

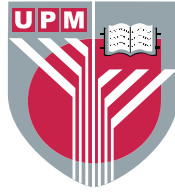


**UNIVERSITI PUTRA MALAYSIA**

***EFFECTS OF NON-FARM ENTERPRISE DIVERSIFICATION ON THE  
ECONOMIC WELL-BEING OF RURAL HOUSEHOLDS IN ETHIOPIA***

**PRECIOUS MAKHOSAZANA TSHABALALA**

**IPTSM 2022 3**



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UNIVERSITI PUTRA MALAYSIA  
BERILMU BERBAKTI

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ECONOMIC WELL-BEING OF RURAL HOUSEHOLDS IN ETHIOPIA**

By

**PRECIOUS MAKHOSAZANA TSHABALALA**

**Thesis Submitted to the School of Graduate Studies, Universiti Putra  
Malaysia, in Fulfilment of the Requirements for the Degree of Doctor of  
Philosophy**

**September 2021**

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## DEDICATION

This thesis is dedicated to my beloved parents Thembinkosi Tshabalala and Sitabiso Tshabalala.



Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfillment of the requirement for the degree of Doctor of Philosophy

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**September 2021**

**Chairperson : Professor Shaufique Fahmi bin Ahmad Sidique, PhD**  
**Institute : Tropical Agriculture and Food Security**

This thesis investigates an important concern in Ethiopia, that of economic well-being and whether non-farm enterprise income can be an instrument in achieving it. In this context, economic wellbeing is presented by the distribution of income and food security. Non-farm enterprises in this study are defined as all rural businesses that exclude farming. The first objective of this study analyzes the determining factors for running a non-farm enterprise. To cater for the censoring nature of participating in non-farm enterprise activities, a panel data double-hurdle model is used to a sample of 3594 Ethiopian rural households between the period 2011 and 2016. The empirical results show that the age of household head, household size, distance to the market, social capital and access to credit are determinants for owning one or more non-farm enterprises. The level of income from these enterprises is determined by age and education level of the household head, household size, agricultural equipment, distance to markets and access to credit. This suggests that the decision to be self-employed is dependent on both household and institutional characteristics. Therefore, in order to improve the rates of participation, the Ethiopian government should put in place policies that aggressively tackle the lack of credit institutions and market institutions in rural areas as well as youth empowerment programs. Using the Gini decomposition and income simulation, Chapter 4 suggests that non-farm enterprise income is egalitarian and favours the poor in periods of drought. The third objective sought to explore the pathways to food security. Using fuzzy logic, the empirical results confirm that non-farm enterprise income is one of the important factors required to eliminate chronic food insecurity. The results contend that non-farm enterprises are an important source of income and therefore have a potential to ensure the economic wellbeing needs of rural households are met. This suggests that in order for the country to meet its food security goals, and close the income inequality gap, policies that are currently heavily concentrated on agriculture could be expanded to incorporate non-farm enterprises.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia  
sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

**KESAN KEPELBAGAIAN PERUSAHAAN BUKAN LADANG TERHADAP  
TERHADAP KESEJAHTERAAN EKONOMI ISI RUMAH LUAR BANDAR DI  
ETHIOPIA**

Oleh

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Tesis ini mengkaji tentang kepentingan yang membimbangkan di Ethiopia, iaitu kesejahteraan ekonomi dan sama ada pendapatan perusahaan bukan ladang boleh menjadi instrumen dalam mencapainya. Dalam konteks ini, kesejahteraan ekonomi merujuk kepada pengagihan pendapatan dan keselamatan makanan. Perusahaan bukan ladang dalam kajian ini pula, ditakrifkan sebagai semua jenis perniagaan luar bandar kecuali pertanian. Objektif pertama kajian ini adalah menganalisis faktor penentu untuk menjalankan perusahaan bukan ladang. Untuk menapis penglibatan dalam aktiviti perusahaan bukan ladang, model data panel *Double-Hurdle* digunakan kepada 3594 sampel isi rumah luar bandar Ethiopia antara tempoh 2011 dan 2016. Keputusan empirikal menunjukkan bahawa umur kepala isi rumah, saiz isi rumah, jarak ke pasaran, modal sosial dan akses kepada kredit adalah penentu untuk memiliki satu atau lebih perusahaan bukan ladang. Tahap pendapatan dari perusahaan-perusahaan ini ditentukan oleh peringkat umur dan pendidikan kepala isi rumah, saiz isi rumah, peralatan pertanian, jarak ke pasar dan akses kepada kredit. Ini menunjukkan bahawa keputusan untuk bekerja sendiri bergantung kepada ciri-ciri isi rumah dan institusi. Oleh itu, untuk memperbaiki kadar penglibatan penduduk, kerajaan Ethiopia harus meletakkan dasar yang agresif bagi menangani kekurangan institusi kredit dan institusi pasaran di kawasan luar bandar serta program memperkasakan belia. Kajian menggunakan penguraian Gini dan simulasi pendapatan, Bab 4 menunjukkan bahawa pendapatan perusahaan bukan ladang adalah egalitarian dan kemudahan kepada orang miskin dalam tempoh kemarau. Objektif ketiga bertujuan untuk mencari jalan bagi mencapai keselamatan makanan. Menggunakan logik *Fuzzy*, hasil empirikal mengesahkan bahawa pendapatan perusahaan bukan ladang adalah salah satu faktor penting yang diperlukan untuk menghapuskan ketidakstabilan keselamatan makanan yang kronik. Hasil kajian berpendapat bahawa perusahaan bukan ladang adalah sumber pendapatan yang penting serta berpotensi untuk memastikan

