Rural Out-Migration in Oromia Regional State: Trends, Causes, and Implications

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ACRONYMS

AE	Adult Equivalent
ATT	Average Treatment Effect on Treated
ATU	Average Treatment Effect on Untreated
CPE	Consumption Per Adult Equivalent
CSA	Central Statistical Agency
FAO	Food and Agriculture Organization
FDRE	Federal Democratic Republic of Ethiopia
GTP	Growth and Transformation Plan
MESR	Multinomial Endogenous Switching Regression
MoFA	Ministry of Foreign Affairs
MoFEC	Ministry of Finance and Economic Cooperation
NBE	National Bank of Ethiopia
NELM	New Economics Labor Migration
PSNP	Productive Safety Net Program
SNNPR	Southern Nations, Nationalities People's Region
TLU	Tropical Livestock Unit
UNCTAD	United Nations Conference for Trade and Development
UNDESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Program
UNESCO	United Nations Educational, Scientific and Cultural Organization
WB	World Bank
WFP	World Food Program

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EXECUTIVE SUMMARY

Migration is a human phenomenon and one component of population dynamics affected by socio-economic and demographic changes. Migration can be international or internal, within the boundary of a country; voluntary or forced. Region wise, Africa is the main source of international migration with 14 to 15% migrants across the globe originating from the continent. Many of these migrants leave the continent in search for a better life or economic prosperity, escaping from conflict, famine or poverty. Moreover, migration has also been a key livelihood and survival strategy for many poor groups across the developing world, particularly in Africa.

Rural-urban migration has been historically connected with industrialization, urbanization and economic growth. Because it increases inter-sectoral factor mobility and plays a vital role for structural changes. Moreover, migration has also been a key livelihood and survival strategy for many poor groups across the developing world, particularly in Africa. Put differently, migration involves the movements of labor and capital between rural agricultural sector, and urban non-agricultural sectors. The movement of these two factors of production between rural and urban areas may affect the economies of both the migrant-sending and receiving areas. This implies that migration does not occur in vacuum, and it gives with one hand and takes with the other hand.

In Ethiopia, migration took many forms under different regimes; from negligible internal and international migrations during the imperial regime to the rise of international Ethiopian migrants during the Derg regime. Following the fall of Derg regime, both internal and international migration have increased in Ethiopia. Recently, compared to the rates of rural-rural, urban-urban, and urban-rural migration, the rate of rural-urban migration has been mounting in Ethiopia. Besides, rural-urban migration is a key development issue compared to the other types of internal migration. This is because the direction of rural-urban migration is from rural agricultural sector where job creation is easy to urban non-agricultural sectors where job creation is difficult.

The available migration studies in Ethiopia have focused on the determinants and impact of migration on migrant-receiving urban areas while studies on the impact of rural-urban and international migration on the welfare and agricultural production of migrant-sending rural households are quite limited. That means, little attention has been given to the impact of rural-out migration on migrant sending households in the area of the origin. In light of this backdrop, this study, aims to identify the drivers, and quantify the impact of rural-urban and international migration on the welfare and crop productivity of rural households in the Oromia region using cross-sectional data collected from a random sample of 384 households.

The descriptive results of the study showed that between 1984 and 2021, the rate of rural-rural migration in Ethiopia decreased from 55.8 to 24.6 percent, while the rate of rural-urban migration increased from 28.7 to 33.8 percent. Moreover, between 1999 and 2021, the rural unemployment rate increased from 1.5 to 4.5 percent, while the urban unemployment rate increased from 13.6 to 18.5 percent in Oromia. But the national urban unemployment rate decreased from 26.4 to 17.5% between the same period. Despite the high rate of urban unemployment, the proportion of migrants in the total urban population increased from 17.2 to 49.2 percent in the Oromia region between 1999 and 2021. The study showed that Oromia region is the primary source of international migrants (34.6%) in Ethiopia, while the Amhara and SNNP regions are the primary sources of rural-urban migrants. The analysis of the data from the last four national labor force surveys (1999, 2005,2013 & 2021) also revealed that compared to urban area lack of job opportunities in rural area

is the primary pushing factor and marriage related factors are the main pulling factors of rural out-migration in Oromia region.

The survey results showed that 56 and 70% of the sample migrants are male and unmarried respectively. Only 43% of international migrants followed the formal route of migration. While Addis Ababa is the leading destination of the rural-urban migrants (43%), Saudi Arabia is the main destination of international migrants (42%) in Oromia region. Remittances from rural-urban migrants primarily used for purchase of clothing, food, and fertilizers whereas international remittance-receiving households mainly spend remittances on fertilizers, clothing, food, and livestock. Further, the result from a regression analysis revealed that land size, use of irrigation, tropical livestock unit, dependency ratio, participation in productive safety net program, and years of schooling decreases the probability that an individual participates in migration while family size, number of plots, being female-headed households, and age of household head were found to increase the likelihood of migration in the study area. The study also found that rural poverty and food insecurity are the driving forces behind the rural out-migration in the Oromia region.

The study has also analysed the impact of migration on household welfare and agricultural productivity in the study in a counterfactual setting and found that the positive impact of participation in rural out-migration outweighs the negative impact on migrant-sending rural areas. More specifically, the conditional average treatment effects on treated (ATT) of annual food expenditure and kilocalorie per AE per day for households with international migrants are Birr 1519.87 and 323.35 respectively. This means migration is found to have positive impact on welfare of migrant sending households (measured in food expenditure and kilocalorie per AE). Similarly, migrant sending households were found to have better agricultural productivity (measured in kg per ha for wheat and teff crops) compared to households with non-migrant member. This indicates that migration, mainly the international migration, eases household's financial constraints and improves household's agricultural productivity. This is in line with the remittance hypothesis of the new economics labour migration theory.

Enhancing access to finance or credit markets, agricultural land and enhanced technology for youth in migrant-sending rural communities can leverage the gain from rural out-migration. Providing financial literacy training and investment possibilities for remittance-receiving households will improve the beneficial effect of migration. Pre-migration training for migrants on business, life skills, and financial literacy provided by the regional government and other stakeholders would help improve migrant workers' competitiveness in destination nations. Furthermore, the regional government should prioritize non-farm job development in rural small towns through the establishment of micro and small-scale businesses in order to reduce the disparity in welfare between migrant-sending rural regions and migrant-receiving urban areas. The regional and federal government should promote safe migration by raising awareness, discouraging irregular migration, easing the procedures required for migration by decentralizing the services delivery, signing bilateral agreements with destination countries and providing essential information to potential migrants about the migration process, and destination countries will increase the benefit from migration. Provision of public services such as electricity, road infrastructure, pure water supply, and telecommunication to secondary towns, tertiary towns and rural villages will attract private investments, and reduce the congestion of regional and national city centers by promoting short distance migration.

1. INTRODUCTION

More people are migrants today than at any other time in human history, and they are living abroad or in cities in greater numbers than ever before. However, recent migrants travel from the rural agricultural sector to urban non-agricultural sectors and from poor and lagging countries to rich and leading countries (FAO, 2019). The massive rural out-migration during the industrial revolution in the 18th century was primarily caused by pull factors in the urban industrial sector while the wave of rural out-migration in developing countries since the second half of the 19th century has been caused mainly by push factors such as poverty, lack of land, large family size, conflict, lack of employment, and drought in migrant-sending rural areas (WFP, 2015).

Between 2000 and 2020, the total number of international migrants increased from 173 million to 281 million while the percentage of international migrants in the total world population increased from 2.8 to 3.6 percent (UNDESA, 2020). Similarly, the total amount of remittances from international migrants increased globally from 128 billion to 751 billion US dollars between 2000 and 2020 (UNCTAD, 2020). In the same period, the percentage of remittances from international to developing countries increased from 57 to 79 percent (World Bank, 2021). Besides, the number of internal migrants in developing countries has rapidly increased and reached 1.3 billion in 2016 (FAO, 2020).

Furthermore, rural out-migration has become a development problem in developing countries since the second half of the 19th century for at least three reasons namely; the composition, the rate and the direction of migration (Beylee et al, 1996). First, most of the rural out-migrants are youth, better educated, better informed and unmarried. This could be a loss of human capital to rural agricultural sector. Second, the current rate of rural out-migration is higher compared to the rate of migration during the industrial revolution in western countries. Third, the direction of migration is from rural area where job creation is easy and unemployment rate is lower to urban area where job creation is difficult and unemployment rate is higher. For instance, job creation in industrial sector is 8.3 times costly compared to job creation in rural agricultural sector (ILO, 1999). This is because job creation in rural agricultural sector requires lower capital compared to job creation in urban non-agricultural sectors.

Rural out-migration involves the movement of labour from rural agricultural sector to urban non-agricultural sectors, and the transfer of capital in the form of remittances from urban non-agricultural sectors to rural agricultural sectors. The implication is that migration does not occur in vacuum, it affects the migrant-sending rural areas through two channels: the labour channel and the remittance or capital channel. There are dichotomous views about the impact of rural out-migration on the welfare and agricultural production of migrant-sending rural areas (United Nations, 2016). The first view, the optimistic view of rural out-migration, contends that migration affects the welfare and the agricultural production of migrant-sending households through the remittance channel (Stark,1985). The proponents of this view assume that households participate in migration to reduce the inefficiency in the credit and insurance markets in rural areas. They argue that remittances from migrants promote consumption, agricultural investment, and asset building by reducing the liquidity constraints and the risk aversion level of migrant-sending rural households. The second view, the pessimistic view of rural out-migration, regards migration as a loss of human capital in migrant-sending origin areas. The supporters of this view state that if remittances are not re-invested in agriculture, and if the opportunity cost of the family members who participated in migration is higher, migration may reduce agricultural production in migrant-

sending areas. Therefore, rural out-migration gives with the remittance channel and takes with the labor channel and its impacts on the welfare and production of households in origin areas depends on the relative strength of the two channels (Lucas, 1987; Rozelle et al. 1999).

The linkage between rural out-migration and welfare of migrant-sending rural households is triggered by the inflow of resources in the form of remittances, and the use of remittances by remittance receiving rural households (Adams and Page 2005). Remittances from migrants can be used for consumption, non-farm participation, purchase of agricultural inputs, house construction, purchase of land, purchase of livestock, payment for health, payment for education, and the like. Rural out-migration, therefore, is assumed to alleviate current poverty, reduce vulnerability, and increase agricultural investment through the remittance channel (Islam, 1991). Still, the impact of participation in rural out-migration on crop productivity in origin areas depends on the uses of remittances, and the opportunity cost of family members who participated in migration. On the one hand, rural out-migration has a downward pressure on the quantity of labour in the migrant-sending origin areas which may lower agricultural production. Besides, rural out-migration significantly lowers the quality of human capital in rural areas particularly when youth, male, better educated and unmarried persons participated in rural-urban and international migration (Zahonogo, 2011). On the other hand, remittances from migrants may rise agricultural investment and productivity by reducing the credit constraints and the risk aversion level of households in origin areas.

Ethiopia is the 2nd most populous country in Africa, and the 12th in the world (World Bank, 2021). Moreover, Ethiopians are the most mobile people in East Africa. Internal and international migrations have different patters under different regimes in Ethiopia (Adugna, 2021). First, under the emperor's regime (1941-1974), both rural-urban and international migration in Ethiopia was negligible (Lyons, 2009). For instance, only 20,000 Ethiopians migrated to Western countries, primarily to pursue an education during this regime (Terrazas, 2007). Second, during the military regime (1974-1991), the participation of Ethiopians in international migration was increased due to the political repression, and civil war. But rural-urban migration in Ethiopia was still limited during the military government due to government restrictions on rural out-migration (FDRE, 2005). Third, following the demise of Ethiopia's military regime in 1991, both rural-urban and international migration has been mounting. The new government removed restrictions on rural-urban migration, allowed for livelihood diversification, and Ethiopians were allowed to obtain passports and travel abroad more easily than ever before.

To improve the livelihood of both rural and urban residents, the Ethiopian government has put in place migration policy and implemented various programs. These programs are aimed at reducing poverty and transform the economy from agricultural sector to industrial sector. However, despite these efforts, the incidences of both one-dimensional poverty and multidimensional poverty have remained high in Ethiopia. For instance, the incidence of income poverty in Ethiopia was 24 percent while the incidence of multidimensional poverty was 83.5 percent in 2016 (OPHI, 2020). The same source indicated that 91.8 and 36.8 percent of Ethiopia's rural and urban populations were multi dimensionally poor in 2016. Similarly, the percentage of Ethiopians living in consumption poverty or one-dimensional poverty in rural and urban areas was 25.6 and 14.8 percent, respectively, in 2016 (ESS, 2018). This difference in welfare between urban and rural areas in Ethiopia mainly attributes to the poor performance of the Ethiopian economy in general, and the agricultural sector in particular. Moreover, this disparity in well-being between rural and urban areas has resulted in a recent wave of rural-urban and international migration in Ethiopia.

Over the last three decades, both rural-urban migration and international migration have increased in Ethiopia. For example, the number of Ethiopian international migrants increased from 611,000 to 1.1 million between 2000 and 2020 while the amount of remittance from international migrants increased from 53 million to 404 million US dollars (World Bank, 2021). Similarly, between 1999 and 2021, the share of rural-rural migrants decreased from 35.6 to 23.4 percent while the share of rural-urban migrants increased from 21.6 to 32.2 percent in Ethiopia (ESS, 2021). While Oromia is the leading source for international migrants in Ethiopia, Amhara and SNNP regions are the first and second sources of rural-urban migrants (ESS, 2021). The 2021 Labour and Migration Survey revealed that 42, 26.9, and 25.6 percent of international migrants of Ethiopia came from rural areas of Oromia, Amhara, and SNNPR regions, respectively (ESS, 2021).

Regarding the major destinations of Ethiopian migrants, 30.7, 12.4, 8.9, and 8.3 percent of migrants were directed to Saudi Arabia, South Africa, the United Arab Emirates, and the United States, respectively (ESS,2021). Moreover, international migrants from Ethiopia generally travel through three major migration corridors: the Eastern corridor, the Northern corridor, and the Southern corridor. The Eastern corridor is the busiest migration route, and Ethiopians migrate to the Middle East following this route since the 1990s. Most of the migrants who travelled following this path are young, female, and unmarried travelling mainly as house workers (MoLSA, 2018). The second corridor, the Northern route, is occasionally used to transit through Sudan to Libya and Europe (Massey et al., 1998). The Southern migration corridor runs from the Horn of Africa to South Africa. Ethiopia and Somalia are the main sources of migrants from the Horn of Africa to South Africa, where Ethiopia alone accounts for two-thirds of the migrants (Horwood, 2009). However, migrants from Oromia region dominate the Eastern migration corridor that runs from the Horn of Africa to the Middle East.

