COLLEGE OF DEVELOPMENT STUDIES
CENTER FOR FOOD SECURITY STUDIES

THE EFFEECT OF URBAN PRODUCTIVE SAFETY NET PROJECT TO HOUSEHOLD FOOD SECURITY STATUS IN ADDIS ABABA: A CASE STUDY FROM YEKA SUB-CITY *WOREDA 08*, ADDIS ABABA, ETHIOPIA.

BY

MULUKEN MOGES MENGISTU

NOVEMBER, 2019
ADDIS ABABA, ETHIOPIA

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A THSIS SUBMITTED TO CENTER FOR FOOD SECURITY STUDIES, COLLEGE OF DEVELOPMENT STUDIES ADDIS ABABA UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN FOOD SECURITY AND DEVELOPMENT STUDIES

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DECLARATION

First, I declare that this thesis is my original work and has not been presented for MA/MSc degree in any other University and that all the sources and materials used for the thesis have been properly acknowledged. This thesis has been submitted in partial fulfillment of the requirements of Master of Science degree at Addis Ababa University and is deposited at the University Library to be made available to borrowers under rules of the library. I also declare that this thesis can be submitted to any other institution, if the university found it necessary. Brief quotations from this thesis are allowable without special permission provided that accurate acknowledgement of source is made.

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This is to certify that the above declaration made by the candidate is correct to the best of my knowledge as an advisor.

Dr. Messay Mulugeta _____ _____

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As adviser/ co-adviser of the thesis, we certify that we have read and evaluated the thesis studied by Muluken Moges entitled "**the effect of urban productive safety net project to household food security status in Addis Ababa: a case study from Yeka sub-city *woreda* 08, Addis Ababa, Ethiopia**" and recommended for defense as fulfilling the requirement for the degree of Master of Science Degree in Food Security and Development Studies.

Approved By:

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Name, Advisor	Signature	Date

As member of the Examiner Board of the Thesis Defense, we certify that we have read and evaluated the thesis studied by Muluken Moges entitled "**the effect of urban productive safety net project to household food security status in Addis Ababa: a case study from Yeka sub-city *woreda* 08, Addis Ababa, Ethiopia**" and recommended that it is acceptable as thesis required for the degree of Master of Science Degree in Food Security and Development Studies.

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Dedication

In Loving memory of my mother, W/ro TSEGANESH MEKU TESFAY, suddenly passed away May, 2018 at age 53.

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Muluken Moges

November, 2019

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Abbreviations

ATA:	Agriculture transformation Agency
CBT:	Community-Based Targeting
CIA:	Conditional Independence Assumption
CSI:	Coping Strategies Index
DS:	Direct support
EDHS:	Ethiopian Demography and Health Survey
ETB:	Ethiopian Birr
FAO:	Food and Agriculture and Organization
FGD:	Focused Group Discussion
FIES SM-II:	Food Insecurity Experience Scale Survey Modul for Households
FIES:	Food Insecurity Experience Scale
FUJCFSA:	Federal Urban Job Creation & Food Security Agency
HFIAS:	Household Food Insecurity Access Scale
IFAD:	International Fund of Agricultural Development
MoFED:	Ministry of Finance and Economic Development
MoLSA:	Ministry of Labor and Social Afire
PMT:	Proxy Means Test
PNSP:	Productive Safety Net Program
PSM:	Propensity Score Marching
PW:	Public Work
SCOWM:	Stunted Children and Overweight Mother
SD:	Standard Deviation
SDGs:	Sustainable Development Goals
UHFSS:	Urban Household Food Security Status
UHH:	Urban Household
UN:	United Nation
UNDP:	United Nations Development Program
UNICEF:	United Nation International Children's Emergency Fund
UPSNP:	Urban Productive Safety Net Project

UPSNP-PAD:	Urban Productive Safety Net Project-Project Appraisal Document
UPSNP-PIM:	Urban Productive Safety Net Project-Implantation Manual
VERO:	Vital Event Registration Office
VIF:	Variance Inflation Factor
WFP:	World Food Program
WJCPSNPO:	*Woreda* Job Creation and Productive Safety Net Project Office
WPSNPO:	*Woreda* Productive Safety Net Project Office

Abstract

This study was aimed to assess Urban Productive Safety Net Program's contribution to urban household food security status. UPSNP is a project serving as a tool to provide social protection for the households' food secure through public works and direct support by providing cash and other benefit packages. UPSNP was implemented since 2016 in Addis Ababa. Community-based cross-sectional study design, purposive sampling techniques to select the target Woreda and random sampling to employ the participants, face to face interviews for data collection and to measure food security status FIES SM-II techniques were enrolled. The result indicates, from 272 samples HH, 30.51% & 69.49% were males and females headed HH respectively, and 50.37% & 49.63% were non-beneficiaries and beneficiaries in the UPSNP respectively. The result shows 13.97% & 29.04% food secure, 7.35% & 6.62% mild food insecure, 19.85% & 6.99% moderately food insecure and 8.46% & 7.72% severe food-insecure HH among beneficiaries and non-beneficiaries of UPSNP, respectively. The ordered logit model result also indicates household head education status and household combined income and household holding assets were negatively related to the food insecurity status of the households within a 1% significance level. Household family size has a positive relationship to household food insecurity status at a 5% significance level. The study concludes that beneficiaries of UPSNP have positive, but not have statically significant changes. Based on the result of this study the following issues recommended, the government should be increasing the amount of cash transfer and the project focused on the severe food-insecure household and illiterate household heads. Besides improving the education of HH heads, create job opportunities and increase their income which is vital in the alleviation of severe food insecurity.

***Keywords*:** FIES SM II, Food Security/Insecurity, Ordinary logit Model, UPSNP,

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

Food insecurity is a continuing, critical challenge today in the world. According to FAO and other organizations, joint reports across the world in 2017, the number of undernourished people across the world is estimated to reach 821 million, which accounts for about one person out of every nine in the globe. From these, nearly 151 million children under five have stunted growth, while the lives of over 50 million are wasted (FAO, IFAD, UNICEF, 2018). According to 2017 Africa, food security and nutritional report indicate that Africa faces huge food insecurity problems, which account 224 million undernourished people, which indicate one of four people or 22.7 percentile of the total population, which have climate change and conflicts add displacement of people from their inhabits are the leading factors (FAO, 2017).

Like other African countries, Ethiopia faces food insecurity. According to the world food program report in Ethiopia more than 10 million peoples require emergency food assistance in 2016, following El Niño introduced drought in 2015 affect many parts of Ethiopia (WFP, 2017). On the other literature indicates about 10% of Ethiopians are chronically food insecure and this figure rises to more than 15% during drought years and 2238,761 children require treatment for severe acute malnutrition (Endalew, Gashaw & Solomon, 2016). On the other side, these kinds of the literature show Ethiopia put number one rank in the term of chronic undernourished and food insecure it accounts 33 million of people face this challenge and more than 35% of the total households' face food insecurity at the national level (Endalew, Gashaw & Solomon, 2016).

According to the United Nation Development Program Ethiopia report (2018), the country growth averaged 10. 5 percent from 2003/4 up to 2016/17 and Real per capita GDP more than doubled from $32 billion in 2010/11 to $ 81 billion in 2016/17 this result, per capita income also doubled from $396 to $862 in the same period (UNDP Ethiopia, 2018). But still now below World Bank lower level middle income i.e. Extreme poverty below US$ 1.9 a day, lower middle income US$3.2 a day higher middle income US$ 5.5 and high income US$21.7 a day (World Bank, 2012).

Food security is a multidimensional /flexible development concept that has evolved and increase recognize as an element of sustainable development. In this respect, it is directly linked to Sustainable Development Goals on Goal two: Zero hanger (End hunger, achieve food security and improved nutrition and promote sustainable agriculture) and indirectly involves in the rest of the SDGs (UN, 2018a, 2018b).

Besides, many international organizations such as the World Bank, FAO, and WFP continues to promote basic human needs strategy through food security. However, most organizations and institute define differently, but a common and acceptable definition of Food security is a situation exists when all people, at all time, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food -preferences for an active and healthy life (FAO, 1996). On the other side food insecurity is a situation that exists when people lack secure access to sufficient amounts of safe and nutritious food for normal growth and development of active, healthy life (Fang & Cao, 2014; FAO, 2018: Kimani-Murage *et al*., 2011).

From the above concept, there were four food security dimension, first physical availability of food in a macro level of domestic sources, import or donor source, secondly economic access or ability of households to obtain food from their production, or from in the marketplace or from another source, the third aspect of food utilization is dietary diversity, proper usage of food including processing, storage, consumption and digestion, and the last dimension sustainability of the above three dimensions. The availability and access dimension of food insecurity are strongly linked to each other. While availability reflects the supply side of food, access reflects effective demand (FAO, 2018).

Households response to food insecurity in two ways i.e. coping strategies and adaptive strategies. coping strategies, responses made by households to improve the declining situation of household food security while adaptive strategies involve permanent changes (Endalew, Muche, & Tadesse, 2015). Safety Net is one component of social protection to address food insecurity and vulnerability to poverty and food insecurity. Safety net is a program expand social transfer (conditional and non-conditional) and protect groups from falling in to extreme poverty, food insecurity and malnutrition, contribute to the building of human capital of poor individuals and

HH to stop inter-generational poverty, promote public works to enhance community assets and introduce social pension schemes for older and other vulnerable persons (World Bank, 2015b).

The Productive Safety Net is a program initiated by different development partners like the World Bank (WB), World Food Program and other organizations in response to the problem of food insecurity (Welteji, Mohammed, & Hussein, 2017). The Ethiopian government has developed Food Security Strategy back in November 1996 as a mitigation measure for the shocks and it is being implemented with various interventions since 2002/2003. The strategy consists of three components: Resettlement (land Access), Productive Safety Net Program (PSNP) and other Food Security Programs (MoA, 2014). The government of Ethiopia launched the program in 2005 because of the previous 2002/2003 drought to help chronically food-insecure households to withstand with stresses and shocks, accumulate and create an asset and to make them food self-sufficient and comprehensively address food insecurity in Ethiopia (MoA, 2014).

The PSNP provides social protection by transferring resources to the people in chronically food insecure *Woredas* in a way that prevents asset depletion at the household level and creates assets at the community level. The PSNP provides resources to households through, direct grants to labor poor, elderly or incapacitated households, and payment to able-bodied members of households for participation in labor-intensive public work (PW) activities. Other Food Security Programs (Projects) supplement asset building in PSNP beneficiaries' households by providing credit for different, agricultural as well as non-agricultural production activities proposed by community members (MOFED, 2003).

