



ST. MARY'S UNIVERSITY
SCHOOL OF GRADUATE STUDIES
MBA PROGRAM IN PROJECT MANAGEMENT

**AN ASSESSMENT ON THE SOCIO-ECONOMIC IMPACT OF
PRODUCTIVE SAFETY NET PROGRAM (PSNP) ON
BENEFICIARIES:
(THE CASE OF HABRU WOREDA, AMHARA REGION)**

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THE SOCIAL AND ECONOMIC IMPACT OF PRODUCTIVE SAFETY NET
PROGRAM ON BENEFICIARY'S.

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RESEARCH TITLE:

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PROGRAM (PSNP) ON BENEFICAIRIES**

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DECLARATION

I, Abdulhafiz Muhammed, hereby declare that this thesis entitled “Socio-Economic Impact of Productive Safety Net program (PSNP) on beneficiaries; The case of Habru woreda in Amhara Region” submitted by me for the award of the of Master of Project Management, St. Mary’s University at Addis Ababa, Ethiopia, is my original work. All sources and materials used for this thesis have been duly acknowledged.

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Date of Submission: June 2021

ENDORSEMENT

This thesis has been submitted to St. Mary's University, School of Graduate Studies for examination with my approval as a university advisor.

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St. Mary's University, Addis Ababa August 2021

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LIST OF ACRONYMS

CBE Commercial Bank of Ethiopia
CSA Centra Statistical Agency
CSI Cyclical and Food Insecurity
CFSTF Community Food Security Task Force
FAO Food and Agricultural Organization
FGD Focus Group Discussion
FIW Food Insecure Woreda
IFPRI International Food Policy Research Institute
IMF International Monetary Fund
HWARDO Habru Woreda Agricultural and Rural Development Office
MFI Micro Finance Institutions
MoFEC Ministry of Finance and Economic Cooperation
MoA Ministry of Agriculture
MoFED Ministry of Finance and Economic Development
PIM Program Implementation Manual
PSM Propensity Score Matching
PSNP Productive Safety Net Program
SSN Social Safety Nets
SNNP South Nations Nationalities and Peoples
TFI Transitory Food Insecurity
UNDP United Nation Development Program
UN United Nations
USAID United States Agency for International Development
WB World Bank
WFP World Food Program
WFSO Woreda Food security Office

ABSTRACT

Social safety net programs can be a critical elements of effective hunger reduction and poverty prevention strategy especially in developing countries. Also, many studies have come out for the last decades that supports the argument that social protection program like PSNP has a paramount impact on local communities and economies to increase and diversify their food consumption, child and maternal welfare as well as fosters more investment in the education and health of children, reduces child labor and ultimately improve life standards. Ethiopia is one of the countries where PSNP has been given due consideration as tool/a safety net to help the poor household asset depletion, overcome food insecurity and create community asset. The core activities of PSNP have been designed to bring positive impacts on beneficiary's household asset accumulation, household income, public participation, financial inclusion, and consumption pattern. This study evaluates the socio-economic impact of PSNP on beneficiaries in Habru Woreda. For quantitative analysis both treatment and control respondents were drawn with 220 (100 treatments and 120 controls) beneficiaries using simple random sampling techniques in Habru. Descriptive statistics and econometric model were applied for analyzing quantitative data. PSM method was employed to analyze the socio-economic impact of PSNP on beneficiaries. Subsequently the objective of this study is to find out the socio-economic impact of PSNP on beneficiaries with a particular reference of Habru Woreda. keeping above objectives in mind, the study employed questionnaires, key informants, and focus group discussions to obtain primary data. The social and economic impact of PSNP is analyzed based on income, consumption pattern, asset accumulation, acquisition of home equipment's, infrastructure, access to finance, women decision making and economic empowerment. The finding indicates that PSNP have made a positive impact to the social and economic aspect of the beneficiaries life. Despite the efforts put on to bring the desired impacts, the study also revealed that there is still area of improvements that government and development partners must work on in terms of getting full access to finance, asset accumulation, consumption pattern, and wage rate increment/income.

Key words: Productive safety net program, poverty, impact, income.

CHAPTER-ONE

1. INTRODUCTION

1.1. BACKGROUND OF THE STUDY

To reduce and/or prevent poverty and hunger, many countries in the developing world increasingly recognized that social protection measures have paramount role. Many studies also support that social protection programs have been successful in reducing hunger and poverty. Social protection program has positive impacts on local communities and economies to increase and diversify their food consumption, child and maternal welfare as well as fosters more investment in the education and health of children, and reduces child labor (FAO, 2015).

In the developing world, there are different challenges that face rural community to be food secure (Anderson & Elisabeth, 2015; Wiseman *et al.*, 2010). For the chronically food insecure people, social protection programs appear as innovative and radical solutions, even though they vary from place to place (Gustavo, 2013). Even if there is a success story in reduction of hunger and poverty in some countries of South Asia and sub-Saharan Africa, the overall prevalence of hunger and poverty progress has fallen slowly. Most of the people in these countries live in rural areas and rely on agriculture as the source of their income. Due to the prevalence of hunger and poverty, they become chronically food insecure (FAO, 2015).

In Ethiopia, approximately 20.5 percent of households was estimated to be food insecure in 2016. At individual level, the proportion of food insecure persons stood at 25.5 percent. This directly translates into approximately 26 million food insecure people. The number of food insecure could have been much higher had food assistance not been provided to around 18 million people through emergency food assistance and productive safety net program. Amhara Region experienced the highest percentage of food insecure households (36.1 percent), followed by Afar (26.1 percent) and Tigray (24.7 percent). Nearly 22.7 percent of rural households and 13.9 percent of urban households are food insecure. Overall, rural households are more food insecure than urban households according to all indicators except calorie deficiency. (Birhane, CFSVA result, 2019)

Ethiopia's Productive Safety Net Program is a development oriented social protection program aimed at solving the chronic food needs of rural households in the country. In 2005, the program commenced by covering four regions of the country (Tigray, Amhara, Oromiya and SNNPR) aiming to reach more than 1.6 million households (5 million people) 6 in 263 woredas 1(districts) identified as chronically food insecure areas (Legovini, 2006; Gilligan et al., 2009; Siyoum, 2012). It is the largest social protection program in Sub Saharan Africa (excluding South Africa) and initially took up an annual budget amounting to 500 million USD2 (Legovini, 2006; Gilligan et al., 2008). Currently, the pastoralist areas of the country are included in the program and the size of the beneficiaries has increased to 8.3 million people in 319 weredas (Siyoum, 2012; Rahmato et al., 2013). The first phase of PSNP operated between 2005 and 2009. The second phase of the program is runs for an additional five years (2010- 2014).

Participation in the two components of the program, public works, and direct support, depends on the labor endowments within the household. The public works component of the PSNP targets households endowed with labor capacity and involves contribution of labor by adult household members-over the age of 16-for building community assets (e.g., conservation structures, dams, roads, schools). The direct support component does not require labor input and it is for the elderly, disabled, sick or mentally challenged, pregnant women, lactating women and orphaned teenagers in return, beneficiaries get cash and/or food, mainly wheat and cooking oil (Berhane *et al.*, 2011a).

Habru is one of the woredas in the Amhara Region of Ethiopia. As part of the North wollo, Habru is bordered with Mille river in south which separates it from the south wollo zone, in west by Gubalafto, in north by the Alewuha River which separates it from Kobo, and on the east by the Afar Region. Because of the prevalent drought and food insecurity Habru was one of the woredas selected in the first/inception year to receive productive safety net program in 2005.

According to CSA (2013) population projection, in 2016/2017 the woreda has a total projected population of 235,347, an increase of 22.1% over the 2007 census, of whom 118,088 are men and 117,259 are women. The projected total urban resident was 37,659, which is 16% of the population in the woreda and an increase of 74.34% of urban population over 2007 census (CSA, 2007; CSA, 2013).

The general objective of the study is to assess the social and economic impact of PSNP on the beneficiaries of Habru woreda. While undertaking the study, several literatures has been reviewed but none of them has addressed this area. The study would further examine what exact impact does it brought to the target beneficiaries in terms of helping improve their economic and social life. Thus, the researcher believes the study would bring potential important findings that would help the government and concerned stakeholders to be aware of the program implementation process, challenges, and actual impacts.

1.2. STATEMENT OF THE PROBLEM

According to plan and development commission of Ethiopia (2021, ten years developmental plan, a pathway to prosperity) poverty headcount ratio at the national poverty lines (% of population) has reduced from 29.6% in 2009/10 to 23.5% in 2014/15. While the poverty rate has gone from 30.4% in 2009/10 to 25.6% in 2020 in the rural areas, and similarly urban poverty rates fell from 25.7% to 14.8% during the same period. Regarding to equitable distribution of growth, Gini coefficient has increased from 0.30 in 2009/10 to 0.33 in 2014/15. During this period, the Gini coefficient in rural areas went up from 0.37 to 0.38 while in the urban areas it has increased from 0.27 to 0.28. (Plan and developmental plan, ten years developmental plan, 2021).

Food insecurity in Ethiopia derives directly from dependence on undiversified livelihood based on low inputs and low output rain fed agriculture. Food insecurity incorporates low food intake, variable access to food and vulnerability of livelihood strategy that generates food in good time but is not resilient adequate. These outcomes correspond broadly to chronic, cyclical and Transitory Food Insecurity (TFI) and all are endemic in Ethiopia. The main triggers for TFI in Ethiopia are drought, and war. Seasonality is major cause of Cyclical Food Insecurity (CFI). The structural factors contributing to chronic food insecurity include poverty, fragile natural resource base, weak institutions, and inconsistent or unhelpful government policies (Devereux, 2000).

According to Devereux (2000) the combinations of factors such as adverse changes in climate, poor technology, soil degradation and policy induced as well as program implementation problems have resulted in serious and growing problems of food insecurity in Ethiopia.

Habru Woreda of North wollo zone in Amhara regional state was one of the Food Insecure Woreda (FIW) where PSNP implemented together with aim of help improve beneficiaries social and economic status. Based on the information obtained from Habru Woreda Agricultural and Rural Development Office (HWARDO, 2011) annual report, it was indicated that rain-fed agriculture, limited use of improved input, frequent drought, backward agricultural practice led to low agricultural production and productivities.

In Amhara region in general, and Habru woreda, smallholder farmers are characterized by subsistence production and suffered from complex and interrelated socio-economic problems. Shortage of farmland, recurrent drought, and environmental degradation are the most significant problems that challenge the lives of the population (PSNP PIM, 2015). All the 39 kebeles of the woreda are labeled as food insecure kebeles. Among others, the regional government has allocated huge resources to protect the rural communities' asset depletion and diversifications of rural income of households. Although efforts have been made to raise agricultural crop yield, the food insecurity problem is still a major challenge in the woreda. To increase the productivity of land, the office of agriculture has been promoting adoption and diffusion of improved technologies by farmers. Farmers have been advised to adopt several physical soil conservation measures. (HWARDO, annual report, 2011).

Several studies have been made and books are published on productive safety net programs. Assessments and impact evaluations have been made by different stakeholders working in the area. For instance, Judit and Matt, (2011), tried to emphasize the remarkable achievements of PSNP starting from the efficiency of community targeting systems. They have noted that the timely payments made sure that people are not forced to sell their productive assets. PSNP has helped in rehabilitating the environment in which these communities live through public work activities and much more.

Other study on impact evaluation of PSNP explains that households that received payments for five years experienced a larger improvement in food security, than households that received payments for only one year. This describes that the more beneficiaries receive PSNP services the better they become over the years (John *et al.*, 2011). Another study done by (Sabates *et al.*, 2013) also showed the reduction in food gap, improvement in roads and services as well as

access to education in selected areas of Afar, Oromia and Somali regions. Besides, other studies conducted on effect of PSNP on household resilience, showed the positive relationship between PSNP and household resilience (Hermela, 2015).

On the other hand, there is an international perception that social protection programs like PSNP could be the cause for dependency. Beneficiaries may attempt to hide true information about their income and assets, to continue to appear eligible when in fact they might have sustained their own assets and a good harvest. Food aid may change the behavior of the recipients by making them less active on their own economic and social responsibilities (Little, 2008). All these behavioral responses to the delivery of social transfers can result in programs failing to achieve their long-term objectives and generating large-scale dependency rather than large-scale graduation.

PSNP has been implemented for the past fifteen years. Before this program was launched, a relief program that is targeted towards food insecure and vulnerable families has been functioning for the past thirty years. Several assessment and impact studies were made on productive safety net program; however, as far as the researcher's knowledge no one had a research of study about impacts of PSNP on beneficiaries socio-economic life. This study, therefore, attempted to fill this research gap by conducting an empirical study on the impact of the PSNP on the beneficiaries socio and economic life in Habru woreda of Amhara Region.

1.2.1. RESEARCH QUESTIONS

The study attempted to answer the following key research questions:

1. What are the economic impacts of PSNP on beneficiaries?
2. What are the social impacts of PSNP beneficiaries?
3. What are the challenges of PSNP in meeting the desired program objectives?

1.3. RESEARCH OBJECTIVES

1.3.1. GENERAL OBJECTIVE OF THE STUDY

The general objective of the study is to assess the Socio-Economic impact of Productive Safety Net Program on the beneficiaries: the case of Habru woreda, Amhara Region.

1.3.2. SPECIFIC OBJECTIVES

The specific Objective of the Study are:

1. To measure the economic impact of PSNP in the lives of beneficiaries
2. To evaluate the social impact of PSNP in the lives of beneficiaries
3. To uncover the challenges of PSNP in meeting the desired program objectives

1.4. SCOPE OF THE STUDY

Despite the study questions are very vital and applicable to all areas in which productive safety net programs are implemented, the study is geographically limited to Habru woreda of Amhara region. Issues and topics related to PSNP are many; However, the study focuses on areas of socio-economic impact of PSNP at beneficiary level. besides, in fact there were a lot of methodology to be applicable the researcher has used quasi-experimental design, mixed approach, descriptive statistics, econometric because of their relevance to the fundamentals of the study.

1.5. SIGNIFICANCE OF THE STUDY

The Ethiopian economy heavily relies on agricultural economy that is totally dependent on seasonal rainfall. Due to this, large proportions of the population are vulnerable to droughts and environmental related shocks. In response to this problem, the government together with other international stakeholders have been implementing one of the biggest social protection programs (PSNP) in Africa since 2005. Therefore, it is imperative to uncover or understand how much the program helping the beneficiaries cope up with those problem, and how it is impacting their social and economic life. Meantime, the study will contribute to improve awareness on the impact of PSNP on the beneficiaries in the target area and its success in meeting the initially set desired goals. The study will benefit target beneficiaries, Finance and economic cooperation

offices, agriculture development office, MoFEC and international stakeholders who are deeply engaged in the program: NGO's who are involving in implementation of the program along with the government.

The information that was produced through this study can serve as a basic document for future reference and existing knowledge improvement. Policy makers, researchers and other concerned bodies may use the result of the study.

1.6. LIMITATION OF THE STUDY

- Even though PSNP is the largest social protection program operating in sub-Saharan Africa, this study would focus in one of the targets woreda in Amhara Region.
- It was tough to obtain relevance documents however the researcher has secured them after so many backs and forth.
- It was also tough to get onboard target study population to held interviews and focus group discussions. Despite the difficulties, the researcher has been able to onboard them and held the sessions successfully.