While the percentage of migrants from the total urban population in Ethiopia decreased from 49.3 to 39.9 percent, the percentage of migrants from the total urban population in Oromia region increased from 27.2 to 49.2 percent between 1999 and 2021. Moreover, the rate of rural unemployment increased from 1.5 to 4.5 percent whereas the rate of urban unemployment increased from 13.6 to 18.5 percent in Oromia region between 1999 and 2021 (ESS, 2021). This implies that both urban unemployment rate and rural-urban migration have been mounting in Oromia regional state. This high rate of rural-urban migration may deplete the educated labour force of the rural area in addition to the problem it creates in urban areas such as increased crime, unemployment, cost of provision of public goods and demand for housing. On the supply side, rural-urban migration disproportionately increases the growth rate of urban job-seekers relative to urban population growth. On the demand side, most urban job creation is more difficult and costly to accomplish than rural employment creation because of the need for substantial complementary resource inputs for most modern-sector industrial jobs (ILO, 1999).

Despite the current high rate of rural out-migration in Ethiopia in general and Oromia region in particular (Bundervoet, 2018), previous studies on the impact of rural out-migration on the welfare, and agricultural productivity of migrant-sending households are scarce. Few studies have looked at the impact of participation in migration on welfare of households and found mixed results (Lagakos et al, 2018 Egger, 2019; Brown, 2020; Ajefu and Ogebe 2021; Nuez and Osorio-Caballero 2021). Besides, while studies conducted by Beyene et al. (2017), Odozi et al. (2020), and Mesfin et al. (2021) found positive and significant association between rural-urban migration and crop productivity, studies conducted by Khanal et al. (2015), Imran et al (2016), Huy (2016) and

Adaku (2019) found negative and significant relationship. But studies on the impact of rural-urban and international migration on welfare and crop productivity of migrant-sending households in origin area are scarce. Hence, the research will address the following four questions.

a. How important are the push and /or the pull factors in contributing to the current rural out-migration in Oromia regional state?

b. What effects does rural out-migration have on the welfare of migrant-sending households in the study area?

c. How does rural out-migration affect the productivity of wheat and teff producers in the study area?

d. What does the government or other stakeholders do so as to address the negative consequences of rural-urban migration in both the sending and receiving areas?

In view the above question, the study therefore, aimed at exploring the trends, identifying the root causes, and quantifying the impact of participation in rural out-migration on the welfare and crop productivity of migrant-sending rural households in Oromia regional state. The remaining sections of the research are organized as follow. The second section contains a review of the relevant literature, the third section discusses the research methods, the fourth section presents the findings and a discussion, and the last section contains a conclusion and policy recommendations.

2. OPERATIONAL DEFINITION AND CONCEPTUAL FRAMEWORK

2.1. Operational Definitions

Migration is defined as a change in one's usual place of residence, whether for temporary or permanent. However, a movement that does not result in changing social ties and thus has no consequences for society in the origin and destination areas is excluded from the definition of migration. As a result, business travel, foreign research, tourism, and family visits are not considered as migration (UNESCO, 2005). In the literature, there are various types of migration such as voluntary, involuntary, internal, external, temporary, and permanent migration. Involuntary migration occurs when migrants leave their usual place of residence and relocate to another location or country as a result of war, political unrest, or land degradation while voluntary migration occurs when migrants leave their original place of residence and relocate to another location in search of better economic and social conditions (De Haas, 2011).

Internal migration refers to people moving from their original place of residence to other places within their country's national boundary, whereas international migration refers to people moving from their original place of residence to other places by crossing their country's national boundary. Furthermore, internal migration is classified into four types: rural-rural, rural-urban, urban-urban, and urban-rural (Ellis, 2003). The rural-urban migration is the focus of this research since the direction of migration is from rural agricultural sector where job creation is easy to urban non-agricultural sectors where job creation is difficult. The other type of migration is temporary vs. permanent migration.

Temporary migration refers to people migrating from their original place of residence to return to their home place, whereas permanent migration refers to people migrating from their home place to other places with no intention of returning to their original residences (De Haas, 2011). In this study, rural out-migration is defined as the movement of people from rural areas to urban areas within their country's borders or to other countries by crossing their country's borders. In addition, households are considered to have a migrant member if at least one household member left a household within the last 10 years prior to the survey date for at least three months and is still away.

2.2. Conceptual Framework

Until recently, migration literature has been dominated by those treating migrants as an individual decision maker. This strand of literature focuses on assessing the indirect effect of migration through labour markets rather than on migration, remittances, and their impacts within the context of the families and communities that produce migration. Such analysis, however, provide little insight on the interaction between determinants of migration and its impacts. In the Lewis 1954 model, movement of surplus labour from sending economy has no opportunity cost. That is, the migrant sending economy can sacrifice workers to migration without suffering a loss in production. However, if there are labour shortages in the migrant sending economy, those who migrate would have made a positive contribution to production at the place of origin if they had not migrated. In addition, if those who migrate take capital (human or financial) with them, the capital stock in migrant sending areas declines, reducing the productivity of other, complementary inputs, including.

In most migration models, from the one implicit in Lewis (1954) to Todaro (1969) and Harris and Todaro (1970), migration decisions are carried out by individuals and shaped by known or expected

income differences between migrant origins and destinations. Migrants move from countries where their earnings or expected earnings are low to those where their earnings or expected earnings are high (e.g., Todaro and Maruzco, 1987). A number of theories have been proposed by scholars with the objective of understanding the process that drive migration. These are dual labor market theory, world systems theory, network theory, migration systems theory, and the new economics labor migration are some of the dominant migration theories.

The New Economics of Labor Migration (or NELM) emerged in the 1980s as an allegedly alternative theoretical framework for accounting for the determinants of migration. The NELM has been variously characterized as a "fundamental departure from past migration research" (Taylor 2001) in a sense that it links migration decision to the impact of migration.

The impact of migration on rural communities varies depending on the type of migration (short or long term, internal or international, voluntary, or forced) and the context in which it occurs. These impacts are delivered through two main channels.

a) **Lost Labour /Movement of People/**: This can change the structure and composition of households of origin including household labour supply and affect rural labour market.

b) **Remittances/ Financial transfer/:** money sent back by migrants to their households.

The conceptual framework of the study is developed and shown in Figure 1 based on the theoretical and empirical reviews. Rural out-migration is generally influenced by demographic, socioeconomic, institutional, geographic, and other factors, which can be classified as push factors, pull factors, personal factors, and intervening factors (Lee, 1966). Rural out-migration involves the movement of the two important factors of production (labour and capital) from the rural agricultural sector to the urban non-agricultural sectors. More specifically, rural out-migration has an impact on the welfare and production of migrant-sending rural areas via two channels: remittances and lost labour.

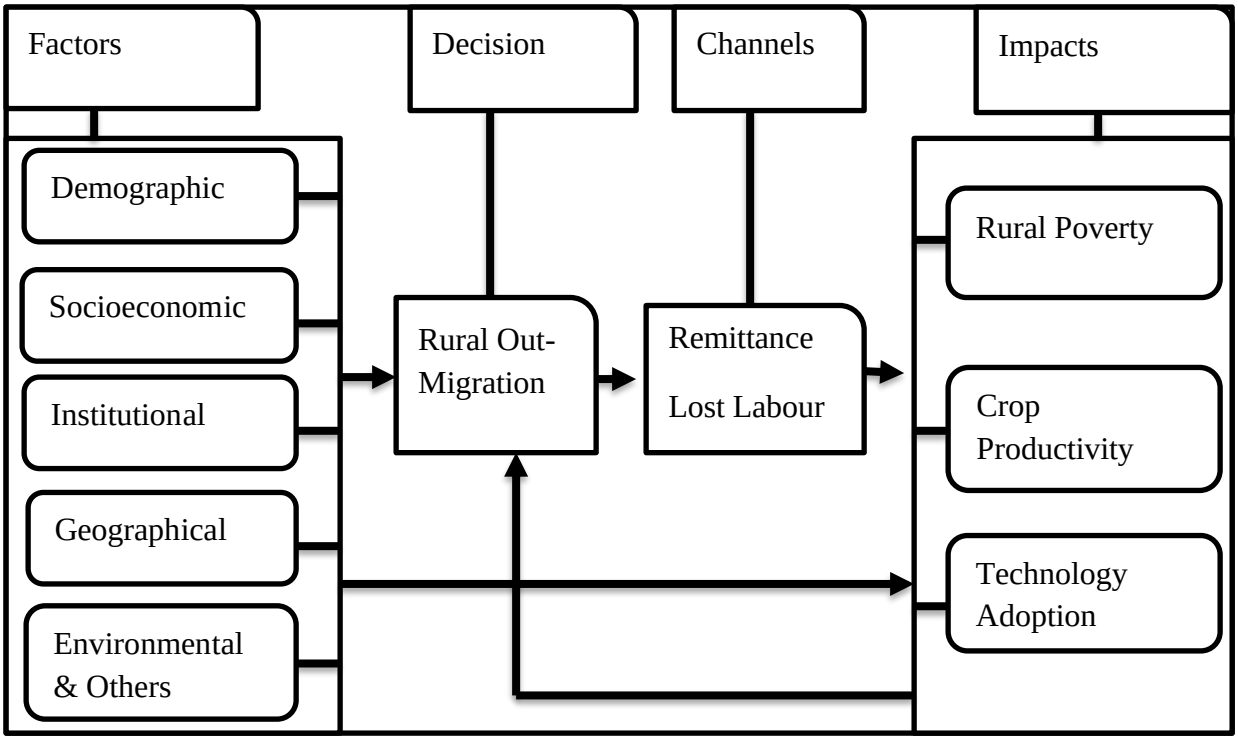

Figure 1. Conceptual Framework of the Study
Source: Author Compilation, 2023

2.3. Limitation of the Study and Areas of Future Research

The use of cross-sectional data and the dependency on quantitative research design are the limitation of this research. But to account for self-selection biases resulting from both observed and unobserved factors in cross-sectional data analysis, the recently developed analytical model of multinomial endogenous switching regression was used while quantifying the impact of rural out-migration on welfare and crop productivity of households. Besides, missed migrants, return migrants, cost of migration, challenges of migration, and effects of migration periods were not covered by this study. Future studies will concentrate on the effects of rural out-migration on income inequality, labor market, and land market in migrant-sending rural areas.

3. RESEARCH METHODOLOGY

3.1. The Study Area

This study was conducted in three selected zones of Oromia regional state of Ethiopia in 2023.Oromia is the largest region in Ethiopia both in terms of population size and land area. The region shares borders with all regions of Ethiopia except Tigray region. The 2022 projected population of the region was 42,647,632 in 2022 (RPDC, 2022) of which 35,453,080 or 83 percent of the population live in rural areas. The total area of the region is 363,375 square kilometres. Administratively, the region is divided in to 21 administrative zones, 23 town administrations, 294 rural districts/woredas and 29 towns. From the total of 21 zones[1] in Oromia National Regional State, three major rural-urban and international migrant sending zones namely; Arsi, Jimma, and North Shawa were covered by this research.

Majority of the population of the region are Muslims (48%) followed by Orthodox Christians (30%) and protestants (18%) (ESS, 2007). While the majority of the region's resident are Oromo (88%), there are also Amhara (7%) and other ethnic background that accounts about 5% of the region's population (ESS, 2007). According to the 2007 population and housing survey, the total population of Jimma was 3,486,155; Arsi was 2,637,657and North Shewa zone was 1,431,305 (ESS, 2007). Jimma zone has 20woredas, while Arsi and North Shawa have 24 and 11 woredas, respectively. From each Zone, 3 woredas were selected for the purpose of this study namely; Setema, Sekoru, and Dedo woredas from Jimma zone; Dodota, Arsi Robe, and Hitosa woredas from Arsi zone; and Girar-Jarso, Abichu and Debre Libanos woredas from North Shewa zone were purposively selected for this study.

Coffee and khat are the major cash crops produced in Oromia, and it is the leading contributor to Ethiopian exports. Besides, gold and cattle are the major exports from Oromia. The region has also more livestock than any other regions of Ethiopia, and it is also the largest producer of cereal crops in Ethiopia. People in pastoral and agro-pastoral areas primarily depend on livestock and livestock products as sources of food and income. On average, a rural household in Oromia region has 1.14 hectares of land compared to the national average of 1.01 hectares. Moreover, 24 percent of the population work in non-farm related jobs compared to the national average of 25 percent (CSA, 2007).

Regarding the ecological zones in Oromia region, the climate types are grouped in three major categories namely, the dry climate, the hot semi-arid climate and temperate rainy climate. First, the dry climate type is characterized by poor and scattered vegetation with annual mean temperature of 27°C to 39°C and the mean amount of rainfall reaches less than 450mm. Second, the mean annual temperature of the hot semi-arid climate type varies between 18°C and 27°C. Besides, the hot semi-arid climate has a mean annual rainfall of 410-820 mm. Third, the highland climate type of Oromia region experiences temperate climate of moderate temperature with mean annual temperature of less than 18°C and the mean annual rainfall of 1,200–2,000mm (CSA, 2007).

[1]*Zones in Oromia include Arsi, Bale, Bedele, Borena, East Haraghe, East Shewa, East Welega, Guji, West Guji, Horo Gudru Welega, Illubabor, Jimma, Kelem Welega, North Shewa, Southwest Shewa, West Arsi, West Hararghe, West Shewa, West Welega, Adama Special Zone, Jimma Special Zone and Oromia-Finfinnes Special Zone.*