Urban Productive Safety Net Project in Addis Ababa Started since 2016 and the program is administrated, facilitated and implemented through the Federal Urban Job Creation & Food Security Agency. At full capacity, the project aims to benefit close to 604,000 people, with 200,000 people selected from the capital's 55 Woredas (World Bank, 2015b). Sixteen percent are beneficiaries of direct support, while the remaining benefit by earning regular income working in their neighborhoods, the direct beneficiaries of the program are the elderly and the disabled living in households with under-age members, street children, the homeless and beggars (Alemayehu & Wondimu, 2019).

The urban Productive Safety Net Project was designed to roll-out in three rounds during the life of the project to reach all the 604,000 potential beneficiaries. The first round of targeting was completed in 2016. The second round of targeting has been finalized recently in Addis Ababa and in other six cities. The cumulative number of beneficiaries currently reached by the program was 440,885 (73% of the target) (MoUDH, 2018). Urban productive safety net project started in Yeka sub-city since 2016, by including 11 *Woredas* targeting 8,683 for public work and 4,875 direct support total 13,553 (local report) and Yeka *Woreda* 08, direct support 253 urban households public work 650 total 903 beneficiaries are involved in this project.

Food security status measures in different ways for a different purpose, but there is no single tool that captures all the dimensions of food security. Only a combination of different measurements can lead to a full understanding of food security or insecurity, its causes, and consequences. However, for this study, we use Food Insecurity Experience Scale (FIES), which develop by Food and Agricultural Organization to standardize food security in a short period on a different level (FAO, 2016a).

1.2 Statement of the problem

The role of social protection is preventing people from entering into poverty, and reducing the duration of poverty. For some time, social protection has been recognized as instrumental to achieve greater equality and promote growth (World Bank, 2005). Recently, it has been recognized that when it is well designed, social protection can both redistribute the gains from growth and similarly contribute to higher growth. The supporters of the new approach see productive safety net program contribution of social protection being both as the redistributive role and as an essential tool to achieve pro-poor growth (Godefey, 2017).

Ethiopia, a country that has a lengthy history failed to meet food security at a national level as well as at the household level and individual level, but achieved significant progress in economic growth and human development (UNDP Ethiopia, 2018). In Ethiopia, the national poverty prevalence was 23.2%, which is 22.5% in rural and 25.7 urban areas which Addis Ababa's accounts for 28.1% poverty with a 6.9 % poverty gap index (World Bank, 2015b). On the other indicator,

Ethiopia has the highest level of food insecurity, which accounts for more than 35% of the total population is chronically undernourished (Endalew, Gashaw & Solomon, 2016).

On the other hand, Addis Ababa household wages did not increase in the common household demand for the rising food price that we face (World Bank, 2015b). About 18% of the Ethiopian urban population live in Addis Ababa (CSA, 2013), from these urban population some poor have no enough food for their dietary needs, unemployed, underemployed and some household revenue expenditures ware for housing rent and compromise their dietary foods (World Bank, 2015b).

Yeka sub-city *Woreda* 08 is the highly populated *Woredas* and most of those are oldies household and slummed areas of among Addis Ababa city *Woredas*. Also, it includes the second biggest market *Shola-gebeya* next to known place *Merkato* (World Bank, 2015a). The Yeka *Woreda* 08 is one of the districts that UPSNP intervention is implemented. The UPSNP in the Yeka *Woreda* 08 supports 903 households *i.e.* In the direct support package 253 urban household beneficiaries and in public work package 650 urban household beneficiaries were involved.

Therefore, in this specific area, this study brings empirical and theoretical evidence on urban productive safety net project effect to the food security status of the households and significant determinant of food insecurity that have a major impact on the participation of UPSNP. So, the researchers have focused on the areas of the effect to UPSNP on urban household food security status and the main determinant factors of food insecurity of urban households. The findings have a critical insight for decision-makers and policy formulator or programmers for optimum resource allocation to enhance the food security status and improve the implementation practice of the project as well as its forecast for further study.

1.3 Objective of the study

1.3.1 General objective

The overall objective of this study is to assess the effect of the urban Productive Safety Net Project on urban household food security status in Yeka Woreda 08, Addis Ababa Ethiopia.

1.3.2 Specific objectives

The specific objectives of this study are to:

- asses the food security status of the UPSNP beneficiary in *Woreda* 08, Yeka sub-city, Addis Ababa.
- examine the effect of UPSNP on the food security status among urban households in *Woreda* 08, Yeka sub-city, Addis Ababa
- identify factors that affect food insecurity status among urban HHs in *Woreda* 08, Yeka Sub-city, Addis Ababa.

1.4 Research questions

This research intended to answer the following basic questions which are derivatives of the above-mentioned research objectives:

1. What is the food security status of UPSNP beneficiaries' households in the *Woreda* 08, Yeka Sub-city, Addis Ababa?
2. What is the effect of the urban Productive Safety Net project on household food security status in the *Woreda* 08, Yeka Sub-city, Addis Ababa?
3. What are the major factors that affect the food security status of urban in *Woreda* 08, Yeka sub-city, Addis Ababa?
4. How does the implementation of UPSNP on the point of view of beneficiaries Eyes in *Woreda* 08, Yeka sub-city, Addis Ababa?

1.5 Scope of the study

The scope of this study was gathered detail household socio-demographic and economic data, food security status and based on a sample population that describes the target population living in *Woreda* 08, Yeka sub-city Addis Ababa, Ethiopia. Thus, the cross-sectional data variables that can affect the contribution of the UPSNP to HH food security were studied (collected, analyzed and interprets) with a study period between 2018 and 2019.

The thematic scope of the study is both the beneficiaries and non-beneficiaries of the UPSNP and its contribution to the urban households living in Yeka sub-city *Woreda* 08. The UPSNP tries to

address food insecurity through conditional or unconditional cash transfer as a means it enhances access food. Hence, the study assesses food security status (food access) of the households and condition of the beneficiaries after receiving the cash transfer and condition of non-beneficiaries. Finally, the beneficiary perception toward the UPSNP is assessed to understand the beneficiaries perceiving level regarding the delivery of support and implementation of the project from the point of beneficiaries' view.

1.6 Significance of the study

The result of the study will benefit the study place community it makes alarming the status of food security and the effect of the Urban Productive Safety Net Project to the food security of the household. Also, it provides a quantified assessment technical report to the government officials and other stakeholders to make interventions that improve food security status. Benefit the policymakers to make new and advanced policies on evidence-based information. Besides, the study can be a useful reference material for academic researchers who would like to do a more in-depth analysis of the project.

1.7 Limitation of the study

The main challenges the researcher face during the study was budget constraints to recruited data collectors and time shortage. Since the Urban productive Safety Net project is a recent period implemented the project so the researcher faces challenges to get related studies done on the study topic. Additionally, the study was constrained by lack of baseline survey information in the study areas on the evaluation of household food security status before and after the project implementation to avoid this challenge the researcher enrolled study participant HHs from both the beneficiary and non-beneficiary of the projects using the same survey questionnaires at the same time.

1.8 Ethical consideration

The study had taken into consideration of the ethics of the research concept. Before proceeding to conduct the study, the researcher obtained an official letter from the from Addis Ababa University College of Development Studies to provide the concerned bodies to get permission. Besides this,

the contacted respondents got essential information about the study purpose and benefits to the community. Finally, the researcher their full consent was first checked before start the interview and they were informed that their information would be kept confidential and used for the study purpose.

1.9 Operational definition of terms

- household is a person or group of related or unrelated persons who live together in the same dwelling units, who acknowledge one adult male or female as the head of the group, who share the same housekeeping arrangements and who are considered as a single unit.
- Food security is a situation exists when all people, at all time, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food -preferences for an active and healthy life.
- Food insecurity exists when people lack sustainable physical or economic access to enough safe, nutritious, and socially acceptable food for a healthy and productive life.
- Food insecurity experience scale is an innovative analytical method aiming to provide a new global standard for measuring food insecurity (access) that is valid, endorsed at the international level, and used for global and specific area level.
- Urban Productive Safety Net Program is a social protection program intended to bring a significant change and to better respond to the needs of food insecure households and creates productive investment to strengthens economic growth and urban environment.

1.10 Organization of the paper

The study is organized into five sections. The first section is the introduction section which consists of the background of the study, statement of the problem, the objective of the study, significance, scope, limitation and ethical consideration of the study. The second section covers the concept and relevant literature review of both theoretical and emphatical literature and incorporates conceptual frameworks. The third section of the study describes the research methods and materials. It includes a study area, research design, sampling techniques, sample size, source of data and analysis methods. The fourth section presents the result and discussions. Finally, the last section presents some conclusion and recommendation were presented.

CHAPTER TWO: REVIEW OF RELATED LITERATURE

2.1 Concept of food security

The concept of food security has evolved among many scholars, policymakers, and programmers over the four decades since the global food crisis of 1973-74 and the World Food Conference in 1974 (Cissé & Upton, 2015). But, some literature takes the emergence of the concept and the beginning of the concern for food security back to 1943, after the first conference of FAO (Georg, Göttingen & Stuttgart, 2009).

This food security definition and concept growth chronological stages. Those are: (1) the food surplus disposal between the 1940s-1950s, (2) food for development 1960s, (3) the idea of food assurance in the 1970s, (4) broadens food security issues in 1980s, and (5) the shift to freedom from hunger and malnutrition since 1990s has been acknowledged by international and bilateral donor organizations to help in improving the food insecurity situation existing in poor countries including our nation (Georg, Göttingen & Stuttgart, 2009). Hence, for the purpose of this study it is adopted that the most common and accepted definition of the World Food Summit held in 1996 defined as a "situation exists when all people, at all time, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food -preferences for an active and healthy life" (FAO, 1996). Generally, the above definition inherently describes food security into four dimensions i.e. Food availability, Food Access, Food Utilization and Stability of the above three dimensions. When we see one by one as follows.

Food Availability: It addresses the supply side or physical availability of food and determines by the level of food production, stock, net trade and aid or all available food in the area it includes fresh as well as packaged foods. Many factors can affect the availability of food availability directly or indirectly. From this seasonal pattern of food production, the trading system, production system, the food system, and infrastructure are among the main factors (Gregory, 2005).