1.7. ORGANIZATION OF THE PAPER

The study was divided into five (5) main chapters or components. The first Chapter deals with the introductory aspect of the study whilst the second chapter is devoted to the reviewing of relevant literature. The third chapter is attempts on a presentation of the methods used in the study. The two remaining chapters-four and five highlight data presentation and analysis, and discussion of finding and recommendations, respectively.

CHAPTER-TWO

2. REVIEW OF RELATED LITERATURE

The Impact of PSNP examines two sets of indicators— economic and social indicators. Economic indicators are linkage to incomes generating activities, saving, unemployment, increasing income level of beneficiaries, patterns of expenditure, consumption, and assets accumulation. Social indicators that are used the impact of PSNP are participation of female head Households and their economic independence, educational status, access to expenditure on health services, level of crime, subjective well-being measures (assessing people’s evaluative reactions to their lives and societies) nutritional levels, anthropometric measures, and contraceptive use (Hulme, 2000).

2.1. POVERTY

Poverty has not a single or correct definition, but different scholars define poverty in different ways. Most scholars define poverty must be understood at least in part in relation to particular social, cultural, and historical context. Noland and Whelan define as poverty is the narrower end of the scale on the grounds that too broad definition runs the danger of losing sight of the distinctive core notion or poverty is the low standard of living. Townsend defines poverty in terms of inability to participate in society that is Societies’ inability to participate owing to lack of resources and other scholar Veit-Wilson define poverty as these areas of life where consumption and participation are determined primarily by command over financial resource. United nation (UN) define poverty is a lack of participation in decision making and a violation of human dignity, powerlessness, and susceptibility to violence (UNDP, 2006).

According to (Gordon, 2006) poverty reduction is the core objective of Ethiopian government. Ethiopia seeks growth and reducing poverty and substantial poverty reduction increase substantial growth. Poverty is universal concept and its definition contested and has different overlapping meaning depend on the subject area. There is no official definition of poverty in the United Kingdom government, but poverty defined by knowing it when they see it. Poverty affects different aspects of people’s lives existing when people are denied opportunities to work to learn to live healthy and fulfilling lives and live out their retirement years in security. Lack of income, access to good quality health, education and housing and quality of local environment all affect people’s wellbeing, the United Kingdom government’s view of poverty covers all these

aspects. Poverty measurements at one point in time and the poor will be measured as these people or households that have both a low standard of living and low income.

2.2. THE HISTORY OF SOCIAL PROTECTION

Social protection emerged as a critical response to the safety nets discussion of the late 1980s and early 1990s. During these days, safety nets were very much a focus of the World Bank's approach to fighting poverty. Safety nets were conceptualized as minimum social assistance in countries that are too poor and administratively weak to introduce comprehensive social welfare programs (Devereux & Sabates, 2004).

The following definition captures the original 'safety net' emphasis from which social protection evolved, but also the broader concern with risk management and with social justice: "Social protection describes all public and private initiatives that provide income or consumption transfers to the poor, protect the vulnerable against livelihood risks, and enhance the social status and rights of the marginalized; with the overall objective of reducing the economic and social vulnerability of poor, vulnerable and marginalized groups" (Devereux & Sabates, 2004: 9). Concern about the adverse impact of the structural adjustment programs on the social sector led, during the 1980s and 1990s, to the emergence of an international consensus to bring social development back as a front burner development issue. This consensus found recognition at several international forums, including the Copenhagen World Summit on Social Development, and was the motivation for the adoption of the International Development Goals, including the United Nations MDGs. The World Bank and International Monetary Fund similarly became a part of this process and even granted debt relief to heavily indebted poor countries (under the Heavily Indebted Poor Countries Initiative). However, they wanted to dedicate the debt relief gains to the social sector and reflected this requirement in their poverty reduction strategy papers which was the prerequisite for debt relief in 1990s (Julie & Sarah, 2011).

2.3. SOCIAL SAFETY NETS IN MIDDLE EAST AND AFRICA

Historically, transitions and crises have often opened new space for SSN building. Around the world, 70 percent of SSN programs were introduced after a major transition; for example, independence after the collapse of the former Soviet Union; Nepal's transition to democracy; decentralization in Indonesia; and political changes in Brazil and Portugal. More recently, the

global financial crisis prompted dozens of countries to create new SSN programs, expand old ones, and improve overall administrative systems to enhance governance and make programs more efficient (IEG, 2011).

Researchers indicated that without a safety net, poor families who are unable to afford their basic needs are likely to lose hope of escaping poverty; malnourished children are likely to grow up as poor adults; and, because of crises, vulnerable families are likely to face difficult choices between immediate survival and avoiding irreversible damage to their future welfare (IEG, 2011).

Progress on some human development outcomes in the Middle East and North Africa is still disappointing, and alarmingly low among the poor, with potentially life-long irreversible impacts. Early childhood malnutrition is very high in the region's low-income countries and in some middle-income ones. In the face of a major shock, Middle Eastern and North African households rely on their own income, savings, and assets as well as on informal safety nets such as private support from family and neighbors because few have access to formal safety nets. According to Mena Development Report, as many as 15 percent of households in Iraq and Morocco reported suffering at least one major shock during the previous 12 months, but only about 1 percent of these shock-affected households reported receiving help from formal safety nets; that is, support from the government and nongovernmental organizations. In this context, poorer families, with their limited incomes, savings, and assets, are again at greater risk. In addition, weather related shocks have considerably increased vulnerability among rural agricultural households (Joana Silva, *et. al*, 2012).

2.4. PRODUCTIVE SAFETY NET PROGRAM

One of the social protection programs designed to protect the Ethiopian population is productive safety net program. PSNP started in 2005 by the Ethiopian government with the help of international donors as a new approach to responding food insecurity. It targets chronically food-insecure households in known famine-prone areas in rural Ethiopia. The program is led by the Ethiopian government but most of the budget comes from donors. The government's expense is the cost of civil servants who are involved in the management of PSNP. When it started, PSNP

had 4.5 million beneficiaries in 2005. PSNP operates in Afar, Amhara, Dire Dawa, Harare, Oromiya, SNNP, Somali and Tigray Regions. (Julie *et al.* 2011).

Social protection is a program with provision of cash or in-kind transfers to the poor as means of reducing poverty and economic and social vulnerability (FAO, 2015). In general, social protection has three components such as social assistance, social insurance, and labor market protection. Social assistance programs are cash or in-kind transfers or public works programs. Programs that provide cover for designated contingencies affecting household welfare or income are called social insurance programs.

However, labor market programs offer unemployment benefits to the workers through building skills. Hence, it increases workers' productivity and employability (FAO, 2015). The government of the Ethiopia implements the social protection program, that is, cash or in-kind transfers or public works programs for chronically food insecure community (Care, 2014).

Such type of social protection program in Ethiopia is known as PSNP. It was launched 2005 to smooth consumption of chronically food insecure households by providing transfers of cash and/or food during lean months to address both the immediate and underlying causes of food insecurity (Brown & Teshome, 2007; Care, 2014). Like other world countries, Ethiopia is undertaking PSNP to meet the need of vulnerable households and communities to address food insecurity. The program provides cash or food for work, and it benefits more than seven million people (Care, 2014). The PSNP aims are to reduce household vulnerability, protect household assets, improve household resilience, and provide labor to create community assets (e.g., check dams and roads). In general, the target of the program is for graduate participants from food insecurity into sustainable food secure (Brown & Teshome, 2007).

2.4.1. THE OBJECTIVE OF PSNP

As per PSNP program implementation manual, PSNP has the following general objective:

“To assure food consumption and prevent asset depletion for food insecure households in chronically food insecure districts, while simulating markets, improving access to services and natural resources and rehabilitating and enhancing the natural environment” (Ministry of Agriculture, 2010).

In fact, in the new PSNP design which was finalized in November 2014 emphasizes that its goal for the next phase of PSNP is: “Resilience to shocks and livelihoods enhanced, and food security and nutrition improved for rural households vulnerable to food insecurity” (Ministry of Agriculture, 2014).

The PSNP, PIM further elaborates that the program focuses on chronically food insecure districts, and households. The program intends to ensure that food insecure individuals or members of the households have enough to eat throughout the year. PSNP aims to prevent asset depletion. It is known that families are forced to sell what they must put food on the plate. The program ensures that people will not be forced to lose their assets to provide food for their families. In its implementation, PSNP involves public works having a positive contribution towards rehabilitating the natural resources. Furthermore, PSNP contributes to the creation of an enabling environment for community development by increasing access to services, such as health, education, roads, and market infrastructure. In general, PSNP provides safety net to food insecure families helping them be able to secure food and asset platform and improve their status over time. (Ministry of Agriculture, 2010).

2.4.2. COVERAGE OF PSNP

According to PSNP, PIM, the productive safety net program is implemented in districts defined by the government as chronically food insecure. The eligibility of households to be part of PSNP is defined by the frequency in which they required food assistance for the past fifteen years preceding the design of PSNP. Households that are chronically food insecure are included for regular PSNP transfers. The researcher selected one PSNP woreda namely Habru which has been part of the program for the past fifteen years.

2.4.3. VALUES OF PSNP

According to (Ministry of Agriculture, 2010), the program has its own values or principles to help achieve its objectives. One of its principles is having a fair and transparent client selection. Beneficiaries are selected by the community and district food security workers. There is an appeal system to address if there are any grievances in the selection process. Transfer of benefits to selected families is timely and predictable. The PIM states that if transfers are timely, beneficiaries surely know when they will be receiving their entitlements and what type of

transfer they will receive. PSNP clients receive their entitlements for the reason of being selected. But they are expected to engage in public work activities if they are able. The PIM mentions that the productive element comes from infrastructure and improved natural resources base created through PSNP public works. In addition, the program is a key element in development planning. It links its beneficiaries to other development programs to ultimately help them achieve resilience over food insecurity (Ministry of Agriculture, 2010).

One of the major outputs of PSNP as stated in the new phase four design is to have appropriate and timely transfers to targeted beneficiaries. It is concerned with ensuring that such transfers are done consistently so that the program goal of strengthened resilience to shocks and improved food security is achieved (Ministry of Agriculture, 2014). PSNP's coverage increases as there is a need to scale up assistance in the event of shocks. When possible, the first choice of assistance is cash as it has the power to stimulate local markets.

Food transfers are provided in areas where markets are not available in nearby places or where market prices for food are very high. The program participates both men and women to help them benefit equally. It responds to women's responsibility in both the productive and reproductive work and focuses to improve the living conditions of female headed households (Ministry of Agriculture, 2010).

2.4.4. TARGETING

PSNP targeting is done with high involvement on the part of the local community along with the Community Food Security Task Force (CFSTF). There is list of criteria to recommend households be included as beneficiaries and whether those households should contribute their labor through public works (Julie *et al.*, 2011).

Therefore, the program uses a combination of both kebele administrative bodies and community targeting approaches. As taken from PIM, screening of the households is based on the following: "The households should be members of the community; chronically food insecure households who have faced continuous food shortages (3 months of food gap or more per year) in at least three years.

Households who suddenly become food insecure as a result of a sever loss of assets (financial, livestock, means of production, assets), especially if linked to the onset of sever chronic illness such as AIDS and are therefore unable to meet their food needs even during periods of normal rain and, households without adequate family support and other means of social protection and support” (Ministry of Agriculture, 2010: p 22-23).

PSNP provides transfers to food-insecure households’ equivalent to 15 kilos of cereal per household member per month for six months a year. Households that are required to work for this transfer must work for five days to receive the transfer for one person. Thus, a household of four members can receive a transfer equivalent to 60 kilos of cereal but must provide 20 days of labor to earn it. In USAID-supported PSNP districts, additional transfers of oil and pulses may also be provided, to ensure a more-balanced food basket (Judith & Matt, 2011).

2.4.5. GRADUATION

“Graduation” is referred in PIM as a movement of a household out of the beneficiary of PSNP. Over the years, it is expected that the food security status of the households will improve with the help of PSNP. A household is considered as a prospect graduate when it meets its food needs for all 12 months of the year and able to withstand modest shocks (Ministry of Agriculture, 2010). The program assesses the situation of the households every year to determine whether they have reached the criteria for graduation. The assessment involves insuring if families have assets such as land holding, livestock holding, food stock, etc. These criteria are benchmarks that are used in all regions to decide graduation. They rely on assessment of a small number of proxy indicators, including livestock holdings, land holdings and education status to determine food security status. Graduation from the PSNP is expected to reduce overall client numbers over time. Households that are identified for graduation will remain in the PSNP for one additional year to promote stability in their livelihoods and the building of resilience (Ministry of Agriculture, 2010).

2.5. IMPACTS STUDIES ON PSNP

There are some studies that have been conducted by different researchers to assess the Impact of PSNP in Ethiopia. Among these studies some of the works tried to assess the impact of the program one year after the onset of the program using cross sectional data - examples include

Devereux *et al.* (2006) and Gilligan *et al.* (2008). But according to Devereux *et al.* (2006), since impact might not accrue in the short run, to fully and rigorously evaluate the PSNP, longitudinal Data is needed. Even though some literature did a panel data analysis they did not focus on welfare (poverty), for instance Anderson *et al.* (2009) and other authors such as Wheelers and Devereux (2010) examined only a change in beneficiary 's status in time without taking the counterfactual situation.

According to Yibrah (2010) who analyzed the impact of PSNP on rural household's asset protection and consumption using PSM technique, Productive Safety Net Program intervention enables beneficiary households to retain their assets holdings. The asset values of the PSNP beneficiary households have exceeded that of the non-PSNP beneficiary households. The PSNP beneficiary households, because of PSNP intervention, have increased their livestock holdings. Thus, the program enables them to protect (increase) their livestock holdings. The result of this study found that the mean difference of the livestock holdings, in terms of TLU, between the PSNP beneficiary households and the non-PSNP beneficiary households was positive and significant.

Andersson *et al.* (2009) analyzed the impact of PSNP on livestock and tree holding of rural household in Ethiopia. The study found that there was no indication of participation in PSNP leads households to disinvest in livestock or tree. In fact, the number of trees increased for households that participated in the program. It could be the case that participation in PSNP (where tree planting and subsequent forest management work on public lands are usual activities) leads to households becoming more skilled in forestry, and that they switch to increased forest planting as a result.

Nonetheless, per the impact evaluation conducted by International Food Policy Research Institute (IFPRI) in 2009 in 68 PSNP Woredas in Tigray, Amhara, Oromia and SNNP regions using a longitudinal (panel) household and community data collected and matching methods, participation in the public works component of the PSNP (defined as receipt of at least 100 birrs in payments over the first five months of 2006, 2007, and 2008) has modest effects. It improves food security by 0.40 months and increases growth in livestock holdings by 0.28 Tropical

Livestock Units (TLU). Relative to non-beneficiaries, beneficiary households perceive that their welfare has improved (Gilligan *et al.*, 2009).

2.5.1. SOCIAL AND ECONOMIC IMPACT OF PSNP IN AFRICA

Different studies have been carried out on the impacts of the social safety net and transfer issues in different countries of Africa. Some of them are Devereux, (2002) assessed the cash transfers intervention in Namibia (social pensions), public works in Zambia, and Mozambique (cash payments to urban destitute). According to this study, the program had identified different poverty and other economic and social outcomes of these income transfers.

