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IMPACT OF INTERNATIONAL REMITTANCE ON RURAL HOUSEHOLD ASSET BUILDING: THE CASE OF MIRAB SORO WOREDA, HADIYA ZONE, CENTRAL ETHIOPIA

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Abstract

Purpose*: The main objective of this study was to assess the impact of international remittances on rural household asset building.*

Design/Methodology/Approach: *This study was used primary household survey data collected from three major rural kebeles of Mirab Soro Woreda from Hadiya Zone, Central Ethiopia Region, and Ethiopia. Both primary and secondary sources of data were used. The collected data were analyzed by both descriptive and econometric analysis; using propensity score matching model. The total of sample households were selected from receiver of remittances and non-receivers of remittances 146 and 186 respectively.*

Findings: *The result of this study finds that international remittances substantially increase the level of asset building and decrease future rural household vulnerability. As the result revealed on average about 52.7% of recipient household's total capital asset were greater than non-recipients and recipients have more cost on children schooling than non-recipients. The household asset positively influenced by tropical livestock, saving, investment, and income and negatively influenced by farm land size housing, consumption and child education. The estimated result of ATT that remittances has brought a positive and significant impact on total capital of household asset and child education expenses. The study concluded that remittance has positive impact on rural household asset building.*

Practical Implications: *The government should develop policies that encourage the inflow of remittances; such as providing better and relatively cheap means of transferring remittance, and developing an appropriate regulatory framework and monitoring mechanism on flow of remittances.*

Originality/Value: *International remittances recipient of rural households builds more assets than non-recipient households.*

Keywords: International remittances, asset building, child education, housing, PSM and Impact.

1. Introduction

International remittances are the cash inflows coming from foreign countries as a result of foreign workers' remitting or transferring money to their home (Loto and Alao, 2016). These cash inflows have been increasing rapidly in developing countries. The history of transferring money by foreign workers to their home is very significant and cannot be overlooked as these remittances have impact on economic growth.

International migration produces both hopes and concerns for the LDCs from where international migrants originate. The revenue that migrants send home is the most visible of these remittances (Ozden and Schift, 2005). Internal remittances and external remittances were two types of income created by migrants.

Migrant remittances boost domestic savings while also improving financial intermediation (Aggrawal et al., 2006), potentially improving development prospects (Giuliano, and Ruiz, Arranz, 2005). Given that the remittances the household receives compensate for the loss of one or more members of working age leaving the household, remittances can have a positive effect on the welfare of household members left behind by increasing income, which can then lead to an increase in consumption and investments.

According to official World Bank data, around 30 million Africans travel globally each year, with demographic trends expected to significantly boost African migration rates in the next decades. Remittances have an impact on the well-being of the population in migrant-sending countries in both direct and indirect ways.A cross-country study of 71 developing countries discovered that a 10% rise in per capita official overseas remittances resulted in a 3.5 percent decrease in the proportion of persons living in poverty (Adams and Page 2005).

The significant drop in remittance flows in 2020 reflects a record $554 billion in remittances to LMICs in 2019. Despite the reduction, remittances are likely to become even more important as a source of external funding for LMICs as foreign direct investment declines (by more than 35 percent). Remittances to LMICs exceeded FDI in 2019, indicating an important milestone in measuring resource flows to poor nations.

According to the World Bank, remittances from LMICs are going to recover and increase by 5.6 percent to $470 billion in 2021. The future prospects for remittances are as uncertain as the impact of COVID-19 on the outlook for global growth and on actions to limit disease spread. Remittances have historically been counter-cyclical, with employees sending more money home during times of crisis and pain. However, this time the pandemic has impacted all countries, adding to the uncertainty (World Bank, 2020).

In terms of foreign exchange generation capability, remittances create an exceptionally significant source of foreign exchange for Ethiopia, potentially larger than export revenues. It has been a key source of income for households in most developing nations, as well as a means of managing poverty and economic crises. Migrant remittances reach recipients directly and without intermediaries, and they can use them as they consider right. International remittances boost rural and urban households' welfare and asset accumulation. Remittances are now counted as one of a country's GDP shares, with Ethiopia accounting for 0.5% of the total GDP (World Bank, 2019).

Remittances are strategically important at both the macro and micro levels. On a macro level, evidence indicates that remittances are becoming an increasingly important and relatively reliable source of foreign money for nations suffering from economic and political crises (Kapur, 2003). In comparison to other capital flows such as foreign direct investment and government development assistance, these countries determine remittances as one of the most secure and reliable means of foreign money.

Remittances have become an all-encompassing solution for disadvantaged impoverished individuals seeking to improve their livelihoods by giving them an alternative source of income. Remittances are considered to have a direct influence on the impoverished, contributing significantly more to poverty alleviation than other forms of external finance. Remittances have been seen to effect not just the well-being and capacities of the receiving households, but also the sending community as a whole (De Hass, 2007a).

Ethiopia is an interesting country to research because it is one of Sub-Saharan Africa's top ten remittance-receiving countries. According to the UN Department of Economic and Social Affairs' population division, there are around 1.3 million Ethiopian migrants abroad. Ethiopia receives 5-6 billion USD annually, primarily from the Diaspora in the United States, Europe, and the Middle East. Private person transfers, including remittances, are Ethiopia's single most important source of foreign money, accounting for 35% of imports (NBE, 2020).

1.1 Statement of the Problem

There are various arguments about the impact of remittances on economic growth. These are optimists (remittances have a positive influence on economic growth due to an increase in investment and employment) and pessimists (remittances have a negative effect on economic growth due to inflation and moral hazards caused by a decrease in labor supply) (Haas, 2007).

In contrast to these two findings, another study discovered that remittances had no substantial impact on economic growth unless institutions are taken into account, resulting in remittances having a negative and significant impact on economic growth. Remittances have been designed to be spent rather than invested in (Guha, 2013). In conclusion, multiple researches support the theory that remittances contribute to economic growth by stimulating investment, enhancing livelihoods, and alleviating poverty.

A rise in household income due to remittances is predicted to boost household asset holdings (Quisumbing, 2010). However, whether remittances stimulate investment in productive assets or whether they are mostly used for everyday consumption and housing has long been a source of argument (Acosta et al., 2007).

Due to the problem of asset and child schooling expenses, both skilled and unskilled migrants migrated to Saudi Arabia and South Africa legally and illegally, and to Middle Eastern countries legally in Mirab Soro Woreda. They traveled to this location for a variety of reasons, and they choose South Africa for its easy access to job opportunities and connections.

Previous empirical research has primarily concentrated on the influence of remittances on objective welfare statistics such as poverty, consumption, labor force participation, and household livelihood. Remittances have been shown in most research to help alleviate poverty (Adams and Page, 2005). While little emphasis has been paid to the impact of remittances on household accumulation of assets by remaining in the country or region of origin,

Despite its growing importance, the direct or indirect relationship between remittances and their influence on rural household accumulation of assets in Ethiopia has received insufficient attention. Anderson (2012) used the PSM approach to evaluate the impact of remittance on rural household welfare, specifically subjective wellbeing, in Ethiopia and discovered that households that received remittance had a superior welfare status.

Remittances will look into measures to alleviate poverty and inequality. Aredo (2005), for example, attempted to analyze migrant remittances, shocks, and poverty in urban Ethiopia at the micro level using panel data from 1994 to 2000 in seven different places. Solomon (2013) used a simple linear regression model to study the influence of remittances from abroad on the expenditure and consumption patterns of rural families, considering the fact that remittances have a positive and significant impact on consumption expenditure in Ethiopia.

This study was specifically attempt to investigate the impact of remittances from abroad on rural household buildup of assets. And hopefully solve the dearth of literature as well it provide knowledge on the impact of remittances from abroad on rural household on creation of wealth in Mirab Soro Woreda. To this end the study attempted to answer the following basic research questions:

- What are the impacts of remittances from abroad on rural household creation of wealth in recipients and non-recipients?
- How the family members sent money to their respective families?
- What are the remittance sources in the study area?
- What are the socio-economic characteristics of the respondents in the study area?

1.2 Research Objectives

The general objective of this study was to assess the impact of international remittances on rural household asset building in the study area.

1. To investigate the impact of remittances on rural household asset building.
2. To identifying the channels for transferring money to the families.
3. To investigate the distribution of international migrating networks in the study area.
4. To investigate the socio-economic characteristics of the households in the study area.

2. Literature Review

What exactly is a remittance? Remittance refers to the transfer of money and/or products to households by migrants working outside of their home nation, either in cities or abroad. Internal and international migration was both high at the start of the twenty-first century, and therefore remittances increased. These resources are one of the most important issues in the recipient countries' economic development. Remittances are the cash inflows coming from foreign countries as a result of foreign workers' remitting or transferring money to their home (Loto and Alao, 2016).

These cash inflows have been increasing rapidly in developing countries. The history of transferring money by foreign workers to their home is very significant and cannot be overlooked as these remittances have

impact on economic growth. The International Money Transfer Association produced the most generally used formal definition of remittances. According to the International Monetary Fund (IMF), "remittances are international transfers of funds sent by immigrant workers from the country where they are working to people in the country from which they have come" (IMF, 2005).

The majority of the literature defines remittances as cash or financial transfers sent by migrants who have left their home country, excluding those sent in kind. The phrase is also limited to cash transfers made by migrant workers to their families and communities back home, omitting transfers made by refugees and other migrants who do not benefit from migrant workers' legal status (Van Door, 2001; Sorensen, 2004). Remittances are funds earned by migrants overseas and sent home. It denotes a private money movement from the country of origin to the country of employment (Daianu, 2001).

The scientific literature identifies various channels through which remittances have an impact on economic growth. Remittances promote economic growth by increasing household income (Giuliani and Ruiz-Arranz, 2005).

Increasing income creates the opportunity to boost consumer spending, accumulation of assets, promotion of self-employment, and investment in small business. Moreover, emigration and remittances contribute to human capital accumulation. A positive impact of emigration on growth is more likely in developed countries, which usually have a higher ability to transfer knowledge and skills when emigrants return to the country of origin, or to divert remittances in order to create new opportunities in the private sector. A negative impact of emigration results if the developing countries of origin suffer from brain drain and start to depend on remittances (Fayissa, 2014).