Food Access: this dimension concerns the way people obtain the availability of food or economic access to bring an adequate supply of food. Normally, the way of accessing food is through a combination of means, including home production, use of leftover stocks, purchase, barter, borrowing, sharing, gifts from relatives, and provisions by welfare systems or food aid. Mainly

determined by income, expenditure, market, and prices of food and negatively influenced by unemployment, lack of coping options, low income, and disasters (Daniel Resnick, Suresh Babu, Steven Haggblade, 2015).

Food Utilization: refers to how people use food. It is dependent upon several interrelated factors: the quality of the food and its method of preparation, storage facilities, and the nutritional knowledge and health status of the individual consuming the food. It negatively influenced by factors such as endemic disease, poor sanitation, lack of appropriate nutritional knowledge, or culturally-prescribed taboos (often related to age or gender) that affect a certain group's or family member's access to nutritious food. Food utilization may also be adversely affected if people have limited resources for preparing food (WFP & UNICEF, 2009).

Food Stability: To be food secure, a population, household, or individual must have access to adequate food at all times. They should not risk losing access to food as a consequence of sudden shocks (e.g. an economic or climatic crisis) or cyclical events (e.g. seasonal food insecurity). The concept of stability can, therefore, refer to both the availability and access dimensions of food security (Daniel Resnick, Suresh Babu, Steven Haggblade, 2015).

2.2 Productive safety net program in Ethiopia

The Ethiopian government has developed Food Security Strategy back in November 1996 as a mitigation measure for the shocks and it is being implemented with various interventions since 2003. The strategy consists of three components: Resettlement to enhance land access, Productive Safety Net Program (PSNP) and other Food Security Programs (MoA, 2014).

The government of Ethiopia has been implementing the Productive Safety Net Program (PSNP) since 2005, reaching more than 8 million Ethiopians each year (Sabates-wheeler, Devereux, & Guenther, 2009). There are 2 components of PSNP transfers – public works (Food/Cash-for-Work) and direct support for ‘non-able bodied’ beneficiaries (i.e. chronically ill, disabled or aged). The government strategically utilizes PSNP public works as an opportunity to organize low-cost community infrastructural works (World Bank, 2015b).

The UPSNP adopt a three-phase integrated support pathway designed to provide income support and increase employability. In the first phase, beneficiaries will receive transfers (conditional on meeting their co-responsibilities) with life skills training and guidance on the employment pathway (self-employment and wage employment) to follow. In the second phase, conditional transfers will continue and beneficiaries will receive financial support, training and job-matching services to increase employability. In the third phase, beneficiaries will have the option to continue to receive a small amount of conditional transfers to supplement their employment income. Support will be provided for a maximum of three years but some beneficiaries may choose to graduate earlier. As this is a first project of this nature in urban areas, it is important to acknowledge that the proposed approach (including graduation from the program) particularly the livelihood services interventions will be piloted, evaluated, course-corrected, and expanded as needed (World Bank, 2015b).

Urban Safety Net Project in Addis Ababa Started since 2016 and the program is administrated, facilitated and implemented through the Federal Urban Job Creation & Food Security Agency (FUJCFSA). At full capacity, the project aims to benefit close to 604,000 people, with 200,000 people selected from the capital's 55 *Woredas*. Sixteen percent are beneficiaries of direct support, while the remaining benefit by earning regular income working in their neighborhoods, the direct beneficiaries of the program are the elderly and the disabled living in households with under-age members, street children, the homeless and beggars (Alemayehu & Wondimu, 2019)

In Ethiopia literature indicates, Productive Safety Net Program implementation faces many challenges besides to improve the food security status of households those challenges are the poor process of targeting the poor is froth with favoritism, corruption as demonstrated by the high inclusion ratio of non-poor households in the program. Other challenges that negatively affect the program include weak institutional linkages, lack of active community participation in the decision-making process and the community also preferred change financial transfers from cash payments to in kind (Nigussa & Mberengwa, 2009).

PSNP reduces the total consumption/welfare, food consumption, and assets of beneficiary households. PSNP also crowd out the private transfers to the beneficiary households. But PSNP increases the supply of labor by beneficiaries towards off-farm activities. 102 The negative impact

of PSNP on household welfare and food consumption might be because of the inflationary situation that the country has experienced which erodes the purchasing power of the transfer. Or it might be due to the dependency behavior (that may develop as a result of PSNP) of beneficiaries which discourage them to put efforts on their agricultural activities (Habtamu, 2011).

Productive safety net project in Ethiopia targeted geographical, administrative, and community targeting is the major mechanisms used to identify eligible beneficiaries for PSNP in the *Woreda*. While these are important mechanisms for identifying the target groups, the results of this study show that the process is poorly done. There is a high inclusion ratio of non-poor households participating in the program at the expense of chronic food insecure households and that the process is head with corruption and nepotism as is highlighted in nonparticipant group discussions (Nigussa & Mberengwa, 2009).

According to the Ministry of Urban Development and Housing, urban productive safety net project implementation progress report indicates public works implementation in most of the cities including Addis Ababa. All the eleven cities have completed an annual public works plan and have made significant progress with implementation. The public works plans from the cities comprise of 132 *Woreda*/*kebele* activity plans that identify priority sub-projects in five main areas: Solid waste management, Urban beautification & greenery, Urban integrated watershed development, preparation of urban agriculture sites as well as urban social infrastructure and services (MoUDH, 2018).

The food security analysis can be done at national, regional, community, urban centers, household, and individual level. As collecting precise information for each might be impossible or too costly, especially in countries like Ethiopia, household level analysis is an option which is widely practiced in food security research (Getinet, 2011). Under these circumstances, food shortage becomes a matter of 'lack of access' that is the inability to produce or purchase food. Scholars argue that households become food insecure because of failure in entitlement: 'endowment' or 'exchange' entitlement failure (Degefa, 2005). This study mentioned that, there are four possible sources of entitlements such as production-based, trade-based (exchange), own-labor, and inheritance and transfer.

The entitlements such that production-based entitlement describes the right to own what one produces with one's resource, trade-based entitlement describes what an individual can buy with the commodities and cash their own: inheritance or transfer entitlement refers to the right to own what is willingly given by others as remittance, bequest, as well as transfer from states such as social security, pensions, and food distribution. All these entitlements give individual control over a resource that they can use (Getinet, 2011).

Scholars argue most developing sub-Saharan Africa countries are most exposed to food insecure to individuals as well as household food insecure settings are more likely to have poor health, especially food insecure household members have a higher incidence of infection, stomach aches, headaches, cold ear infection, and iron deficiency. In addition to this, they are more likely to exhibit emotional and behavioral problems as well as experience more fatigue and irritability and more likely to exhibit aggressive, destructive and hopeless behavior (Kuku, 2009).

Many scholars conduct determinants and magnitude of food insecurity in Ethiopia, a study conducted in the eastern part of Oromia region in *Hararghe* district indicates about 58% of the sampled households were food insecure, by using binary logistic regression analysis identified education status of the household head, annual farm income, sufficient crop production, dietary diversity, and oxen ownership were the major factor inversely associated with food insecurity status. On the other hand, large family size, lower than average monthly off-farm income and small land size has increased the chance of being food insecure households (Mahlet & Tiruneh, 2018).

According to World Food Program, the main determinants of food insecurity in an urban context are food availability, food supplies into the market, food access, purchasing power and access to market and food utilization, health and morbidity status are more significant determinants (WFP and UNICEF, 2009). Literature has undertaken in 2012 shows that, Addis Ababa had 16 % of the total households are below the food insecurity line. The food insecurity gap and severity were 20 % and 9.4 %, respectively. The result of the logistic regression model estimate indicates that out of the 10 factors included, 6 were found to have a significant influence on the probability of being food insecure at less than 10 % significance level. The variables considered to be household size, age of household head, household head education, and access to credit, household asset possession, and access to employment (Girma, 2012).

In Addis Ababa indicates food secure and food insecure households in terms of household size, age of household head, ownership of bank account, household income, kilocalorie available per individual, remittance and gift received and daily food expenditure per adult and equivalent education level of household head was also statistically significant (Ejigayhu *et al*., 2011). Other literature conducted in the Gulelle sub-city of Addis Ababa, which have the same socioeconomic pattern and neighbor to the Yeka sub-city shows that, 19.2% of the household are extremely severe food-insecure status, 26.7% are severe food insecurity status, 26.7% are moderately severe food-insecure status and 27.5% are least severe insecure status. The study shows the food insecurity problem is mainly attributed to lack of education coupled with low income, current food price inflation, less social capital, poor health and lack of physical capital especially housing (Messele, 2011).

2.3 Measuring household food security

Based on the current definition and the multidimensional nature of food security researchers use different food security measurement techniques based on their objectives. But there are no single measurement techniques because it influenced by different interrelated socioeconomic, physical, institutional and political factors, it requires an understanding of the multidimensional context of the target area (Sesar, Fernández, Ares, Rivas, & Castro, 2017).

The full range of food security and hunger cannot be captured by any single indicator. Instead, a household level of food security or food insecurity must be determined by obtaining information on a variety of specific conditions, experiences, and behaviors that serve as indicators of the varying degrees of severity of the condition. (Bickel, Nord, Price, Hamilton, & Cook, 2000).

The household Food security status will be determined using a Standard set of questions Food Insecurity Experience Scale Survey Module for household (FIES SM-II) FIES SM-II, which has a Psychometric scale composed of eight questions with dichotomous yes/no responses. The asked respondents to report experiences of food insecurity of the household varying degrees of severity that are common across cultural contexts short reference (Worried, Health, few foods, Skipped, ate less, ran out, Hungary not enough money and Holyday without eating). Respondent food insecurity status was calculated summing the scores from all eight questions and categorize them

into one of four levels of food insecurity status, i.e. Food secure [0], Mild food insecure [1-3], Moderate food insecure [4-6] and Severe food security [7-8] (Cafiero, Viviani, & Nord, 2018: FAO *et al.*, 2015). While the validity studied in the previous by FAO during the voice of the Hunger project in the Ethiopian context (Ballard, Kepple, & Cafiero, 2013).