Miller *et al.*, 2010, in Malawi, employed both descriptive and econometric techniques of difference-in-differences estimates to analyze the impact of cash transfer on household food security. The results from his study show that intervention households in Malawi allocated 62% of total expenditures to food purchases and the recipients were able to reach what they reported as an acceptable level of food security.

2.5.2. SOCIAL AND ECONOMIC IMPACT OF PSNP IN ETHIOPIA

In Ethiopia, the PSNP is already having a significant impact and there is clear evidence that several important changes have taken place in terms of nutrition, attitudes, and risk-taking behaviors', particularly in terms of food consumption, asset protection, asset building, and allowing people to feel secure enough in their income to take productive loans which they previously found too risky (Rachel, Ashley, & Mulugeta, 2006).

Graduation processes are complex and cannot simply be delivered through a safety net program alone. Although public work is meant to prevent dependency on the PSNP, findings suggest that it may in fact do the opposite for households with higher numbers of non-workers such as children, people with disabilities and the elderly. The labor requirements of the PSNP draw labor away from households' own livelihood activities and affect their choice of packages. There is a danger that households become more, not less, dependent on the PSNP because the work

requirement reduces their ability to pursue successful alternative livelihood activities. (www.wahenga.net lessons from Ethiopia on a scaled-up national safety net program).

This suggests that PSNP, especially when transfers are issued as cash, is helping households achieve their wider objectives in terms of investments in human capital (www.wahenga.net lessons from Ethiopia on a scaled-up national safety net program).

Several studies conducted show that PSNP has a positive impact on the rural community (Andersson *et al.*, 2011; Debela & Holden, 2014; Gebresilassie, 2014; Mohamed, 2017; Welteji *et al.*, 2017; Zoellick, 2014). According to Debela & Holden (2014), the PSNP has positive effect on children through providing short-term nutritional benefits. The finding of Zoellick (2014) indicates that PSNP has positive impact through preventing households from selling productive assets, facilitating new investment, income increase, reductions in stunting and an increase in household food provisions, infrastructure as well as food security for households. Hence, it has improved food security, use of educational and health services and agricultural productivity. PSNP has positive effect on consumption, livestock holdings and productive assets of the household as indicated by Gebresilassie (2014).

The participation of household in PSNP has positive and statistically significant effect on food consumption and on their livelihood (Mohamed, 2017). The PSNP has positive effect on the participant household. Therefore, that it helps beneficiaries for consumption smoothing and asset accumulation (Welteji *et al.*, 2017).

However, some scholars conclude that PSNP has negative impact on the rural community (Mamo, 2011; Hayalu, 2014; Beshir, 2011; Gilligan *et al.*, 2009; Sabates-Wheeler & Devereux, 2010; Adimassu & Kessler, 2013). Some of the negative consequences of the PSNP program were developing sense of dependency syndrome (Hayalu, 2014). According to Mamo (2011), household failed to enhance asset accumulation if they are incorporated under PSNP. According to the earlier researchers (Beshir, 2011; Gilligan *et al.*, 2009; Sabates, Wheeler & Devereux, 2010), PSNP has negative effect on welfare/asset building and consumption. Adimassu and Kessler (2013) reported that PSNP has also negative effect on soil erosion control measures. Adimassu & Kessler (2013).

2.6. REVIEW OF CONCEPTUAL AND EMPIRICAL LITERATURE

The concept of food security was coined following the first World Food Conference in 1974 in Rome. Ever since its definition has been considerably changing and recently reached more than 250. The recently coined and the relatively comprehensive one is put as ‘all people, at all times, have physical and economic access to safe and nutritious food to meet their dietary needs and food preferences for an active, and healthy life. (FAO. Rome declaration on world food security and world food summit plan of action. World Food Summit. 13–17 Nov 1996. Rome; assessed in 2009)

Sufficiency, access, security, and time are the four core issues in the definition of food insecurity. Sufficiency of food involves the calories needed for an active and healthy life, while access refers to entitlement to produce, purchase or exchange food or receive it as a gift. Security is the balance between vulnerability, risk, and insurance. Time refers to the temporal situation of food insecurity whereby food insecurity can be either chronic/permanent or temporal/transitory. There are three main concerns and subsequent theoretical shifts on food security. The first shift is from ‘global and national’ concern to ‘household and individual’. The second shift has been from ‘food first’ to ‘livelihood first m ‘objective measurements’ to people’s perception. (Tolossa, Rural livelihoods communities, poverty, and food insecurity in Ethiopia; a case study at Erenssa and Garbi in Oromiya Zone, Amhara National Regional State, 2005).

The last half a century has brought about significant improvements in aggregate food security and diversity of food. However, many people, particularly in developing countries, have not been able to be benefited from these improvements. In 2013, there were an estimated 842 million people (12% of the world population) who were unable to meet their dietary energy requirements necessary to live an active and healthy life. Around one in eight people on our planet are likely to have suffered from chronic food insecurity. Of the 842 million food-insecure people in 2013, 827 million or 98.2% of the people are living in developing countries, with the highest number of undernourished people coming from Southern Asia, followed by Sub-Saharan Africa and Eastern Asia. (FAO, IFAD, and WFP. FAO statistical yearbook. World Food and Agriculture. Food and Agriculture Organization; 2013.)

Food insecurity in Ethiopia is normally understood in terms of recurrent food crises and famines, and responses to food insecurity have conventionally been dominated by emergency food-based interventions. Since 1998, the numbers of food-aid beneficiaries in Ethiopia have fluctuated between 5 and 14 million every year. (Devereux S, Sabates-Wheeler R, Tefera M, Taye H. Ethiopia's Productive Safety Net Programme (PSNP), Trends within targeted households. Sussex: Institute of Development Studies and Addis Ababa: Indak International Pvt. L. C.; 2006)

Poverty and food insecurity are two different concepts, with their correlation varying significantly among countries, depending on the specific national context. However, in the case of Ethiopia, the overlap of the two concepts is greater than in other countries. (Devereux, Social protection for enhanced food security in Sub-Saharan Africa. United Nations Development Programme. Working Paper, 2012)

Statistics on national poverty trends in Ethiopia indicate that there has been a substantial reduction in poverty over the last 15–20 years. Human Development Index (HDI) increased from 0.275 in 2000 to 0.396 in 2012, although it is still ranked among those countries with the lowest HDI throughout the world. (Government of Ethiopia. Ethiopia's progress towards eradicating poverty: an interim report on poverty analysis study (2010/11). Ministry of Finance & Economic Development; 2012a).

The results from the household consumption and expenditure surveys (HCE) conducted in the country in 1995/1996, 1999/2000, 2004/2005 and 2010/2011 showed that the proportion of people living below the nationally defined poverty line (i.e., headcount index) has decreased from 47.5 to 30.4% in rural areas and from 33.2 to 25.7% in the urban centers during the period of 1995/1996–2010/2011. The depth of poverty (i.e., poverty gap index) stood at 7.8% in 2010/2011 nationwide, with 8% in rural areas and 6.9% in the urban centers. The poverty severity index—while substantially declining during the period of 1999/2000–2004/2005 on a national level—increased in rural (17%) and urban areas (5.1%) from 2004/2005 to 2010/2011. In the context of rural Ethiopia, these data suggest that while the proportion of people below the poverty line and the average gap that separates the poor from the poverty line have declined in the past two decades, there has only been poor improvement in the distribution of income among the rural poor, particularly since 2004/2005. (Government of Ethiopia. Ethiopia's progress

towards eradicating poverty: an interim report on poverty analysis study (2010/11). Ministry of Finance & Economic Development; 2012a).

The causes of food insecurity are many and varied. It includes a low rate of agricultural production, low access to food, the limited capacity of infrastructures and local markets, HIV/AIDS, investment power, finance gap, poor health, shortage of water and poor sanitation, environmental degradation, climate change and natural disasters, conflict, and persecution. To deal with the problem of food insecurity, governments in developing countries have implemented various social protection instruments with three functions in common: (1) to maintain the basic level of consumption, (2) to facilitate investments in human capital and other productive assets and (3) to strengthen the capacity of those in poverty. The Productive Safety Net Program (PSNP) was launched by the government of Ethiopia, with donor support, in January 2005. Recognizing that a large component of this food insecurity is ‘chronic’ rather than ‘transitory’ and that decades of food aid have had no discernible impact on reducing rural poverty and vulnerability, the PSNP represents an innovative attempt to tackle chronic food insecurity and break Ethiopia’s dependence on food aid. (Sabates-Wheeler R, Devereux S. Cash transfers and high food prices: explaining outcomes on Ethiopia’s Productive Safety Net Programme. Working Paper. UK: Institute of development studies and center for social protection, University of Sussex; 2010. <http://www.future-agricultures.org>. Accessed 3 Oct 2015).

The Productive Safety Net Program (PSNP) is targeted toward households that are both food insecure and poor. In Ethiopia, as in many other African countries, there is a pressing need to improve household food security. An emerging consensus suggests that this is most easily accomplished through two development strategies with two complementary dimensions: investments that facilitate income generation and asset accumulation (infrastructure development, improved technologies for agriculture, etc.), and interventions that protect the poorest from hunger, prevent asset depletion and provide a platform on which the growth interventions can take place. Food aid targeting in Ethiopia has a long history of relying on community-based targeting systems, which have been seen as effective. The PSNP adopted this system while further refining the targeting criteria to capture chronic food insecurity—defined as a 3-month food gap or more and receiving food aid for three consecutive years. (MOA.

Productive Safety Net Programme phase IV programme implementation manual Addis Ababa, 2014).

Chronic food insecurity at the Woreda and household level is a defining feature of the eligibility criteria for PSNP participation. The household must have faced continuous food shortages (usually 3 months of food gap or more) in the last 3 years and received food assistance. The other criteria are households that suddenly become more vulnerable because of a severe loss of assets and are unable to support themselves and households without family support and other means of social protection and support. (MOA. Productive Safety Net Programme phase IV programme implementation manual Addis Ababa, 2014).

2.7. IMPACT ASSESSMENT METHOD

Impact assessment of a designed program intervention is to show the effect of the program on participating group and comparison group that did not participate in the program as a control group but having similar pre-intervention socio-economic characteristics. Thus, estimating the impact of a program requires separating its effect from intervening factors which may be correlated with the outcomes, but not caused by the program (Ravallion, 2005). Generally, there are three impact evaluation methods in estimating treatment group participants and control groups. These are randomization/or experimental design, non-experimental design, and quasi-experimental design. Depending on the data availability, ethics to experiment and costs, social science methods deal with randomization/or experimental, non-experimental, and quasi-experimental methods (Jalan & Ravallion, 2003).

2.7.1. EXPERIMENTAL OR RANDOMIZED EVALUATION METHOD

Social experiments are intended to analyze policy issues how things react to a type of policy that has never been tried and one which has no available data observed. The concept of social experiment is to assess a group of willing participants, some of whom are randomly assigned to a treatment group and the rest to a control group. The term experimental refers to the group receiving treatments, control refers the group no receiving treatment and random assignment of individuals in to two groups (Colin & Pravin, 2005).

The contribution of the treatment to the outcome difference between the treated and control group can be estimated without confounding bias in the cause where one cannot control for the confounding variables. However, an outcome depends on treatment as well as other observable factors, so controlling for the latter will in general improve the precision of the impact estimate.

A random assignment of households to treatment and non-treatment groups ensures that on average any difference in outcomes of the two groups after intervention can be attributed to the intervention. In randomized experiment the problem of selection bias can be avoided as a best way of assignment in which the participation characteristics is unmeasured or unobserved. In such cause's randomization takes place before the program begins (Ezemenari, *et al.*, 1999; Smith & Todd, 2005).

2.7.2. QUASI-EXPERIMENTAL EVALUATION METHOD

A quasi-experimental method is the only alternative utilized where there is no baseline survey or randomization is not a feasible option and not takes place prior the intervention. It involves matching program participants with a comparable group of individuals, who did not participate in the program after intervention (Jalan and Ravallion, 2003; Dehejia and Wahba,2002).

2.7.3. NON-EXPERIMENTAL EVALUATION METHOD

A non-experimental method is used when the program participant located intentionally. It can be used through the access of cross-sectional survey data after the program is introduced. Accordingly, there are two broad categories of non-experimental approach, before and after through cross-sectional estimator. Cross-section estimators use nonparticipants to derive the counterfactual for participants (Bryson, *et al.*, 2002).

2.7.3.1. METHODOLOGIES TO CONSTRUCT COUNTER-FACTUAL GROUPS

Nonexperimental methods sometimes are also called statistical methods use statistical techniques to simulate the counterfactual, i.e., the outcome that would have prevailed had there been no intervention. The most frequently used nonexperimental methods available for evaluating development programs include propensity score matching (PSM), difference indifferences (DD), regression discontinuity design (RDD), and instrumental variables (IV).

- **Propensity Score Matching**

The basic idea of the propensity score matching method is to match program participants with non-participants typically using individual observable characteristics. Each program participant is paired with a small group of non-participants in the comparison group that are most similar in the probability of participating in the program. This probability (called propensity score) is estimated as a function of individual characteristics typically using a statistical model such as logit or probit model. The mean outcomes of these groups of matched nonparticipants form the constructed counterfactual outcome. The mean program impact is estimated by the difference between the observed mean outcome of the project participants and the mean outcome of the constructed counterfactual (Caliendo *et al.*, 2005).

- **Difference in Difference**

The difference in difference (or double difference) method entails comparing observed changes in and non-participants using a baseline survey before the program. One then repeats this outcome before and after the project for a sample of participants and nonparticipants. Typically, one collects outcome data of both participants survey at some later point(s) after the program is implemented. This repeat survey(s) should be highly comparable with the baseline survey in terms of the questionnaire, the interview, etc. The mean program impact is estimated by comparing the mean difference in outcomes “after” and “before” the intervention between the participant and non-participant groups. The underlying assumption of DD method is that project participants would have the same outcomes as individuals in the comparison group in the absence of the project. Since this is highly unlikely, PSM is a natural choice to select a comparison group before calculating the differences in a DD method. For this reason, the PSM and DD methods are often used together in practice (Baker, 2000).

- **Regression discontinuity**

The regression discontinuity design method can be used when program participation is determined by an explicitly specified exogenous rule. The method stems from the intuition that individuals around the cut-off point for eligibility are similar and uses individuals just on the

other side of the cut-off point as the counterfactual. In other words, RDD compares outcomes of a group of individuals just above the cut-off point for eligibility with a group of individuals just below it. The major technical problem of the RDD method is that it assesses the marginal impact of the program only around the cut-off point for eligibility, and nothing can be said of individuals far away from it. In addition, for the RDD estimate to be valid a threshold must be applied in practice and individuals should not be able to manipulate the selection score to become eligible (ADB, 2006).

○ **Instrumental Variables**

The instrumental variables method works exactly as a standard regression analysis. When the program placement is correlated with participants' characteristics, then the estimate of program effect using an ordinary least squares regression model is biased. To correct this, one needs to replace the variable characterizing the program placement with another variable (called instrument) such that it mimics the variable being replaced (i.e., correlated with the program placement) but is not directly correlated with the program outcome of interest (Felici, 2008).

2.8. WHY PSM METHOD

Propensity score matching (PSM) approach was used for constructing a comparison group and for reducing the existing differences between the treated and the comparison group. PSM is commonly used to estimate causal treatment effects. The idea of the matching is to find, in a group of non-treated, those individuals who are like the treated individuals in all relevant pre-treatment characteristics. That being done, differences in outcomes between the treated and the adequately selected comparison group are more likely to be attributed to the project intervention. Substantive literature evidence has shown that the experimental estimators using PSM provides reliable and low-bias estimates of program impact.

