economics of migration theory as mentioned earlier asserts that migration decisions are made by households. Households attempt to maximize income and minimize risks resulting from market failures in unstable economies to improve their income relative to the rest of the community. The migration decisions result from the volatility or failures of local markets, as portrayed by a lack of access to credit and livelihood risk insurance. These imperfect or incomplete markets typically characterize rural areas in developing countries. Therefore, in NELM, households are hypothesized to use migration as a means to overcome missing markets or market failures locally, which compel households to self-finance investments in production and self-insure against income risk.

Households send migrants out as part of a strategy to diversify income sources, obtain capital for investment and provide insurance against production and income risks for non-migrating household member remittances set in motion a development dynamic by relaxing production and investment constraints that households face. Remittances may be used to boost production through the financing of inputs, new production technologies, and activities. They also act as insurance by providing households with income that may be uncorrelated, negatively correlated, or not highly correlated with farm income.

In the empirical literature review section, the recent empirical studies have been reviewed the impact of migration on household income have been discussed in the chapter. To this end, most of the researchers, particularly, Ethiopian researchers exhaustively studied income diversification in such a way that categorizing the determinants of rural household income diversification as demographic factors, financial, and, level of education, and institutional factors like access to credit, and poor infrastructure were identified as the major determinants of rural household income diversification. Almost all of the researchers reviewed in this study drawn their conclusion based on only the quantitative results.

To this end, as mentioned earlier under the statement of the problem, in chapter one of this research proposal, there are gaps such as most of the researchers employed only quantitative data, some others used limited variables for instance missing the effect of migration on the income diversification. Therefore this study is believed to address the current scientific knowledge gap and contribute to a better understanding of the impacts of migration on the rural households in Setema Woreda of Jimma Zone, Oromia regional state.

2.4. Conceptual framework of the study

A concept is an idea or notion and a conceptual framework is used to comprehend the place and clarify the direction of a research project. It makes use of past research to conclude a theory and methodology for a current research study (Magher, 2018). The conceptual framework for this study is based on the new economics of labor migration (NELM). According to this theory, migration can reduce the push to diversify for risk reasons. In addition, if households perceive new activities as risky and they cannot invest in these activities due to liquidity constraints, migration through remittances can help rural households overcome these constraints and stimulate income diversification (Dimovaand Sen, 2010). Based on the preceding discussion of the theoretical literature, and empirical studies the following conceptual framework of this study is proposed. The framework of this study is visualized in fig.1 below.

Conceptual framework

The conceptual framework is adapted from the framework developed By Lim et al, (2011) and used as the benchmark as the foundation of the study. The framework formulated to explain

Independent variable (Age, Sex, Education level, and sources of income including Migration) is a dummy measured in terms of types of sources of income like cereal crop farming, coffee farming, beekeeping farming, chat farming, trading, employment, and working as the day laborer. And **dependent variables** that the determinants of household Income diversification for non-farm and off-farm activity

Independent variables   **Dependent variable**
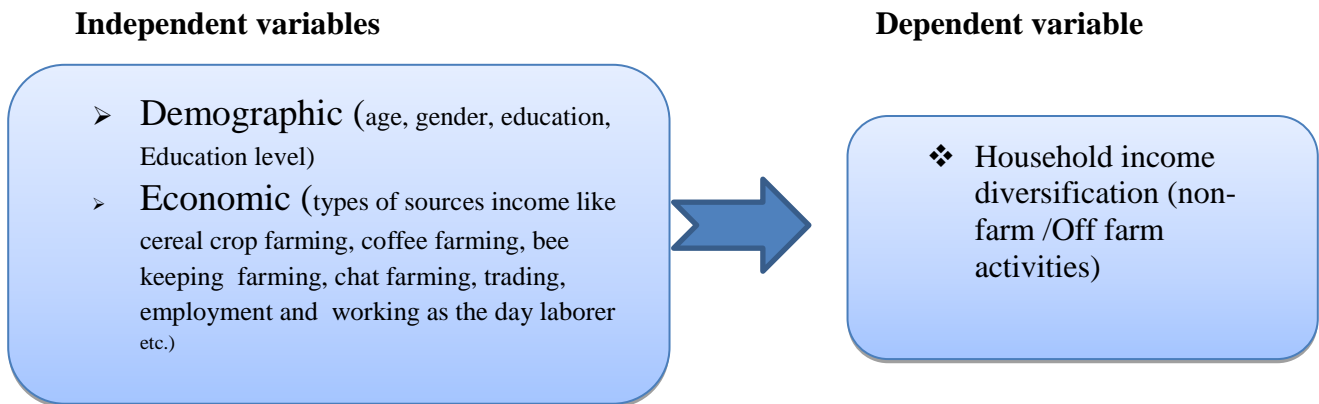
Fig.1: Research framework of the study

Design: Own Sources 2021

CHAPTER THREE

RESEARCH METHODOLOGY

The study used both primary sources and secondary sources of data. The methods used data-gathering instruments like the questionnaire to obtain the primary data. The techniques of sampling and sample size used, the different methods used to analyze the data, and model specifications were presented as follows.

3.1 Description of the study area

The study area was conducted at **Setema** district which is situated 112 km. in the western part of Jimma town. Setema was bounded on the south by Gera, on the west by Sigmo, on the north by the Illubabor Zone, and on the southeast by Gomma. The administrative center of the woreda is Gatira.

The altitude of the woreda ranges from 2,250 to 3,010 meters above sea level. The highest points are in the Damu Siqa mountain range. Perennial rivers include the Onja, Salako, Gidache, and Gebba. A survey of the land in this woreda shows that 27.2% is arable or cultivable (20.8% was under annual crops), 13.1% pasture, 55.1% forest, and the remaining 4.6% are considered degraded, built-up, or otherwise useless. The Sigmo-Geba State Forest, about 100 square kilometers in size, is located in Setema. Teff, corn, and sheep are important cash crops. Although coffee is also an important cash crop in this woreda, less than 20 square kilometers are planted with this crop.

Industry in the woreda includes 32-grain mills. There were 18 Farmers Associations with 17,623 members and 5 Farmers Service Cooperatives with 7,562 members.

The 2007 national census reported a total population for this woreda of 103,221, of whom 50,744 were men and 52,477 was women; 4,729 or 4.58% of its population were urban dwellers. The majority of the inhabitants were Muslims, with 96.91% of the population reporting they observed this belief, while 2.67% of the population said they practiced Ethiopian Orthodox Christianity. The three largest ethnic groups reported in Setema were the Oromo (96.48%), the

Amhara (2.22%), and the Tigray (1.0%); all other ethnic groups made up 0.3% of the population. Oromiffa was spoken as a first language by 97.17%, 1.75% spoke Amharic, and 0.97% spoke Tigrinya; the remaining 0.11% spoke all other primary languages reported.

3.2 Types and Sources of Data

The study was used both primary data and secondary data to achieve the ultimate goal of investigating the problem of the study area. Primary data is very significant which decides the framework within the research whereas secondary data is to support the primary data. To achieve the objectives of the study, an afield survey using a household questionnaire was conducted. This questionnaire incorporated questions about social aspects, economic aspects, and demographic aspects of the respondents. The secondary data were obtained from different sources including the annual reports, internet, and related literature concerning the title.