2.4 Conceptual framework

The PSNP is one of the major components of the food security program implemented by the Ethiopian government with the support of donors aimed at providing timely support to severe food-insecure households. The support provides two channels. Namely, public work provides temporary employment on environmental cleaning and flood channels and direct support which delivers unconditional transfers to the households that unable to work due to age or disability (MoA, 2014). Therefore, the UPSNP beneficiaries selected from the community by ranking based on wealth and income level of the household and the poorest & food insecure households.

The main objective of urban productive safety net project implementation is to provide transfers to the food insecure population in a way that prevents asset depletion to the beneficiary households and creates assets in the community. This determined by the sociodemographic and economic characteristics i.e. sex of household head, age of household head, educational level of household head, family size, dependency ratio, income level, employment status, access to credit, assets, market, aid and perceived health status. Productive Safety Net Program is targeted toward households that are both food insecure and poor. Therefore, the implementation of UPSNP improves the food security status of the urban households by improving income level, increase employment access, access to credit, aid and perceived health status of the households. UPSNP makes a clear and measurable impact on the lives of low-income families and enhances their food security status.

Households are economically active labor have more productive and generate more incomes and it has positive contributions to being food secure. Similarly, increase the educational level of the household head from illiterate to literate and higher education have a positive relation to becoming food secure du to enhance means of livelihood and increase business management skills the same way food secure households have a negative relation to participating in UPSNP. And also, in urban areas housing and asset ownership were other factors that determine the food security status of the

household. Those households have more asset holders have a positive relation to becoming food secure to compare low asset holders. So low asset holders who have a positive association with participation in UPSNP.

Access to credit and aids have main challenges in urban arias those households have access to credit and aids help to solve financial constraints (challenges) to start a business or improve their educational level that enhances their food security status. Those households didn't have assets that don't have credit access because of collaterals or warranty. Therefore, households don't have access credits have low food security status and have more chances to participate in UPSNP benefit packages. Similarly, those households that have aid access have become food secure and have a low chance to participate in the UPSNP benefit.

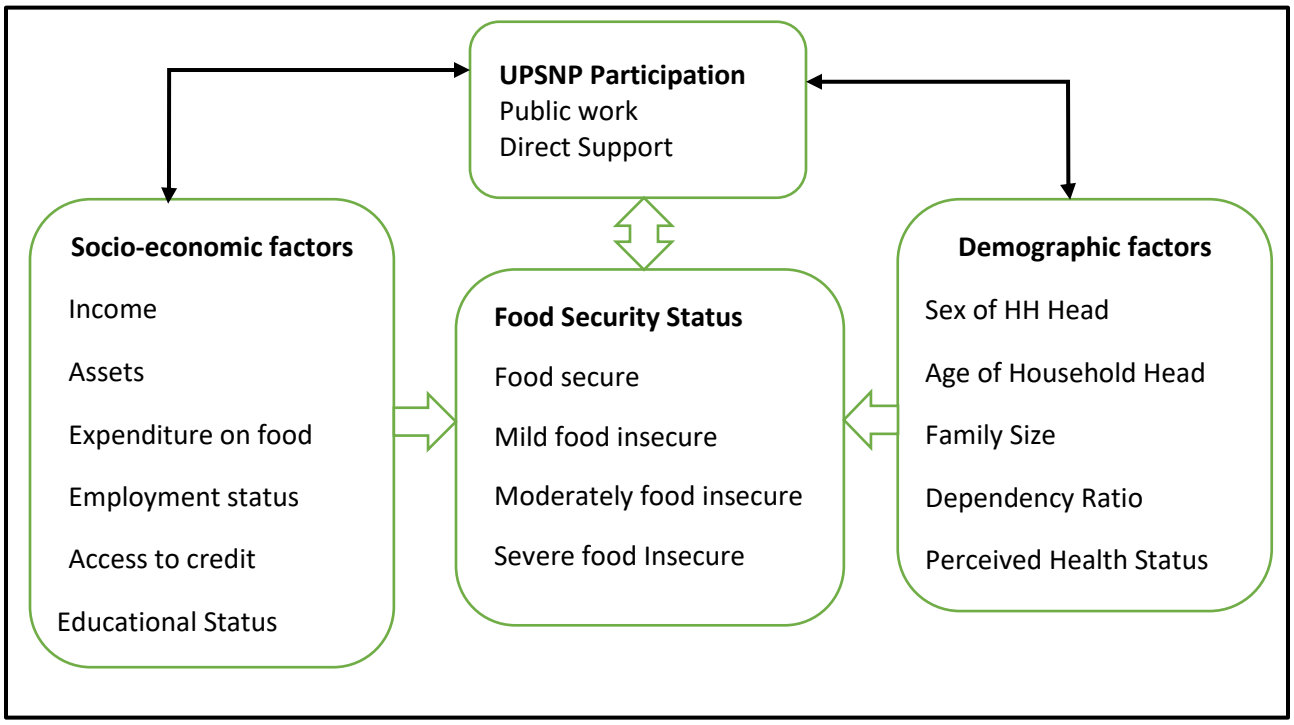


Figure 2.1: Conceptual framework (Source: Welteji *et al*., 2017 and modified)

CHAPTER THREE: DESCRIPTION OF THE STUDY AREA AND THE RESEARCH METHODS

3.1 Description of the study area

The study was conducted in the *Woreda* 08, Yeka sub-city, Addis Ababa, Ethiopia. Addis Ababa is located in the central part of Ethiopia and belong to the western highlands. Oromia regional, state borders all sides of the capital, and covers an area of 647 sq.km. The city gained an international status for being the headquarters of the African Union and home to several international organizations and numerous embassies (World Bank, 2015a).

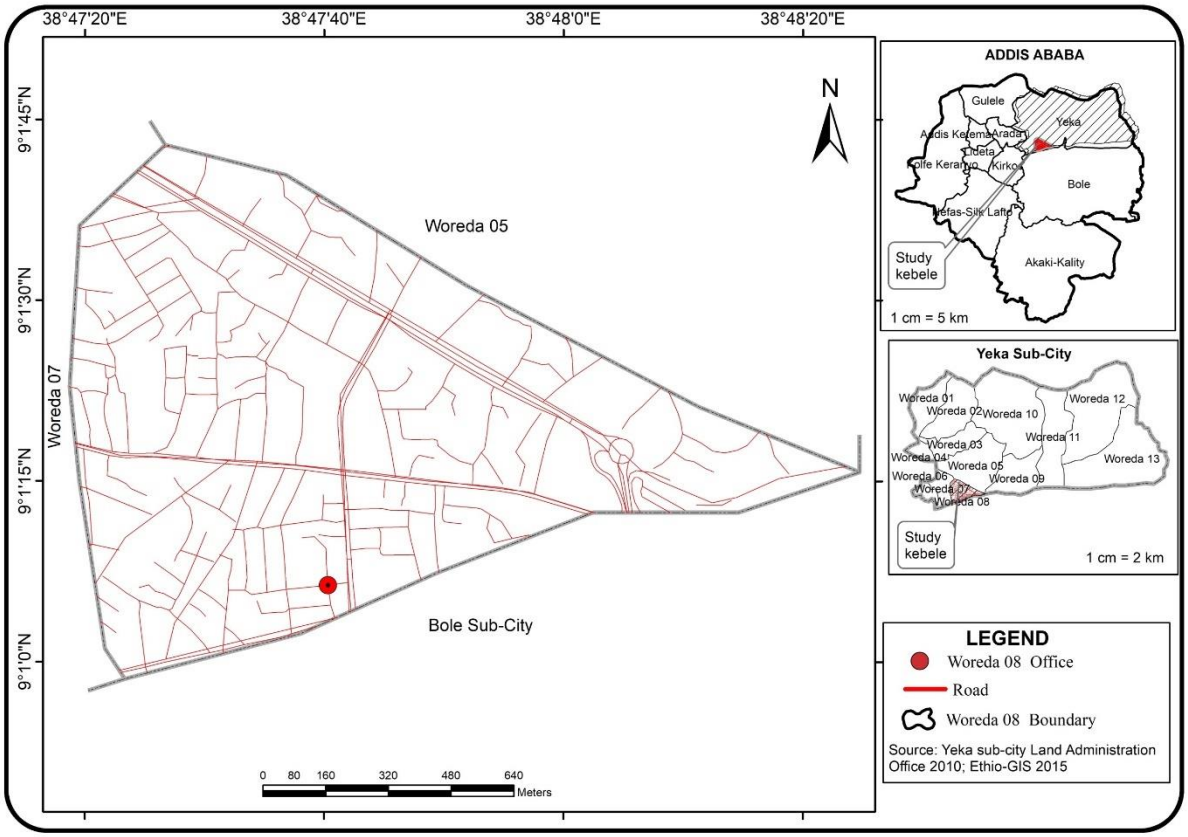


Figure 3.1: Yeka *Woreda 08* in its city and sub-city settings

The projected population of Addis Ababa in 2017 was 3,433,999 and Addis Ababa is divided into ten sub-city and 117 administrative *Woredas*. Yeka sub-city is found in the North-East part of Addis Ababa and the total projected population in 2017 was 201,156 male 233,443 Female total 434,599 population. According to 2016 EDHS Ethiopian urban area household family size was

3.5. Therefore, according to this the total Yeka households 124,171 households and have 13 administrative *Woredas* (CSA, 2013: CSA and MoH, 2016).

The *Woreda* 08, *Yeka* sub-city is one of 13 administrative *Woreda* and located ate about $9^0$00'57" - $9^0$01'41"N and $38^0$47'20" - $38^0$48'23"E (Ethio-GIS 2015). According to the information obtained from the *Woreda* Vital Event Registration Office, Yeka *Woreda* 08, have 14,256 households and an estimation of 49, 896 inhabitants (local report, 2018). The Productive Safety Net Program was launched since 2015 in Yeka *Worda* 08 district and it has two components: direct support and public work components. The payment mode in the district is in cash. The participant selected by comparing each other on raking poverty level.

3.2 Research approach and design

This research study was conducted by using both qualitative and quantitative approach (mixed method). The qualitative approach involves the measurement of quantity or amount. Various available statistical and econometric methods are adopted for analysis in such research. Which includes correlation and regressions analysis. Whereas qualitative research is concerned with qualitative phenomena, or more specifically generate case theories (Panneerselvam, 2004). Therefore, this study employed both Cross-sectional.

Cross sectional describing the characteristics of a particular individual or a group. This research design was determining the frequency with which a variable occurs or its relationship with another variable. In other words, the study analyzing whether a certain variable is associated with another comprises a diagnostic research study. (Panneerselvam, 2004).