keperluan kesejahteraan ekonomi isi rumah luar bandar dapat dipenuhi. Ini menunjukkan bahawa untuk sesebuah negara memenuhi matlamat pembangunannya, keselamatan makanan dan dasar ketidaksamaan pendapatan yang kini banyak tertumpu kepada pertanian dapat diperluaskan kepada perusahaan bukan ladang.



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Central to the completion of this PhD is the support I received from the Organization for Women in Science for the Developing world (OWSD) and the Swedish International Development Cooperation Agency (Sida). I would like to extend my heartfelt gratitude to all the staff that worked tirelessly to ensure that I am supported financially and able to present my papers at international conferences.

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This study would not have been possible without the valuable assistance I received from several individuals. Firstly, I would like to mention my father Thembinkosi Tshabalala and my mother Sitabiso Tshabalala who were ready to give me words of encouragement and moral support whenever I needed it. I am also thankful to my sisters and brother for the love, laughs and banter that kept me going. Many thanks to my uncle Thulani Tshabalala and friends who took time to review my writing and give me constructive feedback. It is with pleasure that I acknowledge my fellow PhD students at UPM with whom I had academic and social discussions that developed me as a person in this PhD process.



This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Doctor of Philosophy. The members of the Supervisory Committee were as follows:

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## Declaration by Members of Supervisory Committee

This is to confirm that:

- the research conducted and the writing of this thesis was under our supervision;
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## LIST OF ABBREVIATIONS

- NFE Non-farm enterprises  
PNSP Productive Safety Nets Programme



# CHAPTER 1

## INTRODUCTION

### 1.1 Background of study

Ethiopia is one of the fastest growing economies in Africa. It was characterized by a strong, broad-based average growth of 10.5 percent a year from 2005/06 to 2015/16, compared to a regional average of 5.4 percent (World Bank, 2013). The country has made considerable progress in reducing its poverty rate from 56 percent in the year 2000, to 33 percent by 2011 (World Bank Group, 2015). According to World Bank (2020) this poverty reduction and economic growth was confined to urban areas, whereas rural areas did not experience any household consumption growth.

As shown in Table 1.1 below, Ethiopia is a largely populated country and much of this is concentrated in rural areas. Agriculture is the cornerstone of the economy, particularly in rural areas. It is responsible for economic growth and food security. The sector is predominantly driven by traditional subsistence-oriented farming, on fragmented highly degraded land. Given that the country is faced with constant droughts and 67 percent of the total land is drylands, it can be said that agriculture is not a reliable source of livelihood (Steiner & Atterton, 2015).

Additionally, rural areas are faced with rapid population growth as shown in Table 1.1 below. These factors coupled with low technology adoption, low labour productivity growth result in households dependent on farming activities being highly poverty elastic.