This method is chosen for this study because now a day's PSM is popular method for program 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 based on a

set of observed characteristics or by using predicted probability of participation given observed characteristics the closer the propensity score, the better the match (Ravallion,2003).

The PSM method is very useful if there are many potential characteristics to match between a sample of treated individuals and a sample of non-treated individuals. The treatment impact is then the difference in outcomes between the treatment and comparison group (Heckman and Todd, 1997). The PSM method provides a natural weighting scheme that yields unbiased estimates of the treatment. The weights are formed as the inverse of the predicted probability that an individual would make the choice to participate in the treatment. The resulting predicted probabilities are used to create weights that are used in subsequent analyses (Baker,2000). While computing the estimated treatment effect, different matching techniques provide different weights on comparison units. The most frequently estimated parameter for such studies is the average treatment effect on the treated (ATT) which is the difference between expected outcome with and without treatment for those who have actually participated in treatment (Caliendo & Kopeinig , 2008).

PSM neither requires randomization nor pre-intervention data but in practice pre intervention data is used to control for differences in individual characteristics prior to implementation of a given program (This is required if a combination of PSM and DID methods is applied). A second best is to use it in the post-intervention data only (Felici *et al.*, 2008). Unlike econometric regression methods, it does not rely on parametric assumptions to identify the impacts of program and it does not impose a functional form of the outcome thereby avoiding assumptions on functional form and error term distributions (Rajeev, *et al.*, 2002). Besides, PSM compares outcome for observation, who share similar observable characteristics using matching methods. This matching method emphasizes the problem of common support thereby avoiding the bias due to extrapolation to non-data region. Results from the matching method are easy to explain to policy makers since the idea of comparison of similar group is quite intuitive. PSM requires large amounts of data both on the universe of variables that could potentially confound the relationship between outcome and intervention, and large numbers of observations to maximize efficiency. Irrespective of its shortcomings like does not considering variables which are non-observable, PSM is extensively used in the recent literature (Ravallion, 2005).

The propensity score or the probability of participating in the program (being treated), is a function of the individual's observed characteristics.

$$P(X) = \text{Prob}(D = 1|X)$$

Where, D indicates participation in project X is the set of observable characteristics.

To measure the effect of a program, we maintain the assumption of selection on observables i.e., assume that participation is independent of outcomes conditional on X_i

$$E(Y|X, D = 1) = E(Y|X, D = 0)$$

2.8.1. STEPS TO APPLY PMP METHOD.

The first step in applying PSM is to create a dichotomous variable for the two group i.e treatment and comparison, estimating using a logit model with maximum likelihood method to estimate the participation probability, a logit model is often preferred due to the consistency of parameter estimation associated with the assumption that error term u in the equation has a logistic distribution (Caliendo & Kopeinig, 2008). Matching estimator is selected based on the data at hand after undertaking matching quality test, overlapping condition or common support condition is identified, the treatment effect is estimated based on the matching estimator selected on the common support region. Finally, sensitivity analysis is undertaken to check the strength of the conditional independence assumption identified. Sensitivity analysis can also be undertaken to check if the influence of an unmeasured variable on the selection process is so strong to undermine the matching procedure.

2.9. STUDIES ON THE APPLICATION OF PSM

Even though there are a plenty of information available on impacts of PSNP program and other interventions, only research done using this model would be discussed. Many researchers have used this model to evaluate different programs and projects in Ethiopia and elsewhere in the world. The following are studies who have applied PSM to evaluate programs in Ethiopia and across the world.

A study by Care -India (2011) to evaluate the impact of INHP-III program on infant and young child malnutrition has applied PSM. Alex Bryson, Richard Dorsett, and Susan Purdon (2002) have applied PSM technique to evaluate the impact of active labor market policies on influencing outcomes in unemployment and earnings for those who subject to the policy change.

In assessing the impact of the impacts of Gasha Micro Finance Institution on poverty reduction in Ethiopia (ABIYOT, 2017) has applied PSM techniques with the primary objective of measuring the impact of the microfinance to help improve client's income level. The result showed that about 80% of the treatment household reported an improvement in their incomes from the time they accessed financial services from Gasha MFI whereas 50.83% of control household respondent expressed an increase in income of the household during the same period with their counterpart in treatment group.

In doing an assessment on the impact of the Productive Safety Net Program (PSNP) in Ethiopia on livestock and tree holdings of rural households, Andersson et al. (2009), have applied PSM model. They found that there was no indication that participation in PSNP leads households to disinvest in livestock or trees. In fact, the number of trees increased for households that participated in the program. It could be the case that participation in PSNP (where tree planting and subsequent forest management work on public lands are usual activities) leads to households becoming more skilled in forestry, and that they switch to increased forest planting as a result. All the above reviewed literature use PSM to evaluate impacts of PSNP whereas this study focused on impacts of microfinance services on household income using PSM.

Jalan and Ravallion (2003) have applied a PSM technique in their study on the benefit incidence of an antipoverty program in Argentina. Esquivel and Pineda (2006) employed the PSM method in their study of the impact of international remittance on poverty in Mexico using food-based, capabilities-based, and assets-based outcome indicators.

Matching is unambiguously preferred to standard regression methods for two reasons. First, matching estimators highlight the problem of common support, since treatment effects can only be estimated within the common support. Where there is poor overlap in support between the treated and the non-treated this raises questions about the robustness of traditional methods

relying on functional form to extrapolate outside the common support. Secondly, matching does not require functional form assumptions for the outcome equation (that is, it is non-parametric). Regression methods impose a form on relationships (usually linear) which may or may not be accurate and which PSM avoids this is valuable since these functional form restrictions are usually justified neither by economic theory nor the data used (Dehejia and Wahba, 1998; Smith and Todd, 2000).

Alemu (2010) applied the model to assess the impact of input and output market development interventions by improving productivity and market success project: The study shows that the participation in market development intervention has significant, positive, and robust impact on outcome variables measured using different indicators. Program has increased participating households' calorie intake by 24percent compared to that of non-participating households.

CHAPTER-THREE

3. RESEARCH METHODOLOGY

The objective of this chapter is to present the snapshot of the research methodology. It contains the research method and design, method of data collection and its source, sampling technique and method of data analysis.

3.1. RESEARCH APPROACH AND DESIGN

The method that would be applied for this research is mixed method because the researcher believes that both qualitative and quantitative research methods help best understand the research problem. Quantitative research approach refers to the systematic empirical investigation of phenomena and quantitative properties and their relationships. It emphasizes on collection of numerical data, which is a deductive approach (Bryman & Bell, 2003). Also, Qualitative research approach refers to all non-numeric data or data that have not been quantified and can be a product of all research strategies (Saunders et al, 2009). This approach can range from a short list of responses to open-ended questions in an online questionnaire to more complex data such as transcripts of in-depth interviews or entire policy documents. (Saunders et al, 2009).

Kothari in his book also argues that mixed methods can serve a larger, transformative purpose to advocate for marginalized groups, such as women, racial minorities, people with disabilities and those who are poor (Kothari, 2004). Moreover, the researcher believes that it is more appropriate to use mixed methods as the study would focus on how well PSNP is impacting the social and economic lives of the poor.

Research Design is a blueprint specifically created to answer the research question. Answering the research question is the central purpose of all research. Research designs are generally categorized into four groups depending on the purpose of the research. Out of these different types of research designs this study has chosen to use a quasi-experimental or causal comparative.

3.2. SAMPLING DESIGN & TECHNIQUE

The study population refers to rural households residing in Habru woreda of Amhara region who are beneficiaries of productive safety net program. Following Kothari, (2004), the size of sample should neither be excessively large, nor too small. It should be optimum. An optimum sample is one which fulfills the requirements of representativeness, and reliability.

Habru woreda is purposefully selected based on the years of participation in the productive safety net program. Secondly, Habru woreda has 39 kebeles. The researcher has selected four kebeles through a simple random sampling. Besides, the same sampling technique was employed to select respondents.

The beneficiaries in each of the four Kebeles was grouped into two strata. Stratum one represents PSNP participant and stratum two represents non PSNP participant but who are in the waiting list. Finally, the primary data for this study was collected from the selected program participants and non-program participants in the study area.

3.3. SOURCE OF DATA AND METHOD OF DATA COLLECTION

The researcher applied both primary and secondary source of data. As primary data source, the researcher has used structured questionnaire developed considering the basic questions under the study, and with respect to the stated objectives. Experts on the field has been consulted for comments on the content, language, and clarity of the questionnaire. To facilitate this, enumerators was assigned to fill the questionnaire by interviewing the sample households from users (participants) and non-users (non-participants) of productive safety net program in the proposed area.

In addition, focus group discussions and key informants (kebele Das) sessions has been done to better understand the implementation process and challenges of PSNP from the implementer agency side.

Besides, as secondary data source, the researcher was approached office of agriculture and Rural development, office of finance and economic cooperation, Kebele administration office, and reviewed articles and journals done on PSNP to supplement the data that was collected from primary data sources.

Sampling procedure and sample size

Determining the appropriate sample size is important in research undertaking. Thus, sample size depends on the total number of populations, the level of confidence and the maximum deviation from true population that can be tolerated in the study. The study has used two groups of samples namely, experimental or treatment group and control group. Control groups are used to avoid the problem of intervening variables (variables that are affecting the output of the research other than independent variables). The researcher applied a simplified formula provided by (Yamane, 1967) as cited by ABIYOT to determine the minimum required treatment group sample size at 95% confidence level, degree of variability= 0.5 and level of precision (e) = 10%.

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

Where n is sample size, N is the total number of study population 18,398.

Where e is the level of precision

Using the total population of 18,398 and level of precision of 10%, the sample size was calculated as follows.

$$n = \frac{18,398}{1 + 18,398(0.10)^2}$$
$$n = \frac{18,398}{1 + 18398 * .01} = 100$$

To ensure that the results are statistically significant, the control group size must be a bit larger enough than the treatment for each combination tested to reach a reliable outcome. likewise, if the desired confidence level for the test is 95% and the minimum acceptable margin of error is 5%, the number of control group sample shall exceed by 0.2%. (<https://clevertap.com/blog/what-is-a-control-group/>).

Therefore, 120 control group are selected from the list of people who were in the waiting list (beneficiaries not enrolled due to resource limitation). To manage the research within the given time and limited budget, a total of 220 samples are selected. From the total sample size, 100 samples are used as treatment group and 120 are used as control group.

On the other hand, the participant of Key informant interviews and Focus Group Discussion are selected purposively. The selection criteria were knowledge and experience in productive safety net program in the woreda.

3.4. METHOD OF DATA ANALYSIS

3.4.1. DESCRIPTIVE STATISTIC

Descriptive statistics like mean, variance, standard deviations, frequency distributions, and percentages were used to assess the socio-economic settings of the sample respondents. From the statistical tools, Chi Square test was used for dummy variables to investigate the difference between the treatment and control groups.

3.4.2. PROPENSITY SCORE MATCHING

Rosenbaum and Rubin (1983) as cited by ABIYOT URGA DADI, pioneered propensity score matching methodology followed by many other improvements and applications. They define propensity score as conditional probability of treatment given pretreatment characteristics. Their argument is because since assignment of subject to treatment and control groups may not be random, the estimation of the effect of treatment may be biased by the existence of confounding factors.

Thus, the researcher has used Propensity score matching as way out to correct the estimation of effect of the participant controlling for the existence of these confounding factors. This study applied propensity-score matching method to match each PSNP program participant with non-program participant (control clients who had (almost) the same probability to be able to be join the program. A group of control beneficiaries was selected in this way can then serve as an accurate control group to correct for selection bias.

While applying this model there are two basic assumptions to follow:

- **The balancing assumption:** States that participation is shaped by pre participation characteristics or that the balancing of participants and control is through the propensity score. Therefore, if $P(x_i)$ is the propensity score then.

$D \perp X / P(X)$ 4

\perp represents independence i.e., exposure to the program participant (D) is shaped by the participation covariates (Xi) the balancing assumption is thus the propensity score $P(D) = 1, X_i = P(x_i)$.

- **Conditional independence assumption:** Assume that selection is biased on observable covariate of the subject and treat all the covariates that influence participation and potential outcomes are simultaneously observed. It is expressed as $Y_1, Y_0 \perp D / P(x_i)$5

Where Y_1, Y_0 are potential outcomes with and without the program respectively, D_i is participation variable, $P(x)$ is propensity score. In other words, for a given propensity score exposure to program is random and therefore participant and control clients should be on average observationally identical (Caliendo and Kopeinig, 2008) as cited by ABIYOT URGADADI.

A logit model was applied to estimate propensity scores using a composite of predictors characteristics of the sampled clients (Rosenbaum and Robin, 1983) and matching were then performed using propensity scores of each observation. In estimating the logit model, the dependent variable is participation in PSNP, which takes the value of 1 if a beneficiary participates in PSNP service and 0 otherwise.

3.4.2.1 MATCHING ESTIMATORS

After estimation of the propensity scores, seeking an appropriate matching estimator is the major task. Estimation of the propensity score per se is not enough to estimate the ATT of interest. This is because propensity score is a continuous variable and the probability of observing two units with the same propensity score is, in principle, zero. There are several matching methods that differ from each other with respect to the weights they attribute to the selected controls when estimating the counterfactual outcome of the treated and the way they select the control units that are matched to the treated. However, they all provide consistent estimates of the ATT under the

CIA and the overlap condition (Caliendo and Kopeinig, 2008). The most used matching estimators nearest neighbors matching, radius matching, kernel matching, caliper matching is discussed below. First, nearest neighbor (NN) matching, it is the most straight forward matching estimator. In NN matching, an individual from a comparison group is chosen as a matching partner for a treated individual that is closest in terms of propensity score (Caliendo and Kopeinig, 2008). NN matching can be done with or without replacement options. In the case of the NN matching with replacement, a comparison individual can be matched to more than one treatment individuals, which would result in increased quality of matches and decreased precision of estimates.

On the other hand, in the case of NN matching without replacement, a comparison individual can be used only once. Matching without replacement increases bias but it could improve the precision of the estimates. In cases where the treatment and comparison units are very different, finding a satisfactory match by matching without replacement can be very problematic (Dehejia and Wahba, 2002). It means that by matching without replacement, when there are few comparison units like the treated units, we may be forced to match treated units to comparison units that are quite different in terms of the estimated propensity score.

Second, stratification or interval matching, this procedure partitions the common support into different strata (or intervals) and calculates the program's impact within each interval. Specifically, within each interval, the program effect is the mean difference in outcomes between treated and control observations. A weighted average of these interval impact estimates yields the overall program impact, taking the share of participants in each interval as the weights.

Thirdly, caliper or radius matching, the above discussion tells that NN matching faces the risk of bad matches, if the closest neighbor is far away. To overcome this problem researchers, use the second alternative matching algorithm called caliper matching. Caliper matching means that an individual from the comparison group is chosen as a matching partner for a treated individual that lies within a given caliper (propensity score range) and is closest in terms of propensity score (Caliendo and Kopeinig, 2008). If the dimension of the neighborhood is set to be very small, it is possible that some treated units are not matched because the neighborhood does not contain a control unit. On the other hand, the smaller the size of the neighborhood the better is

the quality of the matches (Becker and Ichino, 2002). One problem in caliper matching is that it is difficult to know a priori what choice for the tolerance level is reasonable.