There are some studies that analyze whether the level (measured as remittances-toGDP ratio) and growth of remittances are related to a higher level of economic growth (Bashir, 2020). Estimations of economic relationships in a non-remittancedependent setting model show that remittances have a positive impact on GDP growth, but these results are sensitive to the selection of explanatory variables.

At the macroeconomic level, the impact of remittances occurs within the multiplier effect through a household's consumption of goods and services; investment in human capital, which improves labor productivity; and investment in gross capital formation. Despite the positive impact of remittances, they cannot ensure long-run economic growth or solve structural economic problems, such as unstable political climate and economic policies, or corruption, which is common in developing countries (de Haas, 2007).

Some studies found that remittances influence economic growth in less developed countries because they fill the gap of foreign currency shortage (Bliss, 1989). The other reason for a positive impact is that remittances provide an alternative way to finance investments and help overcome liquidity constraints (Fayissa, 2014).

Only by ensuring the stable political and economic environment of the receiving country can remittances ensure economic growth, because this money will be used not for personal consumption, but for investment in productive activities or business. The impact of remittances on the country's economic

growth depends on the financial system and the financial market development, as well as on the specific economic conditions in the receiving country.

Remittances may affect economic growth by decreasing volatility, because remittances do not exhibit too much volatility against changes in the economy. Giuliano and Ruiz-Arranz (2005) found that remittances are typically pro-cyclical for the remittance-receiving country, while de Haas (2007) found that they are typically countercyclical.

Remittances promote additional expenditures in the country, and this influences the opportunity to invest more. Remittances are the source of foreign currency, encouraging higher savings and economic growth (Dilshad, 2013). If remittances create a higher demand than the country is able to meet, they also increase imports, which create a variety of goods and services. In this case, it worsens the prosperity of households that do not receive remittances (Karagoz, 2009).

The impact of remittances on economic growth is relatively sensitive to countryspecific conditions, through which the effects of remittances are differentiated in size and possibly in nature. The impact of remittances depends highly on public policy, controlling the flow of remittances and creating a favorable environment for the use of remittances in productive investment.

2.1 Household Asset Concepts and Definitions

Assets are easier to quantify and do not suffer from the recollection and measurement problems that hinder other well-being measures. They are a good instrument for assessing the household's stock of resources, which reflects the household's long-term welfare position. People who have more assets are less vulnerable and insecure in the face of risks, insecurity, and violence (Moser, 1998).

As a result, the relocation process and the subsequent monetary and in-kind transfers can be expected to increase the migrant household's asset stock. Remittances serve as a mechanism to acquire productive assets, which create income and savings for the household in the midst of imperfect capital markets and credit constraints (Chiodi et al., 2012; Taylor, 1999).

Remittances, for example, are said to be used to buy machinery for small-scale family businesses, livestock, and agricultural equipment for farms, and land and commercial property for new businesses (Adams, 1991; Dustman and Kirchkam, 2002; Nicholson, 2001; Taylor, 1992; Woodruff and Zenteno, 2004).

Housing and real estate, together with agricultural and commercial property, are key uses of migrant remittances (Findlay and Samha, 1986; Osili, 2004). For example, Egyptian migrant households use remittance money to replace their overcrowded and traditional mud-brick dwellings with new red-brick structures (Adams, 1991). Houses built for self-consumption improve household living standards, whereas land and property serve as reasonably safe options for households in underdeveloped financial markets to invest. This study is underpinned by the following theories:

The Developmental Pessimistic View: In the late 1960s a new viewpoint regarding remittances, migration and development emerged; the pessimistic view. The theory arose from a shift in social science towards more structural views (de Haas, 2007). Furthermore, empirical studies from that time showed

results that gave support for the pessimistic view (Taylor, 1999). This theory suggests that the net effect of migration and remittances does not foster sustainable development (Adenitis, 2010).

The brain drain is one of the aspects considered, where emigration of the educated leads to a loss that is not offset by the benefits associated with remittances. The developing countries are drained of their human capital resources when educated inhabitants emigrate.

Moreover, this theory implies that the poorest do not have enough money to emigrate because of the costs associated with emigration, such as traveling costs (de Haas, 2007). This would mean that remittances could increase the income gap in developing countries even further. Also, it is argued that remittances would not be spent on developing enhancing investment, as the optimistic view would imply.

If the aim, when remitting, is to invest in the receiving country it means that the recipients make the investment decisions on behalf of the sender. The recipient might not be as skilled as domestic financial intermediaries; therefore, the investment is less likely to be successful. Money would rather be spent on consumption or non-productive investments such as real estate and rarely in productive enterprises (Adenutsi, 2010). If the money received is spent mainly on consumption, rather than investment, this could encourage more rapid inflation in the remittance receiving developing countries.

The Developmental Optimistic View: The developmental optimistic view dominated during the 1950s and 1960s. According to this view migration leads to "NorthSouth" transfers of investment capital and means an acceleration of the labor exporting countries exposure to "liberal, rational and democratic ideas, modern knowledge and education" (Adenutsi, 2010).

The general assumption the followers of this theory make is that flows of remittances as well as experience, skills and knowledge that migrants acquire abroad will enhance development in the recipient countries (de Haas, 2007). Especially the take-off in economic sense is expected to thrive because migrants would be expected to invest great capital into enterprises in the countries of origin (de Haas, 2007).

The Neoclassical economists also put migration into a positive light. In the Neoclassical model of balanced growth, migration is a process contributing to optimal allocation of production factors, which benefit all equally, both the countries of origin and the recipients (de Haas, 2007).

In an unconstrained market environment, free labor mobility will lead to scarcity of labor, and hence the marginal productivity of labor will increase and lead to higher wages in the migrant sending countries.

Moreover, this would mean that the marginal productivity of capital would go down and capital flows are thereby expected to move in the opposite direction as migration. The core of this theory is that the developmental role of migration depends strictly on the process of factor price equalization (de Haas, 2007). However, de Haas (2007) points out that the neoclassical migration theory does not include remittances in their analysis.

The Developmental Pluralistic View: The Developmental Pluralistic View arose in the 1980s and 1990s. This theory holds the view that both above theories are too static (Adenutsi, 2010). According to this approach there are neither strictly negative nor positive outcomes of remittances in the remittance

receiving countries, the issue is more complex. There is a need for new theories regarding the multiple ways, in which remittances could affect the recipient economies, to be able to understand the complex relationship between migration and development (Taylor, 1999).

The pluralistic view aims to link causes and consequences of migration more explicitly, in which both positive and negative effects on development are possible (de Haas, 2007). They argue that because of the complexity of remittances and development, there is a need of more dynamic understanding of the relationship between them. Neither the optimistic nor the pessimistic view provides this (Adenutsi, 2010). According to this theory the fundamental question is not whether migration has a strictly negative or positive impact on development; the effects of remittances are thus context-dependent (de Haas, 2007). No overarching theory can be applied to, and explain, every outcome.

2.2 Empirical Review of Literature

The evidence suggests that remittances have a mixed and highly contextual impact on agriculture. In certain circumstances, migration and remittances encourage home farm investment and agricultural production, whilst in others, the converse is true. When family members migrate, labor availability for farm and non-farm output may initially decline, especially if households are unable to rearrange family labor endowments or lack the requisite resources to employ extra workers (Lucas 2006, 119). Labor migration to South African mines lowered crop production in the subsistence sectors in Botswana, Lesotho, Malawi, and Mozambique in the short run, but remittances have increased crop productivity and cattle accumulation over time, with the exception of Lesotho (Lucas 1987, 313-330).

It has been established in Bangladesh that, while international migration assists migrants' home-country households to enhance output and income, internal migration has no significant positive benefits on rural well-being (Mendola 2005, 131). Remittances compensate for missed work in rural China, contributing directly to household income and indirectly to crop output (de Brauw, Taylor, and Rozelle 2001, 75-101). Rural remittance-receiving households in Albania typically transfer their on-farm investment from crop to livestock production. Despite labor-force cutbacks, agricultural revenue does not appear to be declining as a result of migration, and total income is rising, owing in part to increased livestock investments. It has also been discovered that members of households with overseas migrants work significantly fewer hours.Migration has little effect on farm technical efficiency, and migrant households invest less in crop production productivityenhancing and time-saving farm innovations (Miluka et al., 2007, 1-30).

Remittances for Education and Health Care: Remittances often raise the standard of living in households. They enhance and diversify income, allowing household members to devote more money to food, health care, and sending their children to school. Opinions on the effects of migration and remittances on health and education differ. Some researchers have discovered that remittances improve the health and educational status of children from migrant households, while others emphasize that the effects of migration are not always positive and that the social and human costs for future generations are high and difficult to quantify.

Children born into international migrant households in rural Mexico were shown to be less likely to die during their first year of life and to have a greater birth weight than other children. It was also confirmed that the children's access to medical treatment had improved, especially since migration had raised their parents' and relatives' knowledge of the necessity of health care (Hildebrandt and McKenzie 2005, 257-289).

Insurance remittances: Households, on the other hand, have several methods at their disposal for smoothing out income changes caused by shocks. They can reallocate their resources over time, for example, by borrowing on formal financial markets. However, in developing nations, official risk-management institutions are often inadequate or non-existent and many people lack access to financial markets. Remittances can thus play an important role in assisting developing-country households to diversify their income sources and, as a result, can be considered as a self-insurance mechanism (Pelham and Torres, 2008).

Remittance on Capital Accumulation: International migration and remittances may help to alleviate financial and productive restrictions in rural areas. As a result, they may have a favorable impact on asset accumulation and so assist in lifting families permanently out of poverty. Yang (2008) discovers that remittance recipient households in the Philippines are more likely to start capital-intensive entrepreneurial activities such as transportation, communication, and manufacturing, which are expected to suffer the most from credit constraints. Glytsos (1993) and Giuliano and Ruiz-Arraz (2009) studied the effect of remittances on capital accumulation at the macroeconomic level, finding that remittances promote growth in countries with less developed financial systems by assisting them in overcoming liquidity constraints.

Remittance on Human Capital Investment: Adams (2005) contends that migrant households who get remittances prefer to spend more on "human capital," such as education, health, and housing, and interprets these spending decisions as a type of investment. He says that housing costs are a sort of investment for migrants while also benefiting the local economy through greater demand. This, in turn, has numerous beneficial developmental consequences, such as the creation of new jobs in the local economy for both skilled and unskilled persons.