3.3 Sampling Techniques and Sample Size

3.3.1 Sample Techniques

A multi-stage sampling technique was used to obtain the survey data because the sample selection involves three basic stages. The concept of multistage sampling helps the researcher to overcome problems related to a geographically dispersed population where it is expensive and time-consuming to construct a sampling frame for a large geographical area in The study area was **Setema**. The researcher selected this woreda purposely because there was no research conducted concerning which type of more income for household diversification was Setema woreda. The other was taking two kebeles nearest to town and two kebeles far from town.

There are 20 rural Kebeles in **Setema** Woreda and one town. At the first stage, the researcher randomly selected 4 Kebeles. The classification depends on land size, agro climate, population density, the farming system of the Woreda, location, elevation range, and homogeneity of the living condition of the population. There are forty-three thousand six hundred five (43,605) households in rural Kebeles of the Woreda. But households of four selected Kebeles are 2383. the target population for the study what type of income household for selected kebeles.

3.3.2 Sample Size

Sampling is an important property of any empirical study in which the goal is to make inferences about a population from a sample. The researcher used Yamane (1967) formula to get the sample size. The following formula is used to determine sample size to collect quantitative data using a questionnaire. The researcher determined the sample size as follows:

n = N/1 + N (e) 2, n =designates the sample size the research uses. N= designates the total number of households from four kebeles,

e =designates the level of precision considered or error 5 %(0.05); 1=designates the probability of the event occurring. Therefore; n = 2383/1+ *2383(0.0025) = **342**.

to determine the sample size of participants for this study, the researcher applies Yemane (1967) the sample size determination formula ($n = \frac{N}{1+N(e)^2}$)at 95% confidence level

On these bases, from each kebeles, respondents were selected on a random basis who are in the age group of 18-64 because they are considered as the productive age. To maintain representativeness, a proportionate sampling technique was applied to four kebeles. Then,**342** respondents are proportionally selected from four kebeles is considered as second stage sampling. In the third stage, the number of respondents taken from each kebeles by proportionate stratification, and the sample size of each kebeles (stratum) is proportionate to the population size of the stratum. Strata sample sizes are determined by the following equations:

That is **nh = (Nh/Ns)*n**, Where: nh = sample size from each stratum, Nh = total population in each stratum, Ns =Total population of the sum of strata for study, n =Total sample size of the population from the study.

Table 3.1: Sample frame and sample size of the study area

	Kebeles	Sample Frame	nh= (Nh/Ns)*n	Sample size
1	Susa Atila	375	342*(375/2383)	54
2	Gella Onja	1350	342*(1350/2383)	194
3	Gatira	331	342*(331/2383)	47
4	Shani Basira	327	342*(327/2383)	47
	Total	**2383**	342*(2383/2383)	**342**

Source: Agricultural development agency of Setema (2020)
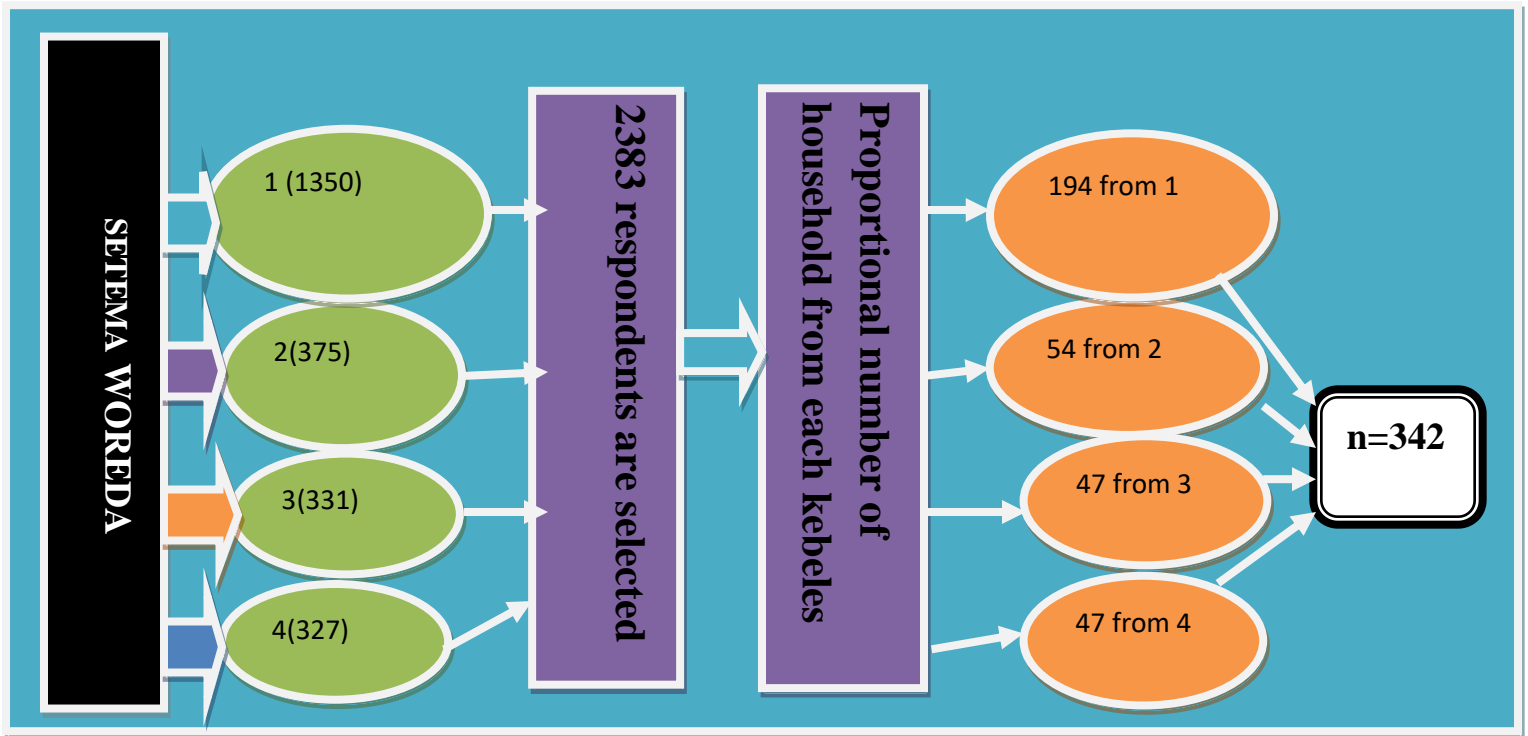
Source: researcher own design (2021)

The above figure indicates that in multistage sampling, at the first stage the researcher randomly selected four rural Kebeles and next to this, at the second stage, 342 total number households were calculated using simple random sampling as a representative sample for the study and selected the proportional number of households from each kebeles, population proportional to size sampling technique was employed and systematic sampling was used to select individual households in each Kebeles.

3.4 method of data collection

The study used questionnaires as an instrument of data collection. Each item in the questionnaire addressed a specific objective or question of the study. The method includes both qualitative and quantitative methods. Primary data for this study was collected from the migrant household respondents on their socio-economic and demographic characteristics using a structured questionnaire prepared with open and close-ended and key informant interviews from the selected kebeles targeted on the household. The questionnaire was prepared in English and translated to Afan Oromo during the interview by the interviewers; the interviewers were

oriented to translate English to Afan Oromo. This was because the local language that both the respondents and the employee can easily understand was the Afan Oromo language.