3.3 Study population

The population from which the sample actually was drawn and about which a conclusion were made and the study population is often more limited than the target population (Getu and Tegbar, 2006). Therefore, Source of population are all households occupied by Ethiopian located in Addis Ababa city administration, the study population were households live in Yeka sub city woreda 08 and the study samples are households live in Yeka woreda 08, both beneficiaries and non-beneficiaries of UPSNPs.

3.4 Sampling techniques

For this study multi-stage sampling was used. Where, the target *Woreda* selected by purposive sampling (non-probability). Then stratify the household into two by beneficiaries of UPSNP (Beneficiaries and Non- Beneficiaries in the program). Enrolling both UPSNP beneficiary and non-beneficiary in the study using systematic random sampling, using systematic random sampling

$\boldsymbol{K = \frac{N}{n}}$ formula to select the household interval

Where,

K = selection interval

n = sample size

N=Total population size

Thus, total urban productive safety net beneficiary in the *Woreda* 903 (Obtain from Local site)

We select, $K = \frac{\mathbf{903}}{\mathbf{135}} \approx \mathbf{7}$

Therefore, the enrolled from urban safety net beneficiary households will be selected in the 6 intervals start of the list of the urban safety net beneficiary household list. Whereas, we use non beneficiaries from the list of kebele house number lists as sample frame.

3.5 Sample size determination

The sample size determination by using (Yamane, 1967) size determination formula

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

Where **n** is the desired sample size: **N** is Total Number of Population: **e** is the desired level of precision or the quality of being care full and accurate which most literature prefers (0.05):

$\boldsymbol{n = \frac{903}{(1+903(0.05^2))}}$ = 272

Therefore, the sample size from Yeka sub-city *woreda* 08. From this sample size divide the sample size into the two strata (beneficiaries and Non-beneficiaries in the UPSNP) 135 from UPSNP beneficiary and the rest 137 from Non- beneficiary.

3.6 Tools and technique of data collection

I. Survey questionnaire

A questionnaire was used to collect the primary quantitative data by enrolling both beneficiaries and non-beneficiaries of UPSNP through face to face interviewing household heads or their spouses (partner) from Yeka sub-city *Woreda* 8. The survey covered a total of 272 randomly selected households.

The questionnaires are composed of three major parts. Those are information collecting about household demography character, household economic character and food insecurity experience scale module II adopt from FAO tools.

II. Focus Group Discussions (FGD)

The focus group discussion consisted of eight participants from the beneficiaries of the UPSNP. Five of them participated from community work and the rest Three were direct beneficiaries. The participants will come up from different age groups, individuals with different occupations in the *Woreda*, and 3 males and 5 Female household heads.

Selection of participants for the FGD was undertaken with the help of *Woreda* Job Creation and Productive Safety Net Project Office (WJCPSNPO) experts to select the relevant participant in the FDG. The discussion guide was focused on the effectiveness of UPSNP contribution to food security status, implementation practice of the project positive and negative assumptions, food insecurity problem and how people cope with the constraint and their survival strategies. The issues of local governance and state-society interactions, government urban policies were also the points of discussion.

3.7 Food Insecurity Experience Scale (FIES) as a food security measurement technique

The Food Insecurity Experience Scale (FIES) is a new tool for valid and comparable measurement of food insecurity. Recently, FAO recommended it for its measure different levels of severity comparable across the regions and countries. The household food insecurity status was to be determined using a standard set of questions. Food Insecurity Experience Scale Survey Module

for household (FIES SM-II) which have a psychometric scale composed of eight questions with dichotomous yes/no responses. The asked respondents to report experiences of food insecurity of the household varying degrees of severity that are common across cultural contexts short reference (worried, health, few foods, skipped, ate less, ran out, hungry not enough money and holyday without eating).

Respondents food insecurity status were calculated by sum the scores from all eight questions and categorize them into one of four levels of food insecurity status, *i.e.* Food secure [0], Mild Food Insecure [1-3], Moderate Food Insecure [4-6] and Severe Food Insecurity [7-8] (Cafiero *et al.*, 2018; FAO, 2015).

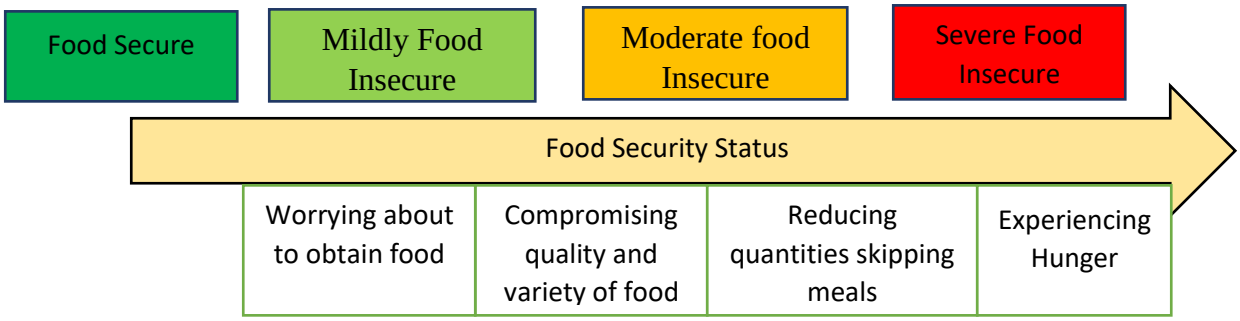


Figure 3.1: Food insecurity experiences and associated severity level (Source: FAO, 2016b)

While the validity was studied by FAO during the voice of Hunger project in the Ethiopian context (Ballard, Kepple, & Cafiero, 2013). The fundamental assumption behind the FIES is that the severity of the food insecurity condition of a household and it tells the severity of food insecurity level. FIES is validated by FAO during the study of Voice of Hunger and translated more than 200 languages, including Amharic version (FAO, 2016b).

Researchers found anxiety was the common experience of insufficient food as respondents worried about not having enough food to eat in the future. As food access conditions worsened, respondents compromised on food choices, resulting in reductions in the quality and diversity of their diet. This stage has now been identified as part of the obesogenic pathway in food insecurity. As food insecurity becomes more severe, food insecure respondents reported that they ate smaller meal portions, skipped meals, and eventually went without food for an entire day or longer. We now understand that this pathway leads to undernourishment (Ville *et al.*, 2019).

Table 3.1: Food insecurity experience scale survey module for household

Now I would like to ask you some questions about the food. During the last 12 months, was there a time when		
Standard level	Question-wording	
Worried	Q1. You or others in your household worried about not having enough food to eat because of a lack of money or other resources?	No 0 Yes 1
Healthy	Q2. Still thinking about the last 12 Months, was there a time when you or others in your household were unable to eat healthy and nutritious food because of a lack of money or other resources?	No 0 Yes 1
Few foods	Q3. Was there a time when you or others in your household ate only a few kinds of foods because of a lack of money or other resources?	No 0 Yes 1
Skipped	Q4. Was there a time when you or others in your household had to skip a meal because there was not enough money or other resources to get food?	No 0 Yes 1
Ate less	Q5. Still thinking about the last 12 Months, was there a time when you or others in your household ate less than you thought you should because of a lack of money or other resources?	No 0 Yes 1
Ran out	Q6. Was there a time when your household ran out of food because of a lack of money or other resources?	No 0 Yes 1
Hungry	Q7. Was there a time when you or others in your household were hungry but did not eat because there was not enough money or other resources for food?	No 0 Yes 1
Whole day	Q8. Was there a time when you or others in your household went without eating for a whole day because of a lack of money or other resources?	No 0 Yes 1

Source (FAO, 2015)

Where: Food Secure [0], Mild Food Insecure [1-3], Moderate Food Insecure [4-6] and Severe Food Insecurity [7-8] scored based on Table 1 questions.

3.8 Data analysis

3.8.1 Qualitative data analysis

The Qualitative data collected through focus group discussions were subject to contextual analysis. Qualitative data analyzed by using quotes from the group discussion and summarizing the essence of the discussion.

3.8.2 Quantitative data analysis

The Collected quantitative data were entered by using Epi Info version 7 and export to Stata version 14.1 to processed descriptive and econometric analysis and summarized each variable were interpreted.

Descriptive statistics

The descriptive statistical method of data analysis was used for analysis ratios, percentages, means, and standard deviations in the process of comparing socio-demographic and economic characteristics of the urban households that related to food security.

Economic model specification

Ordered logit model was used to assess factor determine the food security status of both beneficiaries and non-beneficiaries and analyzed marginal effect to address the effect of UPSNP to food security.

Ordered logit model:

The dependent variable food security status categorized as food secure, mild food insecure, moderate food insecure, severe food-insecure urban households predictor variables or explanatory variables are age of urban household head, household family size, dependency ratio, sex of household head, education level of household head, access to credit, health status of household head, asset holding of the HH, income, HH expenditures, market availability, employment status, perceived health and received aid.

The ordered logit model was used to estimate the ordered categorical outcome variables namely food secure, mild food insecure, moderate food insecure, severe food insecurity urban households. The FIES fills a gap in food security monitoring by directly measuring the access dimension of food insecurity at the household levels.

Urban household food security status (FSS): which ordered the FIES Values into four dependent variables in the model and it takes

$$Y_i = \text{FSS} = \begin{cases} 1 = \text{ food secure} \\ 2 = \text{mild food insecure} \\ 3 = \text{ moderate food insecure} \\ 4 = \text{severe food insecure} \end{cases}$$

FSS_i= FIES level……where i=1, 2…….,272

Where:

Y_i is the food security status of the i^{th} household, i =1, 2, ……, 272

FSS is an urban household food security status

FIES is food insecurity experience scale level score

The ordinal logit model was analyzed by the logistic regression model. When a dependent variable was ordinal. Sometimes we forget about the ordering and fit a multinomial logit that ignores any ordering of the values of the dependent variable.

$$Food\ secure = (P_1) = \log\frac{p_1}{1-p_1} = \text{a}$$

$$mild\ food\ insecure = (P_2) = \log\frac{p_1 + p_2}{1 - p_1 - p_2}$$

$$Moderate\ food\ insecure = (P_3) = \log\frac{p_1 + p_2 + p_3}{1 - p_1 - p_2 - p_3}$$

$$Severe\ food\ insecure = (P_4) = \log\frac{p_1 + p_2 + p_3 + p_4}{1 - p_1 - p_2 - p_3 - p_4}$$

The ordered logit model is used to predict an ordinal dependent variable given one or more independent variables. Ordinal regression was enabling us to determine which of our independent variables (if any) have a statistically significant effect on our dependent variable. The following Assumptions checked. The dependent variable is measured on an ordinal level. The four independent variables are categorical or ordinal, Non multi-collinearity while, the independent

variables are highly correlated with each other, proportional odds *i.e*. that each independent variable has an identical effect at each cumulative split of the ordinal dependent variable (Gujarati, 2004).