According to Sorensen (2004), expenditures on education and health care should be viewed as an investment in the country's human capital. Today's children will be tomorrow's labor force. They further contend that simply increasing the amount of consumption by poorer households is frequently equivalent to poverty alleviation, which is a development goal in and of itself.

Remittance on Housing: Increased home investment by poor households in developing nations has the ability to reinforce the positive effects of remittances by enhancing family assets and general quality of life (McKenzie and Sasin, 2007). The contemporary influence of remittances on low-income housing is extremely obvious. Households with remittances have greater housing quality and ownership rates than those without (Kaptur, 2005; Parrado, 2004). Remittances received by these households, on the other

hand, appear to have a modest impact on housing investment, for example, in Latin America, according to Fajnzylber and Lopez (2007).

3. Research Methodology

Mirab Soro Woreda is a new Woreda in the Hadiya Zone of the Central Ethiopia Region of northwestern Ethiopia. Mirab Soro Woreda is bounded to the south by Tembaro Woreda, to the north by Hadiya zone Soro Woreda Gimibichu city administration, to the west by the Gibe River, and to the east by Hadiya zone Duna Woreda.

The Woreda is approximately 59.5 kilometers north-west of Hosanna. The Woreda is located at 7° 10'0" N and 7° 16'0" N latitudes, 37° 36'0" E and 37° 42'0" E longitudes, and the elevation ranges from 1700 to 2200 m.a.s. (CSA, 2007).

Moreover, Mirab Soro Woreda is one of Hadiya zone's 13 Woreda and 6 city administrations in SNNPRS. It contains 15 kebeles. All 15 kebeles receive international remittances. According to background information available at the Woreda chief administrative office, Mirab Soro Woreda, is one of the known areas in the Central Ethiopia region for international migration. It is also recognized for its densely populated settlements of rural dwellers and relatively fragmented land use and land owning characteristics.

The Woreda has a total population of 110,440 people, of which 53566 are women and 56874 are men, or 15.92% of the populations are urban dwellers and the remaining 84.08% are rural people. The majority of the people are Protestants. This Woreda is well-known for its coffee, ginger, and tropical fruits and vegetables, which are the area's main cash crops. Recently, ginger has been the most commercial cash crop item in this area. Coffee is farmed on small plots in close proximity to the residence alongside subsistence crops (WAO, 2023).

3.1 Research Design

This study was used cross-sectional survey design to collect both qualitative and quantitative data from primary and secondary sources. Qualitative data were collected from FGD, open ended questionnaire and In-depth interview and quantitative data were collected from close ended questionnaires. And the study was used descriptive analysis and Econometric model of analysis were discussed and interpreted from Primary and secondary source of data.

According to Orodho (2009) a descriptive survey is a method of collecting information by interviewing or administering a questionnaire to individuals. Survey design is suitable for this study due to the fact that it allowed interviewing real people directly and is useful in getting primary data.

Sampling Techniques and Sample size Determination: Hadiya Zone is one of targeted remittance receiving Zone in Central Ethiopia region, considering international migrant Zone at the time in 2023.The study was used multistage sampling procedure to select Mirab Soro Woreda from 13 rural Woreda. At the first stage, Mirab Soro were selected as a study Woreda through purposive sampling, a non- probability sampling due to financial and time resources availability is limited. Purposive sampling is used for effective

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inclusion of Mirab Soro Woreda from Hadiya Zone. In Mirab Soro Woreda there are 15 kebeles, from 15 kebeles' three kebeles were selected by giving full selection chance to all.

The population under investigation is homogenous in its socio-economic and demographic. Out of those, these 3 kebeles were selected with a procedure of simple random sampling of lottery method for the study. Those selected kebeles are Fanta, Oricha and Goritancho. Therefore, targeting specific rural households is necessary to collect data from recipients and non-recipients. The sample size was calculated by Yamane's formula (1967).

The reason for using formula is because this kind of formula is valid for survey and cross-sectional data type researchers which compose large population. Moreover, the population under investigation is homogenous in its socio-economic and demographic context and the formula enables to get manageable sample size.

Select the sample according to the formula using Yamane (1967) at 95% confidence level, 0.5 degree of variability and 5% (0.05) level of precision.

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

Where: N = people of total population size n =is number of sample size required e= the desired level of precision with the same unit of measure as the variance and is the variance and e^2 is the variance of attribute in the populations which was assumed to be (5%).

$n = \frac{1978}{1+1978(0.05)^2} = 332$

The percentage and sample to be taken from each kebele recipients and nonrecipients of the remittance has been made proportionally according to respective population size. To get the exact sample take from each category use

Stratified proportional sampling method is shown as follows:

$ni = \frac{n(Ni)}{N}$, Where: ni: is a sample from each stratum, n: is a total sample size,

Ni: is the population of each stratum and N: is total population. From 4 selected kebeles' of total population remittance recipient was 146 and non-recipient was 186 (MWAO, 2023).

Table 1. Distribution of sample households by kebeles both recipients' and nonrecipients' households in international remittance.

No.	Kebele	Total household	sample	Remittance recipients	Percent	Remit Non-recipients	Percent
1	Fanta'a	731	123	48	39.60	75	**60.40**
2	Oricha	715	120	58	46.93	62	**53.07**
3	Goritancho	532	89	40	41.80	49	**58.20**
Total		1978	332	146	23.17	186	**76.83**

Source: M. Soro Woreda Chief Administrative Office, 2023.

Probability proportional sampling (PPS) was employed to determine sample size from each Kebeles. To select Sample respondents from the three kebeles the household heads are identifying by systematic random sampling technique from the **lis**t of total households in the kebele.

Data Type and Source: Both primary and secondary source of data was used in this study. Primary data was collected through the administration of close ended questionnaires to the identified respondents. Secondary data relevant to this study was collected from publications including journals, articles, books, framework of the study.

Methods of Data Collection: The study was used different data collection methods such as open ended and close ended type of survey questionnaires, in-depth interview and Focus Group Discussion (FGD). Households' demographic and socioeconomic characteristic was collected from the sample households by using a semi structured questionnaire. The questionnaire of data was collected by interviewing the sample households from recipients and non-recipients of international remittances in the study area or selected kebeles.

The household survey was focused on household characteristics (family size, education, sex and age category, etc.), land size (own, rented and share), availability of migration, channel of transfer money, livestock and non-livestock asset ownership before and after the migration, non-farm employment and other socioeconomic factors. The values of annual remitted items compute in terms of ET Birr and TLU of sample households. Price data of different assets and crops before and after intervention is also was collected from the respective Woreda's market survey offices.

Methods of Data Analysis: Descriptive, qualitative and econometric tools were used to analyze the empirical data. These tools are outlined and discussed in the following section.

Qualitative Data Analysis: FGD data analysis were recombined the evidence that were collected during the focus group discussion by addressing the impacts of the international remittances on rural household asset building. The data were organized about the initial questions which can be answered by the focus group.

A focus group member was selected by depending on the research question and a focus group can be homogeneous on particular characteristics, or heterogeneity on variables of interest. The study was used three source of the information that is moderators' notes, memory and audio tape recording. Analysis of focus group data involves indexing, management and interpretation.

Qualitative data also occurs in the form of narrative writings commonly was gathered from interviews, survey questions, journals, recorded observations, or existing documents and among other sources. Qualitative analysis of writings used to improve the other sources of information to satisfy the principle of triangulation and increase trust in the validity of the study. Triangulation is a method was used in qualitative research that involves cross- checking multiple data sources and collection procedures to evaluate the extent to which all evidence converges.

3.2 Descriptive Analysis

Quantitative data was analyzed, edited, coded and entered in SPSS version 20 software packages. Descriptive statistics such as mean, standard deviation, percentages, t-values, frequencies, tables, pi-charts and chi square was used to summarize, interpret and conclude the results.

Econometric Model Analysis: Propensity score matching (PSM) and logit model was used which has gained the objectives of this study, like to evaluate the impact of international remittance on rural household's asset building. Now a day's PSM is popular method for impact evaluation studies in many applications of interest due to the dimensionality of the observable characteristics is high.

This matching method tries to pick an ideal comparison matching based on propensity score in which comparison group is matched with the treatment group on the basis of a set of observed characteristics. It is useful to researchers with time constraints and do not have baseline data but use a single cross-sectional data (Gerfin, 2022).

Propensity Score Matching (PSM) Method: Comperes observations and does not rely on parametric assumptions to identify impacts on study. It attempts to estimate the average impact of treatment on treated/ATT (Haile, 2008). According to Khandker et al.(2022s) impact evaluation is the act of studying whether the changes in well-being are indeed due to the intervention and not to other factors.

The main aim of international migrant was to change the life sustainability of households in addition to build asset or smooth their consumption by empowering income status. To this effect, there is a need to see whether the intervention of international remittance has significant influence on the rural household recipient or not.

However, to compare the before and after migrants difference, baseline survey was not conducted prior to the migrant of the remittance in the study area. Therefore, this study was used PSM method because PSM is the appropriate method when such kind of problem arises. Following Caliendo and Kopeinig (2022), there are some steps in implementing PSM. These are, PSM estimation, choosing matching algorithm, checking for overlap (common support), matching quality (effect) estimation and sensitivity analysis.

Propensity Score Estimation Procedure: Propensity score estimation is the first step in PSM technique. When estimating the propensity score, two choices have to be made. The first one concerns the model to be used for the estimation, and the second one the variables to be included in this model. In principle any discrete choice model can be used. Preference for logit or probit models (compared to linear probability models) derives from the well-known shortcomings of the linear probability model, especially the unlike of the functional form when the response variable is highly skewed and predictions that are outside the [0, 1] bounds of probabilities. For the binary treatment case, where we estimate the probability of recipient versus non-recipient, logit and probit models usually yield similar results (Caliendo and Kopeinig, 2005). For this study, logit model is uses to estimate propensity score.