The Primary data are those which are collected anew and for the first time, and thus happen to be original. In the questionnaire, different questions were asked from the respondent and the answers were recorded by the interviewer. The study has used this method because it is the most suitable method to get information by visiting respondents. In addition to this, secondary data is also used to increase the additional information necessary to substantiate the study. Secondary data were collected from the zonal and district levels like reports, journals, articles, statistical reports broachers and also records from woreda Social affairs, woreda health office, woreda education office, woreda administration, of the study area.

3.5 Method of data analysis

As far as the methodological issues are concerned, both descriptive and logistic regression models were used to analyze and find out the results. The descriptive method of data analysis is important to analyze the demography of the population in the study area in terms of age, educational background, and family size. Hence, the descriptive methods of statistical analysis like frequency, percentage were used to analyze the data. When we want to look at a dependence structure, with a dependent variable and a set of explanatory variables, we can use the logistic regression framework. To measure the empirical relationship between explanatory variables and dependent variables, the researcher was applied binary Logistic regression. Using logistic regression is mainly because the nature of data being dependent variable is binary.

3.6. Model specification of Logistic regression

Logistic Regression is a classification algorithm. It was used to predict a binary outcome .a binary outcome was used to predict (1/0, yes/No) given a set of independent variables. In binary choice models, it is implicitly assumed that the dependent or response variable is a dummy in nature, taking 1 or 0 values. A unique property of such a model is that it elicits a yes or no response. The normally used approaches used to estimates such models include the Linear Probability Model as well as the Logit and Probit models. Vasishteler (2012) argues that the Linear Probability Models such as OLS have certain problems such as the non-normality and

heteroscedastic variance of the error term and the fact that the probability of the dependent variable could lie outside the 0-1 range makes it a logically less attractive model.

In logistic regression, we are only concerned about the probability of outcome-dependent variables. Since probability must always be positive and ranges from 0 to 1, we will put the linear equation in exponential form. For any value of slope and dependent, the exponent of this equation will never be negative.

The logistic regression transforms the odds using the natural logarithm so we use the term **log-odds** or **logit** for this transformation. Then we can write the model as follow;

$$log(\frac{pi}{1-pi}) = \text{logit (pi)} = \beta 0 + Xi\beta \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 3.1$$

In the above equation, the log of the odds ratio, log (Pi/1-Pi), is referred to as the logit.

We can write the model in terms of odds because the Logit function can be derived from Odds rations:

β0 it was the Column vector of parameters (Coefficients) to be estimated (i.e. *β1, β2, β3, ... β4*) and β0 is the intercept term, Constant.

it was shown that the natural logarithmic form of odds ratio depends on observed explanatory variables.

$$log(\frac{yi=1}{yi=0}) = log\left(\frac{p(yi=1)}{1-p(yi=1)}\right) = \beta 0 + Xi\beta \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots.3.2$$

Where P (yi = 1) is the probability of being yes and 1 – P (yi = 1) is the probability is not. By adding disturbance error term.

$$log\left(\frac{p(yi=1)}{1-p(yi=1)}\right) = \beta 0 + Xi\beta + ei \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots..3.3$$

Where, ei is a stochastic error term that represents all unobservable factors, and this model displays that the odds ratio does not only depend on variables incorporated in the model but also on other factors which are not included in the equation. After taking exponential (antilogarithm) both sides of equation *(3.3)* and rearranging it we get the logistic function as follows:

$$\left(\frac{p(yi=1)}{1-p(yi=1)}\right) = e^{\beta o + Xi\beta + ei}$$

$$P(yi=1) = (1-p(yi=1))exp^{(\beta 0 + Xi\beta + ei}$$

$$P(yi=1) = \frac{exp(\beta 0 + Xi\beta + ei)}{1+exp(\beta 0 + Xi\beta + ei} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots.3.4$$

Equation *(3.4)* describes that the probability of making depends on observed exogenous variables. This probability is positive and limited between 0 and 1 since the underlying model follows the logistic distribution. The predicted probability of being life therefore this can be expressed as:

$$P(yi = 1) = \frac{\exp(\beta 0 + Xi\beta)}{1 + \exp(\beta 0 + Xi\beta)} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots..3.5$$

The output of the logit regression model explains the probability that the outcome variable (Y) changes when the independent variables change. Thus a positive logit coefficient tells us that a change in the independent variable (X) increases the probability that (Y=1). A significant coefficient indicates that the positive effect is statistically significant. But the logit coefficient does not tell us by how much percentage will the probability of (Y=1) change when the explanatory variable (X) changes by one unit. The logit coefficient shows the direction of the change not the magnitude of the change.

Therefore Logit (p) = log (p / (1 - p)) = β0 + β1 × x1 + … + βk × xk………………………(1)

The parameters in the logistic regression model can be estimated by maximum likelihood. For this study, the overall logistic function equation which includes the household demographic factors, Economic, and production variables are:

The model will be correctly specified as;

Y=β0+β1AGE+β2SEX+ β3EDU+ β4INCCF+ β5INCP+ β6IINBe+ β7INCF+ β8INM+B9INT+ β10INEMP +β11INWL+ ε

Where: β_0 = intercept of the model, {β_1, β_2, β_3, β_4, β_5, β_6, β_7, β_8, β_9 ….. β_n} coefficients of the independent variables in the model

ε = error terms

Description of the variables in the models is;

β0 = intercept of the model

AGE= Age of the respondent

SEX =Sex of the respondent

EDU=Education level of the respondent

INCCF=income of cereal crop farming

INCP=income of coffee production

IN Be=income of beekeeping

INCF=income of chat farming

INM=income of migration

INT=income of trading

INEMP=income of employment

INWL=income of working as day laborer   ε = error terms

3.7 Assumption of logistic regression

Assumptions are should consider for the efficient use of logistic regression as given below.

The following are the basic assumptions:

1. Logistic regression assumes meaningful coding of the variables. Logistic coefficients were difficult to interpret if not coded meaningfully. The convention for binomial logistic regression is to code the dependent class of interest as 1 and the other class as 0.

2. Logistic regression does not assume a linear relationship between the dependent and independent variables. Logistic regression can handle all sorts of relationships; it applies a nonlinear log transformation to the predicted odds ratio.

3. The dependent variable must be Binary.

4. The independent variables need not be interval, no normally distributed, no linearly related, and no equal variance within each group.

5. It needs a large sample size than for linear regression because maximum likelihood coefficients are large sample estimates.

6. The logit regression equation should have a linear relationship with the logit form of the dependent variable.

7. The error terms need to be binomially distributed.

8. The assumption of homoscedasticity is not necessary for logistic regression. Logistic regression can handle ordinal and nominal data as independent variables.

9. Logistic regression requires the dependent variable to be categorical (Mostly binary).

Since logistic regression assumes that's $P(y = 1)$ is the probability of the event occurring, the dependent variables must be coded accordingly. That is for factor level I the dependent variables should represent the desired outcome. Logistic regression assumes linearity of independent variables and logs odds. Otherwise, the logistic regression underestimates the strength of the relationship and rejects the relationship easily, which is being not significant (not rejecting the null hypothesis) where it should be significant. Logistic regression requires quite large sample sizes.

CHAPTER: FOUR
Result and Discussion

The data collected for this study were analyzed using percentages, mean, standard deviations, and correlation. The percentages analyze the distributions of responses for the choices of items that deigned for each question, mean was used to analyze the average of the distribution, standard deviations were used to analyze the distribution around the mean to the sample, and Pearson correlation was used to analyze the relationship between the independent variable and dependent variable. Based results of this study were identified and discussed as follows. The findings of this study had indicated that the types of income households were cereal crop farming, coffee farming, beekeeping, chat planting, trading, migration, employment, and working as a day laborer.