Fourth, kernel and local linear matching, this is another matching method whereby all treated units are matched with a weighted average of all controls with weights which are inversely proportional to the distance between the propensity scores of treated and controls (Becker and Ichino 2002; Venetoklis, 2004). Kernel weights the contribution of each comparison group member so that more importance is attached to those comparators providing a better match. The difference from caliper matching, however, is that those who are included are weighted according to their proximity with respect to the propensity score. The most common approach is to use the normal distribution (with a mean of zero) as a kernel, where the weight attached to a particular comparator is proportional to the frequency of the distribution for the difference in scores observed.

According to Caliendo and Kopeinig (2008) a drawback of this method is that possibly bad matches are used as the estimator includes comparator observations for all treatment observation. Hence, the proper imposition of the common support condition is of major importance for kernel matching method.

3.4.2.2 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 (Becker and Ichino, 2002). The common support is the region where the balancing score has positive density for both treatment and control units. No matches can be formed to estimate the TT parameter (or the bias) when there is no overlap between the treatment and control groups. We define the region of common support by dropping observations below the maximum of the minimums and above the minimum of the maximums of the balancing score.

3.5. DEFINITION AND MEASUREMENT OF VARIABLES

A combination of socio economic and demographic variables is used to explain beneficiary's participation in PSNP as well as the outcomes in terms improving the socio-economic status of the beneficiaries.

3.5.1 THE DEPENDENT VARIABLE OF THE MODEL:

Participation in PSNP is a dummy variable indicating that whether a beneficiary is treatment or control client, 1 for treatment participating household, and 2 other wise or control clients.

3.5.2 DESCRIPTION OF EXPLANATORY AND OUTCOME VARIABLES

Beneficiaries' income status: Increasing income gives the households many options, increases consumption possibilities, allows the households the possibility of saving for future, gives house to have access to better health services, reduces the weaknesses arising from future income failures and gives the children better educational opportunities. Hence, improving the beneficiary's income generating sources and be economically independent has key place in productive safety net program. Therefore, the impact of PSNP on the income of its participants needs to be evaluated to see the extent to which PSNP program have been successful in improving economic status of beneficiaries.

Diversification of income generating activities: helping participants to be able to engage in feasible and viable income generating activities is one of the pillars of PSNP. Amongst are, engaging in animal rearing and production, small businesses, and others.

Asset's accumulation: Asset's accumulation plays a multitude of impacts among beneficiaries of PSNP programs. The ways in which households use assets to smooth out consumption is a well-documented process. Households purchase assets when their income are better and sell them during the lean periods. Besides an asset accumulation by beneficiaries is expected to have a positive impact on saving performance and be able to use when required. In fact, material assets which included other physical and financial assets like for instance land, housing, livestock, saving and jewelry, enable people to withstand shocks and expand their horizon of choices (World Bank, 2002). The researcher wants to evaluate the effectiveness of PSNP program on the level of asset accumulation of the beneficiaries.

Home cooking materials: PSNP also meant to add something to its beneficiaries in terms of acquiring basic home facilities (cooking materials) that are essential to make life easy and save time.

Agricultural production equipment's: to have effective and efficient agriculture, it is necessary to have the equipment that would help to do so. Regarding this, PSNP has a key role in assisting beneficiaries buy and acquire those materials.

Infrastructures: infrastructures are basic indicator to a certain community development. As part of this PSNP has big ambition to help kebeles get road maintenance, education, health, electricity's, water supplies connectivity and transportations. Some light would be shaded into those parameters considering PSNPs impact.

Leve of consumption: PSNP is meant to reduce poverty and improve the life standard of the beneficaeries and eventually be able to get them out of poverty and get them onboard on self-help activities. Besides, it also has a role to improve the daily food consumption in terms of types of foods, quality, and quantity and with respect to frequency of consumption.

Access to financial services: it is imperative that when people get money they need to save and spend it for some essential purpose. So, by having PSNP, participants are getting some cashes that needs to be saved and spent properly to intended objectives. This would look at if there are cooperatives, banks, small financial institutions get onboard after PSNP. Also, PSNPs contributions to any of those engagements.

Savings: saving plays a critical role to improve people economic conditions and life standards. As part of this, PSNP has role in helping people get cash and providing orientation to them on financial/cash managements. Beneficiaries are always have been advised to do saving and utilize it for future.

Decision Making Power: Women's ability to influence or make decisions that affect their lives, and their future is measured to be one of the important components of empowerments. PSNP focuses on getting onboard and improve women household head ability to make decisions about matters related with finance and other economic conditions as the most direct impact of their program (Cheston and Kuhn, 2002). Thus, the measure of client's autonomy in the household decision making will constructed to capture client's empowerment status. It will be measured by

the extent of their participation and impact in making decisions on issues such as expending money, and saving accounts, buying raw material, and selling, using small items and use of loan.

Age: It is continuous variable defined as beneficiaries age at the time of interview measured in years. Vigano (1993) noted that with increase in age, it is usually expected that participants get more stability and acquire experience. So, we expect this variable to have a positive effect on performance. Hence age of the participant was hypothesized to have positively related to income improvement. In other words, the probability of being PSNP treatment participant increases with age as they would more dependent.

Sex: This is a dummy variable which takes a value 2 if the household head is female and 1 otherwise. Sex difference among PSNP beneficiaries play a significant impact in the economic performance of a given beneficiaries. Some empirical evidence demonstrated that sex is important in defining the economic impact of people in Africa (Dey, 1980). This variable is included to differentiate between males and females in the use of finance that they would get from PSNP. Women are generally more likely to participate in saving and engage in start-ups. Therefore, in this study sex was expected to correlate positively when the participating household head is female.

Marital Status: this is a variable whether a household is engaged in marriage or not. Married individuals are more likely than single one`s to participate in saving and income generating activities.

Educational status: Household income is expected to be much higher when household head attain a higher level of education. According to Holvet (2004) education is an input in income since it provides the means of earning a higher income via enhancing earning capabilities. It is also a welfare outcome as it allows individuals to participate in decision making that determine the well-being. Literate individuals may get more information about financial services and social awareness`s in their residential area than individuals with no formal education.

Family Size: this variable refers to a total number of family members of the household make their life under one roof regardless of age and sex. Existence of large household size with limited income source could affect to be able to secure finance and engage in start-ups and larger family with limited income are more likely to participate in PSNP program. This is due to increased

demand for consumption with limited income source. Therefore, the larger household size will become treatment household and it will have positive relationship on income generating ability of the household member.

Dependency Ratio: continuous variable defined as number of dependent household members. This refers to total number of economically inactive members of a household whose age is below 18 years and above 65 years old. This variable tells us the proportion of household members who are dependent on the active members of the family. It was expected that the more the number of dependent in a household the lower the income level would be because the per capita income lowers as the number of dependent increases.

Table 3-1 Type, Definitions and Measurement of Variables used in PSM Analysis

Variable	Types and definition	Measurement
Dependent variable		
Participation	Dummy variable that measures the participation of individuals in PSNP program	1=if Yes and 2=Otherwise
Explanatory variable		
Age	Represents age of the beneficiary	In years
Sex	A dummy variable representing sex of the beneficiary	2 if the household head is female and 1 otherwise
Marital status	A dummy variable representing marital status of the beneficiary	1=unmarried 2= married 3= widow 4=divorced
Family size	Represents the number of family members of the beneficiary	No of family members or households
Dependency ratio	Represents the number of dependent family members of the beneficiary	No
Educational status	Represents the educational level of	0=none/illiterate

	beneficiary	1=read and write 2=basic education 3=primary 4=secondary 5=diploma
Outcome variable		
Total income (TOINCOM)	Incomes improvement because of PSNP	Increased, decreased and stagnant
Consumption pattern (CONSPA)	How many times per they feed their family	Meals per day
Asset's accumulation (ASSACUM)	Represent improved animal rearing and other assets	1=if Yes and 2=Otherwise
Home equipment's (HOMEQ)	Represent improved /acquired home materials	1=if Yes and 2=Otherwise
Infrastructures	Represents infrastructure accessed, (water, road, network, health, education)	1=if available and 2=Otherwise
Access to finance (ACCFINANINS)	Access to financial service (RuSaCos)	1=if Yes and 2=Otherwise

CHAPTER FOUR

4. DATA PRESENTATION, INTERPRETATION AND ANALYSIS

This chapter presents the findings of the social and economic impacts of productive safety net program on the beneficiaries residing in Habru woreda of Amhara Region using both descriptive and econometric analyses. Propensity score matching (PSM) method is employed to estimate the social and economic impact of PSNP on program beneficiaries. Mean, standard deviations, frequency distributions and percentages are used as tools of descriptive statistics and the results are presented in the first part of this chapter.

3.1. BACKGROUND OF PSNP AND OVERALL PROGRAM PERFORMANCE

3.1.1. PROGRAM BACKGROUND

Ethiopia's Productive Safety Net Program is a development oriented social protection program aimed at solving the chronic food needs of rural households in the country. In 2005, the program commenced by covering four regions of the country (Tigray, Amhara, Oromiya and SNNPR) aiming to reach more than 1.6 million households (5 million people) 6 in 263 woredas 1(districts) identified as chronically food insecure areas (Legovini, 2006; Gilligan et al., 2009; Siyoum, 2012).

Habru Woreda of North wollo zone in Amhara regional state was one of the Food Insecure Woreda (FIW) where PSNP implemented together with aim of help improve beneficaeries social and economic status. Based on the information obtained from Habru Woreda Agricultural and Rural Development Office (LWARDO, 2011) annual report, it was indicated that rain-fed agriculture, limited use of improved input, frequent drought, backward agricultural practice led to low agricultural production and productivities.

3.1.2. IMPACT FROM CORE PSNP PROGRAM ACTIVITIES

Key informant across the target kebeles disclosed that PSNP is contributing to ensure food security by its diversified and impactful activities. The main PSNP program activities being

implemented are transfer, livelihood, PDS and public work. Each of this has their own decomposed tasks to be implemented.

3.1.2.1. TARGETING

The PSNP is a targeted program where the targeting methods used embody a mixed set of approaches that include both administrative and community components.

Targeting under the PSNP combines both categorical and individual selection using both administrative and community mechanisms. Administrative mechanisms include the provision of a specified number of clients that can be included within a specific administrative area (woreda, kebele, etc.); guidance on targeting criteria to be used at the community level; and oversight to ensure transparency and accuracy. Oversight ensures upward accountability, through regional oversight of woredas and woreda oversight of kebeles.

Accountability relations work downward as well through community targeting, which includes 93 the identification of clients by community Food Security Task Forces (FSTFs) and verification of the client list in a public meeting, leaving open the possibility for appeals and complaints.

The PIM specifies that households who are targeted should fall into the following categories:

- be community members.
- have faced continuous food shortages (three months of food gap or more per year) in the last three years.
- be acutely food-insecure due to a shock resulting in the severe loss of assets; and,
- lack adequate family support and other means of social protection and support (GFDRE 2010, 24).

Targeting rules in the PIM distinguish between households having adequate household labor, which should be registered for public workfare projects as a requirement to receive their transfers, and households with labor constraints that are unable to contribute to public works. The latter receive “direct support” and are not required to work.

One of the key informants in 04 kebele were asked about targeting and he said, we have learned that it is important to include traditional leaders and elders in determining the targeting criteria because doing so ensures that these match local opinions of who needs support. Involving community leaders in targeting decisions also helps to enhance the transparency of the process.

And focus group discussion held at the woreda level mentioned the following:

Since kebele leaders facilitate targeting, they do not include some poorer individuals, so that their own relatives can be covered. In addition to this, there were some areas in which the kebele chairman was included although he was not poor. Everyone thinks that they deserve it. They [community members] do not know about the program [targeting criteria]. Also, stated, there are occasions where kebele officials allow the elderly to participate in public works when we have told them not to do so. We have told them not to allow children to work, as well. However, when the father is not able to work, public works households will send their children to work out of fear that they will be punished if they do not show up and fulfill their household's labor contribution. Such types of problems do exist.

3.1.2.2. TRANSFER

The system for making cash transfers consists of the following steps. Kebeles are responsible for forwarding attendance sheets and lists of individuals eligible for direct support to the WFSO. The WFSO enters these data using a payroll software system called PASS. all Kebeles use PASS only for public works participants, when this is complete, this information is given to the WOFED. The regional Bureau Office of Finance and Economic Development (BOFED) notify WOFED when funds have been transferred to the branch of the Commercial Bank of Ethiopia and WOFED manage to transfer from CBE account to ACSI CBE account. Meantime WOFED need also to submit payroll soft and hard copy to ACSI. Subsequently, arrangements are made to pay beneficiaries through ACSI satellites, 34-year-old key informants from O5 kebele responded. He also added, it takes 5 days to prepare attendance sheet and payrolls respectively, and ACSI also manage the payment in 15 days.

Additionally, 29-years old key informants from 05 kebele said, noted that there is no significant delay while payment execution but lack of vehicle to coordinate the disbursement and budget delays as a challenge.

Woreda level offices are increasingly well-resourced with trained staff. Nearly all now use the PASS system and nearly all have functioning computers. Most, but not all, have manuals that can be referred to. Training has occurred, although this could be more widespread, (WOFISO report, 2012)

In the FGD held at woreda level the team noted, explains as their communities have good culture and traditions which promotes savings, helping each other and industriousness. Besides, mentioned, the PIM is their instructional manual to implement all program activities.

3.1.2.3. PUBLIC WORKS IMPLEMENTATIONS

According to the PIM (GFDRE 2010), public works participants include men and women over the age of 16 who are able-bodied. Pregnant women after four months and lactating mothers 10 months after the birth of their child are exempt from public works. They should be shifted to direct support if there is no able-bodied labor in their household to compensate for their labor contribution. Where there is household labor available, the work requirement of another able-bodied household member is increased up to the labor cap of 15 days.

one of the principles of public works specified in the PIM is that they are to be integrated with woreda development plans. In all woredas that were visited, public works officials confirmed that public works are planned in this way. As well as being consistent with woreda development plans, public works are also to be implemented in accordance with the Ministry of Agriculture and Rural Development (MoARD) guidelines on community-based participatory watershed development (CBPWD). The overall objective of CBPWD is “to improve the livelihood of communities and households in rural Ethiopia through comprehensive and integrated natural resource development” (GFDRE 2010, 40). Many of the indicative public work’s activities in the PIM reflect the CBPWD approach, such as the establishment of area enclosures and woodlots, the construction of hillside terraces, shallow wells and ponds, and stream diversion.

One of the key informants from 029 kebele explains the following about public work implementations: ‘The kebele FSTF develops a detailed implementation plan based on the indicative plan sent from the woreda. The kebele FSTF makes minor adjustments to this. It can increase the volume of public works but cannot reduce the number of proposed works. However, the kebele FSTF does not have the mandate to make major modifications to the plan sent from the woreda. Public works planning is not participatory, because the main activities and the amount of work to be done is fixed by woreda officials.

FGD result explains as their communities have good culture and traditions which promotes savings, helping each other and industriousness and discussed the following about how the implementation is managed: ‘There was only a focal person responsible for public works, but now there are a group of experts and they are jointly planning, monitoring, and evaluating the implementation of public works and noted public works have helped to build community assets. For example, terraces have helped to recover land that previously was thought to be useless. Trees and grasses have been planted to produce animal feed and protect the environment; as well as stabilizing land that is susceptible to erosion; these have a direct economic benefit for the community, because there is more fodder available for cattle.