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According to (Gujarati, 2004), in estimating the logit model, the dependent variable is recipient which takes a value of 1 if the household recipient of remittance and 0 otherwise. . The mathematical formulation of logit model is as follows; the logit model is mathematically formulated as follows:

$$P_i = \frac{e^{zi}}{1+e^{zi}} \quad (1)$$

Where,

Pi= is the probability of recipient

e = represents the base of natural logarithms (2.718…)

Zi= is a function of n-explanatory variables which is also expressed as

$\beta_\circ+\beta_1 x_1+\beta_2 x_2+\cdots\cdots+\beta_n x_n+U_1$ Zi =

$\beta_\circ+\sum \beta i xi + ui$ Zi= (2)

Where, i = 1, 2, 3……n, βo= intercept term, βi=regression coefficients to be estimated or logit parameters, Ui= a disturbance term, and Xi = pre-intervention characteristics(explanatory Variables like age, family size, level of education, land, health, house, livestock, access to credit etc.)

The probability that a household belongs to non-recipient category is then the odds ratio can be written as:

$$1-p_i = \frac{1}{1+e^{zi}} \quad (3)$$

Then the odds ratio can be written as:

$$\frac{p_i}{1-p_i} = \frac{1+e^{zi}}{1+e^{-zi}} = e^{zi} \quad (4)$$

The left hand side of equation (4) $\frac{p_i}{1-p_i}$ is simply the odd ratio in favor of receiving international remittance.

Finally, by taking the natural log of equation (4) the log of odd ratio can be written as:

$Li = Ln\left[\left(\frac{p_i}{1-p_i}\right)\right] = Zi,$

$Zi = \beta o+\beta_1 X_{i1}+ \ldots\ldots\ldots \beta_i X_n + Ui.$

Where: - x1, x2, x3……..are the explanatory variables.

Where, Li is log of the odds ratio in favor of recipient of remittance, which is not only linear in Xji but also linear in the parameters (Neupane, Sharma and Thapa, 2002; Thapa and Rattanasuteerakul, 2011).

3.4 Calculating Average Treatment Effect on Treated

Average Treatment Effect (ATE): The effect of household's participation in the international migration on a given outcome (Y) is specified as:

Ti = Yi (Di=1) – Yi (Di=0) (5)

Where Ti is treatment effect (effect due to international migration), Yi is the outcome on household i, Di is whether household i has got the treatment or not (i.e., whether a household recipient of international remittance or not).

None the less, since Yi (Di = 1) and Yi (Di = 0) cannot be observed for the same household simultaneously, estimating individual treatment effect Ti is impossible and one has to shift to estimating the average treatment effects of the population than the individual one.

Average treatment effect on treated (ATT): The most commonly used average treatment effect estimation is the average treatment effect on the treated (TATT) which is specified as:

TATT =E(T|D=1) = E [$Y_{(1)}$|D=1] - E($Y_{(0)}$|D=1) (6)

Since the counterfactual mean for those being treated [$Y_{(0)}$|D=1] is not observed, there is a need to choose proper substitute for it to estimate ATT. Though it might be thought that using the mean outcome of the untreated individuals, E [|D=1] as a substitute to the counterfactual mean for those being treated [|D=1] is possible, it is not a good idea especially in non-experimental studies.

This is because it is likely that components which determine the treatment decision also determine the outcome variable of interest. In our case, variable that determines household's recipient of international remittance could also affect household's asset. Therefore, the outcomes of individuals from treatment and comparison group would differ even in the absence of treatment leading to a selfselection bias. However, by rearranging and subtracting E [|D=1] from both sides of equation 6 ATT can be specified as:

E [$Y_{(0)}$|D=1] - E [$Y_{(0)}$|D=0] =TATT+ E [$Y_{(0)}$|D=1] –E [|D=1] (7)

In equation 6, both terms in the left hand side are observables and ATT can be identified if no self-selection bias. That is, if and only if, E [$Y_{(0)}$|D=1] –E

[$Y_{(0)}$|D=0] =0

However, this condition can be sure only in a randomized experiments (i.e., when there is no self-selection bias. Therefore, some identified assumptions must be in traduced for non-experimental studies to solve the selection problem. Basically there are two strong assumptions to solve the selection problem. These are, conditional independence assumption and common support condition.

The conditional independence assumption (CIA) requires that the outcome variable is independent of treatment conditional on the propensity score. The CIA is given as:

$Y_1 Y_0$⊥D|X, |X (8)

Where: ⊥- indicates independence

X-is a set of observable characteristics

Y0-non-and

Y1 –recipients

The implication of CIA assumption is that the selection is solely based on observable characteristics(X) and variables that influence treatment assignment and potential outcome is simultaneously observed (Bryson et al., 2002; Caliendo and Kopeinig, 2005). Hence, after adjusting or observable differences, the mean of the potential outcome is similar for D=1 and D=0. Therefore (Y_0|D=1, X) =E (Y_0|D=0, X)

Common support: Imposing a common support condition ensures that any combination of characteristics observed in the treatment group can also be observed among the control group (Brysonetal.,2002).The

detail of this assumption was presented latter on main body of thesis because the common support condition is one of the five steps of the implementation of PSM.

Based on the above two assumptions, the PSM estimator of ATT can be written as:

TATT=E [Y_1|D=0, Y_0] =E [$P_{(x)}$|D=1,] –E[|D=0, $P_{(x)}$] Y_0 $P_{(x)}$ (9) Where P(x) is the propensity score computed on the covariates the above equation shows that the PSM estimator is the mean difference in outcome over the common support, appropriately weighted by the propensity score distribution of recipients.

Matching estimators: After the estimation of propensity score, the second step in PSM is choosing among different matching estimators. In theory, several matching estimators (matching algorithm) of PSM are available. However, only the most commonly applied are discussed bellow

Nearest neighbor matching (NNM): This is the most straightforward matching estimator. The individual from the control group is chosen as a matching partner for a participant individual that is closest in terms of propensity score (Caliendo and Kopeinig, 2005). NNM can be done with or without replacement. In the case of with replacement, an untreated individual can serve more than once as a match, whereas it is considered only once in the case of without replacement.

NNM with replacement increases the average quality of matching and decreases precision of estimation while the reverse is true in the case of NN without replacement (Caliendo and Kopeinig, 2005). Nearest neighbor with replacement is preferred to without when there are big differences between treated and untreated groups to reduce the risk of bad matching.

Caliper and radius matching: Used to overcome the drawbacks of NN matching risk of bad matches when the closest neighbor is far away. Caliper matching imposes a to clearance level on the maximum propensity score distance (caliper) so that bad matches are avoided and hence the matching quality rises. In caliper matching individual from the comparison group is chosen as a matching partner for a treated individual that lies within the caliper (propensity range) and is closest in terms of propensity score (Caliendo and Kopeinig, 2005). However, caliper matching has a drawback of inability of choosing a reasonable to rate level in advance (Smith and Todd, 2005).

Radius matching: is suggested by Dehejia and Wahba (2002) as an alternative to solve the drawback of caliper matching. In radius matching, the principle is to use not only the nearest neighbor within each caliper but all of the comparison members within the caliper. The advantage of this method is that it uses only as many comparison units as available within the caliper and therefore allows for usage of extra units when good matches are not available. Hence, it shares the attractive feature of oversampling problem and avoids the risk of bad matches.

Kernel matching: Kernel matching is non-parametric matching estimators that use weighted averages of all control group members to construct the counterfactual outcome. The major advantage of this approach is the lower variance which is achieved because more information is used (Caliendo and Kopeinig, 2005).

According to Deheja and Wahba (2002), one has to follow matching criteria to select the best matching algorism in impact assessment. The final choice of the best matching algorism should be guided by three

matching criteria. Matching algorism that shows no statistical significant difference of the mean of covariates of both groups bears low pseudo-R2 and results large matched sample size should be considered as best matching algorism in impact assessment of certain intervention.

The pseudo-R2shows how best the repressors explain the probability of participation and it should be fairly low since there should not be significant difference in the distribution of both groups after matching (Caliendo and Kopeinig, 2005).

Sensitivity analysis: The final step in the implementation of PSM is checking the sensitivity of the estimated results (Caliendo and Kopeinig, 2005). Matching method is based on the CIA, which states that the evaluator should observe all variables that are simultaneously influencing the participation decision and outcome variables. However, this assumption is basically non-testable since the data are uninformative about the distribution of the untreated outcome for treated groups and vice versa (Becker and Caliendo, 2007).

The estimation of treatment effects with matching estimators is based on the selection on observables assumption. However, a hidden bias might arise if there are unobserved variables which affect assignment into treatment and the outcome variable simultaneously which nullify the CIA. This results in biased estimates of ATTs (Rosenbaum, 2002). Since matching estimators are not robust against hidden biases, it is important to test the robustness of results to departures from the identifying assumption.

However, it is impossible to estimate the magnitude of selection bias with nonexperimental data. Therefore, this problem can be addressed by sensitivity analysis (Caliendo and Kopeinig, 2005). To check the sensitivity of the estimated ATT with respect to deviation from the CIA, it is suggested that the use of Rosenbaum bounding approach is appropriate (Rosenbaum, 2002).

Diagnostic Parameters of Model: The problem of multicollinearity; is major econometric problem, that often was faced with cross-sectional data. Light of the fact, that these econometric issues likely affect the fitness of the regression results.

In this study, multicollinearity between the explanatory variables was tested by using Variance Inflation Factors (VIF) for continuous and contingency coefficient tests for categorical variables respectively. The Variance Inflation Factor (VIF) technique is widely used to detect the problem of multicollinearity among the continuous variables (Greene, 2003).

Definition and Measurement of Variables: The procedure after the selection of econometric models for estimation of hypothesis is the choice of variables that can influence the expected outcomes and participation. Once the procedure of the study and its requirements are known, it is necessary to identify the potential explanatory and dependent variables that was used in the models. A combination of socioeconomic, demographic, institutional and natural factors was used to explain household's recipients of international remittance and the outcomes in terms of household well-being indicators in their asset building.

Dependent variable: The dependent variable in this study is recipient of international remittances which, is dummy variable and have value of 1 for recipients and 0 for non-recipients. To carryout propensity score matching (PSM) between recipients and non-recipients; the application of Logit model was used.

Outcome variables: The outcome variables were examined by using different explanatory variables on asset building (total capital asset and spending on human asset). The impact on these outcome variables was described by the amount birr spend on the each household asset. The household total capital asset is the all the assets or items such as ,(mobile phone, house, TV, radio, push cart, bicycle, motorbike, car, bead, sofa chair) value of a household owns, included in total capital assets is cash, equipment, tools and homes.