The other findings of the study were about the rate of income obtained from different sources of income for the household. The finding of this study on the rate of income from which the households get their income from a high rate of income to the low rate of income showed that migration was the high rate of income, the next high rate of income was from coffee and followed with chat planting.

The other finding of this study was indicated that the attitude of households towards migration their family to different countries to get income was positive and migration has a positive effect on the income of a household of Setema woreda. The result of this study was similar to the previous finding of Niimi and Çaglar Özden (2008) in Bolivia since the result indicated that remittances are observed as part of the rural household's income, is because the household sent at least one family member as a migrant.

4.1. Background information of respondents

The respondents' personal information like sex, age, Educational level, Position, experiences, and marital status were analyzed presented in the table below.

Table.4.1. Background information's of respondents

Variables		Frequency	%
Sex	M	302	88.30
	F	40	11.69
Age	18-30	28	8.18
	31-39	107	31.57
	40-49	195	57.01
	50-59	10	2.92
	60 and above	2	0.58
Educational level	Can read and write	113	33.04
	Primary school(1-8)	118	34.50
	Secondary school (9-12)	111	32.45

Sources: Own survey 2021

As it was described in the above table sex, age, and educational level had been presented. As it was indicated in the above table, 302(88.30%) and 40(11.69%) of the respondents were male and female respectively. the age of the respondents was ranged between 18 and 60 and above years, in that 28(8.18%) the ages of the respondents were between 18 and 30 years. 107(31.57 %)of the respondent's age were between 31-39. 195(57.01%) of the respondent's ages were between 40 and 49 years.10(2.92%) of the ages of the respondents were between 50-59.2(0.58%) of the respondent's age was 60 and above years. This implies that majority of the respondents

were male respondents, different age group of respondents had been involved as the respondents of this study in that the responses obtained from these group can be considered as the responses obtained from respondents those who have different life experiences.

113(3.043%) educational level of the sample respondents was can read and write, 118(34.50%) educational level of the sample respondents was a primary school and 111(32.45%) educational level of the sample respondents was secondary

4.2. Analysis of the responses on designed items

Close-ended questions have been designed and data were collected for this study. The collected data were analyzed quantitatively and presented in the tables and followed with discussions. the descriptive atavistic like frequency, percentage, mean standard deviation, bar chart, and inferential spastics like one sample Te-test and Pearson correlation were used to give meaningful conclusions for the data analyzed in descriptive statistics.

Table.1.Cereal crop farming is a source of income for the household.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	**yes**	65	19.0	19.0	19.0
	no	277	81.0	81.0	100.0
	Total	342	100.0	100.0	

Sources: Own survey 2021

In the above table 4.1, data collected on that Cereal crop farming is sourced income for the household. 65(19%) of the responses of the respondents and 277(81%) the responses of the -

dependents indicated as Cereal crop farming is sources income for household and Cereal crop farming is not as sources income for the household.

Table.4.2.Coffee production is a source of income for the household.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	274	80.1	80.1	80.1
	no	68	19.9	19.9	100.0
	Total	342	100.0	100.0	

Sources: Own survey 2021

In the above table 4.2, data collected on that coffee is the source of income for the household. 274(80.1%) of the responses of the respondents and 68(19.9%) responses of the respondents indicated as coffee is the source of income for the household and coffee is not the source of income for the household.

Table.4.3.Beekeeping is a source of income for the household.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	69	20.2	20.2	20.2
	no	273	79.8	79.8	100.0
	Total	342	100.0	100.0	

Sources: Own survey 2021

In the Above table 4.3.data collected on that beekeeping is the source of income the household.69 (20.2%) of the responses of the respondents and 273(79.8%) the responses of the - dependents indicated as beekeeping is the source of income for the household. and beekeeping is not the source of income for the household.

Table.4.4.Chat farming is a source of income for the household.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	137	40.1	40.1	40.1
	no	205	59.9	59.9	100.0
	Total	342	100.0	100.0	

Sources: Own survey 2021

In the above table 4.4.data collected on that Chat farming is sources income for the household**.** . 137(40.1%) of the responses of the respondents and 205(59.9%) the responses of the -dependents indicated as Chat farming is sources income for household and Chat farming is not sources income for household respectively.

Table.4.5. Trading is a source of income for the household.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	68	19.9	19.9	19.9
	no	274	80.1	80.1	100.0
	Total	342	100.0	100.0	

Sources: Own survey 2021

In the above table 4.5.data collected on that Trading is sourced income for the household. 68(19.9%) of the responses of the respondents and 274(81.1%) the responses of the respondents indicated as Trading is the source of income for household and Trading is not sources income for household respectively.

Table.4.6.Migration to different countries is a source of income for the household.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	**yes**	274	80.1	80.1	80.1
	No	68	19.9	19.9	100.0
	Total	342	100.0	100.0	

Sources: Own survey 2021

In the above table 4.6, data collected on that Migration to different countries are sources of income for the household. 274(80.1%) of the responses of the respondents and 68(19.9%) the responses of the respondents indicated as Migration to different countries is sources income for household and Migration to different countries is not sources income for the household.

Table.4.7.Employment is a source of income for the household.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	**yes**	68	19.9	19.9	19.9
	no	274	80.1	80.1	100.0
	Total	342	100.0	100.0	

Sources: Own survey 2021

In the above table 4.7.data collected on that Employment is sources income for household 65(19%) of the responses of the respondents and 2.77(81%) the responses of the-dependents indicated as Employment is sources income for the household. and Employment is not a source of income for the household.

Table.4.8.Working as a day laborer is the source of income for the household.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	**yes**	68	19.9	19.9	19.9
	no	274	80.1	80.1	100.0
	Total	342	100.0	100.0	

Sources: Own survey 2021.

In the above table 4.8.data collected on that Working as a day laborer is sourced income for the household. 68(19.9%) of the responses of the respondents and 274(80.1%) responses of the

respondents indicated as Working as a day laborer is sources income for the household and working as a day laborer is not sources income for the household.

Table.4.9.Rate of income from Cereal crop farming for household

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	**low**	68	19.9	19.9	19.9
	medium	137	40.1	40.1	59.9
	high	137	40.1	40.1	100.0
	Total	342	100.0	100.0	

Sources: Own survey 2021

As it was showed in the above table 4.9, data were collected and analyzed on the rate of income from cereal farming for housed hold. the result showed that 68(19.9%),137(40.1%), and the same result 137(40.1%) rate of income from cereal farming for housed hold low, medium, and high respectively.

Table.4.10.Rate of income from coffee production for household

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	**medium**	137	40.1	40.1	40.1
	high	205	59.9	59.9	100.0
	Total	342	100.0	100.0	

Sources: Own survey 2021

As was showed in the above table 4.10, data were collected and analyzed on the rate of income from coffee production for the household. The result showed that 137(40.1%) and the same result and 205(59.9%) rate of income from coffee production for household medium and high respectively.

Table.4.11.Rate of income from Beekeeping for the household.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	**low**	68	19.9	19.9	19.9
	medium	206	60.2	60.2	80.1
	high	68	19.9	19.9	100.0
	Total	342	100.0	100.0	

Sources: Own survey 2021

As it was showed in the above table 4.11, data were collected and analyzed on the rate of income from Beekeeping for households the result showed that 68(19.9%),206(60.2%) and 68(19.9%) rates of income from Beekeeping for a household was low, medium and high respectively.