3.1.2.4. ASSET ACCUMULATION

The Ethiopian government, in collaboration with donors and development partners, extensively redesigned the OFSP, naming the new program as the Household Assets Building Program (HABP). The HABP is one of the four components of the Ethiopian government’s National Food Security Program. As such, it contributes to the achievement of the FSP’s expected outcome of an improved food security status of male and female members of food-insecure households in chronically food insecure (CFI) woredas. The specific targeted outcome of the HABP is diversified income sources and increased productive assets for food-insecure households in CFI woredas (GFDRE 2009b).

One of 37-years key informants from 028 Kebele said, ‘PSNP alone cannot bring about graduation. If we strengthen the this and provide credit services through preparing business plans with the intended beneficiaries, we will register better results in graduation. Added,

despite the challenges many beneficiaries are doing in food security, improving savings, crop production and getting agricultural inputs.

FGD held at woreda level also explains as their communities have good culture and traditions which promotes savings, helping each other and industriousness. discussed the vital implication of PSNP to help beneficiaries improve their asset through savings and making female headed households become economically independent. Also noted, all listed activities are being done based on the PIM.

3.2. DESCRIPTION OF CHARACTERISTICS OF SAMPLE BENEFICAIRIES

This section discusses the characteristics of sample respondents by applying descriptive statistics such as mean, standard deviation, percentages, and frequency. Inferential statistics such as Chi square test (for categorical variables) and t-test (for continuous variables) are used for the two groups of sample respondents (program participants and non-participants) to compare them with respect to some socio-economic, institutional, and other characteristics that will shed light on the estimation of impact using PSM technique.

Variable definition	Treatment			Control beneficiaries		Total	
		Frequency	Percent	Frequency	Percent	Frequency	Percent
Sex	Female	46	46.0	48	40	94	42.7
	Male	54	54.0	72	60	126	57.3
	Total	100	100.0	120	100	220	100
MARR	Divorced	7	7.0	5	4	12	5.4
	Married	78	78.0	100	83	178	81.3
	Unmarried	4	4.0	6	5	10	4.5
	Widow	11	10.0	9	8	20	8.6

	Total	100	100.0	120	100	220	100
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3.2.1. ANALYSIS OF SOCIO-DEMOGRAPHIC CHARACTERISTICS AFFECTING INCOME.

Table 4.1 Comparison of categorical variable between treatment and control beneficiaries

Source: Own survey result (2021)

3.2.1.1. SEX

Out of the total 220 respondents in the study area 57.3 % were Male-headed and 42.7 % were female-headed households. Among male-headed households, 60 % were control clients and 54 % were treatment clients. Likewise, within female-headed households, 46 % and 40 % were treatment client and control beneficiaries, respectively. Among treatment clients 46 (46%) of them are female headed and 54 (54%) are male headed whereas among waiting beneficiaries 60% are male headed and 40 % are female headed. The statistical analysis showed that there was no statistically significant difference in the sex of the household head between treatment and control client household heads at 5% of level of probability (Table 4.1).

3.2.1.2. MARITAL STATUS

Table 4.1 shows that marital status of the respondents. The result indicates that the majority (78%) of the treatment client respondent and 83% of control beneficiaries were married. This shows that beneficiaries with household responsibilities (married individuals) were most likely to participate in PSNP public works activities. It can also be assumed that married households are most likely to be involved in saving and engage in income generating activities. So, it is fair to assume that these married household heads were most likely to get higher amount of money from PSNP than others who are not married. It also goes with the belief that married individuals are more responsible and are more likely to get credit and saving opportunities as they are more trustworthy than those who are not. This has been pointed out while the interview as married individuals are well trusted and have tendencies to for saving and asset accumulation. Marital status was statistically significant at 1%.

3.2.1.3. AGE

Table 4.2 shows the age distribution of respondents. Age ranged between 29 to 68 years old. The mean age of the head of the household was estimated to be 44.71. (Table 4.2).

3.2.1.4. EDUCATIONAL STATUS

Status of education tends to determine where one works, saving and engages in income generating activities. The respondents were divided into five groups with respect to educational attainment, including those none/illiterate, read and write, basic education, primary, and diploma. Most of the respondents are did not obtain any kind of formal education and only 3% of the respondents were reported have formal education. Out of the total respondents, about 29% were treatment whereas about 26 % where the control clients were could read and write. This shows the treatment group could have a bit higher to be able to read and write. The proportion of no formal educations (primary, secondary and diploma) for the treatment beneficiaries is about 97% which is much nearly the same with that of the control beneficiaries (97%). This indicates that there is no difference in no formal education between treatment and control beneficiaries.

3.2.1.5. FAMILY SIZE

Sample Family size have an average size of 3.78 persons per beneficiaries. The maximum Family size observed was 8 while the minimum was 1. The mean Family size of treatment beneficiaries was 3.78 and that of control beneficiaries was 4.28. Moreover, 15% of the sample beneficiaries have less or equal to 2 Family members, 85% of the sampled Family size have more than 3 household members. This shows there is difference between the two categories under consideration. In addition, 88 % of the treatment beneficiaries households, as well as more than 90% of control client households, reported to have three or more family members and the survey results show much variation in the average household size between the two group households. (Table 4.2)

Table 4.2 Comparison of continues variable between treatment and control beneficiaries.

Variables	Treatment beneficiaries				Control beneficiaries				Total			
	Minimum	Maximum	Mean	Std. Deviation	Minimum	Maximum	Mean	Std. Deviation	Mean	Mean diff	Min	Max
AGER	28	68	44.71	9.418	29	68	45.42	9.040	44.71	-710	28	68
FAMSZR	1	10	3.78	1.554	1	9	4.28	5.274	3.78	-500	1	8
EDUR	0	5	1.00	1.189	0	5	1.10	1.233	1	-400	0	5

3.2.2. IMPACT OF PRODUCTIVE SAFETY NET PROGRAM

The main aim of this study is to assess the social and economic impact of productive safety net program on the beneficiaries. The impact will be measure in economic and social status of beneficaeries like income, saving, consumption pattern of beneficiaries and asset accumulation of beneficiaries and infrastructures.

Table 4.3 comparison of outcome variables respondents

Variables	Treatment beneficiaries				Control beneficiaries				t-test	P-value
	Minimum	Maximum	Mean	Std. Deviation	Minimum	Maximum	Mean	Std. Deviation		
TOINCOM	0	2	1.90	0.414	0	2	0.58	0.795	14.99	0.00
CONSPA	1	2	1.97	0.171	1	2	1.04	0.201	36.54	0.00

ASSACUM	1	1	1.00	0.000	1	2	1.88	0.322	-27.32	0.00
HOMEQ	1	2	1.23	0.423	1	2	1.95	0.219	-16.22	0.00
INFRAS	1	1	1.00	0.000	1	1	1.00	0.000	0.001	0.00
ACCFINANINS (RuSaCos)	1	1	1.00	0.000	1	1	1.00	0.000	0.001	0.00
WODM_EIND	0	1	0.97	0.171	0	1	0.19	0.395	18.360	0.00

Source: Own survey result (2021)

3.2.2.1. IMPACT OF PSNP ON BENEFICIARY'S INCOME STATUS

One of the primary objectives of the productive safety net program is to assist beneficiaries to ensure food security and raise their income and ultimately be graduated and start their own businesses or livelihoods. If we look at the descriptive statistics for the treatment and control groups, the mean income of treatment beneficiaries is more than the mean income of the control beneficiaries (1.90 versus 0.58). As indicated the mean difference in income status between the treatment and the control beneficiaries is 1.05. About 92% of the treatment beneficiaries reported an improvement in their incomes from being the beneficiaries of productive safety net program whereas about 14% of control beneficiaries respondent expressed an increase in income of the household during the same period with their counterpart in treatment group. This shows income level of treatment group is more improved as compared to the control group. Increased incomes from the program were, therefore, spent into purchasing home equipment's, daily consumption, purchasing animals for rearing, children's education, food, and expenditure on health. The above table that presents the result for the sample showed that there is statistically significant difference between the average beneficiary income of treatment group and control group. The t-value table shows a t-value of (14.99) and a p-value of (0.000).

3.2.2.2. IMPACT OF PSNP ON BENEFICIARY'S CONSUMPTION PATTERN

Most of the treatment beneficiaries (91%) respondent explained that their consumption pattern has been improved due to PSNP as they were able to feed or provide meal 3 times per day. However, the same thing is not happening with control beneficiaries as most of them responded (78%) that they are still struggling to provide meal or feed their households three times per day and could still feed 2 times per day. If we look at the descriptive statistics for the treatment and control groups, the mean consumption pattern of treatment beneficiaries is more than the mean consumption of the control beneficiaries (1.97 versus 1.04). As shown in the table the mean difference in consumption pattern between the treatment and the control beneficiaries is 0.93. Generally, it implies that the treatment group are spending to basic consumption needs and, they were able to improve the pattern because of this program. The beneficiaries were very thankful to the government and other stakeholders that are being engaged in the program and were keen to continue utilizing PSNP benefits to its intended objectives. The t-value table shows a t-value of (36.54) and a p-value of (0.00).

Besides, the results obtained from FGD tells us as PSNP is contributing much to helping beneficiaries improve their consumption pattern and be able to feed their households at least three times per day.

In addition to the above one, 37-year-old key informants from 029 kebele responded/reiterates that PSNP has an its own impact in helping beneficiaries buy the required consumption goods and could feed their households.

3.2.2.3. IMPACT OF PSNP ON BENEFICIARY'S ASSET ACCUMULATION

Among the objectives of PSNP, helping beneficiaries accumulate essential assets was the key and boldly stated one. This would eventually help them graduate/withdraw from the program and start leading their life by themselves. In this section asset accumulation specifies on how beneficiaries are successful in animal rearing and holding them as an asset. Table 4.2. shows that the vast of majority of the (98%) of the treatment groups expressed as PSNP helped them holding some sort of assets in terms of animal rearing (goat, sheep, hens, oxen, and cow) and

only 2% of them responded as PSNP could not be able to change their status in this regard. In the meantime, they noted that by raising and selling animals they could be able to make their children attend school and cover educational material and medical expenses. When it comes to the control group, most of them responded that their status on asset accumulation did not change however a handful of individuals could be able to raise and hold in terms of animal rearing.

32-year-old key informants from 028 kebele said, the cash transfer that is being made from the program to beneficiaries is really changing the recipient's asset accumulation as they developed a culture of purchasing some sort of animals right after they withdraw the money, and they are also always advised to spend the money to the right place and to do the right typing.

3.2.2.4. IMPACT OF PSNP ON BENEFICAIRIES HOME EQUIPMENT'S ACQUISITION

It is well noted that PSNP needs to have an impact on beneficiary's status of home material acquisition and ultimately to own materials that would make their life easy. In this regard, most of the treatment group (61%) has responded that PSNP is making a real progress to their life through purchasing and holding of essential devices/materials such as bed and mobile phone. The remain 39 % of the treatment group noted that PSNP to them is not doing well in terms of having the essential devices materials such as mobile phones, bed, TV, kerosene stove etc. besides, most of the control group (67%) could not be able to have one in terms of owning the above materials. The remain 33% of the control group responded that they were able to acquire materials like bed and mobile phones from the incomes generated from self-help activities.

43-year-old key respondents from 05 kebele has said, PSNP helped most of beneficaeries to buy feature mobile devices and connect them with relatives and extended families in the main cities Bahir dar, weldeya, and Addis Ababa.

THE FGD result also shows as PSNP helped women household heads to purchase and basic home cooking materials and could make their life a bit easier.

3.2.2.5. IMPACT OF PSNP ON BENEFICAIRIES (BASIC INFRASTRUCTURE)

One of the PSNPs primary objective making beneficiaries to be able to participate in paid community work and making beneficiaries achieve two things a time i.e obtain cash and participate in building, cleaning, and repairing basic infrastructures such bridges, road, and environmental protection. Besides, there are objectives of PSNP in assisting to fill basic infrastructure gaps such as road maintenance, irrigation facilitation, health, and education facilities. In this regard, almost all (99.9%) of the treatment groups responded that they have the basic infrastructures except electricity's. Also, almost all (99.9%) control group responded that except electricity they have the basic infrastructures.

FGD result shows that, despite the challenges (resistance of some beneficiaries to engage in the community work) there are good progress in making the public to participate in the water sanitation and road construction and other infrastructures. Also noted that, there is a need to do something about electricity to be addressed as soon as possible. Besides, there is also a necessity to help improve the water sanitation in the woreda as the government was only concerned on the coverage.

36-year-old key informant from 07 kebele has responded that, there is a real change in terms of having the basic infrastructure and appreciate the government and other NGOs for sponsoring this and mobilizing the public to participate and keep engaged in every step of the way in doing so.

3.2.2.6. IMPACT OF PSNP ON BENEFICAIRIES ACCESS TO FINANCE

One of the prime objectives of PSNP is to help the unbanked and poor people residing in the countryside to get finance and onboard on the financial inclusion and conventional banking sector. In doing so, Rural saving and credit cooperatives have the key role to play in helping beneficiaries get financial services including but not limited to saving, credit, and loans. So almost all the treatment beneficiaries (99.9%) responded that PSNP and its sub-tasks has encouraged them to go to RuSaCos or the nearby Amhara credit and Saving Institutions to make savings and getting loans. In the meantime, 72% control groups also responded that they have

access to finance and trying to be making savings and take loans as well the remains responded they have finance limitation to do so.

FGD results indicates that the fact that beneficiaries are using the M-BIRR mobile money services which provided through ACSI is making a real impact in terms of beneficiaries to be able to be encouraged and making savings. Also, ACSI satellite cashiers oversee the PSNP cash disbursements, and this helped beneficairies get their money on the spot/nearby and get whatever financial services they might need.

32-year-old key informants responded that while payment date beneficiaries always get financial service orientation from ACSI satellite cashiers, stating that those beneficiaries who wants to save can save and due to this many beneficairies could be able to secure savings eventually.

3.2.2.7. IMPACT OF PSNP ON WOMEN BENEFICAIRIES DECISION MAKING AND ECONOMIC INDEPENDENCY.

Helping women household heads be able improve their decision making and economic independency is amongst the main objective of PSNP. In this regard, most of the treatment groups responded that they believe that PSNP help them decide on their family matters and decide whatever they think is necessity for the family wellbeing. In the meantime, the fact that they are the one who receive the cash from ACSI Seattleite cashiers they were able to make plans in spending the money to right thing that is good for all household members. When it comes to the control groups, most of them responded that there is no such freedom to exercise decision making and enjoy some sort of economic independency.

FGD result indicates that women have the special ability to make savings and spend it properly to areas that are beneficial for the family. Also, noted the program helped women's to relived from economic dependency and now they can save their own money and involved in equip. Besides, they have now the freedom to decide whatever is they thinks is necessary for their family.

3.3. ECONOMETRIC RESULTS

This part describes the whole process of deriving the social and economic impact of productive safety net program on the beneficiaries. It explains the estimation of propensity scores, matching methods, and average treatment effects.