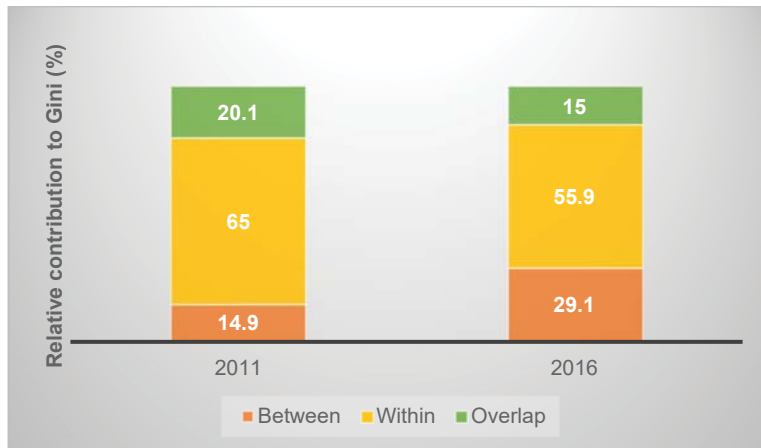
Table 1.1 also shows that although the gross national income (GNI) per capita has been showing an upward trend in the 4 periods, human development remains low in the country. The GNI is still less than half of what the regional average is, and sub-Saharan Africa is already considered poor.

**Table 1.1: Social indicators in Ethiopia**

	<b>Ave 2001-05</b>	<b>2006-2010</b>	<b>2011-2015</b>	<b>2016-2020</b>
Total population (millions)	72.03	82.66	95.44	109.25
Rural population (% of total population)	84.69	83.45	81.42	79.55
Rural population growth	2.62	2.37	2.29	2.05
Agriculture (% of GDP)	43.75	47.56	39.82	36.72
GNI per capita (US\$)	130	280	484	790
GNI/capita SSA	595	115.68	1694	1522
Poverty rates	95.80	93.60	90.20	

[Adapted from: World Bank, Statista and Macrotrends]



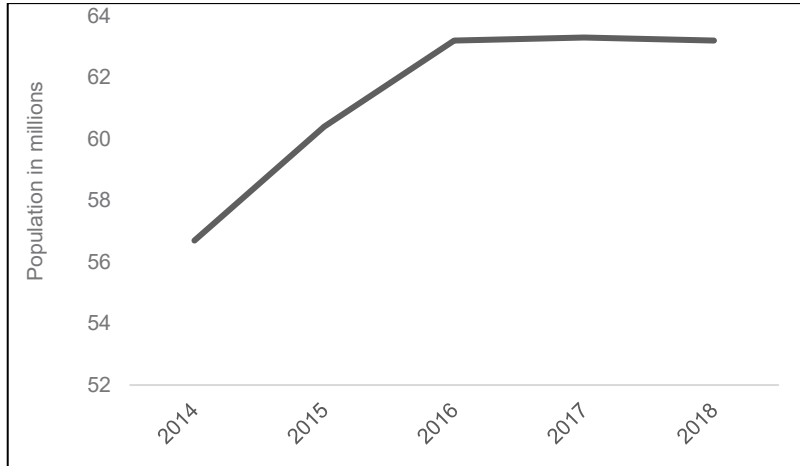


**Figure 1.1: Inequality in Ethiopia (Gini)**

[Adapted from World Bank (2020)]

The poorest 15 percent of the population who happen to live in rural areas did not experience any real consumption growth between the years 2011 and 2016 (World Bank, 2020). Figure 1.1 above shows that the share of overall inequality that can be explained by the disparities in welfare between the urban and rural areas increased from 14.9 to 29.1 percent. Urban economic growth means that the poor population is largely concentrated in rural areas. In this same period, income inequality slightly grew and the Gini coefficient increased from 0.30 to 0.33.

Food insecurity remains a major challenge in Ethiopia. The below average crop production rates, limited agricultural technological progress and poor climatic conditions mean that the highly agrarian population is unable to meet own consumption needs from agricultural production. Figure 1.2 shows that the number of moderately to severely food insecure people has been growing as indicated by the increase from 56.7 million to 63.2 million between 2014 and 2018. An estimated 92 percent of these were rural inhabitants (www.ophi.org.uk, 2017).