The order Logit model becomes for each category or order

$$Z_i = ß_0 + ß_1 AGE + ß_2\, SEX + ß_3\, MARTISTA + ß_4\, EDUCA + ß_5 HSIZ + ß_6 EMPLOYSTA + ß_7\, INCOM6 + ß_8\, ASSET + ß_9 HEALTHSTA + ß_{10} MARK + ß_{11} MARKD + ß_{12} AID + ß_{13} CREDIT + ß_{14} UPSN + ß_{15} EXP\_TOTAL + ß_{16} DRATIO + U_i$$

Where:

$ß_0$ = Y-intercept

$ß_1$, $ß_2$ ------ $ß_n$ are the slopes of the equation in the model

U_i = disturbance term/Error term

For this analysis post-estimation test were done after logistic regression. In order to test the existence of multi-collinearity, both the continues and discrete explanatory variables were checked using variance inflation factor (VIF). This statistical analysis indicates that there is no strong association among the variables. And also, heteroscedasticity and goodness -of- fit test was calculated to auto correlation and appropriateness of data with model. The information gathered from focus group discussion, was analyzed qualitatively.

Marginal Effect

The marginal effect of a predictor in a categorical response model estimates how much the probability of being food secure being the predictor variables changes as the predictor change. For a continuous predictor, the marginal effect is a partial derivative of the probability of being food secure respect to the predictor of interest. For a binary categorical predictor, it is the change in event probability when the predictor is changed between its levels. A measure of the overall effect of the predictor is the average of the marginal effects (AME).

3.9 Dependent variables

This study focused on the food security status of UPSNP beneficiaries. however, lack of baseline data to evaluate the effect of this project on household food security status. The study incorporates non-beneficiaries of UPSNP in the study. Therefore, both UPSNP beneficiaries and non-beneficiaries HH of food security status (FSS) are the dependent variable in the study. The FSS of the household measure by using FIES score and ordered in to four Categories. The FIES score [0] Food Secure code 1, [1-3] Mild Food Insecure code 2, [4-6] Moderate Food Insecure code 3 and [7-8] Severe Food Insecurity code 4 (Cafiero *et al*., 2018; FAO, 2015).

3.10 Independent variables (X_n)

Based on the previous effect of productive safety net program to food security status and participation in the program determinant factors, some of the common predictors that are expected to influence urban household food security in the study area could be listed in the following

(1) Age of urban household head (AGE): Age is a continuous explanatory variable and measures number of years. As the age of a household increases, it is assumed that employ or business owner could acquire more knowledge and experience. They are more risk averter and their chance to become more food secure increases with age (Girma, 2012). Thus, food security is positively correlated and has a negative relation to participating in UPSNP.

(2) Household size (HSIZ): Household size refers to the total number of household members who live and consume from the same household and is expressed in adult equivalent. Household size measure by direct count the total number of peoples live in the household. It is an important variable that determines the state of household food security and expected to have negative impacts on household food security. An increase in household size implies more people to be fed from the limited resources. Thus, it is to have a negative association with food security and have a positive relation to participation in UPSNP (Beyene & Muche, 2010).

(3) Dependency ratio (DRATIO): Dependency ratio is obtained by dividing inactive labor force (age less than 15 and above 65) by the active labor force (age between 15 and 65) within a household. These variable measures the ratio of dependent variable live in the HH range from 0 up1. When a large household size corresponds with the availability of adequate adult labor,

it can have a positive effect. But a household with a more inactive productive labor force compared to the active age shows a high dependency ratio and it is more likely to be food insecure. Therefore, it is food security negatively associated (Godefey, 2017). Thus, the dependency ratio has a positive relationship to participate in UPSNP.

(4) Sex of household head (SEX): The Household head is a person who economically supports or manages a household or for reason of age or respect is considered as head by other members of the household. Male-headed households have more access to job opportunities and business entrepreneurs as compared to female-headed households. Female-headed households most of the time spent on nonproductive and reproductive activity. Sex of household head is an important determinant of food security and it is a dummy variable (i.e. 1 if it is male and 0 otherwise). Thus, male-headed households are more likely to be food secure than female-headed households (Ejigayhu *et al*., 2011). Males have the capability to participate in various income-generating activities while the female is disadvantageous because they are often limited to certain income-earning activities. Thus, the sex of the household head has a positive relationship with the male household being food secure.

(5) Marital status of the household head (MARITAL): A gender disaggregated view of the marital status of the respondents' shows that the entire female heads of households were widows, widows indicate how they are intentionally targeted by the program. Apparently, the targeting of safety net beneficiaries, especially the direct support, seems to have adhered to the vulnerability criteria categorized as Married=0 Single=1 divorce=2 widowed= 3 and it have negative relation to being food secure (Tezera, 2007).

(6) Employment Status of the household Head (EMPLOYSTA): it is a dummy variable work on a specific engagement on both employed or self-employed that should be generate income. Code as employed as 0 and unemployed as 1 and it have negative relation to being food secure (Welteji *et al.,* 2017).

(7) Education level of household head (EDUCA): It is a categorical variable in urban areas the most predictor variable in business running as well as employment. Education is an important variable determining household food security where educated households have a better chance of managing their business or employees in more income position as well as to entrepreneurial his or her business. It has positive effects on food security (Tadele, 2011). While it has a negative relation to participating in UPSNP.

(8) Access to credit (CREDIT): Credit serves as a means to boost production and expand income-generating activities It is a dummy variable taking the value 1 if the household takes credit 0 otherwise. Thus, a household that has access to credit does initiate investment in business and achieve food security. Thus, a household that has access to credit is more likely to be food secure access to credit have a strong, significant and positive relationship with a household's food self-sufficiency. This is due to the fact that credit gives the households an opportunity to be involved in income-generating activities. Therefore, access to credit has a negative relation to Participate in UPSNP (Godefey, 2017).

(9) Health Status (HEALTHSTA): it is categorical variables. If more members of the household perceived healthy, the household is more likely to have spent more on food and more productive. Respondents will be asked whether they perceived Excellent, Good, Fair and Poor health status. Thus, the health status of the household head has a negative relation to being food secure (Ejigayhu *et al*., 2011).

(10) Income (INCOME): The total income of the household in the previous 6 months in Ethiopian Birr. It is an important variable in determining a household food security status. The data include cash or money income as well as income in-kind from rental, unpaid goods and services, and unpaid food and beverages. In the stata it converted to loge value to minimize the value in the model. The sign for the relationship is expected to be positive which more income has the probability of food secure (Ejigayhu *et al*., 2011). Thus, income has a negative relation to participating in UPSNP.

(11) Market (MARK): it is a dummy variable to their perceived to have access to food items in the market if Yes=1 No=0. The availability of food in the market has a positive relationship to urban household food security status. Thus, the availability of food in the nearest market has a positive relationship to being food secure(Mohamed, 2017).

(12) Market distance (MARKD): it is a continuous variable. it measured the distance of the market from the household to the market in kilometer. When the market is far from the household it takes time and transportation cost. therefore, the distance from the market has a negative relationship to being food secure (Mohamed, 2017).

(13) Assets (ASSET): Ownership of assets has been posited as one attribute that makes it more likely positive for food security. These assets include houses and buildings, vehicles, and

financial assets like savings. Thus, ownership of assets has a positive relationship to being food secure (Katane, 2010).

(14) Aid (AID): The existing other emergency programs, create access to food availability for vulnerable households. Therefore, households received food commodities would fulfill their food gap needs, hence, in this study, the households who have been receiving aid are expected to be food secure than those who did not get gifts from persons and non-government organizations. So, households that have access to aid have a positive relationship with being food secure (Yimer, 2011).

(15) Food Expenditures (FOODEXP): The expenditure of the household on food in ETB. In urban Ethiopian sittings consumption and consumption growth was lost during period of rapid food price increase. During this time poorer household were more affected by rapid rising food price, there share food expenditures were positive relation to being food insecure (Hadley, Stevenson, Tadesse, & Belachew, 2012). In the model the share of expenditures on food converted to log value to minimize the value number.

(16) Participation in UPSNP (UPSNP): it is an important determinant of food security and it is a dummy variable (i.e. 1 if it is beneficiary and 0 otherwise non-beneficiaries). Households who received cash from the program would fulfill their food. Therefore, the participation of the household in the UPSNP project has a positive relationship with food security status.

Table 3.2: Summary of Variables

No.	Variables	Type	Measurement	Expected being FS	Source
1	Age of urban household head	continuous	Number in Years	+	(Girma, 2012)
2	Household size	continuous	Number of Household Members	-	(Godefey, 2017)
3	Dependency ratio	continuous	Ratio (inactive labor force to active labor force)	-	(Godefey, 2017)
4	Sex of household head	Dummy	Male 1 or Female 0	+ for Male	(Godefey, 2017)
5	Education level of the household head	Categorical	Illiterate, primary school, high school, preparatory, college diploma or Certificate, and Degree & above	+	(Tadele, 2011)
6	Employment	Dummy	Employed 1 and Unemployed 0	-	(Welteji *et al.*, 2017)
7	Health status	Categorical	Excellent, Good, Fair and Poor	-	(Ejigayju, 2011)
8	Access to credit	Dummy	Yes, or No	+	(Godefey, 2017)
9	Income	Continuous	ETB	+	(Ejigayju, 2011)
10	Food availability in the Market	Dummy	Yes, or No	-	(Mohamed, 2017)
11	Market distance	Continuous	Distance in Km to purchase food from the house to Market KM	-	(Mohamed, 2017)
12	Assets	Continuous	Total Wealth in ETB	+	(Katane, 2010)
13	Aid	Continuous	Aid access	+	(Yimer, 2011)
14	Expenditures on Food	Continuous	ETB	+	(Hadley *et al*., 2012)
15	Marital Status	Categorical	Married=0 Single=1 divorce=2 widowed= 3	-	(Tezera, 2007)
16	UPSNP	Dummy	Yes, or No	+	(Mohamed, 2017)

CHAPTER FOUR: RESULT AND DISCUSSION

This section discussed both the result of descriptive and econometric analysis. In the descriptive analysis, household characteristics, Urban Productive Safety Net Project (UPSNP) participation and food security related variables were analyzed by either t-test or chi-square. The econometric analysis was also conducted using the Ordinary logit model and propensity score match (PSM) between beneficiaries in the UPSNP and Non-beneficiaries in the UPSNP.