Table.4.12.Rate of income from Chat farming for the household.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	**medium**	205	59.9	59.9	59.9
	high	137	40.1	40.1	100.0
	Total	342	100.0	100.0	

Sources: Own survey 2021

As was showed in the above table 4.12, data were collected and analyzed on the rate of income from Chat farming for the household. The result showed that 205(59.9%) and 137(40.1%) rate of income from Chat farming for a household was medium and high respectively.

Table.4.13.Rate of income from trading for the household.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	**low**	136	39.8	39.8	39.8
	medium	137	40.1	40.1	79.8
	high	69	20.2	20.2	100.0
	Total	342	100.0	100.0	

Sources: Own survey 2021

As was showed in the above table 4.13, data were collected and analyzed on the rate of income from trading for the household. The result showed that 136(39.8%),137(40.1%) and 69(20.2%) rate of income from trading for a household was low, medium, and high respectively.

Table.4.14.Rate of income from Migration to different countries

for the household.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	**medium**	136	39.8	39.8	39.8
	high	206	60.2	60.2	100.0
	Total	342	100.0	100.0	

As it was showed in the above table 4.14, data were collected and analyzed on the rate of income from Migration to different countries for the household. The result showed that 136 (39.9%), 206 (60.2%) and the rate of income from Migration to different countries for a household was medium and high respectively.

Table.4.15.Rate of income from Employment for the household.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	**low**	69	20.2	20.2	20.2
	medium	205	59.9	59.9	80.1
	high	68	19.9	19.9	100.0
	Total	342	100.0	100.0	

As it was showed in the above table 4.15, data were collected and analyzed on the rate of income from Employment for the household. The result showed that 69 (20.2%), 205(59.9%) and the

same result 68(19.9%) rate of income from Employment for the household. low, medium, and high respectively.

Table.4.16.Rate of income from Working as a day laborer for the household.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	**low**	138	40.4	40.4	40.4
	medium	136	39.8	39.8	80.1
	high	68	19.9	19.9	100.0
	Total	342	100.0	100.0	

Sources: Own survey 2021

As it was showed in the above table 4.16, data were collected and analyzed on the rate of income from Working as a day laborer for a household. the result showed that 68(19.9%), 136(39.8%) and the same result 138(40.4%)rate of income from Working as a day laborer for the household. high, medium, and low respectively.

Table.4.17.The family has a positive attitude towards migration since they get income from their migrant family to other countries.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Undecided	69	20.2	20.2	20.2
	Agree	239	69.9	69.9	90.1
	Strongly agree	34	9.9	9.9	100.0
	Total	342	100.0	100.0	

Sources: Own survey 2021

As it was showed in the above table 4.17, data were collected and analyzed on that families **have a positive attitude towards migration since they get income from their migrant family to other countries and** the result showed that 69(20%), 239(69.9%) and the same result 34(9.9%) of the responses of the respondents undecided, agree and strongly agree on that family **have a positive attitude towards migration since they get income from their migrant family to other countries**

Table.4.18.The family has a negative attitude toward migration since they do not get income from their migrant family to other countries.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	disagree	103	30.1	30.1	30.1
	Undecided	239	69.9	69.9	100.0
	Total	342	100.0	100.0	

Sources: Own survey 2021

As it was showed in the above table 4.18, data were collected and analyzed on that families have a negative attitude towards migration since they get income from their migrant family to other countries and the result showed that 103(30.1%) and 239(69.9%) of the responses of the respondents disagree, undecided and strongly on that family have a negative attitude towards migration since they get income from their migrant family to other countries

Table.4.19.Migration is not getting the family to earn money.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	disagreed	137	40.1	40.1	40.1
	Undecided	205	59.9	59.9	100.0
	Total	342	100.0	100.0	

Sources: Own survey 2021.

As it was showed in the above table 4.19, data were collected and analyzed on that families have a negative attitude toward migration since they do not get income from their migrant family to other countries. And the result showed that 137(40.1%) and 205(59.9%) of the responses of the

respondents disagreed and were undecided on that families have a negative attitude toward migration since they do not get income from their migrant family to other countries.

Table.4.20.Household families are interested in sending their daughters and son to get income

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	**Undecided**	138	40.4	40.4	40.4
	agree	170	49.7	49.7	90.1
	strongly agree	34	9.9	9.9	100.0
	Total	342	100.0	100.0	

Sources: Own survey 2021

As it was showed in the above table 4.20, data were collected and analyzed on that household families are interested in sending their daughters and sons to get income and the result showed that 138(40.4%) 170(49.7%) and 34(9.9%) of the responses of the respondents undecided, agree and strongly agreed on that household family are interested in sending their daughters and sons to get income.

Table.4.21.Household families are not interested in sending their daughters and son to get income.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	**disagree**	136	39.8	39.8	39.8
	Undecided	206	60.2	60.2	100.0
	Total	342	100.0	100.0	

Sources: Own survey 2021

As it was showed in the above table 4.21, data were collected and analyzed on that household families are not interested in sending their daughters and sons to get income and the result showed that 136(39.8%) and 206(60.2%) of the responses of the respondents disagreed and undecided, on that household family are not interested in sending their daughters and sons to get income.

Table.4.22.Migration is a high source of income for the household family.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	**Undecided**	103	30.1	30.1	30.1
	Agree	205	59.9	59.9	90.1
	strongly agree	34	9.9	9.9	100.0
	Total	342	100.0	100.0	

Sources: Own survey 2021.

As it was showed in the above table 4.22, data were collected and analyzed on that migration is a high source of income for the household family and the result showed that 103(30.1%), 205(59.9%), and 34(9.9%) of the responses of the respondents undecided, agree and strongly agreed on that migration is high sources of income for the household family.

Table.4.23.The migration of a family is not the source of income for the household family.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	206	60.2	60.2	60.2
	Undecided	136	39.8	39.8	100.0
	Total	342	100.0	100.0	

Sources: Own survey 2021

As it was showed in the above table 4.23, data were collected and analyzed on that migration is not the source of income for the household family and the result showed that 206(60.2%) and 136(39.8%) of the responses of the respondents disagreed and undecided on that migration is not sources of income for the household family.

Table.4.24.Migration affects the income household family

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	**Disagree**	138	40.4	40.4	40.4
	Undecided	204	59.6	59.6	100.0
	Total	342	100.0	100.0	

Sources: Own survey 2021

As it was showed in the above table 4.24, data were collected and analyzed on that migration affect the income of the household and the result showed that 138(40.4%) and 204(59.6%) of the responses of the respondent disagree and undecided, on that migration affect the income of the household.

Table.4.25Migration improves the life of a household family.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	**Undecided**	34	9.9	9.9	9.9
	Agree	274	80.1	80.1	90.1
	strongly agree	34	9.9	9.9	100.0
	Total	342	100.0	100.0	

Sources: Own survey 2021

As it was showed in the above table 4.25, data were collected and analyzed on migration improve the life of household family and the result showed that 34(9.9%),274(80.1%), and 34(9.9%) of the responses of the respondents undecided, agree and strongly agree on that migration improve the life of a household family

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	**disagree**	137	40.1	40.1	40.1
	Undecided	205	59.9	59.9	100.0
	Total	342	100.0	100.0	

Source: Own survey 2021.

As it was showed in the above table 4.26, data were collected and analyzed on that migration do not improve the life of household family and the result showed that 137(40.1%) and 205(59.9%) of the responses of the respondent's dis greed and undecided, on that migration do not improve the life household family.