3.3.1. ESTIMATION OF PROPENSITY SCORE

Table 4.4 Logistic regression result of program participation

<i>Participation</i>	<i>Coefficients</i>	<i>Std. Error</i>	<i>Z</i>	<i>p-Value</i>
<i>Educational status</i>	13.970	2867.524	0.000	0.996112
<i>Marital status</i>	-0.228	1.348	0.029	0.865652
<i>Age</i>	-1.131	1.356	0.696	0.004042
<i>Family size</i>	1.341	1.646	0.663	0.004154
<i>Sex</i>	1.450	2.299	0.398	0.528176
<i>Income status</i>	1.504	1.745	0.307	0.00367

Source: model result, 2021

The logistic regression model was used to estimate propensity score matching for treatment and control beneficiaries. The pseudo- R² indicates how well the regresses explain the participation probability. After matching there should be no systematic differences in the distribution of covariates between both groups and therefore, the pseudo- R² should be low (Caliendo and Kopeinig, 2008). Results presented in Table 4.4 shows the estimated model appears to perform well for the intended matching exercise. The pseudo-R² value is 0.123. A low R² value shows that program beneficiaries do not have much different characteristics overall and as such finding a good match between treatment and control beneficiaries becomes easier.

Based on the results indicated in above table 4.4 there are several significant covariates of program participation that have been disclosed. The probability of beneficiaries being received

aids from PSNP program is tends to have been increased with peoples with low income or who were under extreme poverty, peoples with higher age, and peoples with large household members. In the meantime, educational status, marital status, and sex were not sadistically significant. It also means there have been no relation between participation in PSNP program and educational status, marital status, and sex.

Based on the results for the logistic estimated sample in table 4.3 the intercept 0.12, which is significant and positive and indicates that PSNP program has a good impact on beneficiaries social and economic lives. subsequently, six variables have been assumed to explain factors affecting participation in PSNP program. Of them only three variables have found to be statistically significant at 5%, the rest were not significant in explaining the variations in the dependent variable. The maximum likelihood estimates of logistic regression model shows that family size, income status and age were significant factors in influencing to participate the in the PSNP program.

Based on the above table (4.4), estimated coefficient results participation in PSNP program has been significantly influenced by three variables. Income status and family are found to have positive and strong relationship with beneficiaries participation in PSNP.

3.3.2. PROPENSITY SCORE MATCHING

The result of the logistic regression model was used to estimate propensity scores for matching treatment beneficiaries with control beneficiaries. As indicated earlier, the dependent variable in this model is a binary variable indicating whether the client was a participant in the PSNP program. The model is estimated with Stata 14 computing software using the propensity scores matching algorithm developed by Leuven and Sianesi (2003).

In the estimation data from the two groups; namely, treatment and control beneficiaries were pooled such that the dependent variable takes a value 1 if the beneficiary was treatment beneficiary (in the program) and 2 otherwise.

Propensity score matching is a way to “correct” the estimation of treatment effects controlling for the existence of these confounding factors based on the idea that the bias is reduced when the comparison of outcomes is performed using treated and control subjects who are as similar as

possible. Since matching subjects on an n-dimensional vector of characteristics is typically unfeasible for large n, this method proposes to summarize pre-treatment characteristics of each subject into a single-index variable (the propensity score) which makes the matching feasible (Shadure, 2009).

Propensity score matching (PSM) constructs a statistical comparison group that is based on a model of the probability of participating in the treatment, using observed characteristics. Participants are then matched based on this probability, or propensity score, to nonparticipants. The average treatment effect of the program is then calculated as the mean difference in outcomes across these two groups. The validity of PSM depends on two conditions: (a) conditional independence (namely, that unobserved factors do not affect participation) and (b) sizable common support or overlap in propensity scores across the participant and nonparticipant samples (Shadure, 2009).

Table 4.5 Matching methods to measure the social and economic impact of PSNP on beneficiaries.

Outcome variables	Estimation	ATT	St. Err	z-value	p>/z/
Total income	PSM	1.207	0.411	2.939	0.005
Consumption level	PSM	2.888	0.85	22.265	0.000
Asset accumulation	PSM	1.345	0.655	7.111	0.000
Home facilities	PSM	1.144	0.45	8.678	0.000
Infrastructures	PSM	1.798	0.64	0.876	0.000
Access to finance	PSM	1.141	0.14	1.999	0.000
Women decision making and eco independency	PSM	0.9999	0.0674	0.00578	0.000

3.3.2.1. ESTIMATION OF IMPACT OF FACTOR INFLUENCING TREATMENT EFFECT (ATT) ON INCOME OF THE BENEFICAIRIES.

The above table 4.5 presents results from the PSM model that was estimated for comparing purposes with the treatment effect model results. Likewise, propensity score matching was employed for all outcome variables for robustness check. Based on the results PSNP program beneficiaries could earn much higher income than those who are under control group in the total monthly income is significant 1% significant level.

3.3.2.2. ESTIMATION OF IMPACT OF FACTORS INFLUENCING TREATMENT EFFECT (ATT) ON CONSUMPTION LEVEL OF BENEFICAIRIES.

Table 4.5 shows PSNP program participants/beneficiaries could feed their households more than who are not the participants pr control groups. The ATT result of the above algorithm indicates that participants' consumption level is significant at 1% significant level. The figures are smaller compared to the difference of consumption level between participant and non-participant simple t-test (table 4.2) which is 36.54. This indicates the robustness of the PSM method, and this is the reason why the researcher choices this method.

3.3.2.3. ESTIMATION OF IMPACT OF INFLUENCING TREATMENT EFFECT (ATT) ON BENEFICAIRIES ASSET ACCUMULATION

The above table 4.5 indicates that PSNP beneficiaries have accumulated assets more than control beneficiaries. This also means that PSNP beneficiaries were utilizing the money that is coming from the program properly. Based on the table the difference between program and non-program participants is significance at 1% probability level. Indicating the most robustness of Propensity-score matching method compared to other methods and conservativeness of t-test. This difference comes from the impacts of unobservable variables to the researcher. So, the difference between participant and non-participant because of PSNP participation is the result of this method.

3.3.2.4. ESTIMATION OF IMPACT OF INFLUENCING TREATMENT EFFECTS (ATT) ON HOME EQUIPMENT ACQUISITION OF BENEFICAIRIES

Table 4.5. indicates that PSNP beneficiaries could obtain more home equipment's than the control group. This also means PSNP beneficiaries is using the opportunity to be able to acquire essential home facilities. These materials are also intended to make beneficiaries life a little bit of easy. In the meantime, the difference between program participants and non-program participants is significance at 1% probability level.

3.3.2.5. ESTIMATING THE IMPACT OF FACTORS INFLUENCING TREATMENT EFFECTS (ATT) ON ACCESS TO FINANCIAL SERVICES OF BENEFICAIRIES

As per table 4.5 PSNP program beneficiaries have gain a little bit of more access to financial serves than control groups as they have cash gaining from PSNP that could be saved and eventually take loans as well. This also means that there are local financial institutions that are primary established to serve rural people like PSNP program beneficiaries. hence, the difference between program participants and non-program participants is significance at 1% probability level.

3.4. DISCUSSION OF FINDINGS WITH THEORETICAL AND EMPIRICAL LITERATURES

3.4.1. THEORETICAL LITERATURES

The PSNP, which began implementation in 2005, is one of the largest social protection programs in Africa and has been widely promoted as a model for the rest of the continent. The PSNP reformed the existing humanitarian system as a means of addressing food insecurity. In contrast to the previous annual appeals system, the PSNP provides guaranteed support to chronically food-insecure households over the medium term, smoothing household consumption and protecting household assets from distress sales. Furthermore, the program is intended to make a productive impact by using public works to build community infrastructure and through links to complementary programs to build household assets (the Other Food Security Programs—OFSP/Household Asset Building Program—HABP). The PSNP has gradually expanded from an

initial coverage of 5 million to a maximum of 10 million people from late 2015. (Lavers, Tom (2016): Social protection in an aspiring 'developmental state': The political drivers of Ethiopia's PSNP, WIDER Working Paper, No. 2016/130,).

The government has consistently demonstrated itself willing to forgo aid rather than change policies, notably in stand-offs with the international financial institutions in the early 1990s and budget support donors following the 2005 elections (Feyissa 2011).

The government regards donors as unreliable, and relations are often problematic. The partial exception here was the World Bank in the early 2000s. To some degree, this may be the result of the bank's continued support when other donors pulled out over the Eritrean war (Furtado and Smith 2009).

However, the bank's country director in the early 2000s was unusually close to Meles (int. respondents ED9, ED21), while Meles was involved in several policy dialogues with former World Bank Chief Economist, Joseph Stiglitz. (Lavers, Tom (2016)).

The above theoretical literature indicates PSNP program is contributing for about 10 million food insecure household to be able to get/cash assistance and make beneficiaries engage in various household asset building programs and infrastructural activities. It also noted that, the governments relationship management with international financial institution as nice as it has supposed to be in revising policies and set important way forwards that would have brought negative impact on PSNP.

In connection with this paper findings, both noted that PSNP helped the rural poor to recover from the extremely food insecurity and contributed to hold some sort of assets and make them engaged in essential community works.

Climate related shocks affect productivity, hamper economic progress, and exacerbate existing social and economic problems due to this food insecurity situation in Ethiopia is highly linked up to rigorous, recurring food shortage and famine, which are associated to recurrent climate change. Major steps have been taken in fighting food insecurity, poverty and bringing sustainable economic development in Ethiopia. In addition to this the Government has designed food security policies and strategies, which are basically community oriented and paying

attention on addressing the needs of the poor households in terms of providing better social services (Abduselam A., 2017).

With respect to the findings of this paper, the target woreda is supposed to be vulnerable to frequent climate shocks in which almost all of its kebeles are also believed to be prone to recurrent droughts. Hence, with this respect, PSNP is helped reduce such risks to some extent and helped to mobilize the public to participate in public works and provide educational sessions about how to manage the aid being delivered by PSNP to help them save and spend for basic facilities/infrastructures.

Also, some existing theoretical literatures argued that PSNP is a government conceived which does not address the policy and strategy needs of the end users. Besides, there are also some theoretical literatures that hold the assumption that PSNP is making the country and its people more dependent on foreign aids. In both arguments, this study argues that it would be hard for the government to address the ongoing emergency assistance needs by its own as there are millions if not 10th millions poor people who need such assistances. With respect to the assumption that PSNP is government conceived, this study argues that there is a lot to be implemented in terms of doing ground level rigorous assessment to have policy and tools that consider the end users circumstances.

3.4.2. EMPIRICAL LITERATURES

Various empirical studies have been carried out on different issues regarding PSNP in Ethiopia. To list a few: Gilligan et al. (2008) conducted a study to analyze the Ethiopia's PSNP and its linkage after one and half a year since the implementation of the program. According to their study, the program had a significant positive impact on participants' food security; borrowing for productive purposes; use of improved technologies and creating nonfarm own businesses compared to the control groups when the PSNP was only complemented with other food security program (OFSP).

However, when the participants received only PSNP transfers of ETB 90 per month or more per individual without access to OFSP, their study shows that the program reduces the likelihood of households' very low caloric intake and improves mean calorie availability. They also found no evidence for the disincentive effects on the reduction of labor supply to wage employment or

private transfers. However, their study shows that relative to the control group, participants did not experience faster asset growth even when the PSNP was complemented with OFSP.

Another study conducted by Andersson et al. (2009) evaluated the impacts of the Ethiopian PSNP on rural households' holdings of livestock and forest assets including trees. This study found that program participation had a positive effect on number of trees planted.

Ethiopia has also made advances in agricultural production and food security. According to Global Hunger Index reported by IFPRI Ethiopia is among the top seven countries that have recorded significant progress in reducing hunger. The country reported to have reduced its hunger index from 42.2% to 28.7% between 1999 and 2011 (Von Grebmer et al., 2012). Stunting prevalence decreased from about 58% in 2000 to about 44% in 2011 (CSA, 2011). The percentage of the population under the national poverty line has fallen from 44.2% in 1999 to 29.6% in 2010, with the rural poverty rate falling from 45.4% to 30.4% over the same period (Anderson & Elisabeth, 2015).

Despite the achievements in increasing crop production by about 9 percent between 2004 and 2014, the sector still fails to resist drought shocks. This implies there is little transformation of the sector. In rural Ethiopia only 12 percent of the households have a formal financial account (CSA, 2016). Household asset and savings are kept in the form of livestock and grain as there is limited access to or preference for financial institutions (EEA, 2016).

A study by Gebrehiwot & Castilla (2017) reported that, increase in money received by households from PSNP transfers between 2012 and 2014 had no effect on household dietary diversity. Furthermore, participation in the PSNP was found to have no effect on child nutrition measured by height-forage or the probability of being stunted. However, the study reported a 13.4 percent increase in average daily calorie consumption per person in PSNP-beneficiary areas indicating that the program does help to reduce household food insecurity.

Many authors have attempted to investigate the impact of PSNP on different economic outcome such as asset building capacity of beneficiaries', food security of households and other health and health related outcomes. Some have found a significant result in their study. For example, Gilligan et al. (2008) found food aid in combination with other components like credit and agricultural packages have significant impact in improving food security of household. A more

robust finding by Filipski et al. (2016), claims that a 2.8 percent increase in grain yields and an increase in income of household by 6 per cent. The same study claimed to have found that PSNP have increased value added at national level by 0.99 percent.

A study by (Berhane et al. (2015) found some evidence that PSNP had impacts on schooling and child labor. In 2008, when PSNP payments were low relative to work requirements, participating in the PSNP lowered school attainments for both boys and girls and increased child labor on family farms. As PSNP payments increased relative to PSNP work requirements – especially in 2012 – these adverse outcomes were reversed. In 2012, the PSNP increased girls’ school attendances between 6 and 14 percent (depending on the age of the child), improved schooling efficiency by 10 to 20 percent and reduced boys’ labor. This study does not found evidence that the PSNP reduces chronic or acute malnutrition. They speculate that child diet quality is poor, and most mothers had not had contact with health extension workers.

In connection with the findings, 92% of treatment beneficiaries argued that PSNP has helped them improve their income level in comparison with control beneficiaries which was 14%. Also, the program has brought significant outcomes in relation to beneficiary’s consumption pattern, among the treatment beneficiaries 91% of them responded that their daily consumption has been improved while 22% of the control groups argued that their consumption pattern could improve.

Despite the variations, it is imperative to argue that the above stated empirical studies and this paper shared commonality in terms of PSNP programs impact in various aspect of beneficiary’s lives.

3.5. RELIABILITY, VALIDITY AND ETHICAL CONSIDERATIONS

3.5.1. RELIABILITY OF INSTRUMENTS

Reliability refers to the absence of random error, enabling subsequent researchers to arrive at the same insights if they conducted the study along the same steps again; Yin (2011). To increase the reliability of the survey, the researcher exerted its own efforts. The Cronbach’s alpha result is 0.82 so results greater than 0.6, would reveal it is adequately reliable.

3.5.2. VALIDITY

There are two major criteria which applied to evaluate the quality of the study. These are validity and reliability. According to; Patton, (2001), the two factors validity and reliability should be considered by a qualitative researcher to judge the quality of the study, designing the study, and analyzing results. Validity can be assessed using theoretical or empirical approaches. Like cronbach's theoretical assessment of validity focuses on how well the idea of a theoretical construct is translated into or represented in an operational measure; Anol, (2012).

In this regard, the validity of the current study was addressed through the review of related literatures and adapting instruments used in previous research.