4.1 Socio-demographic characteristics of the respondents

4.1.1 Sex of the HH among beneficiaries and non-beneficiaries in the UPSNP:

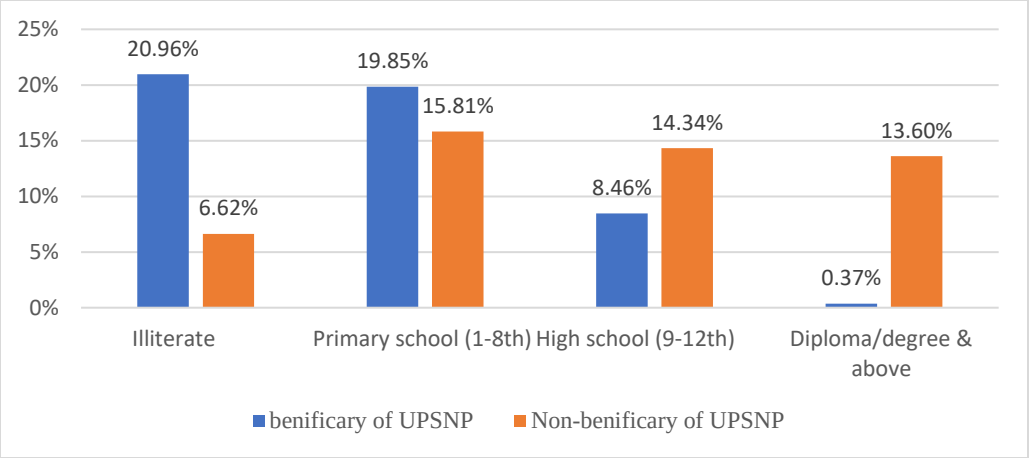
From the survey respondents of 272 urban respondents, 83 (30.51%) were male and 189 (69.49%) were female. About 32 (11.76%) and 103 (37.87%) were male and female respectively, the beneficiary of the urban productive safety net project (UPSNP) and 51 male (18.75%) and 86 (31.62%) were non-beneficiary in the urban productive safety net project, (See table 4.1).

4.1.2 Marital status of the households:

The survey indicates 71 (26.1%), 16 (5.88%), 17 (6.25%), & 31 (11.40%) were married, single, divorced and widowed respectively in the beneficiary of UPSNP. On the other hand, 97 (35.66%), 23 (8.46%), 7 (2.57%) & 10 (3.68%) were married, single, divorced and widowed in the non-beneficiary of UPSNP, respectively (See table 4.1).

4.1.3 Education status of beneficiaries in the UPSNP:

The survey result shows that, out of 272 respondents, 57 (20.96%) & 18 (6.62%) were illiterate in the beneficiary and non-beneficiary of UPSNP respectively. From the total respondents 54 (19.85%) & 43 (15.81%) were primary school (1-8th) attended in the beneficiary and non-beneficiary of UPSNP respectively. From the total 23(8.46%) & 39 (14.34%) were high school (9-12th) attended in the beneficiary and non-beneficiary of UPSNP respectively. Finally, we saw 1 (0.37%) & 37 (13.6%) were attended diploma/ degree or above Ethiopian education curriculum. Therefore, higher education and high school attending household heads have lower food insecurity prevalence compared to illiterate or lower grade complete household heads (see figure 4.1).



Source: own survey, 2019

Figure 4.1: Education status of beneficiaries and non-beneficiaries of UPSNP

Other literature emphasizes, the prevalence of food insecurity decreased as household head education status improved. A household with reading and write has a much higher incidence of food insecure than those household head attended elementary and secondary education (Ejigayju, 2011). Literature indicates the household food insecure reduces with the increasing educational level of the households. Households headed by those uneducated and with primary education were more food insecure than those headed with a diploma and above (Tesfay, 2012).

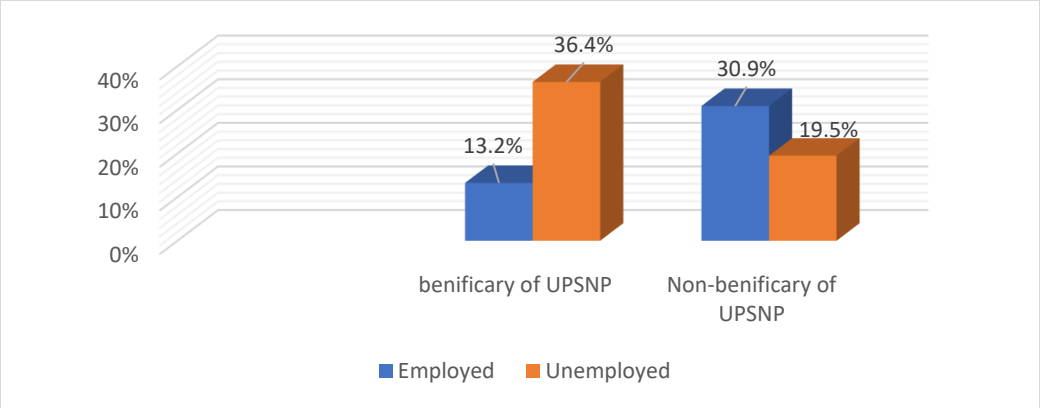
Table 4.1: Distribution of Sample Household Head by Education

Variables	Characterizations	Frequency	percent	Cumulative freq.
Household Head Educational Status	Illiterate	75	27.57	27.57
	Primary school (1-8th)	97	35.66	63.24
	High school (9-12th)	62	22.79	86.03
	Diploma/Degree or above	38	13.97	100.00

Source: own survey, 2019

4.1.4 Employment Status among beneficiaries and non-beneficiaries of UPSNP:

From 272 interviewed household 36 (13.24%) &84 (30.88%) were employed and 99 (36.4%) & 53 (19.49%) were unemployed in the beneficiaries and non-beneficiaries of UPSNP respectively (see table 4.1). Therefore, those household heads have jobs decrease participation in UPSNPs. However, the unemployed household head has benefited from the UPSNP.



Source: own survey, 2019

Figure 4.2: Employment status of the household head

Literature indicates PSNP helps to protect the basic level of consumption. Similarly, the Addis Ababa UPSNP was helping the urban household to fulfil their consumption. Accordingly, the main targeting criteria was the employment status of the household head with the consideration of income and household family size (Kassa, 2018). Therefore, the UPSNP beneficiaries were unemployed household head than UPSNP non beneficiaries.

4.1.5 Food security status of the household:

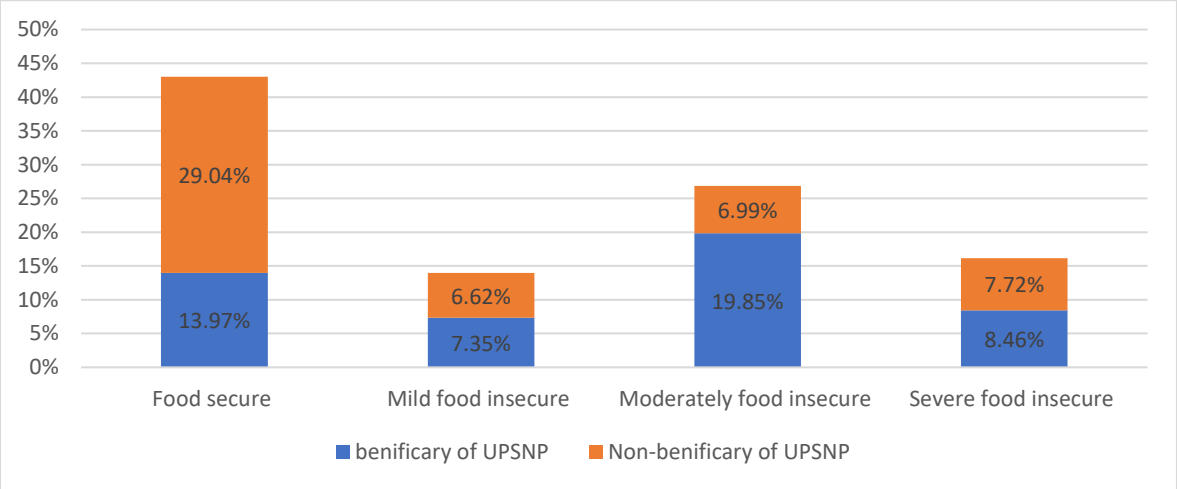
Based on Food insecurity experience scale (FIES) module II for households out of the 272 sample household 38 (13.97%) & 79 (29.04%) food secure, 20 (7.35%) & 18 (6.62%) mild food insecure, 54 (19.85%) &19 (6.99%) moderately food insecure and 23 (8.46%) & 21 (7.72%) severe food insecure among beneficiaries and non-beneficiaries of UPSNP, respectively (see figure 4.3).

Table 4.2: Distribution of Sample Household Food Security Status

Variables	Characterizations	Frequency	percent	Cumulative freq.
Household Food Security Status	Food secure HH	117	43.01	43.01
	Mild food insecure HH	38	13.97	56.99
	Moderately food insecure HH	73	26.84	83.82
	Severe food insecure HH	44	16.18	100.00

Source: own survey, 2019

The result shows that, the household food security status between beneficiaries and non-beneficiaries of UPSNP were statistically different with p value 0.000. The status of being food secure were more on non-beneficiaries than the beneficiaries. but other studies indicates the contribution of safety net program in enhancing the food intake and food access of beneficiaries (Misgana, 2018). The FGDs had also mentioned that, there is no change in their living condition beside to cover up to two-week household demands. Which 1500 ETB per month for public work package beneficiaries and 215 per individual for direct support package beneficiaries.