Table.4.27.Descriptive Statistics0n the attitude of house family on migration

	N	Minimum	Maximum	Sum	Mean	Std. Deviation
Positive attitude	342	3.00	5.00	1333.00	3.8977	.53995
Negative attitude	342	2.00	3.00	923.00	2.6988	.45944
Not earn money	342	2.00	3.00	889.00	2.5994	.49073
Interested	342	3.00	5.00	1264.00	3.6959	.64160
Not interested	342	2.00	3.00	890.00	2.6023	.49013
Valid N (list wise)	342					

Table.4.28.Descriptive Statistics0n effect of migration the of house family on migration

	N	Minimum	Maximum	Sum	Mean	Std. Deviation
Source of income	342	3.00	5.00	1299.00	3.7982	.60078
Not source of income	342	2.00	3.00	820.00	2.3977	.49013
Affect household income.	342	2.00	3.00	888.00	2.5965	.49132
Improve life.	342	3.00	5.00	1368.00	4.0000	.44656
Not improve life.	342	2.00	3.00	889.00	2.5994	.49073
Valid N (listwise)	342					

Sources: Own survey 2021

As it was showed in the above table 4.27and 28, data were collected and analyzed in the attitude of household and effect of migration on household income.3.8977 mean score., 2.6988mean score.2.5994mean score, 3.6959mean score, and 2.6023mean score indicated as positive towards

migration, negative attitude, the house was not earned money from migration, interested in migration, and not interested in the migration of household family respectively.

The result of mean scores on the effect of migration showed that 3.7982 mean score,2.3977 mean score,2.5965mean score,4.0000 mean score and 2.5994 mean score showed that as migration sources of income, is not a source of income, affect household, improve life and not improve life. Respectively as indicated in table 4.28.

Data were collected on that of Attitude of household and effect of migration on household income for the all Mean value interpretation was high and satisfaction often time evident and the other one was moderate and satisfaction some time evident

Table.4.29.One-Sample Statistics0n the attitude of house family on migration

	N	Mean	Std. Deviation	Std. Error Mean
Positive attitude	342	3.8977	.53995	.02920
Negative attitude	342	2.6988	.45944	.02484
Not earn money	342	2.5994	.49073	.02654
Interested	342	3.6959	.64160	.03469
Not interested	342	2.6023	.49013	.02650
Valid N (list wise)	342			

Sources: Own survey 2021

Table.4.30 One-Sample Statistic on the effect of migration on household income

	N	Mean	Std. Deviation	Std. Error Mean
Source of income	342	3.7982	.60078	.03249
Not source of income	342	2.3977	.49013	.02650
Affect household income.	342	2.5965	.49132	.02657
Improve life.	342	4.0000	.44656	.02415
Not improve life.	342	2.5994	.49073	.02654
Valid N (list wise)	342			

Sources: Own survey 2021

One-Sample Statistics0n the attitude of house family on migration and One-Sample Statistic on the effect of migration on household income analyzed to give a meaningful conclusion on the relation between responses given by the sample respondents, in the result of One-Sample Statistics on the attitude of house family on migration and One-Sample Statistic were significant.

4.3 Logistic regression Analysis

In statistics, the **logistic model** (or **logit model**) is used to model the probability of a certain class. Each object being detected in the image would be assigned a probability between 0 and 1, with a sum of one. Logistic regression is a statistical model that in its basic form uses a logistic function to model a binary dependent variable, although many more complex extensions exist. In regression analysis, logistic regression (logit regression) is estimating the parameters of a logistic model (a form of binary regression).where the two values are labeled "0" and "1". In the logistic model, the log-odds (the logarithm of the odds) for the value labeled "1" is a linear combination of one or more independent variables ("predictors"); the independent variables can each be a binary variable (two classes, coded by an indicator variable) or a continuous variable (any real value). The corresponding probability of the value labeled "1" can vary

between 0 (certainly the value "0") and 1 (certainly the value "1"), hence the labeling; the function that converts log-odds to probability is the logistic function, hence the name. The unit of measurement for the log-odds scale is called a *logit*, from the logi*stic un*it,

Notes		
Output Created		16-JUL-2021 08:34:18
Comments		
Input	Data	C:\Users\User\DesktRow data;. Save
	Active Dataset	DataSet3
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	342
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax		LOGISTIC REGRESSION VARIABLES nonfarm income /METHOD=ENTER cereal coffee beekeeping chat trading migration employee working /PRINT=CI(95) /CRITERIA=PIN (0.05) POUT(0.10) ITERATE(20) CUT(0.5).
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.06

Case Processing Summary

Weighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	342	100.0
	Missing Cases	0	.0
	Total	342	100.0
Unselected Cases		0	.0
Total		342	100.0

a. If weight is in effect, see the classification table for the total number of cases.

Dependent Variable Encoding	
Original Value	**Internal Value**
No	0
Yes	1

Block 0: Beginning Block

Classification Table[a,b]					
	Observed		Predicted		
			non/off-farm income		Percentage Correct
			no	yes	
Step 0	non/off farm income	No	237	0	100.0
		Yes	103	0	.0
	Overall Percentage				69.3

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation							
		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-.842	.118	50.999	1	.000	.431

Variables not in the Equation

			Score	Df	Sig.
Step 0	Variables	cereal crop farming of the respondent	.503	1	.478
		coffee production of the respondent	1.470	1	.225
		beekeeping is the source income of the respondent	.962	1	.327
		chat farming of the respondent	.107	1	.744
		trading source of income of the respondent	.543	1	.461
		migration is the source of income of the respondent	.531	1	.466
		employment is the source of income of the respondent	6.557	1	.010
		working as a day laborer is the source of income of the respondent	.816	1	.366
	Overall Statistics		41.392	8	.001

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	44.958	8	.001
	Block	44.958	8	.001
	Model	44.958	8	.001

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	373.549[a]	.123	.175

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Classification Table[a]

	Observed		Predicted		
			non/off farmi income of the respondent		Percentage Correct
			no	yes	
Step 1	non/off farmi income of the respondent	no	233	6	97.5
		yes	80	23	22.3
	Overall Percentage				74.9
a. The cut value is .500					

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	cereal crop farming of the respondent	-.360	.261	1.904	1	.168	.698	.419	1.163
	coffee production of the respondent	1.479	.569	6.764	1	.009	4.388	1.440	13.372
	beekeeping is source income of the respondent	.643	.372	2.996	1	.083	1.902	.918	3.941
	chat farming of the respondent	.368	.349	1.114	1	.291	1.445	.729	2.865
	trading source of income of the respondent	2.766	.967	8.179	1	.004	15.897	2.388	105.837
	migration is source of income of the respondent	.393	.307	1.646	1	.199	1.482	.813	2.702
	employment is source of income of the respondent	-2.963	.700	17.934	1	.001	.052	.013	.204
	working as day laborer is source of income of the respondent	1.757	.860	4.178	1	.041	5.795	1.075	31.244
	Constant	-7.306	2.246	10.577	1	.001	.001		

a. Variable(s) entered on step 1: cereal crop farming of the respondent, coffee production of the respondent, beekeeping is source income of the respondent, chat farming of the respondent, trading source of income of the respondent, migration is the source of income of the respondent, employment is the source of income of the respondent, working as a day laborer is the source of income of the respondent.