3.5.3. ETHICAL CONSIDERATION

According to; Bhattacharjee, (2012) research ethics include voluntary participation and harmlessness, informed consent, anonymity and confidentiality and research obligation in disclosure. Based on this, all ethical consideration listed above is applied throughout the research process. The research has not been exposed to any other person other than the principal investigator and the entire study subject was assured their responses are kept confidential.

CHAPTER FIVE

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

5.1. SUMMARY OF THE MAJOR FINDINGS

As it has been clearly stated in the introduction part, the main objective of this thesis was to show the social and economic impact of productive safety net program on the beneficiaries. Therefore, the following major findings were obtained based on the analysis:

- It is boldly noted that PSNP has a lot of core activities that are intended to achieve its communal objective; helping beneficiaries ensure food security and hold sustainable livelihoods.
- Most of the respondents have agreed that PSNP helped improve their income despite its not dramatic and as intended.
- It is noticed that PSNP assisted beneficiaries purchase essential animal as an asset and to be sold when required.
- They also argued that PSNP has played a key role in their life in terms of acquiring basic home and other equipment's such as mobile phones and beds.
- It is also noticed that PSNP has mobilized the public to participate in the community's infrastructural work, this helped to rebuild some basic infrastructures and a bit changed beneficiaries' attitude towards work. They also argued that despite the quality they have the basic infrastructures except electricity. So, they are hoping for the government and other concerned stakeholders will address it soon.
- Access to financial services/inclusion is among the main objectives that PSNP holds, in this regard, they argued PSNP not only helped them but encouraged them to be able to go to get financial services such as savings and credit and other related services. They also noted that the role that ACSI satellite cashiers played in motivating them for savings.
- The last but not the least, empowering women's decision making and ensuring women's economic independency is also analyzed, in this regard. They are argued PSNP helped them to directly access their account to withdraw and to do other transactions by themselves. Also, this helped them decide over the money independently.

5.2. CONCLUSIONS

In this study, the survey analyzed the social and economic impact of productive safety net program beneficiaries on 220 beneficiaries using the technique of propensity score matching. The study used a comprising approach of a treated and a control group. The treated group is composed of beneficiaries who participated over the last years, and the control group is made up people who were neglected to resource limitation and other reasons and who have been in the waiting list. The study applied recent advances in propensity score matching methods to examine the social and economic impact of productive safety net program. Since a baseline survey or randomizations are not feasible options in this case, the study is well suited to matching methods. For the purposes of comparison, the study presented estimated results with treatment and control groups separately.

Respondents from the treatment category were found to register an increased income for the last years in comparison with control group. With respect to client's income improvement, the cash money being gained from productive safety net program has a positive impact on the beneficiaries.

Most of the respondents agreed that their participation in the productive safety net program has brought them huge positive impact in terms of income improvement, asset accumulation, acquiring home facilities/equipment's, and access to basic financial services. Besides, their participation in the PSNP has enabled them to change their attitude towards work and help improve basic infrastructures around their kebeles. In the meantime, women household heads were able to improve their decision making power and economic independency due to PSNP as they were able to make choice and handle financial matters by themselves.

Also, the fact that the payment is being done by ACSI which is one of giant MFIs in the country were a boost for beneficiaries to be able to learn about basic financial services and eventually use and get advantage of it.

5.3. RECOMMENDATION

Based on the finding of the study the below recommendations are forwarded:

- Woreda rural development and food security office, Woreda finance and economic cooperation office and involved NGOs should emphasize on mobilize big public participation in the community work and in the meantime, increase wag rates so beneficiaries income can ultimately improve significantly.
- The program and policy makers should focus much on livelihood acquisitions and educating beneficiaries by holding community conversation and experience sharing across kebeles and woredas, so best practices can be learned and shared.
- Woreda rural development and finance and economic cooperation office and other involved NGOs should emphasize on building, renewing basic infrastructures like electricity's, connectivity's, and water sanitation so those infrastructures enable beneficiaries ease their life and maintain their wellbeing.
- Also, Ministry of agriculture, ministry of finance, world bank and other relevant stakeholders should strengthen digital financial services so beneficiaries can fully be banked and enjoy all financials services. Besides, cascading these digital financial services to the woreda and monitoring its implementation is expected from the stakeholders.
- Coordination should be strengthening with local financial services providers i.e Rural saving and credit cooperatives and Amhara credit and saving institution Seattleite offices to reaching out with all beneficiaries fully and ensure services are done in compliance with quality, time, and efficiency.
- Beneficiaries should also get awareness about small and medium enterprise sector and ultimately be engaged in it and in the meantime, government should suggest a viable way that could provide start-ups capitals.
- Designing and implementing relevant employee performance evaluation system is vital to periodically monitor progresses against stated objectives and to maintain some sort of accountability on staffs who failed to exert responsibilities and commitments.

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APPENDIX-A

Survey Questionnaire to be administered for PSNP Beneficiary Household Heads in Habru woreda.

General Introduction

Dear respondent, my name is Abdulhafiz Muhammed a student at St. Mary's university, studying project management. As a partial fulfillment of Master of arts program, I am conducting a research study entitled 'the social and economic impact of PSNP to the beneficiaries; the case of Habru woreda' the objective of my study is to assess the social and economic impact of PSNP to its target beneficiaries in terms of poverty reduction, asset accumulation, helping reduce women's economic dependency, improve household incomes, improve infrastructures, increasing productivity in Agriculture, and meeting basic needs. The study may provide insights for program donor, government stakeholders and policy makers.

The answer given by the respondents for this research will be kept confidentially and only used for the purpose of this study. The researcher also believes that real answers that the respondents give possess high importance that might be used by policy makers, government stakeholders and other aid and development agents who are working on PSNP.

Hence, I ask you to be honest and forthcoming in your response. Furthermore, any information that you provide is valuable to this study. I would like to extend my appreciation and thanks for your cooperation and committing your precious time.

General Instruction

1. Please do not write your name in the questionnaire
2. Your participation is voluntaries., there is no penalty if you do not participate.

Thank you in advance for Your cooperation!

Section 1. Basic information of the respondents

1.1 Sex: 1. Male 2. Female

1.2 How old were you at your last Birthday? Age in a complete year _____

1.3 Religion

1. Orthodox 3. Catholic
2. Muslim 4. Protestant 5. Others _____

1.4 Marital status

1. Unmarried 3. Widow
2. Married 4. Divorced

1.5 Level of education

1. None/ Illiterate 5. Secondary
2. Read and write 6. Diploma
3. Basic education/pre-school 7. Bachelor's degree
4. Primary 8. Others (specify) _____

1.6 Are you the head of the family?

1. Yes 2. No

1.7 Family size: M _____ F _____ Total _____

S/N	Name	SEX	Age
1			
2			
3			
4			

Section 2. Information about sources of income, level of family income & livelihood activities

2.1 What is your source of income before PSNP?

1. Own income 3. Remittance
2. Children's income 4. Selling crops 5. If any (specify) -----

2.2 What is your average monthly income from all sources (give income by source)?

S/N	Source of income	Amount of income in Birr/quantal if applicable	
		Before PSNP	After PSNP
1			
2			
3			

2.3 During the last 15 years has your overall family income _____

1. Decreased 2. Stayed the same 3. Increased

2.4 If decreased why did your income decrease? (Multiple responses allowed)

1. One or more household members have been sick 3. Decreased PSNP wage
 2. Unable to get input (fertilizers) 4. Inflation to buy goods 5. Disaster on crops
 (dessert locust) 6. Animal disease 7. Others (specify) _____

2.5 If increased why did your income increase? (Multiple responses allowed)

1. Increased PSNP wag rate
 2. Engaged in income generating activities 3. Able to buy inputs at a cheaper price
 4. sold agricultural crops 5. Emergency aid 6. 5% contingency payments 7. Loan
 provision to engage livelihood activities 8. Others _____

2.6 Is any of your family members engaged in income generating activities through PSNP?

1. Yes 2. No

If yes, what kind of income generating activity? _____

2.7 Please answer the following questions in the table regarding your household livelihood activity to earn a living. (By putting “X” mark for your answer

Activities	Answers	Income generated	
		Per month	per annum
a. crop production (growing crops to be used as food and sell)			
b. PSNP			
c. Trade			
d. Rearing and selling animals			
e. Remittance			
f. Agro-pastoralism (mixed, livestock and crop production)			

Section 3: reason for selection

3.1 When were you firstly joining the program? _____

3.2 In which category of the program your household has been participating?

1. Direct support: 2 Public work 3 both

3.3 If your answer is public work, how many household members engage in public work activities? _____

Section 4: Types of services being delivered to PSNP households

4.1 what services your household is being received from PSNP? (Please put “X” mark for your answer)

Services	
A. Free-Food	
B. Free-Cash	
C. Food for participation in community work	
D. Cash for participation in community work	
E. Other specify	

Section 5: Impact of PSNP on Food Consumption

5.1 How much food or cash your household has been receiving, per month?

Food/cash	Per month
A. Cereal(kg)	
B. Oil(liter)	
C. Pulses(kg)	
D. Cash (Birr)	
E. Other(specify)	

5.2 What is your household’s preference to the transfer?

Food: 1 cash: 2 both: 3

5.3 How many times in a day children and adults eat in your household?

Household members	# of meals per day before PSNP	# of meals per day before PSNP
Children (school-age	A.1 B. 2 C.3 D. 4	A.1 B. 2 C.3 D. 4

/ working, not infants)		
Adult	A.1 B. 2 C.3 D. 4	A.1 B. 2 C.3 D. 4

5.4 Types of food you consume within a week

Before PSNP	After PSNP

Section 6: Impact of PSNP on Household Assets and living conditions

6.1 Did PSNP help to improve your livestock rearing?

1. Yes 2. No

Please fill the table below, regarding number of livestock that you own before and after joining PSNP.

Types of livestock	Before you joined PSNP	After you joined PSNP
Goat		
Sheep		
Cow		
Oxen		
Chickens		
Other (specify)		

6.2 Did PSNP help you to add cooking materials and consumer durable goods?

1. Yes 2. No

Please circle your answer in the table below, regarding household materials that you have before and after you joining to PSNP

Cooking materials and	Before you joined PSNP	After you joined PSNP

consumer durable goods		
Kerosene stove	1) I Have 2) I Have not	1) I Have 2) I Have not
Modern chair	1) I Have 2) I Have not	1) I Have 2) I Have not
Modern table	1) I Have 2) I Have not	Have: 1 Have not: 2
wood/metal bed	1) I Have 2) I Have not	1) I Have 2) I Have not
wood/metal bed	1) I Have 2) I Have not	Have: 1 Have not: 2
Television	1) I Have 2) I Have not	Have: 1 Have not: 2
Mobile telephone	1) I Have 2) I Have not	1) I Have 2) I Have not
Others (specify)		

6.3 Did PSNP help you to add production materials in your household?

Yes: 1 No: 2

Please circle your answer in the table below, regarding production materials that you have before and after you joined to PSNP

Types of Production Material	Before you joined PSNP	After you joined PSNP
Goref	1) I Have 2) I Have not	1) I Have 2) I Have not
Plough	1) I Have 2) I Have not	1) I Have 2) I Have not
Spade	1) I Have 2) I Have not	1) I Have 2) I Have not
Others (specify)		

6.4 Do you have access to basic infrastructures? Please answer the following questions regarding your access to social infrastructure.

Access	Yes	No	Before joining PSNP	After joining PSNP
Are there roads in your village?				
Is there water access in your village?				

Is there network connectivity?				
Is there electricity?				
Access to education services				
Access to health services				
Access to affordable transportation				

Section 7: View of PSNP by beneficiary households

7.1 Do you think PSNP is contributing to the alleviation of food insecurity in your kebele?

Yes: 1 No: 2

7.2 If “yes” please indicate its contribution

7.3 If “No” what problem, you observe while implementing the program

7.4 Do you think that PSNP (public work) have an impact on communities’ working value?

Yes: 1 No: 2

7.5 If “yes” please indicate the impact?

7.6 Are there any problems that you observe in the whole process of PSNP implementation?

Yes: 1 No: 2

7.7 If “yes” please indicate them?

Section 8: Impact of PSNP on access to financial services

8.1 Do you have savings at nearby cooperatives, banks, or MFI's?

1. Yes 2 No

8.2 If yes, what type of saving?

1. Compulsory 2. Voluntary 3. Both

4. Others (Please specify) _____

8.3 Did you have other savings before you joined PSNP?

1. Yes 2. No

8.4 If yes Specify amount (in Birr) by type of saving:

1. Eqqub _____ 2. women's _____ 3. Association's _____ 4. Saving and credit cooperatives _____ 5. other _____.

8.5 Amount of saving before and after PSNP.

Before PSNP	After PSNP
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8.6 What is your current total amount of saving?

Specify amount of saving (in Birr): _____

8.7 What is your source of money for saving?

1. From PSNP 2. From foreign remittance
 3. Borrowed from relatives 4. Borrowed at cost 5. Others (Please specify) _____

Section 9: Questionnaire for non-program participants

9.1 what do you think the reason for not being selected?

1. unable to meeting targeting criteria's 3. Unwilling to join the program
 2. bias in the targeting process 4. Others (specify)_____

9.2 What is your source of income?

1. Own income 3. Remittance
 2. Children's income 4. Selling crops 5. If any (specify) -----

9.3 What is your average monthly income from all sources (give income by source)?

S/N	Source of income	Before PSNP	After PSNP	Amount of income in Birr/quantal if applicable
1				
2				
3				
4				

APPENDIX A-1

Focus Group Discussion Checklist

- What looks like general background (tradition, social relation, value...etc.) of your community?
- What looks like PSNP strategy of your Kebele?
- What looks like identifying process of beneficiary households to PSNP
 - In the process of identifying food insecure households, what is the role of community elders
 - What mechanisms have been used to identify household's either for direct support or public work
 - Were there challenges while identifying food insecure households for PSNP initiative
- What is the purpose of PSNP in your Kebele?
 - In terms of food consumption status
 - In terms of prevention asset depletion and generation of asset
- What outcomes PSNP has been bringing regarding women economic independency (women head HHs)
 - in terms of deciding on household financial matters
 - in improving women's participation in the social and economic matters
- What outcomes PSNP has been bringing regarding financial inclusion and essential infrastructural development
 - Raising beneficiaries awareness saving and credit
 - starting new business (commercial activities)
 - In terms of infrastructure: transport, water, and extension services.
 - In terms of environment protection
- Do you have any other comments on our discussion?

APPENDIX A-2

Key Informant Interview Guideline for Development Agents (DAs)

Role\Position: _____

Date: _____

1. What is the role of DAs in enhancing community development and alleviating food insecurity?
2. What are your general observations on PSNP program?
3. What is the purpose of PSNP in this Kebele?
4. Does it have an impact of Kebele?
 - In beneficiaries consumption level (food security)
 - in increasing beneficiaries income
 - rearing essential livestock's
 - crop cultivation
 - access to agricultural inputs
 - in improving women's participation in the social and economic matters
 - Infrastructures (telecom, electricity, road, water ...etc.)
 - working behavior
 - Environment protection
 - Other impacts
5. What are your reflections on targeting beneficiary households to PSNP program?
 - In the process of targeting what is your role as DA
 - Were there challenges in targeting process (i.e., were complaints in targeting process) if there, what action has been taken to resolve.
6. Do you have any other comments on our discussion?