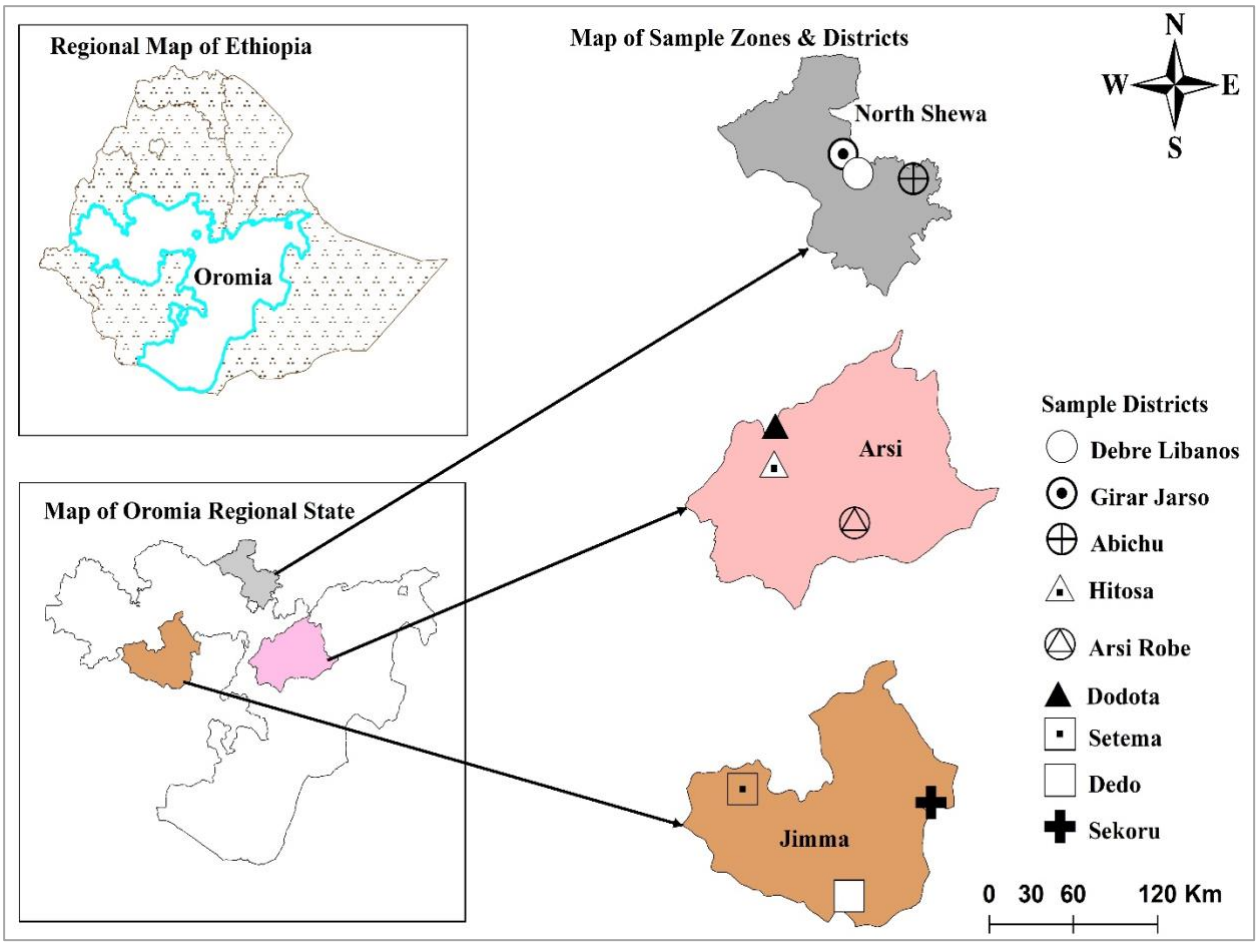

Figure 2. Map of Sample Zones, and Districts of Oromia Regional State

3.2. Data Sources and Data Collection Instruments

This study primarily employed a quantitative dominated mixed research design to generate better understanding on the causes, and impacts of rural out-migration on the economy of migrant-sending rural areas of Oromia region. Structured questionnaire, key informant interview, focus group discussion and case study were used to gather primary data. Primary data on demographic characteristics, sources of rural out-migration, use of remittances, agricultural production, and welfare of rural sample households were gathered from 384 households between January 20 to February 20/2023 from nine sample districts in the region. Besides, secondary data on the trends of rural out-migration, unemployment, major sources and destinations of rural-urban and international migrants were obtained from Central Statistical Service. To supplement the quantitative data, 32 key informant interviews were conducted in this study. The participants in key informant interview were selected purposively based on their expertise and professional contributions to the study from different offices such as women and children, labour and social affairs, job creation and policy commission. Moreover, 8 focus group discussions were held, and 5-8 participants were included in each FGD. The participants in the FGDs also include elders, development agents, religious leaders, cultural leaders, youth and women group leaders, school principals, community representatives (local police) and return migrants. Finally, 8 case studies

were conducted which focused on the experience and the life of return migrants before and after migration in the study area

3.3. Sampling Procedures and Sample Size

A multistage sampling technique was employed to select sample households for this study. First, three sample zones namely Jima, Arsi, and North Shewa were selected for this study purposively from 20 zones[2] in the Oromia region. This is because the three zones are the primary sources of both rural-urban and international migrants in Oromia region. Second, nine major migrant-sending sample woredas were chosen from the three sample zones. As a result, Setema, Dedo and Sekoru woredas were selected from Jimma zone while Dodota, Arsi Robe and Hitosa woredas were chosen from Arsi zone. Likewise, Girar Jarso, Debre Libanos and Abichu woredas were selected from North Shewa zone. Third, two kebeles from each of the woredas in Jimma and Arsi Zones while one kebele from each of the woredas in the North Shewa zone were selected. That means a total of 15 major migrant-sending sample *Kebeles*[3] were selected for this study. Fourth, the sample households were allocated among the three zones using Probability Proportional to Size (PPS). The samples were further allocated for migrant sending and non-migrant sending households with 2/3 allocated for migrant-sending households from each woreda and kebele while 1/3 is allocated for non-migrant sending household. The overall sample size is determined using Cochran (1963) sample determination formula as follows:

$$\boldsymbol{n = \frac{Z^2 pqN}{e^2(N-1) + Z^2 pq}}$$

where $e, p, q, n, N,$ and Z are the measure of precision, the assumed level of variability in the population, one minus the level of variability in the population, the sample size of the study, the total population and the value of standard normal distribution, respectively. The total households (N) in the three sample zones, degree of variability, and level of precision in this study are 1249711, 0.5, and 0.05 respectively. Based on the above formula, a sample size of 384 is determined for this study. Hence, quantitative data were collected from 384 rural households on causes, and impact of rural out-migration in the region using survey questionnaire in the year 2023. Participants in this study were divided in to three groups namely: households without migrants, households with international migrants, and households with rural-urban migrants. However, households with both international and rural-urban migrants were grouped under households with international migrants due to their few numbers (9).

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[2]*There are (21) zones in Oromia region and they include Arsi, Bale, Bedele, Borena, East Haraghe, East Shew, East Welega, Guji, West Guji, Horo Gudru Welega, Illubabor, Jimma, Kelem Welega, North Shewa, South West Shewa, West Arsi, West Hararghe, West Shewa, West Welega, Adama Special Zone, Jimma Special Zone and Oromia-Finfinnes Special Zone.*

[3]*The sample Kebeles include Asandabo & Habe Dangazela (Arsi Robe), Dirre Kiltu & Dodota Alem (Dodota), Jawi Chilalo & Sero Ankato (Hitosa), Seo Sidisa & Karti Wosorbi (Dedo), Yera Docha & Chafeta (Setema), Yabbu & Haro Kake (Sekoru), Ano Akabdo (Abichu), Wartu (Girar Jarso) and Wakene (Debre Libanos).*

3.4. Method of Data Analysis

Both descriptive and inferential methods of data analysis were applied in this study. The descriptive methods include percentages, bar graphs, frequencies, means, standard deviations, and time series graphs. The inferential analysis such as mean difference test, analysis of variance (ANOVA), and multinomial endogenous switching model were employed to answer the research objectives. Since the problem of self-selection biases due to observed and unobserved factors is a common problem in migration analysis, this study employed a multinomial endogenous switching regression model to evaluate the impact of participation in rural-urban and international migration on crop production and welfare of migrant-sending rural households in rural out-migration on welfare and agricultural productivity of migrant-sending households in origin areas. The information gathered via the KII and the FGDs were narrated to substantiate the findings of quantitative analysis and draw relevant policy recommendations. The quantitative data were analysed using STATA 17, and SPSS 23 Statistical Software.

3.4.1. Model Specification

To examine the impact of rural out-migration on welfare and crop productivity of migrant-sending rural households, annual food consumption per Adult Equivalent (AE), kilocalorie per AE, wheat output per hectare, and teff output per hectare were used as outcome variables. The treatment variable is rural out-migration which is a nominal variable with three categories namely; households without migrants ($j = 0$), with rural-urban migrants ($j = 1$), and international migrants ($j = 2$). But there is a problem of self-selection in to migration due to both observed and unobserved factors. Put differently, participation in migration is not random, and households with similar characteristics may participate in rural-urban migration or international migration. Moreover, there may be bidirectional relationship between migration, and welfare or agricultural production of migrant-sending households. For instance, poor households may participate in rural out-migration, and participation in rural out-migration may also affect the poverty of migrant-sending rural households. To account for this selection problem, this study employed the multinomial endogenous switching model. The multinomial endogenous switching model was developed by Deb and Trivedi (2006) to control for endogeneity due to observed and unobserved factors. Based on the concept of expected utility maximization, rural households may participate in rural out-migration if the expected utility from rural out-migration is higher than the expected utility without participation. Following Deb and Trivedi (2006), the latent variable model which describes the behaviour of rural households in choosing one alternative among the three alternatives to maximize its expected utility is given by:

$$Y_{ij}^{*} = \beta_i Z_i + U_{ij} \quad (1)$$

Where Y_{ij}^{*} is the latent variable that measures the expected utility of the ith household from choosing among jth alternative, $i = 1,2,3 \ldots 384,\ j = 0,1,2,$ Z_i is a vector of exogenous covariates, β_i is a vector of parameters to be estimated and U_{ij} is an error term. In the multinomial endogenous switching model, a household has j choices and the latent outcome variable is given by:

$$Y_{ij} = \begin{cases} 1 \;\; iff\; Y_{i1}^{*} > \max_{k \neq 1}(Y_{i1}^{*}), & U_{i1} < 0 \\ . & . \\ . & . \\ . & . \\ M \;\; iff\; Y_{iM}^{*} > \max_{k \neq M}(Y_{i1}^{*}), & U_{iM} < 0 \end{cases} \quad (2)$$

where Y_{ij} is the observed value of the outcome variable for the i[th] household of choosing alternative j, $U_{i1}, U_{i2} \ldots U_{iM}$ are error terms of the outcome equation, $i = 1,2,3 \ldots 384$, $j = 0,1,2$ and Y_{i1}^{*} is the latent variable. There are two components in equation (1) namely; the deterministic component, $\beta_i Z_i$ and the unobserved stochastic component, U_{ij}. The above model assumes that the unobserved stochastic term, U_{ij} is independently and identically distributed with zero conditional expected value, $E(U_{ij}/Z_i)=0$. Given the assumption that U_{ij} is independently and identically distributed or the independence of the irrelevant alternatives (IIA) assumption, the selection model of migration leads to the following multinomial logit model where the likelihood of choosing alternative j:

$$P_{ij} = \Pr(U_{ij} < 0/Z_j) = \frac{e^{\beta_i Z_i}}{\sum_{k=1}^{M} e^{\beta_i Z_i}} \quad (3)$$

In the second stage, a multinomial endogenous switching regression model is used to quantify the impact of participation in rural out-migration on the welfare and crop productivity of migrant-sending rural households. Rural households without a migrant family member, $j = 0$ is the base category in this study. Hence, the annual consumption per adult equivalent (CPE) of household is defined as m regime:

$$\text{Regime 0: } CPE_{i0} = X_i\gamma_0 + \varepsilon_{i0}\,, \quad \text{if } j = 0 \quad (4)$$

$$\text{Regime 1: } CPE_{i1} = X_i\gamma_1 + \varepsilon_{i1}\,, \quad \text{if } j = 1 \quad (5)$$

$$\text{Regime 2: } CPE_{i2} = X_i\gamma_2 + \varepsilon_{i2}, \quad \text{if } j = 2 \quad (6)$$

where CPE_{ij} is the annual consumption per adult equivalent of the i[th] household in regime j, $i = 1,2,3 \ldots 384$, $j = 0,1,2$, X_i is vector covariates, and ε_{ij} is the unobserved factor. Based on equations (4), (5), and (6), the selection bias-corrected outcome equations are given:

$$\text{Regime 0: } \text{CPE}_{i0} = X_i\beta_0 + \delta_0\left[\rho_0 m(P_{i0}) + \sum_j \rho_j\, m(P_{ij})\left(\frac{P_{ij}}{P_{ij}-1}\right)\right] + \varepsilon_{i0}\,, \;\; if \;\; j = 0 \quad (7)$$

$$\text{Regime 1: } CPE_{i1} = X_i\beta_1 + \delta_1\left[\rho_1 m(P_{i1}) + \sum_j \rho_j\, m(P_{ij})\left(\frac{P_{ij}}{P_{ij}-1}\right)\right] + \varepsilon_{i1} \;\; if \;\; j = 1 \quad (8)$$

$$\text{Regime 2: } CPE_{i2} = X_i\beta_2 + \delta_2\left[\rho_2 m(P_{i2}) + \sum_j \rho_j\, m(P_{ij})\left(\frac{P_{ij}}{P_{ij}-1}\right)\right] + \varepsilon_{i2} \;\; if \;\; j = 2 \quad (9)$$

where P_{ij} is the probability that the i[th] rural household chooses the j[th] alternative, ρ_j is the degree of correlation between the error term of the participation equation, U_{ij} and the error term of the outcome equation, ε_{ij} and $m(P_{ij})$ is the inverse transformation for the normal distribution function. Thus, the number of bias correction terms in each equation is equal to the number of choices in the model.

The multinomial endogenous switching regression model is also used to estimate the counterfactual data to quantify the impact of rural out-migration on welfare and crop productivity of migrant-sending rural households. In other words, the multinomial endogenous switching regression model is used to create a selection-corrected prediction of the counterfactual data of annual consumption per adult equivalent or kilocalorie per adult equivalent per day. Following the work of Bourguignon et al. (2007) and assuming households without migrants, $j = 0$ as the base category, values of the mean annual consumption per adult equivalent of households with migrants are given by:

$$E(CPE_{i1}/j = 1) = X_i\beta_1 + \delta_1\left[\rho_1 m(P_{i1}) + \sum_{k=1}^{M}\rho_k m(P_{ik})\left(\frac{P_{ik}}{P_{ik}-1}\right)\right] \quad (10)$$

$$E(CPE_{i2}/j = 2) = X_i\beta_2 + \delta_2\left[\rho_2 m(P_{i2}) + \sum_{k=1}^{M}\rho_k m(P_{ik})\left(\frac{P_{ik}}{P_{ik}-1}\right)\right] \quad (11)$$

Moreover, once the values of actual mean annual consumption per adult equivalent of households are determined using the above two equations, the values of mean annual consumption per adult equivalent of households from the counterfactual data are given by:

$$(CPE_{i0}/j = 1) = X_i\beta_0 + \delta_0\left[\rho_0 m(P_{i1}) + \rho_1 m(P_{i0})\left(\frac{P_{i1}}{P_{i1}-1}\right) + \rho_1 m(P_{i1})\left(\frac{P_{i3}}{P_{i3}-1}\right)\right] \quad (12)$$

$$(CPE_{i0}/j = 2) = X_i\beta_0 + \delta_0\left[\rho_0 m(P_{i2}) + \rho_2 m(P_{i1})\left(\frac{P_{i1}}{P_{i1}-1}\right) + \rho_1 m(P_{i0})\left(\frac{P_{i3}}{P_{i3}-1}\right)\right] \quad (13)$$

Lastly, the conditional average treatment effects on treated (ATT) could be computed by subtracting equations (12) and (13) from equations (10) and (11) respectively. The positive and significant values of ATT imply that participation in rural out-migration promotes the welfare of migrant-sending rural households via the remittance channel.