When data collected and analysis the estimated logit value of the Cereal Crop farming of the respondent negatively correlated and is not significant and the status of the respondent increases by 0.698.respectively,and the estimated logit value of the coffee production of the respondent the significant and the status of the respondent increases by 4.388.respectively,and the estimated logit value of the beekeeping is source income of the respondent positively correlated and significant, the status of the respondent increases by 1.902 .respectively, and the estimated logit value of the chat farming of the respondent positively correlated and significant, the status of the respondent increases by 1.445.respectively, and the estimated logit value of the migration is source of income of the respondent positively correlated and significant, the status of the respondent increases by 1.482.respectively, and the estimated logit value of the employment is source of income of the respondent negatively correlated and not significant, the status of the respondent by 0.52 respectively, and the estimated logit value of the working a day laborer is source of income of the respondents positively correlated and significant, the status of the respondent by 5.795 increases. Respectively,

4.4.Correlation analysis types of income diversification and household income

This section includes the analysis of data related to types of income diversification and household income. To investigate the relationship between types of income diversification and household income Pearson product correlation coefficient was used. The Pearson product-moment correlation coefficient is a statistic that indicates the degree to which two variables are related to one another. The sign of the correlation coefficient (+ or -) indicates the direction of the relationship between -1 and +1.

Variables may be positively or negatively correlated. A positive correlation indicates a direct and positive relationship between two variables. A negative correlation, on the other hand, indicates an inverse, negative relationship between two variables (Leary, 2004). Measuring the strength and the direction of a linear relationship that occurred between variables is, therefore, important for further statistical significance.

Table.4.2.31.Pearson correlation analysis result

Rate income of a household.	Pearson Correlation	.608**	**Household income.***
	Sig. (2-tailed)	.000	.
	N	342	
Types of income	Pearson Correlation	.691**	*
	Sig. (2-tailed)	.000	.
	N	342	

Sources: Own survey 2021

As table 4.3.1 shows that, all the variables are positively correlated to each other. Both the Rate income of household and types of income significance correlation ((r =0.608** and 0.691**)) The rate income is positively related with household income since the value of Pearson was ranged between 0.608 and 0.691 this value was scaled as there was high relation between the income rate and household income.

CHAPTER FIVE

Conclusions and Recommendations

5.1. Conclusions

The main objective of this study was to assess the migration and other types of house income diversification of households in the case of Setema woreda. To achieve the intended objectives of this study descriptive survey research method was used with quantitative and qualitative research data collecting approaches. The mixed data collecting approaches, quantitative and qualitative approaches were used, Using mixed research methods can neutralize or cancel the biases of any single method, and it is used as a means for seeking convergence and integrating qualitative and quantitative data (Creswell, 2009).

In this study, the descriptive survey research method was used with a quantitative data collecting approach and a qualitative data collecting approach. In this approach, quantitative data were collected from 342 respondents through a close-ended questionnaire, and the collected data were analyzed and discussed with text explanations. The qualitative data that were collected through the interview and focus group discussions were discussed in-text explanations. On the analysis made of this study, the conclusions were made and the findings of this study were identified and presented based on the designed research questions and the specific objectives of this study follows.

The findings of this study had indicated that the types of income households were cereal crop farming, coffee farming, beekeeping, chat planting, trading, migration, employment, and working as day laborers.

The finding of this study on the rate of income from which the households get their income from a high rate of income to the low rate of income showed that migration was the high rate of income, the next high rate of income was from coffee and followed with chat planting.

The other finding of this study was indicated that the attitude of households towards migration of their family to different countries to get income was positive and migration has a positive on the income of a household of Setema woreda.

5.2. Recommendations

Based on the above findings the following recommendations were given

- The house family should be involved in beekeeping to raising their household income more in advance.

- The household should be involved in coffee farming on a large scale to increase their income.

- Migration to other countries should be carefully seen since there have problems that may affect their life.

- The household should be involved in different types of farming activities.

References

Abdul-Mumuni, Quaidoo, C. (2016), "Effect of International Remittances on Inflation in Ghana Using the Bounds Testing Approach", *Business and Economic Research*, 6(1), 192-209.

Adams, R.(2011).Evaluating the Economic Impact of International Remittances on Developing Countries Using Household Surveys: A Literature Review, *The Journal of Development Studies*,47:6,809-828, DOI:10.1080/00220388.2011.563299

Adugna, G., (2019). Migration patterns and emigrants' transnational activities: comparative findings from two migrant origin areas in Ethiopia. *Comparative Migration Studies*, 7(1), pp. 1–28.

Best, J.& Kahn, J. (2006).*Research design*: *Research in education*(4th ed.). USA: Pearson Education Inc.

Cohen, L., Manion, L., and Morrison, K.(2007). *Research methods in education.* USA, Canada: Routledge.

Creswell, J. W. (2012). *Educational research planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Boston: Pearson Education, Inc.

Alobo Loison, S. (2015). Rural Livelihood Diversification in Sub-Saharan Africa: A Literature Review. The Journal of Development Studies, 51(9), 1125–1138. http://doi.org/10.1080/00220388.2015.1046445

Alonso, Jose (2011) 'International Migration and Development: A review in light of the crisis' Economic & Social Affairs CDP Background Paper No. 11(E) December 2011

Amsalu, B., Kindie, G., Belay, K., & Chaurasia, S. P. R.(2013).Off-farm labor supply decision of adults in rural Ethiopia: Double hurdle approach

Asmah, E. E. (2011). Rural Livelihood diversification and agricultural household welfare in Ghana. Journal of Development and Agricultural Economics, 3(7): 325-334

Attanasio, O., and S. Krutikova (2020). 'Consumption Insurance in Networks with Asymmetric Information: Evidence from Tanzania'. *Journal of the European Economic Association*, 18(4):1589–618. https://doi.org/10.1093/jeea/jvaa030

Beyene, B.(2014).The Effects of International Remittances on Poverty and Inequality in Ethiopia. *The Journal of Development Studies*,50(10), p p. 1380-1396.

Berlin Heidelberg: Springer.Bove, V., and Elia, L., 2017. Migration, Diversity, and Economic Growth. World Development, 89, 227-239.

IMF (2019). World Economic Outlook: Growth Slowdown, Precarious Recovery. Washington, DC: International Monetary Fund.

Bilgili, Ö., Kuschminder, K. and Siegel, M., (2018). Return migrants' perceptions of living conditions in Ethiopia: A gendered analysis. *Migration studies*, 6(3), pp. 345–366.

Bilgili, O.,(2013), The links between economic integration and remittances behavior of migrants in the Netherlands, UN-MERIT Working Paper 2013-037

Bodvarsson, O. B., and Van den Berg, H., 2013. Economic growth and immigration. In The economics of immigration (pp. 217–248).

Cohen, J. H. (2011), "Migration, Remittances, and Household Strategies", Annual Review of Anthropology, 40(1), 103-114.

Deane, K., D., Johnston, D., and Parkhurst, J., O., 2013. Migration as a tool in development policy: Caution ahead? The Journal of Development Studies, 49(6), 759–771.

Dedehouanou, S.F.A., andJ.McPeak(2020). 'Diversify More or Less? Household Income Generation Strategies and Food Security in Rural Nigeria'. *The Journal of Development Studies*, 56(3):560–77. https://doi.org/10.1080/00220388.2019.1585814

Dimova, R., and K. Sen (2010). 'Is Household Income Diversification a Means of Survival or a Means of Accumulation? Panel Data Evidence from Tanzania'. BWPI Working Paper 122. Manchester: Brooks World Poverty Institute, University of Manchester. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1688433 (accessed 21 December 2020).