Definition of explanatory variables and hypothesized relations explanatory variables: The independent variables of the model are those variables that expect to have relationship with recipient of international remittance and the outcome variables select depending on available literature. Anderson, (2009) noted that there is no a general rule on which variables should be included as covariates.

However, economic theory and empirical studies are used as a guide to know which observables (explanatory variables) affect both participation and the outcomes of interest (Bryson et al., 2002).The demographic, socioeconomic, institutional and natural factors hypothesized to affect the dependent variable and outcome variables are the following.

Gender of household Head (SEX): It is a dummy variable, refers to the sex of the household head taking a value of 1 for male and 0 for female. Various studies indicated that sex of household head has a differential effect on household asset building. This is due to women migrants are vulnerable to the exploitation of trafficking, cultural and related constraints (Carolina, 2021).

To generate better income at household level Labor supply plays a great role; so male-headed households are in a better position to pull more labor force than the female-headed ones; sex of the household head is an important determinant of asset building in the study area.

Age of the household head (AGHH): It is continuous variable and measured in year. The older house hold can have children of productive age group and encourage livelihood assets as it is working age group. It is considered that older household heads may have children of prime age who can migrate for work (Adams, 2005).

Family Size/number (FS): Is a continuous variable measured in adult equivalent which represent a group of people living in the same house, jointly sharing food and comprising one family with a common head. Household labor availability is related to household size. Household with young men, women and older household member can have low available labor force which contributes for investments, asset accumulation and well living standard (Sana and Massey (2005) and Quinn (2006)). Therefore this variable expected to have negative relationship with outcome variables.

Marital status: The marital status of household can influence the investment behavior of household positively. Marital status is a dummy variable measured economically active labor force with respect to family size.

Education level of household head (EL): Is a continuous variable which reveals that level of formal schooling completed by household. An educated household heads can have in-depth knowledge about employment opportunities and transmit information to household members (Vanwey, 2003), Barbier and Carr, 2005). Higher level of education is believed to be associated with access to information on improved technologies and higher productivity (Norris and Batie, 1987). Therefore education of household heads is expected to positive relationship with outcome variable.

Saving: Saving behavior of household head can influence investment and an asset holding of households. According to Mishra (2005) remittances increases the domestic private investment (saving). This variable is expected to have positive relationship with outcome variable.

Livestock holding: this variable helps to assess the importance of asset holding behavior of household heads in investment and living standard. This variable expected to have positive relation with outcome variable.

Consumption: This variable is very important for the households to accumulate the asset in rural areas as well as in in the urban areas. Therefore, this variable is expected to have the negative impact with the dependent variable.

Farm size (FLAND): This is continuous variable and refers to the total arable farmland that a household owns and measured in hectares. Land is one of the important economic factors that the size of land holding can help households to invest as they can sell or mortgage it. This variable is expected to have positive relationship with outcome variable.

Work status: Occupation of house hold head is categorized in two broad groups; employed and unemployed. Occupation of house hold head as unemployed has negative relationship with outcome variables.

Table 2. Table of Explanatory variables and their hypothesized sign

No.	Variables	Nature of variables	Measurement	Expected relation
1	Sex of (HHH)	Dummy	1 Male, 0 other wise	+ve
2	Age of (HHH)	Continues	Number	-ve
3	Family Size	Continues	Number	+ve
4	Work Status of (HHH)	Categorical	employ, other wise	-ve
5	Marital status	Dummy	married, other wise	+ve
6	Consumption	Continues	Birr	-ve
7	Education of (HHH)	Continues	Year of schooling	-ve
8	Land holding	Continues	Hectare	-Ve

9	Livestock holding	Continues	Birr	+Ve
10	Saving	Continues	1 save, 0 other wise	+Ve
11	Income	Continues	Number	+ve
12	Investment	Categorical	Type	-ve
13	Credit access	Continuous		+ve

Source: Authors Expectations, 2023.

4. Results and Discussion

This chapter presents the main results and discussions of the study. It is divided into two subsections. The first section provides the demographic characteristics of sample households with respect to identified explanatory variables of the study while the second subsection describes econometric estimation results, which include estimation of propensity score, common support region, matching algorisms, balancing test, treatment effect results and sensitivity analysis respectively.

Description of demographic characteristics of sample households: In this part demographic characteristics of the sampled households such as sex of the household head, age of the household head, and education level of the household head, family size of the household, marital status of household head, occupation and dependency ratio were described. There are important tools to present research results clearly and concisely. They can also help one to have a clear picture of the characteristics of sample units. Descriptive statistics such as mean, standard deviation, minimum, maximum, percentages and frequency; inferential statistics such as Chi square test (for categorical variables) and t-test (for continuous variables) were used to see relationship and mean differences between recipients and non-recipients households. The two groups of sample respondents were compared and contrasted with respect to socioeconomic and demographic characteristics so as to draw some important conclusion.

Age of the respondents: Age of the household head was one among the many determinants of migration and remittance due to its impact on the age composition of household members. The result below table 3 revealed that the average age of sampled household head was 51.4 years in the study area with standard deviation of 14.98. The maximum age observed was 44 while the minimum was 24 years.

The mean age of recipients and non-recipients were identified to be 51.466 and 50.3 with standard deviation of 14.98 and 12.0 respectively. This discovered that both groups are from economically productive age group and the mean age of recipient is greater than non-recipients. The t-test value revealed that, there was significant mean difference at 10% significance level in household head age for the two groups.

Total family size: The number of family size within a given household has its implication and impact for remittance through its effect on migration. They have impact on the number and availability of adult family members that can migrate and remit to the family left behind. The result below in Table 3, explain that the average household family size in the sample household consists of 6.26 persons. The average household size for recipient is higher than non-recipient which is 1.2380 and0.582 persons, respectively.

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The mean difference in family size between recipients and non-recipients was statistically significant at 5% level of significance. With respect to the specific characteristics of recipients and non-recipients households, household size was in determining the state of engaging on remittance activities, in such a way that a household with large family size tends to be engaged in remittance activities than that of with small numbers.

Dependency ratio: Age dependency ratio is the ratio of persons in the ages defined as dependent (under 15 and over 64 years) to persons in the ages defined as economically productive (15-64 years) in a population (CSA, 2014). The mean dependency ratio for recipients was 3.74and 1.76for non-recipients with the mean difference of 1.98. There is no significant mean difference between recipients and non-recipients towards dependency ratio.

Child education: As indicated below in table 3, the combined average of educating number of children were 1.37 with minimum of 1 and maximum of 5 and the number of educating children of recipients and non-recipients were 1.9367 and 0.82 respectively. This indicates on average remittance recipients educate more children than non-recipients.

Remittances are also known to prevent youth from having to drop out of school, from suffering malnutrition or from losing their housing. Remittances can be particularly effective in preventing rural youth from dropping out of school during household shocks or larger economic downturns. Enabling youth to stay in school has been shown to be associated with mental well-being among impoverished youth in rural Malawi (Rock et al., 2016).

Table 3. Descriptive statistics of demographic variables

Variables	**Total sample**		**Remittance recipient**		**Non-recipient**		**Minimum**	**Maximum**	**p>|t|**
	mean	St.dev	Mean	St.dev	Mean	St.dev			
Age	51.466	14.98	50.54	12.00	36.61	7.590	24	44	0.0057
Child education	1.37	1.12	1.9367	3.24418	0.82	2.836	1	5	0.002
Total family size	6.26	2.48	1.2380	0.71286	0.582	0.260	1	Above 5	0.18
Dependence ratio	0.9879	1.4227	3.74	0.4885	1.76	0.377	Medium	low	0.004

Source: Authors survey result, 2023.

Annual Saving: The average saving of both recipients and non-recipients household was reported to be 357112Birr with standard deviation of46414. The mean annual saving of recipients and non-recipients was 1.96 and 0.90 respectively. The difference was 1.06 Birr; it is statistically significant mean difference

between recipients and non-recipients at 1% significant level. It shows that the average annual saving of recipients were significantly higher than non-recipients households.

Farm land holding: Land is the most important natural capital asset for rural population. The amount of land for a given household has implication and impact for its asset building. Therefore, there was a room for respondents to tell the size of land that the household holds. As a result, which indicated below table 4, the average land owned by both recipients and non-recipients household was stated as0.48 hectare.

The maximum land holding was 2 hectare while the minimum was 0.5 hectares with standard deviation of 0.303. The mean land holding of recipients and non-recipients was 2.12and 3.28 hectare respectively. The difference was significant at 5% of significance level. In relation to land size households with minimum land size were engaged to migrate and participate in remittance activities than higher land size households; which help them to build their physical and human asset.

TLU holding: Livestock are among important assets in livelihood of rural people. They are source of income, power, organic fertilizer and food for people. The result from Table 4 below revealed that the average livestock holding was 2.73while the maximum livestock holding was 13.0 and minimum of 0.03. The average TLU holding of recipients and non-recipient was 1.27and 0.83 with mean difference of 0.44 and significant at 1% level. Households who has maximum livestock holding have high probability of accessing to remittance because they have probability of sending their children to foreign employment than those who have low livestock holding and in turn affect livelihood of those remittance recipient households.

Table 4. Descriptive statistics of socio economic variables

Variable			**Remittance recipient**		**Non-recipient**		**p>|t|**	**Minimum**	**Maximum**
	Mean	St.dev.	Mean	St.dev.	Mean	St.dev.			
Saving	357112	46414	1.96	0.305	0.90	2.357	0.000	1200	5000
TLU	2.73	1.48	2.27	0.378	0.83	0,445	0.000	0.03	13.0
Farm land	0.48	0.303	2.12	1.117	3.28	3.258	0.034	0.5	2

Source: Authors survey result, 2023.

Gender of the respondent [Sex]: The result from Table 5 below shows the sex distribution of sampled households (remittance receiver and non- receiver). In general With regards to the participation status of respondents in receiving remittance by sex, it was found that 54.1% of remittance receivers were male while 45.9% % of them were female. This may indicate that as male are leaders of house most of the time participate in the receipt of remittance more than females in male headed family.

Occupation of the respondents: The descriptive statistics result in the table 5 below showed that from total remittance recipient household respondents 63.7% were employed in own business activity and 14.0 %were non-recipients employed in own business activity. This indicated that the probability of employed

in own business activity household's family were to be migrate and participate in remittance receiving activities than of employed on their agricultural activity and in government jobs.