3.4.2. Description of Variables and Hypotheses

In the first stage regression of the multinomial endogenous switching model, the dependent variable is rural out-migration which is a nominal variable with three categories namely; households without migrants ($j = 0$), households with rural-urban migrants ($j = 1$), and households with international migrants ($j = 2$).The occurrence of drought may induce rural out-migration by reducing the income of rural farm households. Studies conducted by Ma et al. (2019) and Abeje (2021) on determinants of rural-urban migration in northern Ethiopia found that the occurrence of drought is positively and significantly related to the propensity of rural out-migration but the land size and rural-urban migration are negatively and significantly associated. Similarly, family size is considered as pushing factor for labour out-migration from rural areas. For instance, studies conducted by Alarima (2019) and Ma et al. (2019) on factors affecting rural-urban migration using

cross-sectional data found that family size and years of schooling of household heads are positively and significantly related to the likelihood of rural out-migration. Besides, a study conducted by Kefelegn (2020) found that family size, years of schooling of household head, being female-headed households and drought are positively and significantly related to rural out-migration. This study also hypothesizes that family size, education, being a female-headed household, and occurrence of drought are positively associated with rural out-migration. Added to these, a study conducted by Tegegne and Penker (2016) also found that age, education level of household heads, and being female-headed households are positively and significantly related to the likelihood of rural-urban migration. However, Wondimagegnhu and Zeleke(2017) examined the determinants of rural-urban migration in Ethiopia and found a negative and significant association between tropical livestock units and rural-urban migration.

Table 1.Description, Measurement, and Expected Signs of Covariates in the Model

Variables	**Description**	**Measurement**	**Sign**
AGE	Age of household head	Continuous	+
EDUC	Years of schooling of household head	Continuous	+
FS	Family size	Discrete	+
LS	Land size in hectares	Continuous	-
TLU	Tropical livestock unit	Continuous	-
Male	Sex of household head	Male =1 & Female =0	$\pm$
IRR	Use of irrigation	Users=1 & non-users=0	-
DPR	Dependency Ratio	Continuous	+
Plots	Number of Plots	Continuous	+
NFP	Non-Farm Participation	Participant =1 &o Otherwise	-
DR	Drought in the last five years	Occurrence=1 & 0 otherwise	+
LR	Participation in land renting out	Renting =1 & 0 otherwise	+
EXTN	Frequency of extension visits	Discrete	-
PSNP	Productive Safety Net Program	Users =1 & 0 otherwise	$\pm$
Oromo	Dummy for Ethnicity of Household	Oromo=1 & 0 otherwise	+
Arsi	Place dummy for zone	Arsi=1 & 0 otherwise	+
Jimma	Place dummy for zone	Jimma =1 & 0 otherwise	$\pm$
Muslim	Dummy for religion of the household	Muslim =1 & 0 otherwise	+

Further, a study conducted by Ajaero et al. (2018) on determinants of rural out-migration found that being male-headed households, family size, and age of household head is positively and significantly related to participation in migration. Similarly, Khatir and Rezaei-Moghaddam (2014) conducted a study on predictors of rural out-migration of youth in Iraq and indicated that family size, age of household head, being male-headed household, number of active male family members, and the occurrence of drought are positively and significantly related to the likelihood of rural out-migration while the land size and frequency of extension visits are negatively and significantly associated with rural out-migration.

The outcome variable in the second stage regression of multinomial endogenous switching regression is the annual consumption per adult equivalent (CPE_i) or kilocalorie per adult equivalent of households. The independent variables in the second stage regression include all independent variables in the first stage regression less three instrumental variables such as dummy for religion, dependency ratio and return migrants. The treatment variable in the second stage regression of the

multinomial endogenous switching model is rural out-migration which is a nominal variable with three categories namely; households without migrants, with rural-urban migrants, and international migrants. Regarding the impact of participation in rural out-migration on the welfare of migrant-sending households, there are dichotomous results. While some authors (Seetha, 2012; De Brauw and Giles, 2018; Mukhtar et al., 2018; Musakwa and Odhiambo, 2019; Marta et al., 2020) found a positive and significant association between participation in migration and welfare of migrant-sending households, other authors (Bryan et al., 2014; Lagakos et al., 2018; Alleluyanatha et al., 2021) found a negative and significant association between migration and welfare of migrant-sending households.

4. FINDINGS OF THE STUDY

This section presents both the descriptive and econometric results of data analysis. First, descriptive results on the dynamics of rural-urban migration in Oromia region, the characteristics of migrants, major destination of rural-urban and international migrants, characteristics of sample households, and farm characteristics are presented. Besides, the results of simple inferential statistics such as the independent samples t-test and the ANOVA test results are presented in the first part of this section. Second, econometric results on the drivers of rural out-migration, impact of rural out-migration on welfare, and crop productivity of migrant-sending households in rural areas of Oromia regional state are presented.

4.1. Dynamics of Rural-Urban Migration in Oromia Region

4.1.2. Migration Trends in Urban Areas of Oromia

The share of migrants from the total urban population was 27.2 percent in Oromia region in 1999, and this figure increased to 49.2 percent in 2021 as indicated in Table 2. As shown in Table 2, the share of migrants from the total urban population of Oromia region has been increasing over time, and relatively higher compared to other regions such as Amhara and SNNP regions. However, the share of migrants in the total rural population in Oromia regional state decreased between 1999 and 2021 from 15.5 to 12.5 percent. The implication is that both the urban and rural areas of Oromia are the major migrant receiving areas compared to Amhara and SNNP regional states.

Table 2. Trend of the Proportion of Migrants in Urban Areas of Oromia, Amhara and SNNP

	Urban				Rural			
Year	1999	2005	2013	2021	1999	2005	2013	2021
Ethiopia	49.3	39.4	44.4	39.9	15.0	12.5	8.5	10.1
Oromia	**27.2**	**27.8**	**46.6**	**49.2**	**15.5**	**15.2**	**9.1**	**12.5**
Amhara	25.1	38.5	50.0	42.9	13.8	9.5	8.0	8.3
SNNP	20.6	30.6	42.1	31.6	13.6	10.4	7.9	11.8

Source: Authors 'Computation from ESS,1999; 2005;2013 & 2021 National Labour Force Surveys

Despite the large share of migrants in the total urban population, the rate of urbanization, or the ratio of urban population to total population, is lower in Ethiopia in general and in the Oromia region in particular. For example, between 1999 and 2021, the rate of urbanization in Ethiopia increased from 13.5 to 21.4%, whereas the rate of urbanization in the Oromia region increased from 10.3 to 16.7% (ESS, 2021). However, this rate of urbanization is lower than in Africa (40%), Sub-Saharan Africa (38%), North Africa (52%), Central Africa (44%), Western Africa (45%), Southern Africa (62%), and Eastern Africa (26%). This highlights the need of supporting the development of secondary and tertiary rural small towns in Ethiopia in general, and Oromia region in particular, by providing public services and employment opportunities in rural small towns.

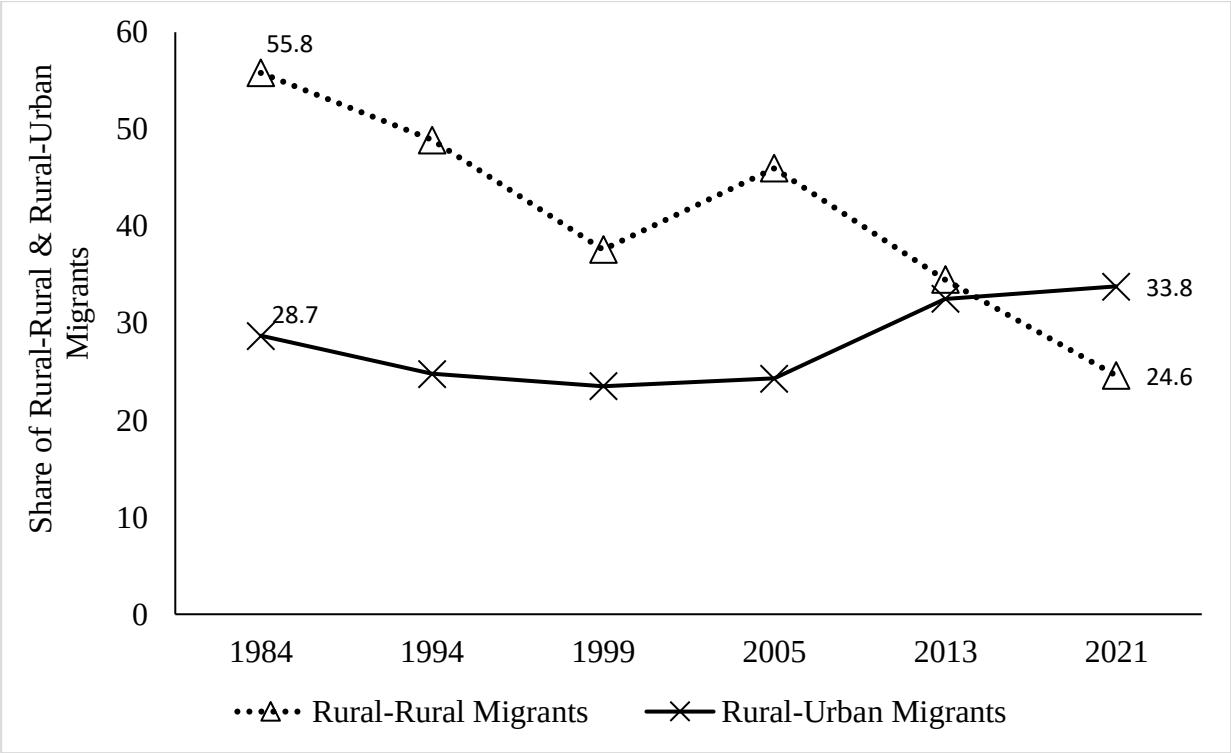

Figure 3. Trends of Rural-Urban and Rural-Rural Migration in Ethiopia
Source: Authors' Computation from different rounds of NLFs and Population Census

The high share of migrants in the total urban population is primarily contributed by the current high wave of rural-urban migration. Of all types of internal migration, rural-urban migration has recently become the most dominant type of internal migration in Ethiopia in general and Oromia region in particular. As indicated in Figure 3, the rate of rural-rural migration decreased from 55.8 to 24.6 percent while the rate of rural-urban migration increased from 28.7 to 33.8 percent between 1984 and 2021. The implication is that rural-urban migration involves the transfer of labour from a place where job creation is easy, rural areas, to a place where job creation is difficult, urban area. That means job creation in rural areas requires less capital compared to job creation in urban areas.

Migration from rural to urban areas is crucial for structural change because it lowers the number of farmers while increasing employment in the urban industrial sector. However, rural-urban migration may result in high urban unemployment and a shortage of agricultural products if it is primarily driven by push factors, occurs prior to agricultural development, and is from the least productive agricultural sector to the least productive service sector. In other words, if migration is primarily motivated by pull factors or employment opportunities in the urban industrial sector, rural-urban migration can contribute to economic development or structural transformation. The economic activities in migrant-sending and -receiving areas may be impacted by this movement of labor between rural and urban areas. As an illustration, the high proportion of migrants in the urban population as a whole will put a lot of strain on the availability of public services like water, housing, roads, health care, and education in migrant-receiving urban areas. In addition, if people migrate from rural agricultural to urban service sectors, there will be more urban unemployment because the capacity of the service sector to create jobs is lower than that of the industrial sector.

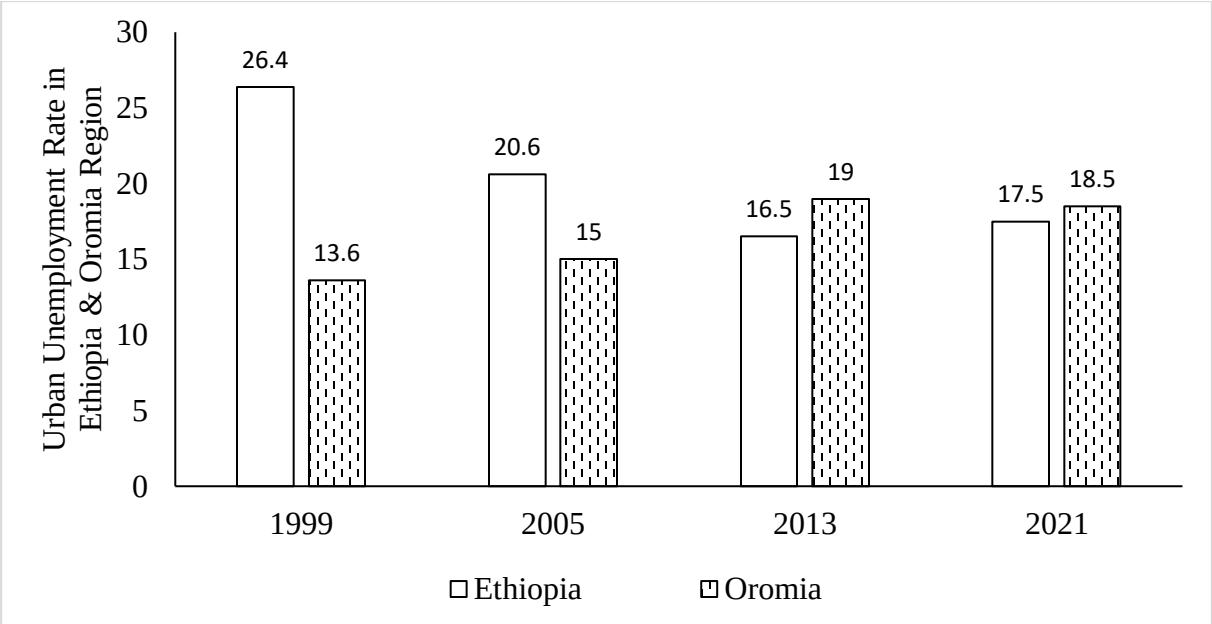

Figure 4. Trend of Urban Unemployment Rate in Ethiopia & Oromia Regional State
Source: Authors' Computation from ESS,199; 2005; 2013& 2021 National Labour Force Surveys

As illustrated in Figure 4, the rate of urban unemployment in Ethiopia decreased from 26.4% to 17.5 percent between 1999 and 2021, while the rate of urban unemployment[4] in the Oromia region increased from 13.6% to 18.5 percent. It indicates the number of people who are willing to participate or engage in the production of goods and services. This suggests that rural-urban migration has been increasing in the Oromia region, despite the high rate of urban unemployment shown in Figure 4. The migration phenomenon in the study area is better explained by the human capital theory of migration (Todaro, 1969), which assumes that people migrate from rural agricultural sector to urban non-agricultural sectors in developing countries despite high rates of urban unemployment if the likelihood of getting a job in urban non-agricultural sectors is greater than the likelihood of getting a job in rural agricultural sectors. In the same vein, the human capital theory of migration (Todaro, 1969) assumes that rural-urban migration is the primary cause of urban unemployment in developing countries.

[4]The unemployment rate is the ratio of the unemployed population to the total labor force.