Yamane, T. (1967). *Statistics, an introductory analysis* (2nd Ed.), New York: Harper and Row.

Demissie,A. and Legesse,B.(2013), Determinants of income diversification among rural households: The case of smallholder farmers in Fedis district, Eastern zone, Ethiopia. *Journal of Development and Agricultural Economics* Vol. 5(3), pp. 120-128.

Ellis, F. (2000b). Mixing It: Rural Livelihoods and Diversity in Developing Countries

Oxford: Oxford University Press.Eresso, M.Z., (2019). Sisters on the move: Ethiopia's gendered labor migration milieu. Canadian *Journal of African Studies/Revue canadienne des études africaines*, 53(1), pp. 27–46.

FAO(2012), How to Design Capacity Development Interventions and Ensure their Sustainability. www.fao.org/capacity-development/resources/practical-tools/design-capacity-development/en/

Fejerskov, A. and Zeleke, M,(2020).'No place for me here: The challenge of Ethiopian male migrants.*Danish Journal of Institute for International Studies*, pp. 1–69.

Gecho, Y. (2017). Rural farm households income diversification: The case of Wolaita Zone, Southern Ethiopia, Social Sciences, Vol. 6(No. 2), 45–56.doi:10.11648/j.ss.20170602.1

Gupta, S., Patillo, C. and S. Wagh (2009) 'Effect of remittances on poverty and financial development in Sub-Saharan Africa', World Development 37(1), 104-115.

Haggblade, S., Hazell P. &. Reardon, T. (2010). The Rural Non-Farm Economy: Prospects for Growth and Poverty Reduction. World Development, 38(10):1429–1441

IOM.(2019). Guidance on Referral Mechanisms for the protection of migrants vulnerable to violence, exploitation, and abuse and of victims of trafficking

IOM, (2020). The Desire to Thrive Regardless of the Risk: Risk perception, expectations and migration experiences of young Ethiopians migrating along the Eastern Route and the Horn of Africa, pp. 1–52.

Joseph, George and Sonia Plaza (2010) 'Impact of Remittances on Child Labor in Ghana' Policy Research Working Paper Series (2010).

Khan, Zakir Saadullah, Shamimul Islam (2013) The Effects of Remittances on Inflation: Evidence from Bangladesh Journal of Economics and Business Research, (2013) Koechlin, V. and Leon, G. (2007) 'International remittances and income inequality: an empirical investigation', Journal of Policy Review, 10(2): 123141.

Lokshin, M., Bontch-Osmolovski, M. and Glinskaya, E. (2010), Work-Related Migration and Poverty Reduction in Nepal. Review of Development Economics, 14: 323–332.

Marx, V. and Fleischer, K. (2010) Internal Migration: Opportunities and Challenges for Socio-economic Development in Viet Nam. Hanoi: The Programme Coordination Group on Social and Economic Policies of the United Nations in Viet Nam.

Mendola, M. (2012), "Rural Out-Migration and Economic Development at Origin: A Review of The Evidence", *Journal of International Development*, 24, 102-122.

Mukwedeya, T.G. (2009). Exploring the Role of Remittances in Household Livelihood Strategies in Glen-Norah, Harare. University of the Witwatersrand: Johannesburg.

Khan, R., and O. Morrissey (2020). 'Income Diversification and Household Welfare in Tanzania 2008–2013'. WIDER Working Paper 2020/110. Helsinki: UNU-WIDER. https://doi.org/10.35188/UNU-WIDER/2020/867-2

Prabal K. De & Dilip Ratha (2012) Impact of remittances on household income, asset, and human capital: evidence from Sri Lanka, Migration and Development, 1:1, 163-179

Qadri, F., S., and Waheed, A., 2013. Human capital and economic growth: Cross-country evidence from low-, middle-and high-income countries. Progress in Development Studies, 13(2), 89–104.

Skeldon, R., 2008. International migration as a tool in development policy: A passing phase? Population and Development Review, 34(1), 1–18.

Taylor, J.E.(1987).Undocumented Mexico-U.S. Migration and the Returns to Households in Rural Mexico. *American Journal of Agricultural Economics*, 69(3),p.626.

Taylor, J.E.(1999).The New Economics of Labor Migration and the Role of Remittances in the Migration Process. *immigration*,37(1),pp.63-88.

Todaro MP.(1969).A model of labor migration and urban unemployment in less-developed countries. *American Economic Review* 59:138-48

UNICEF(2011), Advocacy Toolkit: A guide to influencing decisions that improve children's lives www.unicef.org/cbsc/files/Advocacy_Toolkit.pdf

World Bank, (2019). The World Bank in Ethiopia Overview. Accessed 31 Nov. 2020. Available at www.worldbank.org/en/country/ethiopia/overview

Worldometer, (2020). Ethiopia Demographics. Accessed 31 Oct. 2020. Available at www.worldometers.info/demographics/ ethiopia-demographics/#broad-age

Jimma University

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Dear sample rural household of Setema woreda the objective of this study is to collect your responses on the house income diversification in the case Setema woreda. Your responses will be very important to achieve the objective of this study .your responses will be very important to achieve the intended objective of this study. Therefore, I kindly provide your responses.

Part I; personal information

Section One: Personal information

1. Gender: 1.Male----------------- 2.Female_--------------

2. **Age:** 1. Less than 30   2.30 to 39   3.40 to 49   4.50 to 59   5. 60 years or above

3. **Educational status**: 1. read and write 2.primary school   3. Secondary school

Part II; questions

Choices items: yes (1) and No (2)

A; types of household income

No	Items	yes	no
A	**Types of household income**		
1	Cereal crop farming is a source of income for the household.		
2	Coffee production is a source of income for the household.		
3	Beekeeping is a source of income for the household.		
4	Chat farming is a source of income for the household.		
5	Trading is a source of income for the household.		

6	Migration to different countries is a source of income for the household.		
7	Employment is a source of income for the household.		
8	Working as a day laborer is a source of income for the household.		

Choices of items; very low(1), low(2),medium(3),high(4) and Very high(5)

B. rate of income from different income sources

No	Items	1	2	3	4	5
A	**Rate of income**					
1	Rate of income from Cereal crop farming for the household.					
2	Rate of income from coffee production for the household.					
3	Rate of income from Beekeeping for the household.					
4	Rate of income from Chat farming for the household.					
5	Rate of income from trading for the household.					
6	Rate of income from Migration to different countries for the household.					
7	Rate of income from Employment for the household.					
8	Rate of income from Working as a day laborer for the household.					

C. The attitude of the household family towards to migration their family different countries to get money.

Items of choices: strongly disagree(1),disagree(2), undecided(3),Agree(4) and Strongly disagree(5)

No	Items	1	2	3	4	5
A	**Attitude of house hold family**					
1	The family has a positive attitude towards migration since they get income from their migrant family to other countries.					
2	The family has a negative attitude toward migration since they do not get income from their migrant family to other countries.					
3	Migration is not getting the family to earn money.					
4	Household families are interested in sending their daughters and son to get income.					
5	Household families are not interested in sending their daughters and son to get income.					

D. Effect of migration on household family

No	Items	1	2	3	4	5
A	**Effect of migration on household family**					
1	Migration is a high source of income for the household family.					
2	The migration of a family is not the source of income for the household family.					
3	Migration affects the income of a household family.					
4	Migration improves the life of the household family.					
5	The migration does not improve the life of household families.					