House of the respondent: The result from Table 5 below shows the house building materials of sampled households (remittance receiver and non- receiver). From remittance receivers sampled households, 63.58% of them were builds tin house,2.0%of them were builds stone house, 34.42% of them were builds wood house and from non -receivers of remittances 22.1% of them were builds tin house,58.0 % of them were builds wood house, 19.9 % of them were builds stone house. This show building quality of housing and improves living conditions of the household members. The quality of housing of the recipient households is also superior, with more rooms, better quality house and walls, and higher. Adams Jr. (2006) found that households receiving remittances also spend more on the margin on housing.

Marital status of respondents: The descriptive statistics result in the table 5 below revealed that from the total remittance recipient respondents 64.5% were unmarried while the remaining 31.7 % and 3.5 % were single and divorced respectively; this showed that unmarried migrants remit more than others to their families remained back in origin country which builds the total capital asset of their family.

Education level of respondents: Majority of household heads from remittance receivers are formally educated. The illiterate levels of respondents was generally unexpected given the context where the research has been conducted, being rural households. The result in Table 5 below indicated that 37.7 %of the sampled from remittance recipient was diploma level of education. Based on key informants, the coverage of schools and educational facilities were fully accessed in the rural areas. Therefore, it should have been a conclusion that households with education are the more beneficiary of remittance.

Credit access: The result in the table 5 below indicates that 60.17% of the sampled households were participated in credit access were non-recipients. Public services such as access to credit services significantly and positively affect household's asset building. Therefore, expanding rural credits services to households should be one of the main areas of interventional policy options Tesfaye G. (2018).

Investment direction of the respondents: The result below showed that from the total respondents, remittance recipient and non-recipients household respondents 36.1and 4.15% were investing in commercial activity investments respectively. This indicated that households that participate in remittance activity and recipients had high probability to invest in commercial investments (own business activity) than non-recipient households.

Gender of the respondent [Sex]: The result from Table 5 below shows the sex distribution of sampled households (remittance receiver and non- receiver). In general With regards to the participation status of respondents in receiving remittance by sex, it was found that 54.1 of remittance receivers were male while 45.9 of them were female. This may indicate that as male are leaders of house most of the time participate in the receipt of remittance more than females in male headed family.

Education level of respondents: Majority of household heads from remittance receivers are formally educated. The illiterate levels of respondents was generally no expected given the context where the research has been conducted, being rural households.

The result in the table 5 below indicated that 11.0 percent of the sampled from remittance recipient was primary level of education, 37.0% were secondary level, 37.7 percent were diploma level and 13.7% were degree level of education while from non-recipient households 3.2 % were primary level, 35.5 % were secondary level t, 37.1% were diploma level and 24.2 % were degree level of education. Based on key informants, the coverage of schools and educational facilities were fully accessed in the rural areas.

Therefore, it should lead us to a conclusion that households with education are the more beneficiary of remittance. That means most of the remittance recipient households were get best opportunity for education rather than non-remittance recipient households.

Monthly consumption expenditure level of the households: The result in Table 5 below shows that 76.0 percent of remittance recipient households were 15000(highest level) of ETB monthly income was expended on consumption, and 61.3% of non-recipient households were 5000(lowest level) level of monthly income was expended on consumption.

This reveals that remittance was the most important source of the consumptions income for recipient households. The study concluded that recently remittance was plays the great role on income generating for not only recipient families but also for the government and for the country's economic development in general.

According to Table 5, descriptive result monthly consumption expenses of the sampled households was strictly different. The recipient households 76.0 percent of the total sampled were consumes the highest level of income, i.e. they expended up to 15000 monthly. The non-recipient households 59.1 percent were expended lowest level of the income i.e., up to 5000 ETB monthly. The study should be concluded that remittance was the most driving force for the consumption income of rural households.

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Table 5. *Description of some categorical variables used under study*

Variables	Category	Recipient		Non-recipient	
		F	%	F	%
Education status	primary	16	11.0	6	3.2
	secondary	54	37.0	66	35.5
	diploma	55	37.7	69	37.1
	Degree	20	13.7	45	24.2
	Total	146		186	100.0
Investment	Agro-land	29	18.0	97	51.10
	Livestock	70	45.9	82	44.75
	Commercial	47	36.1	7	4.15
	Total	146	100	186	100
Access to credit	Yes	35	22.73	142	60.17
	No	111	77.27	94	39.83
Sex of HHS	Female	67	45.9	107	57.5
	Male	79	54.1	79	42.5
	Total	146	100.0	186	100.0
Marital status	**Married**	**49**	**31.7**	**60**	**17.80**
	Unmarried	90	64.5	120	79.66
	Divorce	7	3.5	6	2.54
	Total	146	100	186	100
Occupation	Farmer	17	11.6	90	48.4
	Gov.t employer	22	15.1	56	30.1
	Non-employed	14	9.6	14	7.5
	Merchants	93	63.7	26	14.0
	Total	146	100.0	186	100.0
House type	Wood house	53	34.42	108	58.0
	Stone house	27	19.9	12	2.9
	Tin house	66	45.68	66	39.1
	Total	146	100	186	100
Monthly Consumption	up to 5000(low)	3	2.1	58	31.2
	Up to 9000 (medium)	32	21.9	114	61.3
	upto15000(high)	111	76.0	14	7.5
	Total	146	100.0	186	100.0

Source: Authors survey result, 2023.

Total capital asset: The survey results showed that the mean total capital in Eth Birr derived from the sum of all assets of the households in current market price mean of Birr 59779.1 in per households while, the mean total capital of recipients and nonrecipients was birr 105497.5 and 29945.93 respectively. The mean difference is 75551.57 which were statistically significant at 1%.

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Children schooling expense: The sample households to annual children schooling expense on average spent ETB 14888.45 with a standard deviation of 12723.85 while this figure was 21309.3 ETB with standard deviation of 12401.04 for recipient's households and 10698.57 ETB with standard deviation of 11100.4 for non-recipients households. The statistical analysis revealed that the mean difference between the two groups in relation to children schooling expense was 10610.73; it is statistically significant at of P-value=0.000 significant level.

Table 6. Description of Outcome variables used under study

	Recipients		Non-recipients		Total	
Variable	Mean	Std. D	Mean	Std. Dev.	Mean	Std. Dev.
Total capital	105497.5	59695.58	29945.93	21535.33	59779.1	55219.62
Educexpens	21309.3	12401.04	10698.57	11100.4	14888.45	12723.85

Source: Authors survey result, 2023.

Remittance channels: The channels used for transferring remittance have always been at the center of both academic and policy debate (Yang, 2008). During household survey this issue was explored and the respondents were asked about the channels they used to receive remittance from South Africa and Middle East. The result from the table 15 below revealed that 55.5 % of the respondents receive through banks followed by 44.5 % receive through brokers.

Some additional information from FGD was also collected from the sampled household respondents about the means of selecting the channel to receive remittance sent from abroad. Consequently, migrant sending households and their remitters considered the banking procedure for transferring and receiving money to be very difficult and costly. The procedures which involve the paper work are major challenges in using the formal channel for receiving money from abroad.

Informal way of money transfer, for example: by broker transfer, appears to be one channel to transfer money from South Africa to study area. Once the money reaches to the broker from South Africa it is exchanged often in black markets and then provided to the household. The informal agents are giving the banks service without having license and/or paying the necessary tax for the income they generate. Additionally, informal money transfer channels increase the challenge of knowing the magnitude of remittance inflows and as a result misguide the activities and decisions made in this regard.

Migration network: At the table 6 below the result from descriptive statistics showed that 63.0 % of remittance senders are children's of the respondents i.e. brothers and sisters. This shows that more recipient households sent to abroad their child, than other members of the family. Migration decision is the most important social and economic decisions a human being can make. The decision to migrate can be influence by multiple push and pull factors.

In addition to these factors social network plays an important role in migration decision. Through social networks and contacts migrants learn opportunities, living conditions, and risks of the destination. Hence

social network shapes the ability and desire of individuals to leave their home. In this study we have tried to assess the social network and employment opportunities of migrants before they leave their home.

Table 7. Description of some categorical variables used under this study

Variables	Response	Frequency	Percent
Channel	Banks	81	54.7
	Brokers	65	45.3
	Total	146	100.0
Migration network	husband/ father	18	12.3
	wife/ mother	4	24.7
	Brother	88	60.3
	Sister	36	2.7
	Total	146	100

Source: Authors survey result, 2023.

5. Description of Result from Focus Group Discussion

The result from focus group discussion exposed the common significances of the remittances in the study area; some of them are enlightened briefly as follows: the receipt of remittances in the home country of emigrants has an attractive effect on emigration intentions of household members living home; this is a truly positive effect in terms of asset building to decrease the future vulnerability and risks.

International remittance recipient households have better building power of assets then no-recipient households. Asset holding such as, livestock holding (particularly oxen), housing, land size and non-livestock assets, access on own businesses activities were significantly enhanced the household's asset building and child education expenses. Therefore, this is an insight that rural household asset bulling program should be implemented to enhance households welfare and reduces poverty.

Brokers transfer remittance money to the main channel, if not the only, of transfer from Republic of South Africa to Ethiopia. Once the money reaches Addis Ababa by passenger from Republic of South Africa, representatives of the agents working in Addis Ababa receive the cash and then exchange it often in black markets. The next step in this informal transmission channel is transferring the birr in to the current accounts of the agents. The implication here is that the agents require comparatively higher fees than the amount required through formal transfer system from abroad to the migrants' home countries through non official money transfer channels.

Remittances' positive contribution in terms of filling an expenditure gap, improving consumption pattern, affording house rent, which again had important implication for students that would otherwise, give up schooling, raising a household's economic confidence and socio-economic security and very importantly proliferating new houses bought by migrant sending households.

5.1 Econometric Analysis

This section describes the result from econometric analysis. It is divided into two sections. The first section explains econometric analysis which was followed to identify the impact of remittance on household's asset building. The second section presents the estimation of propensity scores, defining common support region, choosing matching algorism, testing matching quality, calculating average treatment effect on treated and sensitivity analysis. The result of multicollinearity and model specification tests and the result of binary logit model to identify determinant factors of international remittance.