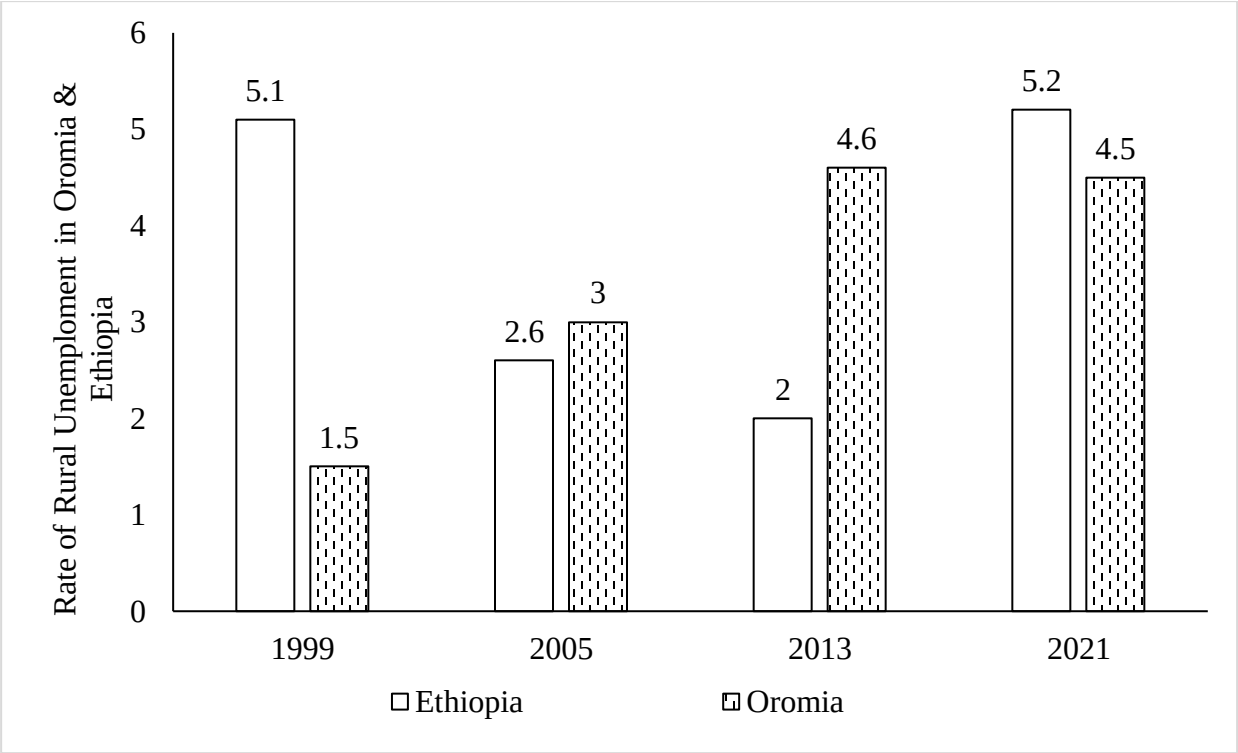

Figure 5. Trend of Rural Unemployment Rate in Ethiopia & Oromia Region
Source: Authors' Computation from ESS, 1999; 2005; 2013 & 2021 National Labour Force Surveys

As indicated in Figure 5, the rates of rural unemployment in Ethiopia and Oromia region were lower compared to the rate of urban unemployment between 1999 and 2021. The implication is that rural-urban migration in Ethiopia in general and Oromia regional state in particular involves the transfer of labor from the place where unemployment rate is lower, rural areas, to the place where unemployment rate is higher, urban areas.

Furthermore, the Oromia region is Ethiopia's primary source of international migrants, followed by Amhara and the SNNP regional states. According to the 2021 Labor and Migration Survey, about 35 percent of Ethiopian international migrants are from Oromia followed by Amhara (24.5%), and SNNP (18.1%) (ESS, 2021). This suggests that Oromia is the leading remittance-receiving region in Ethiopia. The same survey shows that while Amhara is the leading source of internal migrants (40.2%), Oromia is a primary source of international migrants (34.6%). Besides, Oromia region is a primary destination for internal migrants in Ethiopia. This descriptive analysis revealed that participation in both rural-urban migration and international migration has increased in the Oromia regional state in recent years.

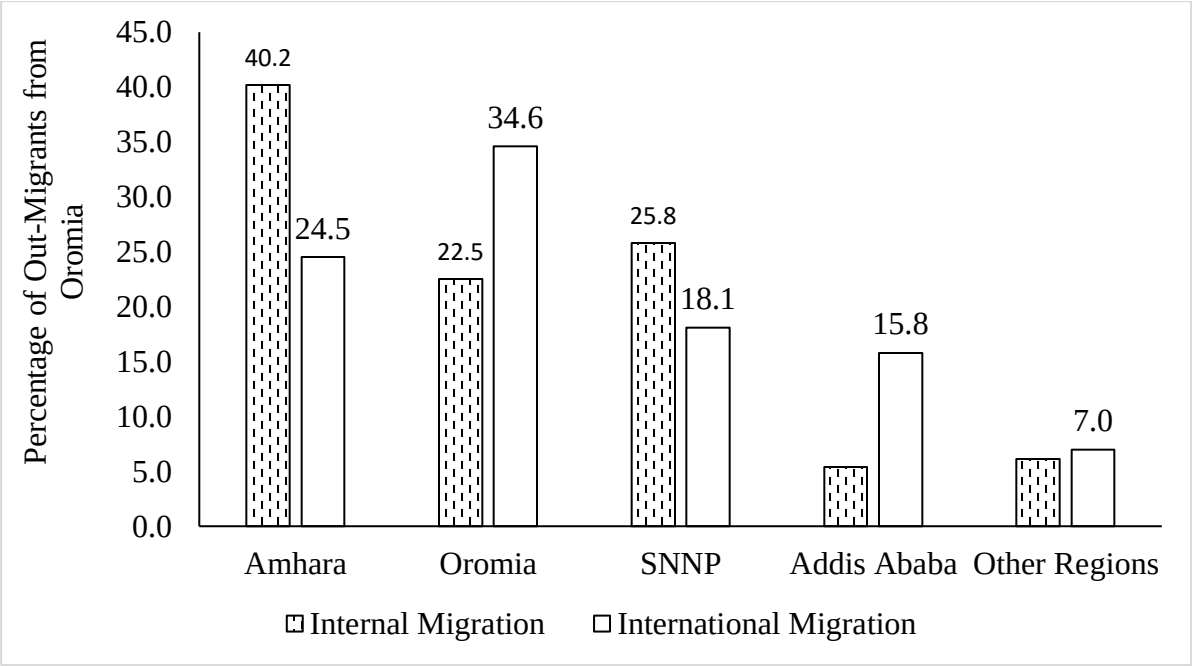

Figure 6.Sources of Internal and International Migrants in Ethiopia by Regions in 2021
Source: Computed from NLFM Survey, 2023

Furthermore, data on the total number of migrants in the Oromia region, as well as the reasons for migration, were gathered from Ethiopia's last four national labor force surveys. According to Table 3, the main reasons for out-migration in the Oromia region are lack of jobs in origin areas, the presence of family members or relatives in destination areas, and marriage-related factors. As shown in Table 3, the presence of a relative or family member in the destination area is the main pulling factor of migration in the study area, while a lack of job opportunities in the migrant-sending origin area is the main pushing factor of migration. This is consistent with the network theory of rural out-migration, which predicts that the presence of family members or relatives at destination areas reduces the cost of migration by providing migrants with information about destination areas prior to migration and supports after migration.

Still, as shown in Table 3, the percentage of migrants migrating due to marriage-related reasons has been increasing in the Oromia region. This descriptive result implies that creating viable farm and non-farm employment opportunities in origin areas will help to reduce the current wave of rural out-migration. Urban-biased development policies, on the other hand, would fuel rural out-migration and exacerbate the current high rate of urban unemployment. Therefore, the pull factors in destination areas and push factors in sending areas are the primary drivers of the movement of people from rural areas to urban areas in Oromia region. Likewise, the current survey also found that more than three-fourths of migrants participated in migration due to a lack of job opportunities in sending rural areas.

Table 3. Total Migrants, and the Distribution of Reasons for Migration in Oromia Region

Years	1999	2005	2013	2021
Migrants in Oromia Region	897,429	1,338,864	1,464,194	1,833,481
Reasons for Migration				
Search for Work	**15.4**	**8.8**	**26.3**	**29.4**
Job Transfer	4.5	4.2	5.5	7.8
Land Shortage	2.4	19.1	1.8	2.0
Education	8.8	10.3	7.9	9.9
Marriage Related Factors	**16.2**	**7.5**	**10.9**	**13.6**
Conflict & Drought	1.4	6.8	1.6	3.2
Join Family or Relatives	**37.6**	**35.4**	**29.2**	**29.4**
Health	0.5	1.3	2.1	1.1
Others	13.0	6.6	14.7	3.6

Source: Authors' Computed from the 1999, 2005, 2013 and 2021 NLFS

4.1.2. Characteristics, and Destinations of Rural Out-Migrants in Oromia

The results of a descriptive analysis of the characteristics of migrants in the study area are shown in Table 4. The average age of rural-urban migrants and international migrants in the study areas is 24 years. According to the 2021 Labour and Migration Survey, more than two-thirds of internal migrants were between the ages of 15 and 39, while more than three-quarters of international migrants were between the ages of 15 and 29 at the time of migration (CSA, 2021). According to the same source, 50, 27, and 9% of international migrants had completed primary, secondary, and college education before leaving their home countries. The implication is that the majority of rural out-migrants are young, educated, and unmarried.

Table 4. Descriptive Statistics on the Characteristics of Migrants in Oromia Region

		Rural-Urban		International		Total	
		Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev
Age of migrants		24.52	7.01	24.15	5.21	24.31	6.07
Income at origin		394.85	868.08	430.506	1778.93	414.58	1442.86
Income at destination		4337.05	3753.9	16192.77	9316.27	10897.21	9435.04
Annual remittance		3872.045	2973.8	67609.2	83322.1	51853.92	77324.7
In kind remittance		3608.333	4119.4	33357.14	26863.5	19626.92	24778.1
		Frequency	%	Frequency	%	Frequency	%
Sex	Male	79	58.95	89	53.62	168	56.00
	Female	55	41.05	77	46.38	132	44.00
Marital Status	Unmarried	94	70.15	117	70.48	211	70.33
	Married	35	26.12	45	27.11	80	26.66
	Divorced	5	3.73	4	2.41	9	3.01
Route of Migration	Formal			72	43.37	72	43.37
	Informal			94	56.63	94	56.63

Source: Authors' Computation, 2023

In the study area, the average annual remittance from rural-urban migrants and international migrants to their home countries is Birr 3872 and 67609, whereas the average monthly income of rural-urban migrants and international migrants at area of destinations Birr 4337and 16193, respectively. Therefore, rural out-migration entails the movement of labour from rural agricultural sector to urban non-agricultural sectors as well as the transfer of capital in the form of remittances from migrant-receiving urban areas to migrant-sending origin areas. According to this, rural outmigration has a net positive and negative impact on the welfare and agricultural activities of rural households that send migrants, depending on the relative size of the remittance effect and the lost labour effect. Additionally, 70.15 percent of migrants are single and 56 percent of migrants are men. In Northern Ethiopia, a study on the factors influencing rural out-migration by Dad (2020) found that 75% of rural out-migrants are male. Additionally, Abire and Sagar (2016) looked into the factors that influence international migration in southern Ethiopia and discovered that 72.5 percent of those migrants were men.

Table 5. Major Destination of Migrants, and Decision to Migrate in the Study Area

	Major destinations	Frequency	Percentage
Rural-Urban Migrants	Addis Ababa	58	43.28
	Adama	20	14.93
	Jimma	7	5.22
	Other Small Cities	49	36.57
	Total	134	100
International Migrants	Saudi Arabia	70	42.17
	UAE	34	20.48
	Yemen	24	14.46
	Sudan	12	7.23
	Others	26	15.66
	Total	166	100
Decision to Migrate	Family	104	34.67
	Self	185	61.66
	Relative	2	0.60
	Friends	9	3.00
	Total	300	100

Source: Authors' Computation, 2023

According to Table 5, Addis Ababa is the main destination for domestic rural-urban migrants in the Oromia region (43.28%) followed by Adama (14.93%), while Saudi Arabia is the main destination for international migrants from Oromia region of Ethiopia (42.17%), the second being United Arab Emirates (20.48%). In accordance with the 2021 Ethiopia Labour and Migration Survey, Ethiopia's international major migrant destination areas were Asia (58%), Africa (21), and North America (10%). In particular, Saudi Arabia (31%), South Africa (12%), the United Arab Emirates (9%), and the United States (8%) received the majority of international migrants from Ethiopia (ESS, 2021). The same survey also indicates that Amhara and SNNP regions are the main sources of rural-urban migration with the major areas of destination for these migrants being, Addis Ababa and Hawassa. The decisions to migrate are mainly made at the individual and family levels, as shown in Table 5. The human capital theory of migration (Todaro, 1969) contends that decisions

to migrate are made at the individual level while the new economics labor migration theory (Stark, 1985) contends that decisions to migrate are made at the household level.

Table 6 details how migrant-sending rural households use remittances from international migrants and rural-urban migrants. On the one hand, remittances from rural-urban migrants are primarily used for household expenses such as food consumption, clothing, seeds and fertilizer, and health care by rural households that receive the remittances. For example, in the study area, over three-fourths of remittance-receiving households use remittances for household food consumption, while over half of remittance-receiving households spend remittances on clothing.

Table 6. Use of Remittances by Rural Households, and Frequency of Remittances per Year

	International Migration		Rural Urban Migration	
	Frequency	Percentage	Frequency	Percentage
Seeds & Fertilizers	103	**76.9**	16	36.4
Clothing	98	**73.1**	23	**52.3**
Food Consumption	94	**70.1**	34	**77.3**
Livestock	74	55.2	10	22.7
Education	50	37.3	10	22.7
Housing	39	29.1		
Health	34	25.4	11	25.0
Saving	33	24.6		
House Equipment	29	21.6	3	6.8
Land Renting in	19	14.2		
Loan Repayment	12	9.0		
Labor	10	7.5	2	4.5
Wedding & Funerals	9	6.7	2	4.5
Agricultural Equipment	9	6.7		
Others	14	10.4	9	20.5

Frequency of Remittances per Year	Frequency	Percent
1	30	16.85
2	27	15.17
3 & above	**53**	**29.77**
On request	21	11.8
On special occasion	47	26.4
Total	178	100

Source: Authors' Computation, 2023

As opposed to agricultural investment, it appears that the majority of rural households spend remittances from rural-urban migrant on food consumption. According to a study by Debnath (2022) on how remittances are used in India, rural households in India spend remittances from rural-urban migrants primarily on food, clothing, education, and health. On the other hand, as shown in Table 6, rural households spend remittances from international migrants primarily on clothing, food, and the purchase of livestock. Therefore, compared to rural-urban remittance receiving households in the study area, rural households that receive international remittances use

remittances primarily for agricultural investments. For instance, more than three-thirds of households that receive remittances from abroad buy seeds and fertilizer, while more than half of households buy livestock with the money they receive from international migrants. The implication is that households receiving remittances from abroad use them to increase their assets, invest in agriculture, and finance households' food expenditure in the study area.