**Figure 1.2: Number of moderately to severely food insecure Ethiopians in millions**

[Adapted from Global Hunger Index - Ethiopia (2021)]

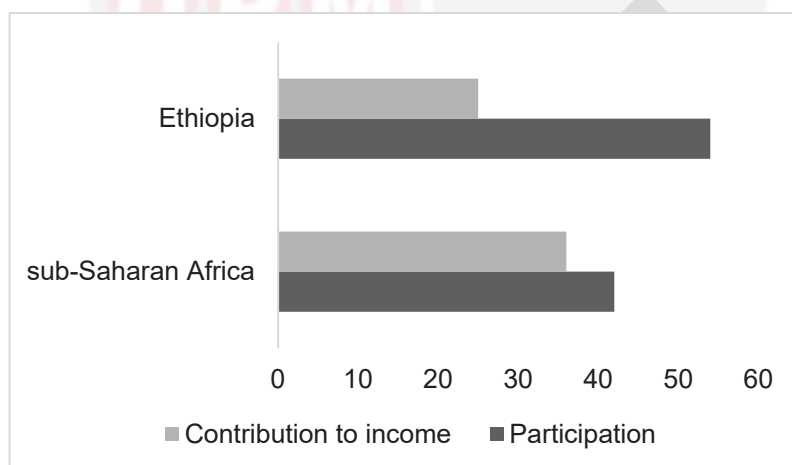
In order to cope with these challenges, rural non-farm income diversification is increasingly becoming important in the rural economy. Rural non-farm activities include all rural economic activities outside agriculture and agricultural wage employment. These include self-employment, such as, milling, operating a small handicraft enterprise, selling local food and drinks, and wage employment (Escobal, 2001). These activities hardly derive income outside the immediate rural context (Lanjouw & Lanjouw, 2001). Most of the activities come about in the processing of agricultural and other primary products as well as trade, and their growth is dependent on other rural activities (Davis, 2004).

At national level, 34 percent of households are involved in non-farm activities (Komikouma, Tnsue, & Kaiyu, 2021). While more than three quarters of rural households participate in non-farm activities (Demissie & Legesse, 2013). Komikouma et al. (2021) established that 29 percent of households ran rural non-farm enterprises. Between 1994 and 2009 the share of non-farm income in total household income ranged between 14 and 27 percent (Prowse, 2015). By 2015 this figure had grown to 42 percent and at least three percent of rural households were solely dependent on non-farm income (Eshetu & Mekonnen, 2016). This is indicative of the growing importance of the sector in the rural economy.

Although these activities are considered to be outside agriculture, some are derived from agricultural activities. A lack of access to agricultural inputs will pull households to diversify their income (Nagler & Naudé, 2017). When households are endowed with labor but lack inputs such as land, they are forced to redistribute their labor into non-farm activities. On the other hand, depending on the proximity of urban markets, gaps in input markets create opportunities for the emergence of enterprises that will supply agricultural

inputs at lower transaction costs. Conversely, higher productivity of agricultural activities will push households into the small scale agro-processing industry, given that these are subsistence farmers (Barrett, Reardon, & Webb, 2001).

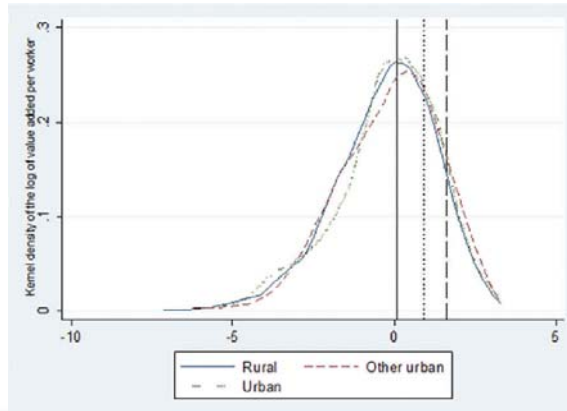
Self-employment in business, are also known as non-farm enterprises (NFE). Most of these enterprises are survivalist microbusinesses and tend to employ fewer than 10 workers. The success of rural industrialization in China, the relative failure of previous industrialisation oriented development strategies and the limited labour-intensive capacity of capacity of agricultural intensification saw the advent of rural non-farm enterprise in Africa (Kirsten, 1995). Nonfarm enterprises are run by 42% of rural families in Africa, and they contribute between 8% (Malawi) and 36% (Niger) of average family income (Nagler & Naudé, 2014).



**Figure 1.3: Households operating NFEs and the contribution to household income (in percentage) between 2008 and 2011**

[Adapted from Nagler and Naudé (2017); World Bank Group (2015)]

Figure 1.3 above shows that operating a non-farm enterprise is common practice in Africa and Ethiopia in particular. More than half of households run non-farm enterprises in Ethiopia, and they reported that NFEs do not only contribute to total household income, but they also play a major role in household welfare. In agricultural terms, it is estimated that NFE income is equivalent to earnings received from one sixth of a hectare of land (Kudama, 2015). In Mauritania, income from non-farm activities is linked to a 3.6 percent decrease in poverty intensity and a reduction in poverty severity of 1.6 percent (Ba, Anwar, & Mughal, 2021).