In the construction of econometric model, variables that provide the same information may be included. Therefore, here before running the regression model, the explanatory variables were checked for the existence of Multicollinearity and Heteroscedasticity. The variance Inflation Factor (VIF) tests of the variables in the model showed that there were no serious problems of multicollinearity. There was no any continuous or discrete explanatory variable dropped from the estimated model since no serious problem of multicollinearity were detected from both the VIF and contingency coefficient results.

Model specification was checked using link test. The test result showed a p- value of 0.129, which is insignificant. As can be seen from Appendix, the test failed to reject the hypothesis that the model is correctly specified.

5.2 Estimation of Propensity Scores

This part presents the results of the logistic regression model employed to estimate propensity scores for matching treatment household with control households. As specified earlier, the dependent variable in this model is binary indicating whether the household was a remittance recipient which takes a value of 1 and 0 otherwise. The model is estimated using STATA 16 software package using the propensity score matching algorithm developed by Leuven and Sianesi (2003). In the estimation process data from the two groups, namely, recipient's households and non-recipient households were pooled.

The logistic regression result below table 8 showed that from 14 of explanatory variable 8 of them are significant; those are, Age, level of education of household head, number of schooling child, investment, saving, credit, TLU, farm land size and consumption are the main determinants of household migration and being recipient of remittance in the area under consideration.

Sex of household heads: The logistic regression result shows that sex of household head determines probability of receiving international remittances positively at 5% significance level. The odds ratio indicate that, one unit increases of male headed household increases the probability of receiving international remittances by 1.860603units. The possible explanation for this relationship might be because female headed households have higher chance of being vulnerable to the exploitation of trafficking than male headed households due to several genders related factors.

Education level: The education level of the household head determines the probability of receiving international remittances negatively at 5% significance level. Odds ratio indicate that the education level

of household decreases by one level increases the probability of receiving international remittances by 1.599625 units.

This shows that unskilled headed households have higher probability of receiving international remittances than skilled headed households. Child education of household and investment were found to have negative and significant effect on the receiving international remittances at 5% level of significances.

The household' farm land size: Determine the probability of receiving remittances negatively at 5% significance level. The negative term of farm land size indicates that, households relatively with large land size were not migrate and those having small land size were migrated to the other country. The odd ratio of logistic results of farm land size increase by one hectare decreases the probability of receiving international remittances by .323593 units.

Credit access and saving has positive relationship with probability receiving remittances and is statistically significant at 1% level of significance. The odd ratio of logistic results of credit access and saving indicate that, increases a one birr of both credit and saving, keeping all other factors constant, increase the households` probability of receiving remittances by 2.95 and 1.000028 units respectively.

Looking into output of logistic regression (Table 8), it was found that the Tropical livestock units (TLU) affect households' probability of receiving international remittances positively and significantly at 1% significance level. The odds ratio of TLU indicates that, a one unit increase probability of receiving international remittances by 2.44 units.

The logistic regression output results, presents participation in the remittance receiving used to create propensity scores for the matching algorithm. The estimated model appears to perform well for our intended matching exercise. Hence, the pseudo-R2 value of 0.4001, in the logistic regression, shows that the explanatory power of the matching variables is fairly low even before matching.

Monthly consumption: The logistic regression result shows that monthly consumption income of household head determines probability of receiving international remittances positively at 5% significance level. Odds ratio indicate that monthly consumption income level of household increases by one level increases the probability of receiving international remittances by 3.3003 units.

Table 8. Logistic Estimation Result

Robust				
Participation	Odds Ratio	Std. Err.	Z	P>z
Sex	1.860603	3.32296	0.35	0.728
Age	1.492307	.1065674	5.61	0.000*
Marital status	1.109909	.4908742	0.24	0.814
Education	1.599625	1.398182	-2.21	0.591
Occupation	.6316765	.1785409	0.54	0.591
Child education	.6406537	.1111665	-2.57	0.010*
DRR2	1.001455	.0029664	0.49	0.624

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TFS2	1.070962	.0691231	1.06	0.288
Investment	.6130124	.1298602	-2.31	0.021*
Saving	1.000028	6.4606	4.27	0.000*
Credit	2.9460441	.156234	2.75	0.006*
Farm land size	.323593	.1474914	-2.48	0.013*
TLU	2.442957	.4801564	4.54	0.000*
consumption	3.3003	1010.111	4.36	0.000*
Cons	.0182715	.033184	2.20	0.028

Note: *** 1% level of significance, ** 5% level of significance, Sample size (N) =390, Pseudo R2= 0.4001, Wald chi2 (13) = 81.83, Prob > chi2 **Source:** Authors survey result, 2023.

5.3 Matching of Remittance Recipient with Non- Recipient Households

There are three tasks that should be done before matching remittance receiver households with non-receiver households. Estimating propensity score based on identified explanatory variable for all sampled households is the first task, which was done in previous section. Imposing common support condition on the propensity score distribution of households with and without remittance is the second task.

Discarding observations whose propensity score is outside common support region is the final task. Table 9 below shows the distribution of propensity score for all households. As shown in the table below, the propensity scores vary between 0.0698996 and 0.9999973 for remittance-receiver with mean score of 0.6643407. Whereas the score vary between 0.0013071 and 0.9987245 for non-receiver household with mean score of 0.209666.

The common support then lies between 0.0698996 and 0.9987245. This means that household whose propensity score less than minimum (0.0698996) and larger than maximum (0.9987245) were not considered for matching purpose.

Table 9. Distribution of estimated propensity score of households

Group	Observation	Mean	STD	Min	Max
All households	332	0.3892042	0.3221646	0.0013071	0.9999973
Remittance receiver	146	0.6643407	0.2542167	0 .069899	0.9999973
Non-receiver household	186	0.209666	0.21852	0.0013071	0.9987245

Source: Authors survey result, 2023.

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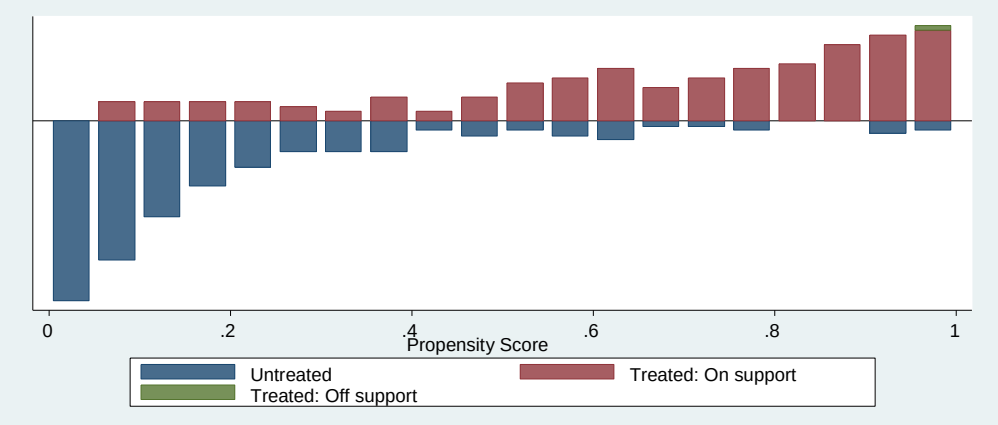
Figure 3. *Distribution of propensity score and common support region graph*



Source: *Own study.*

Checking for overlap and common support region: The propensity score ranges from 0.0013071 to 0.9999973 with a mean of 0.3892042. The propensity score for recipients in the range of 0.0698996 and 0.9999973 with a mean of 0.6643407.While the propensity score for non-recipient ranges from 0.0013071 to 0.9987245 with a mean 0.209666.

The common support and overlap region for both recipient and non-recipient group's lies between 0.0698996 and 0.9987245. Having common support and overlap region tells us the two comparison groups can make matching.

Matching Algorithm: Once the common support region identified, the next step is searching the appropriate matching algorithms. The appropriate matching algorithm should be selected by observing three criteria in the result that are: the balancing test, the reduction in standard, pseudo-R2 and matched sample size (Rosenbaum and Rubin, 1983). A matching algorithm which balances the most explanatory variables, results in a low pseudo-R2 value, reduces more standard bias and also results in large matched sample size should be selected. As we see from table 10; the kernel matching algorithm (band width 0.25) was found appropriate matching algorithm for the data presented for this study.

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As the result revealed in the below Table 11 shows that the mean difference between identified explanatory

Table 10. *Performance criteria of matching algorisms*

Matching algorisms	Performance criteria		
	Balancing test*	**Pseudo-R**	**Matched sample size**
Nearest Neighbor			
1 Neighbor	10	0.112	331
2 Neighbor	9	0.70	331
3 Neighbor	12	0.62	331
4 Neighbor	12	0.59	331
5 Neighbor	13	0.050	331
Caliper			
0.01	12	0,056	327
0.1	12	0.056	327
0.25	12	0.056	327
0.5	12	0.056	327
Caliper Radius			
0.01	13	0.047	289
0.1	13	0.049	331
0.25	13	0.045	331
0.5	10	0.112	331
Kernel			
0.01	13	0.051	275
0.1	12	0.051	330
0.25	13	0.043	330
0.5	12	0.070	330

Source: *Authors survey result , 2023 .*

variables before matching was large enough. But after matching, the remaining mean difference between explanatory variables was minimum which this is insignificant difference. It is clear that the main intention of estimating propensity score is not to get a precise prediction of selection into treatment.

Rather, to balance the distributions of relevant variables in both groups (Caliendo and Kopeinig, 2008). Therefore, the selected matching algorism, kernel of kernel band width 0.25, has created a covariate balance between remittance receiver and non-receiver households, which is important to conduct impact analysis.