Table 7. Jobs Situation of Migrants before, and after Migration in the Study Area

Before Migration			After Migration		
Jobs	Frequency	Percent	Jobs	Frequency	Percent
Students	133	**44.33**	Construction workers	53	**17.67**
Family Labor	129	**43.00**	Houseworkers	98	**32.67**
Hired Labourer	17	5.67	Farm workers	40	13.33
Hired Servant	12	4.00	Waiters	16	5.33
Others	9	3.00	Shopkeepers	11	3.67
			Cleaners	10	3.33
			Guards	9	3.00
			Office workers	8	2.67
			Teachers	7	2.33
			Traders	4	1.33
			Others	44	14.67
Total	300	100		300	100

Source: Authors' Computation, 2023

The frequency of remittances from migrants is influenced by a number of variables, including the distance between the destination and origin areas, the income of migrants in the destination areas, the economic circumstances of migrant-sending households, and the time the migrants have spent in the receiving areas. As seen in Table 6, close to 15% of migrant-sending households receive remittances twice a year in the study areas, compared to 30% of rural households who receive remittances three times a year or more. Additionally, on special occasions like holidays, weddings, hardships, and funerals, about 26.4 percent of rural households receive remittances from migrants. As indicated in Table 7, most of the rural out-migrants in the study area were students (44.33 %), and works on family farm (43%) before migration. But after migration, the majority of the migrants employed as houseworkers (32.67 %), and construction workers.

4.1.3. Characteristics of Sample Households in the Study Area

Majority of the sample households (87%) are male-headed and 65% of them are Muslims as indicated in Table 8. Of the total sampled households, 40% of them have no migrant while 21%&39% of the sample households have at least one rural-urban& international migrant, respectively.

Table 8. Frequency Distribution of Some Qualitative Variables of Sample Households

Qualitative Variables	Categories	Frequency	Percent
Sex	Female	50	13.0
Migration	No Migrants	153	39.8
	Rural-Urban	82	21.4
	International	149	38.8
Sample Zones	Arsi	156	40.6
	Jimma	144	37.5
	North Shawa	84	21.9
Religion	Muslim	250	65.1
	Orthodox	125	32.6
	Others	9	2.3
Ethnicity	Oromo	370	96.4
	Amhara	11	2.9
	Others	3	0.8
Irrigation	Users	53	13.8
PSNP	Users	40	10.4
Credit	Users	38	9.9
Off-Farm Participation	Participants	84	21.9

Source: Authors' Computation, 2023

Looking into the livelihood type of households, only 13.8% practice irrigation farming while about 10% of the sampled household participate in PSNP. Moreover, only small proportion of households (10%) have the practice of using credits from financial institutions and about 22% of them engage in nonfarm activities to supplement their farm income.

Table 9. Summary Statistics of Some Quantitative Variables of Sample Households

	No Migrants (153)		Rural-Urban (82)		International (149)		Grand Total (384)	
Variables	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Age HH	44.84	11.08	52.12	11.39	50.87	12.31	48.73	12.04
AE	4.72	1.79	5.23	1.95	6.47	2.38	5.51	2.21
DPR	0.77	0.75	0.45	0.56	0.54	0.54	0.62	0.65
Education	4.85	4.19	2.62	2.76	3.81	3.47	3.98	3.74
Family Size	5.76	2.12	6.12	2.45	7.83	2.93	6.64	2.70
Land Size	1.86	2.17	2.27	1.92	1.69	1.23	1.88	1.81
Extension	6.91	23.50	25.06	72.13	6.06	18.79	10.46	38.92
TLU	5.34	4.34	5.90	4.00	5.07	3.23	5.35	3.87
Asset of HH	11271.5	60720.4	4,723.8	9204.6	6,776.8	14754.5	8129.3	39653.7
FPCE[5]	8310.1	6769.09	5914.5	3345.0	7091.6	3308.45	7325.7	5061.2
KCAL	3505.3	1872.51	2487.3	1511.8	3060.1	1595.36	3115.2	1733.4
NFPCE	4415.7	4309.86	3886.2	3322.1	3528.1	3583.46	3958.2	3850.3
Output wheat	1443.1	1203.5	1,752.86	1475.2	1,688.8	1505.3	1597.2	1378.3
Output Teff	588.83	360.07	928.58	929.55	716.9	719.9	713.39	674.85

Source: Authors Computation, 2023

Note: DPR and AE refer to dependency ratio and adult equivalent respectively.

Moreover, the summary statistics of sample households' characteristics were computed and presented in Table 9. The average land size per household in the study area is 1.88 hectare which is relatively higher than the national average which is1.15 hectare per house hold. The average tropical livestock unit (TLU) is 5.35 per household in the study area, while the average for non-migrant household is 5.34 and for migrant sending households, the average TLU is 5.9 and 5.07 respectively for rural-urban and international migrants. This indicates the average land size, and TLU are higher for households without migrants compared to households with international migrants. In agrarian economy, agricultural land and livestock are the major sources of livelihood for rural population. That means, households with better access to farmland and own livestock are less likely to migrate than households with less access to such resource.

The average age of the household head is about49 years, with average family size and years of schooling being6.64 and 3.98, respectively. The average age of household head with migrant household member is higher compared to the average age of household head without migrant household member in the study area. This could possibly explain a relationship between age of the household head and migration in a sense that older household heads could have large family size which on the other hand encourages migration because of resource sharing among member of the household. Likewise, the average family size of households with rural-urban migrants, and households with international migrants is higher compared to households with no migrants in the study areas. This could be because households with large family size are more likely to participate in rural out-migration as predicted by push and pull factors theory of migration. According to the Lee (1966), large family size, and limited access to agricultural assets in areas of origin is the main push factor.

[5] The food and the non-food expenditures are adjusted for inflation by using the prices in2016 as the base year.

The mean dependency ratio is 0.62[6] in the study area. High dependency ratio reduces household consumption per capita and makes households more vulnerable to shocks. As can be seen from Table 9, the mean dependency ratio of households without migrants is higher compared to households with migrant members. The implication is that dependency ratio may tend to reduce participation in rural out-migration.

The mean kilocalorie per adult equivalent per day of household is3,115.2 while the mean annual food expenditure and non-food expenditure per AE are Birr 7,325.7 and 3,958.2, respectively. According to the WFP (2014), a household is considered as food insecure if kilocalorie per adult equivalent per day is lower than 2500. Against this standard, about 40% of sample households are food insecure. It is found that most of these food insecure households participate in rural out migration. For instance, about 32 percent of households without migrants are food insecure compared to 55% for households with rural-urban and 40% for households with international migrants. Moreover, the mean kilocalorie, food expenditure, non-food expenditure, and asset of households are lower for households with migrants compared to households without migrants. These results imply that poor households that are food insecure more likely participate in rural out-migration in the study area.

The mean productivity of wheat is 1,597.2 kilograms per hectare while the mean productivity of *teff* is 713.4 kilograms per hectare in the study area. Moreover, Table 9 shows that the productivity of wheat and *teff* are higher for households with migrants compared to households with no migrants. Even though there is a difference in the mean productivity of *teff* or wheat among international migrants, rural-urban migrants, and non-migrant households, the difference cannot be attributed to participation in migration without controlling for other factors using an econometric analysis.

4.1.4. Mean Comparison of Household Consumption and Productivity by Migration Status

Analysis of existing migration literature revealed that migration has an impact on the welfare and agricultural activities of migrant-sending areas via the remittance channel and the lost labor channel. Due to the downward pressure on the quality and quantity of human capital in the rural agricultural sector, the lost labor channel tends to reduce agricultural productivity. The remittance channel, on the other hand, tends to increase both short-term and long-term welfare because households spend remittances from migrants on consumption and long-term investment, such as food, clothing, education, health, housing, agricultural investment, and house equipment.

The result of mean difference test on annual food expenditure per AE and kilocalorie per AE per day among household with no migrants, rural-urban migrants, and international migrants is reported in Table 10. Since there are more than two categories of rural out-migration, the analysis of variance (ANOVA) is employed to determine the statistical significance of the mean differences for annual food expenditure and kilocalories per AE per day among the three categories. The mean annual food expenditure per AE of households with no migrants is higher than the mean annual food expenditure per AE of households with rural-urban migrants by Birr 2395.56 and the difference is found to be significant at the 1% level. In the same vein, the mean annual food expenditure per AE of households with no migrants is Birr 1218.42 higher compared to the mean

[6]Dependency ratio is calculated by dividing the number dependent member of the household by number of family members in the labor force.

annual food expenditure per AE of households with international migrants and the difference is significant at 1% level.

Table 10. Comparison of Consumption and KCAL Per AE by Status of Migration using ANOVA

		Food Expenditure Per AE (Birr)			Kilocalorie per AE		
Mean (A)	Mean (B)	Mean Difference (A-B)	Std. Error	P-value	Mean Difference (A-B)	Std. Error	P-value
Rural-Urban	No Migrants	-2395.56	683.09	0.00	-1017.98	232.00	0.00
International	No Migrants	-1218.42	574.46	0.09	-445.17	195.10	0.06
International	Rural-Urban	1177.14	686.28	0.20	572.80	233.08	0.04

Source: Authors' Computation, 2023

However, there is no significant mean difference between the mean annual food expenditure per AE of households with rural-urban migrants, and households with international migrants. The household consumption in kilocalorie per AE per day for household with no migrants is significantly higher than that of households with rural-urban migrants, and international migrants. From this descriptive result, it is difficult to attribute the lower household food consumption and kilocalorie per AE of migrant sending households to their participation in migration. This could be because poor households may participate in rural out-migration and, therefore, the direction and significance of the impact of participation in migration on the welfare of migrant-sending households can only be determined by controlling for other co-variates that effect welfare of households. This is mainly because of self-selection biases in migration where households with similar characteristics may participate in rural out-migration and this can be controlled by using switching regression model.

The statistical significance of the mean difference in wheat and teff productivity for households with and without migrant members is examined using a one-way analysis of variance (ANOVA), and the findings are summarized in Table 11. The one-way ANOVA test result reveals that households with rural-urban migrants have significantly higher teff productivity compared to households with no migrants. Though the mean productivity of *teff* for households with international migrants is higher compared to households with no migrants; it is not statistically significant as indicated in Table 11.

Table 11. Comparison of Wheat & Teff Productivity by Migration Status using ANOVA

		Teff Output Per Hectare			Wheat Output Per Hectare		
Mean (A)	Mean (B)	Mean Difference (A-B) (kg)	Std. Error	P-value	Mean Difference (A-B) (kg)	Std. Error	P-value
Rural-Urban	No Migrants	339.76	108.24	0.005	309.74	255.03	0.446
International	No Migrants	128.11	91.18	0.340	245.72	211.22	0.476
International	Rural-Urban	-211.64	107.70	0.123	-64.02	260.60	0.967

Source: Authors' Computation, 2023

Similarly, the mean productivity of wheat for households with migrant member is higher compared to households with no migrants but there is no significant mean difference in wheat productivity between households with and without migrants. However, unless other parameters are held constant, it is impossible to attribute the difference in teff productivity by migration status to

participation in rural out-migration alone. For example, if households with migrants had not participated in rural out-migration, their wheat and teff productivity could have been even higher.

4.2. Drivers of Rural Out-Migration in Oromia Region

The second goal of this research is to identify the factors that influence rural out-migration in the Oromia region. Push and pull factors, intervening factors, and personal factors are thought to influence rural out-migration. In migrant-sending rural areas, push factors include limited access to productive resources, large family size, lack of access to jobs and education, conflict, the occurrence of drought, low income, and the likes while pull factors include better availability of job opportunities, education, and public services in migrant-receiving urban areas. The intervening factors include the distance between receiving and sending areas, transportation costs, and access to information about destination areas, whereas personal factors include migrants' age, education, marital status, gender, and religion (Lee, 1966). The multinomial logit model was used in this study to identify the sources of rural-urban migration as well as international migration.

As specified in the methodology section, the multinomial endogenous switching model estimates two equations simultaneously: the participation equation and the outcome equation. The first stage regression uses the multinomial logistic model and employed to examine the drivers of rural out-migration in Oromia regional state. The dependent variable in the first stage regression is a nominal variable with three categories: non-migrant households ($J = 0$), rural-urban migrants ($J = 1$), and international migrants ($J = 2$). The base category is non-migrant households. The Wald test result is statistically significant at 1% implying that the survey data fit the model well. The estimation result of multinomial logit model mainly depends on the assumption of the independency of irrelevant alternatives (IIA). The above model was tested for this assumption and the test result as presented in the appendix revealed that the assumption of IIA is not violated.

The estimated coefficient of age of household head is negative and it is significantly related to rural-urban and international migration while the coefficient of age square is positively and significantly associated to rural-urban migration and international migration as indicated in Table 12. This means after certain age, as the age of household head increases, adult family members are more likely to participate in migration. Table 12 shows that the coefficient of head's years of schooling is positive and statistically significant in affecting participation in rural out-migration. In other words, the education level of the household head increases the likelihood of family members migrating from rural to urban areas in the study area. This could be because education may change the preference of household head in favour of public goods that are found in urban areas over the rural based traditional ways of life, and promote rural out-migration. Participation in migration also varies between female and male headed households. More specifically, female-headed rural households are more likely to participate in migration than male-headed rural households. This could probably explain that female-headed households have limited access to secondary sources of income, agricultural land, livestock, education, and trainings. They also spend more of their time on unpaid house-works. This makes female-headed households more vulnerable to rural poverty than male-headed households, and they are more likely to participate in rural out-migration. A study conducted by Tegegne and Penker (2016) on determinants of rural-urban migration in Ethiopia also found that age, education, and being female-headed households are all positively and significantly related to the likelihood of rural-urban migration.

The irrigation dummy coefficient is negative and statistically significant at a 5 percent level of significance. This could be because use of irrigation by rural households increases their farm income, build resilience to poverty and vulnerability, and which could reduce their likelihood of participating in rural out-migration. The study also revealed that family size increases the likelihood of participation in rural-out migration. Similar study is that of Wondimagegnhu and Zeleke (2017) who found that the probability of a household to engage in rural-out migration increases with family size. This suggests that family with large size may be forced to share resources like land and other agricultural assets which may not be enough to make their livelihood. Asa result, members of the family engage in rural-urban or international migration. Therefore, a large family size is one pushing factor of rural-urban and international migration in Oromia.

The result in Table 12 also revealed that being followers of Muslim religion reduces participation in rural-urban migration while it increases participation in international migration. Putting it differently, followers of Muslim religion are more likely to participate in international migration compared to followers of other religions. This indicates that religion is both a push and a pull factor in migration. More importantly, it shows that Muslim migrants are more likely to be pulled by Muslim countries in migrant-receiving destination areas (Ahsan, 2022). Agricultural assets like rural land size and number of tropical livestock units reduce household participation in migration in the study area.