**Figure 1.4: Labour productivity of NFEs**  
 [Adapted from Diao, Magalhaes, and Mcmillan (2018)]

The kernel densities of the log of value added by labour demonstrates the productive heterogeneity, while the vertical lines represent the productivity of microenterprises in rural, urban and small towns respectively. The kernel densities show that the extent of heterogeneity in terms of productivity does not vary significantly according to location. Rural non-farm enterprises are also argued to be more productive than the agricultural sector and the services industry. This is evidenced by Figure 1.4 above which shows the average labour productivity in the Tanzanian economy represented by agricultural industry (far left vertical line), services industry (middle vertical line), and the non-farm enterprise sector (far right vertical line).

Evidence from a wealth of research suggests that rural non-farm enterprises increase and stabilize household income, thereby providing financial security and economic wellbeing (Demie & Zeray, 2015; Haggblade, Hazell, & Reardon, 2010; Kassie, Kim, & Fellizar, 2017; J. O. Lanjouw & Lanjouw, 2001; van den Berg & Kumbi, 2006). Economic wellbeing affects household expenditure and household consumption and ultimately ensures food security. The NFE sector is thus pivotal for meeting the first, second and third Sustainable Development Goals of no poverty, zero hunger, and ensuring good health and wellbeing.

Economic wellbeing is defined as the ability of individuals, families and communities to meet their present and future financial security needs. These include food, education, clothing and housing (Council on Social Work Education, 2016). Organisation for Economic Co-operation and Development (2013) argues that the concept of economic wellbeing is a state in which households are able to meet essential material living conditions, including the extent of consumption possibilities and the command over resources. At household level, it can be measured by the average level of and the distribution of income and wealth across families (Katchova, 2008; Mishra et al., 2002; Organisation for Economic Co-operation and Development, 2013).

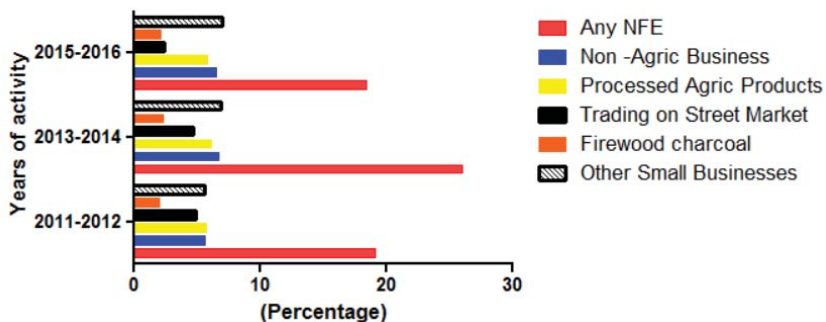
Given the pivotal role that rural NFE income plays in household income, it is important to establish its contribution to household economic wellbeing in rural households, where there is a high incidence of poverty. The growth and success of the sector is pertinent to policy objectives as it gives individual households more options to improve economic wellbeing and alleviate poverty (Pfluger, 2000).

## 1.2 Overview of rural enterprises in Ethiopia

Approximately one in five rural households in Ethiopia owned one or more non-farm enterprises between the years 2011 and 2016 (Central Statistical Agency and the World Bank, 2015; Central Statistical Agency & World Bank, 2013; CSA, Ethiopia, & World Bank, 2017). Rural non-farm enterprise activities in rural Ethiopia include both agricultural and non-agricultural businesses.

The 1974 Ethiopian revolution resulted in some policy measures that saw farmers being abolished from participating in non-farm activities. They were coerced to join producer and service cooperatives in order to receive any financial and extension services from government. When the military government was demolished in 1991, markets were liberalized government policy emphasized the agricultural and industrial sector, with less precise attention paid to the rural non-farm sector (Woldehanna, 2002). Over the years, participation in non-farm activities has grown, and due to lack of evidence was guessed to range between 10 and 35 per cent in 2008 (Loening, Rijkers, & Söderbom, 2008).

Figure 1.5 below shows the percentage of rural households that reportedly owned non-farm enterprises and the types of activities they were engaged in.