Table 11. Balancing test results of covariates using caliper radius band matching estimator

Covariates	Sample	Mean		% of bias	% bias	
		Treated	Control		Reduction	pvalue
Sex	Unmatched	1.3442	1.1271	52.7		0.000
	Matched	1.3355	1.2903	11.0	79.2	0.397
Age	Unmatched	53.253	50.301	19.9		0.057
	Matched	53.164	55.54	-16.0	19.6	0.154
Marital status	Unmatched	1.9156	1.8475	18.1		0.091

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	Matched	1.9145	1.9028	3.1	82.8	0.750
Education HH	Unmatched	2.3377	2.8983	-41.3		0.000
	Matched	2.3421	2.1335	15.4	62.8	0.165
Occupation HH	Unmatched	1.9221	2.0508	-16.0		0.140
	Matched	1.9211	2.0475	-15.7	1.8	0.096
Child	Unmatched	1.4675	1.3136	13.9		0.186

Education

	Matched	1.4408	1.6343	-17.5	-25.7	0.176
DRR2	Unmatched	69.175	68.582	1.2		0.905
	Matched	69.373	73.918	-9.5	-665.6	0.377
TFS2	Unmatched	6.6104	6.0424	23.4		0.027
	Matched	6.5987	6.4701	5.3	77.4	0.620
Investment	Unmatched	2.3377	2.2034	16.0		0.122
	Matched	2.3355	2.2597	9.1	43.5	0.411
Saving	Unmatched	43108	13477	87.0		0.000
	Matched	40254	43022	-8.1	90.7	0.478
Credit	Unmatched Matched	1.7727 1.7697	1.3983 1.7639	82.0 1.3	98.4	0.000 0.904
Farmland size	Unmatched Matched	.4099 .40954	.47299 .41229	-21.3 -0.9	95.6	0.043 0.930
TLU	Unmatched Matched	4.6227 4.6288	3.1392 4.4562	110.0 12.8	88.4	0.000 0.394

Source: Authors survey result, 2023.

As indicated in Table 12 below, the value of pseudo-R2 was low. This low pseudoR2 value and the insignificant likelihood ratio test indicate that remittance receiver households and non-receiver households had the same distribution in the covariates after matching. These results indicate that the matching procedure is able to balance the characteristics in the treated and the matched comparison groups. Hence, these results can be used to assess the impact of remittance among groups of households having similar observed characteristics. This enables to compare observed outcomes for remittance recipient with those of a non-recipient group sharing a common support region.

Table 12. Chi-square test for the joint significance of variables

Sample | Ps R2 LR chi2 p>chi2 Mean Bias Med Bias B R %Var

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Unmatched	0.390	204.05	0.000	38.7	21.3	175.4*	1.09	38
Matched	0.043	18.30	0.146	9.7	9.5	49.9*	1.80	15

Note: * if B>25%, R outside [0.5; 2] **Source:** Authors survey result, 2023.

All of the above tests suggest that the matching algorithm chosen was relatively best for the data of this study. Therefore, it was possible to proceed to estimate the average treatment effect on the treated (ATT) for the sample households.

5.4 Average Treatment Effect on the Treated (ATT)

This section provides evidence as to whether or not the remittance has brought significant changes on physical and human asset of receiver households. Productive and non-productive assets of household valued in birr was considered as indicator of physical asset building of the households, Whereas, the cost that households incurred on children schooling and health services were considered as impact indicator of human asset building of households.

Impact of remittance on Total capital holding of recipient households: Respondent households were asked to report all productive and non-productive assets that were changed to total capital with its estimated market value. The estimated result of ATT in Table 13 indicates that remittance has brought positive and significant impact on total capital of household valued 77467.7264Birr which was significant at 1% statistical significance level.

The study concluded that use of remittances build better asset holding or total capital of households than non-receivers. This result is consistent with findings from Adams (1998) that investigates the effects of internal and international remittances on asset accumulation in rural Pakistan. This result is also in line with findings from Quisumbing and McGivney (2010) that assess the impact of internal migration and remittances on assets in the rural Philippines using longitudinal data and an instrumental variable approach, and finds a positive impact of remittance on housing, consumer durables and non-land assets.

Table 13. ATT estimation result of Total capital of household

Variable	Sample	Treated	Controls	Difference	S.E.	T-stat	
Total capital	Unmatched	105497.468	29945.9322	75551.5353	4253.62348	17.76	
	ATT	106082.961	28615.2341	77467.7264	5863.88571	13.21**	

Source: Authors survey result, 2023.

5.5 Sensitivity Analysis

The validity of matching estimators for impact evaluation depends on the primary assumption which is the Conditional Independence Assumption (CIA) also known as un-confoundedness (Rosenbaum and Rubin,

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1983). CIA states that the treatment assignment conditional on observed Covariates (X) is independent of the post intervention outcome.

This assumption implies that the counterfactual outcome in the treated group is the same as the observed outcomes for the control group. The CIA assumption requires that the set of explanatory variables/Covariates (X) should include all the variables that together influence the outcome with and without treatment. The need of doing sensitivity analysis is to made diagnosis on how robust the estimated ATT are with respect to possible deviations from these conditions. This is because any unobservable factor affecting treatment leads to biased ATT.

Thus, the sensitivity of matching estimates to unobserved heterogeneity was tested using the Rosenbaum bounds method (r-bound) in STATA.

Accordingly, the Rosenbaum bound (r-bounds) sensitivity analysis results by kernel matching band width (0.25) matching algorithm estimator showed that the impacts of remittance on total capital accumulation and child school expense of households is not sensitive, even up to γ =300 which is a very high value. It is significant at 1 % significance level (see table 14).

Therefore, we can conclude that the average treatment effects estimated in both total capital and child school expense of households are highly robust (insensitive) to the presence of unobserved characteristics.

Table 14. Result of sensitivity analysis using Rosenbaum bounding approach

Outcomes	e^{γ}=1	e^{γ}= 2	e^{γ}= 2.25	e^{γ}= 2.5	e^{γ}= 3
Total capital	0	2.0e-14	5.0e-13	6.7e-12	3.3e-10
Child education expense	0	1.6e-14	4.2e-13	5.8e-12	2.9e-10

Source: Own survey computation result (2023).

6. Conclusions

Remittance is a common and viable asset accumulation strategy for many rural households. By following this strategy, one or several members was leave the original household, get external employment, and send remittances which can contribute to livelihood security by giving the household an extra source of income to meet their basic needs.

When asking the locals why they receive remittances, a few explanatory factors stand out. First of all they emphasize the obligations, responsibility, indebtedness and gratefulness that children have to show towards their parents as it is by and large migrated children who are sending money to their parents. Many also point to poverty as one of the reasons for receiving remittances.

The study applied a semi-experimental approach called propensity score matching to evaluate the impact of remittance earnings on various socio-economic dimensions of migrant households. Four kebeles were randomly chosen in the Woreda and a survey was conducted in 332 households both from international remittances recipient households (treatment group) and international remittances non- recipient households (control group).

The survey administered the questionnaire that included a number of socioeconomic aspects of households, including total capital accumulation, children's education expense, transfer channel of remittances, networks of migration and others. The objective of this study was to find out the impact of international remittance on total capital asset accumulation and child education expense of rural households in this study area.

The empirical analysis was conducted by using propensity score matching techniques and the logistic regression to capture the marginal impact of international remittance on household total capital asset accumulation, child education expense and used descriptive statistics to identify the pattern and remittance sending channels of senders to households. These results give some signal of a productive use of remittances, which is asset accumulation and human capital formation.

Availability of remittances income has helped to increase investments in assets (specifically in the purchase of land and house renovation or construction. Remittance recipient households are largely involved in using the remittance for the purchase of land and construction of house. The changes in asset stocks among households receiving international remittances were found to be substantially different from those among the non-recipients of international remittances.

Rural recipients of international remittances acquire much more assets, including productive assets, compared with the non-recipient rural households. In terms of the impact of remittances on marginal income and spending behavior we did find a very significant role played by remittances and we concluded for a different consumption patterns for household with different remittances status in study area.

This last argument is supported by Adams et al. (2008a) who explain why they find different results in Ghana and Guatemala: low income-countries perhaps value income from remittances just as wage income but it could be possible that in the long run - after the household is able to provide a minimum level of satisfaction in the basic commodities - the role and perception of remittances change.

The overall conclusion is that remittances in Mirab Soro Woreda functions quite similarly to how a social wellbeing system functions in other settings, where households which are poorer, headed by older members, and with less education receive remittances regularly so that they can enjoy a higher income and improved food security than they would otherwise have had. In sum, the results of survey and key informant interview proved remittances' positive role in asset accumulation and child education of migrant-sending households at home.

This study also found that remittances play a pivotal role in securing asset accumulation and educational possibilities for migrant's children and contribute social sustainability of the sending household by enabling better life perspective for the children in the future.

After matching recipient of international remittances with non-recipients on the basis of some socioeconomic, demographic and other variables, the study found out that the level of total capital asset, and annual education expense of the international remittances recipient; in average > 10000 birr 52.7% of recipient households total capital asset were greater than non-recipients and recipients have more cost on

children schooling than non-recipients. International remittance recipients spend on average > 10000 Birr (52.7%) per year on children schooling than non-recipients. This difference would suggest that international migration is effective at increasing on total capital asset building and child education expense of recipient households.

6.1 Recommendations

Based on the findings of this study, the following points were recommended:

A descriptive statistic result described that remit agents and brokers had been one of the main channels, from the respondents about 54.7% of recipients they are using to receive their money from abroad by using banks and 45.3% are receiving their money by using brokers. In this situation, the strong corrective measures are necessary to discourage the operation of such informal transfer channel businesses. Also, it is vital of increasing networking of money transfer agencies to include many parts of the world where the money is mostly coming from.

In the study area people migrate towards abroad for foreign employment were mostly low-skilled workers, which raise concern for the policymakers, that sending low-skilled workers abroad do not benefit both the migrant-sending households and the country in general. Also these create less attention on education interest of the children's this is leads to the existence of high illiteracy rate in study area particularly and country level in generally.

The advantages of those successful migrants are higher in international remittance sending and building assets in the study area. The Ethiopian government should have put some legal foundation that supports formal transfer of migration network through employment agencies and facilitate legal emigration.

The impact analysis result revealed that, international remittance income has a positive and statistically significant impact on household's total capital asset accumulation and child school expense. Thus, it needed more emphasis to increase inflow of international remittance through investment on human capital, total capital asset and having bilateral relationship with foreign countries.

Lastly, the investigation recommends that concerned body mainly the government should give due consideration to the flow of international remittances as it can be used as multiplier effect in economic growth in Ethiopia. That means the government should develop policies that encourage the inflow of remittances; such as providing better and relatively cheap means of transferring remittance, and developing an appropriate regulatory framework and monitoring mechanism of flow of remittances.

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