Table 12. Estimation Results of the Drivers of Rural Out-Migration in Oromia Region

Multinomial Logistic Regression				Pseudo R square =33.2		
Log Pseudolikelihood= -233.8592				Wald chi2 (48) =132.181		
Number of observations: 384				Prob>chi2=0.000		
Independent Variables	Rural-Urban Migration			International Migration		
	Coefficient (Std. Error)	t-value	p-value	Coefficient (Std. Error)	t-value	p-value
Male	-1.273 (0.65)	-1.94	0.052	-1.607 (0.702)	-2.29	0.022
Age	-0.215 (0.128)	-1.69	0.092	-.323 (0.112)	-2.88	0.004
Age Square	0.003 (0.001)	2.24	0.025	0.003 (0.001)	3.15	0.002
Dependency Ratio	-0.785 (0.384)	-2.04	0.041	-1.522 (0.313)	-4.86	0.000
Education	0.26 (0.177)	1.46	0.143	.368 (0.134)	2.74	0.006
Education Square	-0.053 (0.019)	-2.76	0.006	-0.031 (0.012)	-2.59	0.010
Muslim	-0.807 (0.462)	-1.75	0.080	1.088 (0.481)	2.26	0.024
Family Size	0.264 (0.099)	2.67	0.008	0.497 (0.089)	5.58	0.000
Oromo	0.209 (0.674)	0.31	0.757	1.432 (0.831)	1.72	0.085
Land Size	-0.381 (0.121)	-3.15	0.002	-0.363 (0.148)	-2.46	0.014
Extension Visits	0.009 (0.006)	1.54	0.122	0.003 (0.006)	0.44	0.657
NFP	-0.716 (1.064)	-0.67	0.501	0.789 (0.798)	0.99	0.323

TLU	-0.017 (0.054)	-0.31	0.760	-0.12 (0.058)	-2.07	0.039
Drought	-0.615 (0.403)	-1.52	0.128	0.166 (0.352)	0.47	0.638
PSNP	-1.381 (0.78)	-1.77	0.077	-1.063 (0.547)	-1.94	0.052
Arsi	-0.279 (0.58)	-0.48	0.633	2.77 (0.565)	4.91	0.000
Jimma	1.155 (0.453)	2.55	0.011	1.697(0.551)	3.08	0.002
Irrigation Use	-1.418 (0.62)	-2.30	0.022	-0.959 (0.558)	-1.72	0.086
Plots	0.182 (0.096)	1.90	0.057	0.20(0.093)	2.15	0.032
Land Renting	0.923 (0.526)	1.76	0.079	0.163 (0.449)	0.36	0.717
Constant	3.915 (3.447)	1.14	0.256	2.571 (2.939)	0.88	0.382

Source: Own survey, 2023

Note: values in the parenthesis are standard errors

Similar finding was that of Wondimagegnhu and Zeleke (2017) who found number of tropical livestock unit that the household own reduce the probability of a household to participate in rural-urban migration in Ethiopia. Abdullah (2022) has also found that land size negatively affects rural out-migration in Bangladesh. This suggests that better access to agricultural assets such as land, livestock, and capital in rural areas have the potential to reduce the rural out-migration in Oromia region. Besides, the number of plots that the rural households own is positively and significantly related with both rural-urban and international migration, and statistically significant at 5 percent level of significance, citrus paribus. The implication is that since the livelihood of rural households primarily depends on agricultural land, limited access to agricultural land due to population pressure increase the likelihood of participation in rural-urban and international migration. Comparing the variation across zones, sample households from Jimma and Arsi are more likely to participate in international migration compared to those from North Shewa zone as indicated in Table 12. The existence of dependents in a family (indicated by DPR) reduces participation in migration in the study area. That means families with unproductive member are less likely to participate in rural out-migration mainly because of the extra responsibility that the dependents pose to the family. This finding is in agreement with a study conducted by Md.Zakir(2016) who found a negative and significant relation between dependency ratio and rural-urban migration of households.

Likewise, participation in productive safety net program also reduces participation in migration. This may be because participation in productive safety net program might build the resilience of users to poverty and food insecurity and reduce their participation in rural out-migration. More so, the findings from the KIIs and FGDs showed that limited access to agricultural land, large family size, lack of employment, and credit constraints by rural youth are the major pushing factors of rural out-migration in the study area. They added that peer pressure, brokers, presence of return migrants in the village, under age marriage, conflicts in the family, and divorce are also contributing to rural out-migration. Further, the participants in KIIs and FGDs also reported that rural youth are not interested in agricultural activities, and rural traditional life, and they rather attracted by public services in urban areas.

4.3. Impact of Rural Out-Migration on Welfare of Rural Households

The third objective of this research is to quantify the impact of rural outmigration on the welfare of migrant-sending households. According to the new economics labour migration theory, rural out-migration has an impact on migrant-sending origin areas through both the lost labour channel and the remittance channel. The welfare of migrant-sending households in the origin areas is expected to improve through the remittance channel. However, the lost labour channel may reduce the welfare of households that send migrants by lowering human capital and agricultural output in the areas of origin. The multinomial endogenous switching model was used to quantify the impact of rural-urban and international migration on the welfare of migrant-sending rural households.

Hence, the multinomial endogenous switching model was used to quantify the impact of participation in rural-urban and international migration on food expenditure, non-food expenditure, household asset and kilocalorie per adult equivalent. The estimation result is reported in Table 13. Food expenditure, non-food expenditure, asset and kilocalorie per adult equivalent are used as outcome variables in evaluating the impact of rural out-migration on the welfare of migrant-sending households using the new economics labour migration theory as a theoretical framework. The treatment variable is a nominal variable that is divided into three categories: households with no migrants, rural-urban migrants, and international migrants. The estimated values of food expenditure, non-food expenditure, asset and kilocalorie per adult equivalent of rural households who participated in rural out-migration are compared to the counterfactual values if they had not participated in rural out-migration.

Participation in international migration has a positive and significant impact on households' food expenditure, non-food expenditure, asset and kilocalorie per adult equivalent. The mean annual food expenditure per adult equivalent of households with international migrants is Birr 7,549 while the counterfactual mean annual food expenditure per adult equivalent is Birr 6,029. Moreover, the average treatment effect on treated (ATT) of food expenditure per AE is positive and significant at a 1 percent level of significance. This suggests that, on average, participation in international migration increases food expenditure of households by Birr 1520 in the study area.

Regarding non-food expenditure per AE, the average treatment effects on treated (ATT) for households with rural-urban migrants and international migrants are Birr 971 and 1527 respectively, and this difference is statistically significant. Likewise, the average treatment effects on treated (ATT) of kilocalorie and asset per adult equivalent (AE) for households with international migrants are 323 and Birr 4415, respectively. This could be because migrant-sending households may use remittances to pay for food, clothing, health care, and education. This finding implies that migration improves the well-being of migrant-sending households in rural areas of Oromia.

Table 13. Estimation Results of the Impact of Migration on Welfare of Rural Households

Outcomes	Choices	Decision to Participate in Migration		Average Treatment Effect on Treated (ATT)
		Participation	Non-participation	
		Actual	Counterfactual	
Food Expenditure	Rural-urban	6246.24	5345.59	900.65 (1137.56)
	International	7548.98	6029.12	1519.87(463.59) [a]
Non-Food Expenditure	Rural-urban	4051.47	3080.70	970.77 (527.74) [c]
	International	3926.85	2399.96	1526.89(278.65)[a]
Kilocalorie per AE	Rural-urban	3307.94	2471.01	177.31 (293.29)
	International	52.47	2984.58	323.35(177.02) b
Asset per AE	Rural-urban	4490.54	-1657.10	6147.64(2980.03) [c]
	International	7563.01	3148.29	4414.73 (1574.6) [a]
Heterogeneity Effects		$\mathbf{BH_1}$	$\mathbf{BH_0}$	**TH**
Food Expenditure	Rural-urban	-1299.88 (415.2) [a]	-3438.78 (902.42) [a]	2138.90 (871.66) [b]
	International	-1930.23 (308.1) [a]	-2755.26 (501.06) [a]	825.03 (321.24) [b]
Non-Food Expenditure	Rural-urban	813.30(303.98) [a]	-1237.483 (493.79)	2050.78 (527.67) [a]
	International	-680.37 (295.6) [b]	-1918.22 (329.50) [a]	1237.85 (298.07) [a]
Kilocalorie per AE	Rural-urban	-406.87(158.4)[a]	-680.17 (184.68)[a]	-1264.36 (242.43)[a]
	International	241.88 (148.4)[a]	-669.31(137.20) [a]	-750.78 (185.12)[a]
Asset per AE	Rural-urban	697.94(972.2)	-12491.2(3776.98)	13189.09(4125.1) [a]
	International	-4316.87(875.1) [a]	-7685.77(2743.9) [a]	3368.89 (2526.84)
Falsification Test Result:		F -statistics =1.34	Probability >F = 0.265	

Source: Authors' Computation, 2023

Standard errors are in parentheses. [a], [b], and [c] denote significance level at 1%, 5%, and 10% level.

Moreover, this finding supports the new economics labor migration theory which assumes that participation in migration promotes the welfare of migrant-sending households via the remittance channel. This theory assumes that rural households may spend remittances from migrants on food, clothing, education, health, purchases or construction of houses, purchase of agricultural inputs, and purchase of livestock. The findings from case study as indicated in Appendix 1 also supports these findings in a sense that households spend remittances on food consumption, education, health and agricultural investment in the study area. The finding of this study is in line with the findings of Brown (2020), Ajefu and Ogebe (2021), (Abdi, 2021), Thapa and Acharya (2017), Nuez and Osorio-Caballero (2021 and Addai et al. (2021) while it contradicts the findings of Bryan et al. (2014), Lagakos et al. (2018), &Alleluyanatha et al. (2021). Transitional heterogeneity is positive and significant for food expenditure, non-food expenditure, and asset per AE as indicated in Table 13. This suggests that the welfare improving effect of participation in rural-urban and international migration is higher for participant households compared to non-participant households. Lastly, the falsification test was performed, and the results show that the selected instrument (religion) is valid instrument.

The findings from KIIs and FGD also supports these findings. FGD participants highlighted that remittance-receiving households use remittances for short-term households' spending (such as food, clothing, health and education expenses), and long-term investments (such as purchase of house, cows and oxen). These investments, both short and long-terms improve household welfare either in short or long term. Moreover, On the other hand, it was stressed by the key informant's

and FGD participants that rural out-migration increases school dropout in the study area. This could be because by observing the positive impact of participation in migration from remittance-receiving households, and return migrants, junior and high school students in the village has lower aspiration to attend and complete their schooling. Besides, the return migrants who participated in case studies as presented in the appendix reported that they use remittances to start their own business, purchase of urban houses, and help their family.

4.4. Impact of Rural Out-Migration on Crop Productivity of Households

The last objective of this study is to determine the impact of rural out-migration on wheat and teff output per hectare in the study area. Migration has an impact on agricultural activities in origin areas via the remittance and lost labour channels. While the remittance channel is expected to increase agricultural production in migrant-sending areas by reducing households' liquidity constraints and risk aversion, the lost labor channel is expected to decrease agricultural productivity by lowering valuable human capital in rural areas. As a result, the net impact of migration on crop productivity is determined by how rural households use remittances, the opportunity cost, and the composition of family members who participated in migration. The multinomial endogenous switching model was still used in this study to assess the impact of rural-urban and international migration on output per hectare of wheat and teff producers in Arsi, Jimma and North Shawa zones of Oromia regional state.

To this end, the output per hectare of wheat and *teff* producers was used as dependent variables in the outcome equation whereas the participation in rural out-migration which is a nominal variable with three categories is entered as a treatment variable. The multinomial endogenous switching model quantified the impact of participation in rural out-migration by simultaneously estimating both the outcome and the participation equations and the results are presented in Table 14. As reported in Table 14, the actual mean output of wheat is 1,905 and 1,641 kilograms per hectare for households with rural-urban migrants and international migrants, respectively. But the counterfactual mean output of wheat is 1,564 and 934 kilograms per hectare for households with rural-urban migrants and international migrants respectively. Accordingly, the conditional average treatment effects on treated (ATT) of wheat for households with rural-urban migrants and international migrants are 341 and 707 kilograms per hectare. This suggests that participation in international migration significantly increases wheat output per hectare in the study area though the impact is also positive for rural-urban migration.

Similarly, the actual mean output of teff is 996 and 820 kilograms per hectare for households with rural-urban migrants and international migrants respectively. But the counterfactual mean output of teff is 494 and 563 kilograms per hectare for households with rural-urban migrants and international migrants respectively. Accordingly, the conditional average treatment effects on treated (ATT) of teff for households with rural-urban migrants and international migrants is 502 and 257 kilograms per hectare, and significant at 1 percent level. This suggests that the substitution of labour and capital between the rural agricultural sector and urban non-agricultural sectors promotes the productivity of wheat and teff producers in Oromia region. This could be because the transfer of capital in the form of remittances from urban areas to capital constrained rural areas will enhance agricultural production by lessening the credit constraints and the risk aversion level of households.

Table 14. Estimation Results of the Impact of Migration on Productivity of Wheat and Teff

Outcomes	Choices	Decision to Participate in Migration		Average Treatment Effect on Treated (ATT)
		Participation Actual	Non-participation Counterfactual	
Wheat Productivity	Rural-urban	1904.90	1563.62	341.28 (215.02) [c]
	International	1641.42	934.20	707.21 (107.29) [a]
Teff Productivity	Rural-urban	996.01	493.96	502.05 (84.92) [a]
	International	819.82	562.77	257.04 (45.68) [a]
Heterogeneity Effects		$\mathbf{BH_1}$	$\mathbf{BH_0}$	**TH**
Wheat Productivity	Rural-urban	-963.86 (305.83) [a]	166.99 (128.73)	-1130.86 (306.88)[a]
	International	-3.274 (141.93)	-462.41 (91.74)	459.13 (139.02)[a]
Teff Productivity	Rural-urban	839.19 (142.82) [a]	-96.20 (31.82) [a]	935.39 (144.92) [a]
	International	93.70 (62.14) [a]	-27.38 (28.56)[a]	121.09 (66.96)[c]
Falsification Test Result: F – statistics = 1.61			Probability > F = 0.206	

Source: Authors' Computation, 2023

Standard errors are in parentheses. [a], [b], &[c] denote significance level at 1%, 5%, and 10%.

This finding supports the credit, and risk hypotheses of the new economics labor migration theory which claim that migration increases agricultural investment and productivity by reducing the risk aversion level and the credit constraints of migrant-sending rural households. Furthermore, since households with limited land size, tropical livestock unit, fragmented land size, and large family size participated in rural out-migration in the study area as evidenced from the descriptive results, participation in rural out-migration may not necessarily lead to reduction in agricultural production via the lost labor effect. Moreover, about half of the migrants in the study area are female migrants, and the opportunity costs of female migrants to agricultural production are lower compared to male migrants since male family members are more likely to participate in agricultural activities. Yet, migration may increase output per hectare of remittance-receiving rural households through the remittance channel if rural households spend remittances from migrants on the purchase of agricultural inputs, and livestock. This result, therefore, implies that migration promotes crop productivity through the remittance channel by lessening the liquidity constraint, and increasing agricultural investment in the region.

In sum, while the human capital theory of migration considers the expected wage differential between rural areas and urban areas as the primary cause of rural out-migration, the new economics labor migration theory insists that rural out-migration is mainly caused by the inefficiency in capital and insurance markets in rural areas. Besides, the new economics labor migration theory also assumes that migration affects the welfare and production of migrant-sending areas via two channels: the lost labor channel and the remittance channel. Hence, rural outmigration is a two-handed transaction, and it gives with one hand and takes with the other hand. The impact of migration on welfare and production of migrant-sending households, therefore, depends on the relative strength of the remittance effect and the lost labor effect. However, in this study, remittances from migrants have been shown to increase agricultural investments, food expenditure, non-food expenditure, and kilocalorie per adult equivalent per day of migrant-sending households in Oromia regional state. This result, therefore, supports the new economics labor migration theory which assumes that participation in migration increases welfare of migrant-sending households.