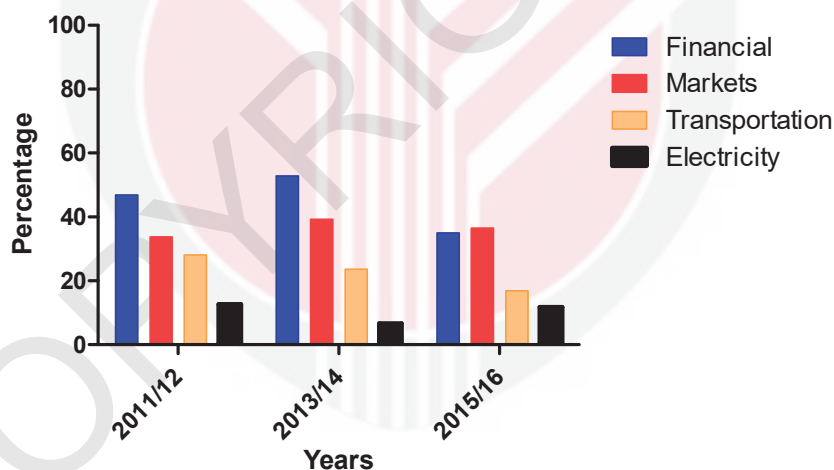


**Figure 1.5: Percentage of rural households reporting one or more NFE, by type**

[Adapted from CSA and the World Bank, 2015; CSA and World Bank, 2013; CSA et al., 2017]

As shown above, in 2011/12 rural non-farm enterprise participation was 19.1 percent, it reached its highest of 26 percent in the period 2013/14, followed by a low of 18.4 percent in 2015/16. The most common enterprises are non-agricultural businesses or services from home such as shoe repairs, and tailoring. These are closely followed by businesses that process agricultural products such as flour, tella and injera. Trading in the street or a market is also among the important activities. Other types of entrepreneurial activities which are classified as other small business include firewood/charcoal trading, taxi/pickup trucks and restaurants. To increase the number of participants in the non-farm enterprise sector, international, national and regional non-governmental organizations and government could provide rural households with services such as providing loans particularly for rural micro enterprises, education on the sustainable use of resources and technical training on agro-processing and other skills outside agriculture.

The non-farm enterprise sector is however not inclusive, households reported facing constraints in establishing a non-farm enterprise. Figure 1.6 below illustrates the limitations encountered by households in entering the non-farm enterprise sector, between 2011 and 2016. These are the challenges faced by households either owning or intending to establish an enterprise.



**Figure 1.6: Percentage of households that reported constraints, by type**  
 [Adapted from CSA and the World Bank, 2015; CSA and World Bank, 2013; CSA et al., 2017]

As shown in Figure 1.6 above, nearly half the households were constrained by financial services. The main reason for this could be related to most households not being creditworthy due to lack of collateral. Moreover, formal financial institutions charge exorbitantly high interest rates such that the rural entrepreneurs are restricted to borrow. This means that they have to depend on their own savings, which is limiting for poor households (Chowdhury, 2017).

Markes, which include physical access to market (distance and cost, challenges in obtaining product market information and low demand for goods and services), were mentioned by over a third of households to be a constraint. Geographic isolation of rural areas and the bad road networks further pose difficulties for accessing markets. These challenges increase transportation costs and constrain poor households from participating in the non-farm economy.

Lastly, the poor and/or lack of availability of electricity limits operating hours of rural businesses to day light activities and thus reduces the number of customers that can be reached (Vernet, Khayesi, George, George, & Bahaj, 2019). Reliable power supply also allows farmers to venture into technology based non-farm activities and subsequently increases opportunities for firm formation. These limitations slow the growth of the rural non-farm sector, and thus require a coherent plan from policy makers of redressing them.

### **1.3 Problem statement**

The problem to be addressed in this research is that the importance of the non-farm enterprises to rural livelihoods has been largely neglected in development policy making. The Ethiopian government has not invested resources towards non-farm enterprises as a means of human development. Funds are allocated either towards the agricultural ministry or the industry ministries for farming and manufacturing respectively. However, a significant number of people who depend on agriculture find themselves in dire need for food aid every agricultural season, making it paramount for rural households to diversify their livelihoods.

In order to redirect policy focus and develop programs that support the growth of the rural non-farm enterprise sector, an evidence based and targeted approach is necessary. What is largely missing in literature is knowledge on the conditions under which non-farm businesses operate is lacking. The little empirical evidence analyzing the determinants of participation disregards the heterogeneity of the non-farm sector. Non-farm activities are aggregated into one homogenous group of jobs without regard for the type of employment, level of skill and degree of investment required. The unclear and inconsistent definition of non-farm activities has led to misguided inferences about determinants of participation (Bezu & Barrett, 2010).