Some previous studies have also examined the effect of rural-urban migration on agricultural production in migrant-sending rural areas and they found dichotomous results. On the one hand, studies conducted by Khanal*et al*. (2015), Imran *et al*. (2016), Goldsmith (2017), and Adaku (2019) found a negative and significant impact of rural-urban migration on agricultural production. On the other hand, studies conducted by Beyene *et al*. (2017), Odozi *et al.* (2020), and Mesfin *et al.* (2021) indicated that rural-urban migration positively and significantly impacts agricultural production. Besides, Haymanot et al. (2022) examined the impact of rural-urban migration on crop productivity using cross-sectional data and found that participation in migration promotes agricultural productivity in China.

The base heterogeneity for participants (BH_1), the base heterogeneity for non-participants (BH_0) and the transitional heterogeneity (TH) effects are computed and the results are presented in Table 14. The base heterogeneity for participants (BH_1) is the difference between the output per hectare of participants minus the output per hectare of non-participants if they would have participated. But the base heterogeneity for non-participants (BH_0) is the difference between the output per hectare of participants if they would not have participated minus the output per hectare of non-participants. Hence, positive value of TH suggests that the productivity enhancing impact of migration is higher for participants compared to non-participants whereas the negative value of TH implies that the productivity increasing impact of migration is higher for non-participants had they participated in migration compared to participants. Finally, a falsification test was conducted to assess the suitability of the instruments, and the test result indicated that the selected instruments are valid. Religion, dependency ratio and return migrants were used as exclusion restriction variables in this study.

5. CONCLUSION AND POLICY RECOMMENDATIONS

5.1. Conclusion

Rural out-migration involves both the transfer of capital in the form of remittances from migrant-receiving urban areas to migrant-sending rural areas as well as the movement of labour from rural agricultural sector to urban non-agricultural sectors. Put differently, rural outmigration is a two-handed transaction. Despite the fact that many previous studies have examined the drivers of rural out-migration and the impact of rural out-migration on migrant-receiving urban areas, there are few studies on the impact of rural out-migration on the welfare and production of migrant-sending rural areas. Hence, this study assessed the dynamics of rural out-migration, identified the determinants of rural out-migration, and quantified the impact of rural out-migration on the welfare and crop production of migrant-sending households in Oromia region using cross-sectional data from a random sample of 384 households in the year 2023. The new economics labor migration theory is used as a theoretical framework whereas the multinomial endogenous switching model is employed as an analytical model.

Between 1999 and 2021, the rate of rural unemployment increased from 1.5 to 4.5 percent while the rate of urban unemployment increased from 13.6 to 18.5 percent in Oromia regional state. Despite the high rate of urban unemployment compared to the rate of rural unemployment in the region, the proportion of migrants in the total population in Oromia region increased from 27.2 to 49.2 percent between the same period. The implication is rural out-migration in Oromia region is from rural area where job creation is easy and unemployment rate is low to urban area where job creation is difficult and unemployment rate is high. This supports the human capital theory of migration which assumes that people migrate from rural areas to urban areas despite the high rate of unemployment rate in urban areas. This theory further predicts that rural people are attracted to urban areas by the presence of various public services such as pure drinking water, electricity, road, education, and health services in addition to the availability of jobs.

The finding of the study showed that most of the international migrants directed to Saudi Arabia, and United Arab Emirate while the majority of rural-urban migrants directed to Addis Ababa and Adama in Oromia region. Besides, the Oromia region is the leading sources of international migrants whereas Amhara and SNNP regions are the major sources of rural-urban migrants in Ethiopia. The research revealed that rural households primarily spend remittances from rural-urban migrants on food, clothing, seeds and fertilizer, health, and education. However, they primarily use the money sent home by international migrants for housing, education, livestock, clothing, food, and other household expenses. As a result, while remittances from rural-urban migrants are primarily used for short-term welfare improvement or rural households' consumption expenditure, remittances from international migrants mainly used for long-term welfare improvement via asset building and agricultural investment.

Findings of the study show that households without migrants spend significantly more on food on average each year and consume significantly more calories per adult equivalent per day than households with migrant member. The implication is that international migration and rural-urban migration are both common among relatively poor and food insecure households. It was found that the main driving forces behind rural out-migration in the study areas are family sizes, limited access to land, land fragmentation, lack of irrigation, a smaller number of livestock, age of the household head, and being headed by women. Furthermore, households in the Jimma and Arsi zones are more

likely to participate in international migration than households in the North Shewa zone. Likewise, households belonging to the Oromo ethnic group and following Muslim religion are more likely to migrate compared to other ethnic groups and non-Muslim households? Number of dependents in a family and participation in productive safety net programs reduces households' participation in migration.

Participation in international migration significantly increases the annual food expenditure, non-food expenditure, and kilocalories per adult equivalent per day of rural households in the study area. The regression result of the multinomial endogenous switching model shows that participation in international migration reduces poverty and food insecurity of migrant-sending rural households in Oromia region. But participation in rural-urban migration does not improve the welfare of migrant-sending rural households, and this could be because the level of remittances from rural-urban migrants is lower compared to the level of remittances from international migrants. This finding supports the remittance hypothesis of the new economics labour migration theory which predicts that participation in rural out-migration improves the welfare of migrant-sending households by increasing income, and reducing the liquidity constraints of households. The implication is that promoting access to capital, viable non-farm employment, productivity growth, and access to public goods would improve rural households' welfare and help to capitalize the positive impact of rural out-migration in Oromia region.

Furthermore, this study investigated the impact of participation in rural-urban migration and international migration on crop productivity of migrant-sending households, and the finding showed that participation in rural-urban and international migration increased the productivity of wheat and teff producers in Oromia region. Participation in both rural-urban and international migration increase wheat productivity by 341.28 and 707.21kilograms, respectively while the productivity of teff increase by 502.05 kilograms and 257.04 kilo grams due to participation in rural urban and international migration, respectively. This finding also supports the credit and risk hypotheses of the new economics labour migration theory which contends that migration promotes agricultural investment and productivity of migrant-sending rural households by lowering the credit constraints, and the risk aversion level. The impact of migration on welfare and production of migrant-sending households, therefore, depends on the relative strength of the remittance effect and the lost labor effect. However, in this study, remittances from migrants have been shown to increase agricultural investments, food expenditure, non-food expenditure, and kilocalorie per adult equivalent per day of migrant-sending households in Oromia regional state.

In conclusion, this study found that the positive impact of participation in rural out-migration outweighs the negative impact of rural out-migration on migrant-sending rural areas. The implication is that the substitution of labour and capital between the rural agricultural sector and urban non-agricultural sectors promotes the productivity of wheat and teff producers in Oromia region. Therefore, the transfer of capital in the form of remittances from urban areas to capital constrained rural areas will enhance agricultural production by lessening the credit constraints and the risk aversion level of households. The substitution of labour and capital between rural and urban areas may promote agricultural productivity of households in origin areas due to the following reasons. First, the relatively abundant labour force in rural areas compared to urban areas lowers the opportunity cost of migrants to the migrant-sending rural areas. Second, due to the scarcity of capital in rural areas, remittances from migrants significantly affect the welfare and production of migrant-sending households by lessening the credit constraints of households. Third, about 44

percent of participants in migration are female in the study area, and this will lower the opportunity costs of migrants to the agricultural sector as female family members are less likely to participate in agricultural production. Fourth, households with large family size, small land size, and lower number of livestock participate in rural out-migration and this may not significantly reduce agricultural productivity in origin areas. Fifth, most of the rural out-migrants in the study area were students before migration, and therefore, participation in rural out-migration may not immediately lower agricultural productivity in migrant-sending areas.

5.2. Policy Recommendations

Based on the finding of the study, the following policy recommendations were suggested. For the purpose of policy action and implementations.

- Since the findings of the study support the remittance hypothesis of the new economics labor migration theory, the provision of access to capital and/or credit markets for rural youth by the regional government in collaboration with relevant financial institutions will increase the production and welfare of rural households, and reduce the pushing factors of rural out-migration in Oromia region. This is because migration due to pull factors is more beneficial to both migrant-sending and receiving areas compared to migration due to push factors. It was found in the study that remittance ease household credit and improve agricultural productivity. More specifically, promoting access to credit for the rural youth, and encouraging farmers use of weather index-based crop and livestock insurances would increase the output and welfare of migrant-sending rural areas. This by itself will reduce the economic distance between migrant-receiving urban and migrant-sending rural areas.

- The study found that rural households spend remittances from rural-urban migrants mainly on food and clothing while rural households spend remittances from international migrants on agricultural investment and food consumption. However, provision of financial literacy training for remittance-receiving households by regional government in collaboration with relevant stakeholders would capitalize the positive impact of rural out-migration in origin areas.

- To capitalize the dividend from international migration, and create job opportunities for non-migrants, the regional and the federal government should provide the return migrants, and the remittance-receiving households with investment opportunities in agricultural and non-agricultural sectors in migrant-sending origin areas.

- The provision of pre-migration training for migrants on entrepreneurship, life skills and financial literacy by the regional government and other stakeholders will enhance the competitiveness of migrant workers in the destination countries, reduces the negative impact and boost the positive impact of participation in international migration.

- The finding of the study also indicated that limited access to agricultural assets like land, and livestock are the main pushing factors of rural out-migration in Oromia region. Specifically, asset poor and food insecure households participate in rural-urban and international migration in the study area. Hence, the regional government should organize, and motivate rural youth, and provide them with agricultural land and improved technologies to promote agricultural production, and bring balanced development and

population distribution between rural and urban areas. Besides, the regional government should focus on non-farm employment creation in rural small towns via the expansion of micro and small-scale enterprises to decrease the discrepancy in welfare between migrant-sending rural areas and migrant-receiving urban areas.

- The regional and federal government should promote safe migration. For instance, raising awareness, discouraging irregular migration, easing the procedures required for migration by decentralizing the services delivery, signing bilateral agreements with destination countries and providing essential information to potential migrants about the migration process, and destination countries will increase the benefit from migration.

- To support evidence-based decision making, capitalize on the positive effects of migration, and minimize the negative effects of migration, regular migration data collection, analysis, and utilization on both internal and international migration in the region is critical for policymakers, practitioners, and researchers.

- To boost the positive impact of rural out-migration in Oromia region, government should follow the policies of diverting rural-urban migration from large primary cities to secondary and tertiary cities. This involves the decentralization of infrastructure and economic activities with a view to create new centers of growth that will be able to absorb the rural population influx. This will help to reduce the congestion of regional and national city centers by promoting industries and services in secondary and tertiary cities in rural areas. Therefore, rural-urban migration should not only result in people being relocated from their place of residence. Rather, converting small villages into townships and providing various public goods will help to capitalize on the positive impact of migration while minimizing the negative impact on migrant-sending and receiving areas. For example, the recent restructuring, merger, and creation of new cities and towns in Oromia region would promote balanced rural-urban development through enhanced rural-urban linkages, improved public services, and better population distribution.

- Promoting access to small scale irrigation would increase agricultural productivity, build resilience, and promote welfare of households in rural areas of Oromia region. Besides, since family size is the main pushing factor of rural out-migration in this study, population control via promoting family planning is also important.

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6. APPENDIX: CASE STUDIES

Case Study 1: Arsi Zone

"My name is Haji Hasan Aman, and I live in Asandabo Kebele in Arsi Robe woreda. I migrated to Saudi Arabia with friends 20 years ago via illegal route. I stayed there for more than 10 years. I decided to migrate due to limited agricultural land and low farm income. On our way, we faced number of challenges such as walking without food for days, vulnerable to physical attack from brokers, and request from brokers for additional money. After many ups and downs, we arrived at Saudi Arabia. Since I have a relative who migrated before, I got the chance to learn the language, and obtain job soon. I started sending money to my family for food consumption, purchase of oxen and cows, building of standard houses in rural area. Besides, I saved enough money, imported grain mill and planted in my village. Now, I use the income from the grain mill business to cover education, health, cloth and food expenses of my family. Therefore, my family life is now better after migration compared to the life before migration. Unless government creates viable farm and non-farm employment for youths in migrant-sending rural areas, I think rural out migration is inevitable. But if opportunities are created for youth to work in their home country, they have to work and change their life. Lastly, migrants should get different trainings before migration, and they should also follow legal route of migration"

Case Study 2: North Shewa Zone

"My name is Konjit Abebe, and I live in Fitche town. I was a college student before migration. I migrated to Saudi Arabia via formal route, and returned to Ethiopia due to health problem after my four years of stay there. I started my own business in Fitch town using the money I saved during the four years. The main challenge I faced during my four years stay is the language problem to communicate with the employer and others. My advice for non-migrants is not to migrate if they have the opportunities to work in their home countries. However, those who have no access to capital to start their business or have no job opportunities in home country, they should have to get training before migration, and follow a formal route of migration"

Case Study 3: North Shewa Zone

"I live in Abichu woreda in North Shewa zone of Oromia. I decided to migrate after completing my university education due to lack of employment. I migrated to Dubai following formal route of migration. I was hired as a house cleaner and received a monthly payment of 1000 AED, or 272.25 USD. I was sending a monthly sum of Birr 4000 for my family by saving the remaining money in my account. Recently, I returned back to Ethiopia to start my own business in dairy production in Abichu district. Non-migrants who are interested to work abroad to lessen their capital constraint should follow save migration or formal migration"

Case Study 4: Jimma Zone

"While I was a grade 6 student, a return migrant in my village showed me a lot of money, and told me that he got the money by migrating to Saudi Arabia following the illegal route. He stayed there for 5 years. After few weeks, I went to Gatira town and told the brokers my intention to migrate via the informal route. Within two weeks, I travelled from Gatira to Addis Ababa, and Addis Ababa to Dire Dawa. At Dire Dawa, I met new broker and he told me to wait for co-migrants from other localities for a week. Later, other migrants from different parts of Ethiopia joined us and we travelled 5 days to reach Somalia. From Somalia, I reached Galafi which is a border village between Ethiopia and Djibouti. After three days, we reached the seaport of Obock in Northern Djibouti which is the main corridor to Yemen. At Obock seaport, we joined new brokers and they asked us to pay 6500 Birr individually so that they will take us to Yemen through boats. I requested my brother to send me the money, and he did by selling livestock. Then, we arrived in Yemen through boat. At Yemen, the brokers also requested us to pay them an additional money of 3500 Riyals to reach Saudi Arabia. After two weeks in Yemen, I met a person who I knew in Setema, and he gave me the requested money on credit basis. Then, I reached Saudi Arabia with other 50 migrants via Cargo. I got job at a monthly pay of 1200 Riyal and worked for 4 years. One day, on my way to supermarket, police caught me, and asked to show my visa. After my two weeks stay in a prison, I was deported to Ethiopia. After returning to Ethiopia, I bought a house in urban area, financed my marriage, purchased a motor cycle, and participated in livestock trading. By now, I am giving a motor transportation services in rural areas of Setema woreda. I have no an intention to migrate, and advice non-migrants to follow save or form route of migration"