Reducing income inequality is important for sustained economic growth. A growing non-farm sector is one of the important drivers of poverty reduction, the rural economy and distribution of income. Therefore, stimulating the non-farm economy is important for economic development. Ethiopia currently lacks projects that support pathways to non-farm gains. It is important to overcome policy and resource constraints in order for the rural poor to reap the benefits of the non-farm economy. Critical to guiding the country's approaches to

alleviating rural poverty is consistent diagnostics. This involves conducting adequate research that links the non-farm sector to economic wellbeing for the poor. Without clear evidence of its effects, it is difficult to determine whether approaches that focus on non-farm enterprises are appropriate for reducing rural income inequality in Ethiopia.

One of Ethiopia's major challenges in rural areas is the high levels of food insecurity. Low agricultural productivity is the leading cause of food insecurity in Ethiopia. In light of meeting the Sustainable Development Goal of ending hunger and achieving food security, it is important to focus on other income generating strategies outside of agriculture, that is, non-farm enterprises.

It is therefore paramount to understand the sector and to demonstrate the extent to which rural non-farm enterprises can be an instrument in reducing income inequality and alleviating food insecurity.

#### **1.4 Objectives:**

The general objective of this study is to analyse what the relation between economic wellbeing and participation in rural non-farm enterprises in Ethiopia is.

This overarching objective will be met through three specific objectives as follows:

- (i) To analyse the determinants of non-farm enterprise diversification in rural households of Ethiopia;
- (ii) To examine the effect of non-farm enterprise income on rural household income inequality;
- (iii) To evaluate the set of theoretical combinations of non-farm enterprise income and other factors that result in desirable food security outcomes.

#### **1.5 Research questions**

- (i) What are the factors that drive rural households to diversify into non-farm enterprises.
- (ii) How has income from rural non-farm enterprises affected income inequality in Ethiopia?



- (iii) How does non-farm enterprise income interact with other factors to achieve food secure households?

## 1.6 Significance of the study

This study is done to shed light on the dynamics of small and micro non-farm enterprises in rural Ethiopia, and to be able to assess the developmental potential within this sector.

The impact of non-farm enterprise diversification in reducing income inequality and improving household wellbeing remains not well researched. Previous studies have focused on all non-farm activities. This study extends the analysis by examining dynamic issues such as the determinants of participation, as well as the overall effect of non-farm enterprises on income inequality, and food security. This is pertinent to Sustainable Development Goals as it addresses the second and tenth goals of *Zero hunger* and *Reduced inequality*.

Moreover, much of the existing empirical evidence is based on single period, single region data, which is limited in demonstrating the causes of inequality and the household characteristics that are theoretically related to investment in all non-farm activities. Most of this data is from small-scale and location specific sample surveys that do not demonstrate the characteristics of aggregate populations. This study seeks to close that gap by using the recently available, nationally representative Living Standards Measurement Study – Ethiopia Rural Socioeconomic Survey three wave panel data from all the 10 regions in Ethiopia.

These knowledge gaps about rural entrepreneurship constrain policy making. It is therefore paramount that the role played by NFE income on household economic wellbeing and income inequality be determined in order to inform policy-makers of the importance of public support for non-farm enterprises and to substantiate the need for more investment in the sector. To ensure an appropriate level of public support and the adoption of appropriate policy measures that promote the trickling down of the benefits of the non-farm sector, it is imperative to provide evidence of the role played by NFEs on economic wellbeing. Without clear and convincing evidence of its benefits, the sector will not be able to attract the necessary sustenance required for it to be successful.

## 1.7 Organization of the study

This study is outlined as follows, chapter one introduced the study and provided a brief background of the study including the problem statement, objectives and hypotheses. Chapter two introduces the definitions of

diversification, and also constitutes literature review on theoretical and empirical components of past studies.

Chapter three focuses on the first objective which is the estimate the determinants of non-farm enterprise diversification and factors that affect level of income. Chapter four analyses the second objective of measuring the effect of non-farm enterprise income on income inequality. Chapter five presents the third objective of establishing the relationship between non-farm enterprise income and food security. Finally, chapter six summarises the results and conclusions, gives the policy implications, and suggests directions for future research.



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