Source: own survey, 2019

Figure 4.3: Food Security Status of the HH among beneficiaries and non-beneficiaries of UPSNP

Table 4.3: Socio-demographic characteristics of the Sample HH among beneficiaries and non-beneficiaries of UPSNP

		Beneficiaries of UPSNP N=135(49.63%)		Non-beneficiaries of UPSNP N=137 (50.37%)		Chi square	P-value
		No.	%	No.	%		
Sex	Male	32	11.76%	51	18.75%	5.8641	0.015
	Female	103	37.87%	86	31.62%		
Marital status	Married	71	26.10%	97	35.66%	20.1894	0.000
	Single	16	5.88%	23	8.46%		
	Divorce	17	6.25%	7	2.57%		
	Widowed	31	11.40%	10	3.68%		
Education Status	Can't write & read	57	20.96%	18	6.62%	59.7502	0.000
	Primary school (1-8th)	54	19.85%	43	15.81%		
	High school (9-12th)	23	8.46%	39	14.34%		
	Diploma/degree & above	1	0.37%	37	13.60%		
Employment status	Yes	36	13.24%	84	30.88%	33.1081	0.000
	No	99	36.40%	53	19.49%		
Access to credit	Yes	14	5.15%	19	6.99%	0.7806	0.377
	No	121	44.49%	118	43.38%		
Perceived health status	Excellent	49	18.01%	88	32.35%	41.0697	0.000
	Good	30	11.03%	37	13.60%		
	Fair	43	15.81%	11	4.04%		
	poor	13	4.78%	1	0.37%		
Physical disabilities	No	128	47.06%	131	48.16%	0.0970	0.755
	Yes	7	2.57%	6	2.21%		
Access to aid	Yes	9	3.31%	2	0.74%	4.7504	0.029
	No	126	46.32%	135	49.63%		
Food availability market	Yes	41	15.07%	45	16.54%	0.1929	0.661
	No	94	34.56%	92	33.82%		
Food security status of HH	Food secure	38	13.97%	79	29.04%	31.3315	0.000
	Mild food insecure	20	7.35%	18	6.62%		
	Moderate food insecure	54	19.85%	19	6.99%		
	Severe food insecure	23	8.46%	21	7.72%		

Source: own survey 2019

4.1.6 Age of the household head:

The study result shows that there is a significant mean difference between the beneficiary and non-beneficiary groups. The mean of age beneficiaries (47 years with a standard deviation of 15.58) greater than the mean age of non-beneficiaries (38 years with a standard deviation of 0.92) of UPSNP. The group means are significantly different as the p-value less than 0.05 (i.e., based on two-tailed significant levels). The mean age difference between this shows that the young and energetic people are not dependent on the UPSNP (see Table 4.2). The household head age was found statistically significant. It was positively associated to become beneficiaries of UPSNP. Thus, household elder household heads more participated in the project.

4.1.7 Family size of the household:

The survey result shows that there is no significant mean difference between beneficiaries and non-beneficiaries of UPSNP but there is slight difference the two categorical group, however, that with t-test at 5% significant beneficiaries HH has 3.94 household size with 1.71 standard deviation and non-beneficiaries HH have 3.64 with 1.4 standard deviations of UPSNP with p-value 0.1197. Therefore, the mean difference between beneficiaries and non-beneficiaries was not statistically significant (see figure 4.4). The result shows more family size have chance to participate in the UPSNP but statically insignificant which have 0.1198 p value.

Table 4.4: Distribution of Sample Household Size

Variables	Characterizations	Frequency	percent	Cumulative freq.
Household family size	1	24	8.82	8.82
	2	27	9.93	18.75
	3	60	22.06	40.81
	4	90	33.09	73.90
	5	33	12.13	86.03
	6	26	9.56	95.59
	7	6	2.21	97.79
	8	4	1.47	99.26
	9	2	0.74	100.00

Source: own survey, 2019

4.1.8 The combined 6-month income of the household:

The survey result shows that it is statically different between the two groups. However, the mean of 6-month income 20233 birr/6 months with 24835 standard deviations for each HH and 41329 birr/6month with 84785 standard deviations for the beneficiaries and non-beneficiaries of UPSNP (see Table 4.2).

4.1.9 Total expenditures of the household:

The survey result shows that it is statically different between the two groups. However, the mean of 6-month expenditures 11,575.6 birr/6 months with 12634.34 standard deviations for each HH and 20,265.55 birr/6month with 255514.41 standard deviations for the beneficiaries and non-beneficiaries of UPSNP (see Table 4.2).

4.1.10 Asset holding of the household:

From 272 HH respondents, 98 (36.03%) and 76 (27.94%) had low asset (less than 10,000 birrs based Ethiopian asset raking), 17 (6.25%) and 25 (9.19%) were have Medium asset holder household (10,000-99,999 birr based Ethiopian asset raking) and 20 (7.35%) and 36 (13.24%) had high asset holder HH (greater than 100,000 birrs based Ethiopian asset raking), to beneficiaries and non-beneficiaries respectively (see Figure4.4). Although, asset holding have a significant difference at p-value 0.008 between beneficiaries and non- beneficiaries' household.

Table 4.5: Socio-demographic characteristics of the HH among beneficiaries and non-beneficiaries of UPSNP

	UPSNP participation					
	Participant in the UPSNP N=135 (49.63%)		Non-beneficiaries in the UPSNP N=137(50.37			p-
variables	mean	Std. Dev.	mean	Std. Dev.	t-test	value
Age	47.00741	15.57672	38.26277	0.9177926	5.3965	0.000
HH size	3.940741	1.709338	3.642336	1.433513	1.5609	0.1198
Market distance	2.22222	2.408525	2.43.657	1.885688	-0.7953	0.4271
Income	20233.7	24835.04	41329.64	84785.17	-2.7759	0.0059
Asset	53806.67	148406.7	239213.1	615457.2	-3.4040	0.0008
Total expenditures	11575.64	12634.34	20265.55	255514.41	-3.5513	0.0005

4.2 Econometric result

This subsection presents result the determinant of food security status by using the ordinary logit model and the effectiveness of UPSNP using Propensity Score Matching (PSM). Before proceeding the ordinary logit model and effectiveness estimation the researcher checked multicollinearity between variables by using the variance of inflation factor (VIF) for continuous variables and the contingency coefficient test was used discrete variables.

4.2.1 Variance inflation factors and correlations of variables

For Variance Inflation Factor (VIF) as the rule of thumb, (a variable those have 1 VIF not correlated between 1-5 moderately and greater than 5 have high correlated) (Education, 2010) from this respect as the mean of VIF was 1.07 have less collinearity each variable. Therefore, there was no indication of multicollinearity problems between variables (see Table 4.3). As a result, all the hypothesized four continuous variables were included in the model estimation.

Table 4.6: Variance Inflation Factor (VIF) for continuous variables.

Variable	VIF	1/VIF (Tolerance)
INCOM6	1.11	0.904513
ASSET	1.06	0939167
AGE	1.05	0.950239
HSIZ	1.04	0.958000
Mean VIF	1.07	

Source: Survey result, 2019

For contingency coefficient was calculated for the discrete variables that have ranged between 0 and 5. The value of the contingency coefficient less than 0.5 assumes a weak association between the variables. Since the table shows the low existence of an association between the variables, all the discrete variables were included in the model as well.

4.2.2 Estimation of determent food insecurity status

In the study, the researcher was employed an ordered logit regression model to predict the determinant of food insecurity status of sample urban households. The ordinary logit model was made by using demographic and socio-economic factors that could be affecting the food security status of the households.

An ordered logit model of estimation used to analyze factors having a certain category of relationship to food insecurity status of study households. The ordinary logit model of Prob > chi^2 is a good fit since it is below 0.05, for instance, it was 0.000 (see table 4.4). The number of observations was 272 and the LR Chi-squared test with a value of 206.41 (P-value =0.000) shows that models fit the data well as compare to the null.

Although, it indicates the p-value of four variables significantly influenced and determined the probability of becoming the food insecurity status of the urban household in the study area. As it indicates, the p-value of these four variables is below 0.05 or above the Z score of 1.96. These variables were household head education status, household family size, household combined income and household assets.

The result stats that, household head education status and household combined income and household holding asset were negatively related to food insecurity status of the urban households within 1% significant level. This means urban households head who have to attend higher education are food secure than those who have a lower grade or illiterate household head or vice versa. And also, the result shows, those households have low income have food insecure with compere higher income.

Whereas, household family size has a positive relationship to household food insecurity status at 5% significant level. This result shows that the urban households who have large family size are food insecure than those who have a small family size at 5% significant level.

Household head education status was found important in determining household food security status. other observed studies show, higher the educational level of the head the more likely in the household in the household to be food secure. This is because of the more educated household head has more opportunities for the job and doing business in urban areas (Tsegay Gebrehiwot, 2009).

Table 4.7: Determinate of Urban household food insecurity status.

Iteration 0: log likelihood = -349.66765

Iteration 1: log likelihood = -252.39612

Iteration 2: log likelihood = -247.3273

Iteration 3: log likelihood = -247.2757

Iteration 4: log likelihood = -247.27569

Ordered logistic regression — Number of obs = 272

LR $chi^2(11)$ = 204.78

Prob > chi^2 = 0.0000

Log likelihood = -247.27569 — Pseudo R^2 = 0.2928

Food Security Status being food insecure	Coef.	Std. Error	Z	P>/Z/
Age of HH Head (AGE)	.0086838	.0110778	0.78	0.433
Sex of HH Head (SEX)	.4298695	.312309	1.38	0.169
Marital status of HH Head (MARTISTA)	-.0434203	.1331576	-0.33	0.744
Education level of HH(EDUCA)	-.75959	.2014081	-3.77	0.000***
Household size (HSIZ)	.2654572	.1045264	2.54	0.011**
Employment status (EMPLOYSTA)	.2539242	.300622	0.84	0.398
Perceived Health Status (HEALTHSTA)	.020926	.1575726	0.13	0.894
Access to aid (AID)	-.6515575	.6090015	-1.07	0.285
Access to credit (CREDIT)	.2876381	.522682	0.55	0.582
Log of Income (Logincome)	-.9870384	.2045202	-4.83	0.000***
Log of Asset (Logasset)	-.1440785	.0287424	-5.01	0.000***
UPSNP	-.0313039	.3084125	-0.10	-.6357812
/cut1	-9.822306	1.9461		
/cut2	-8.71806	1.91566		
/cut3	-6.576998	1.877721		

Source: Own survey result, April 2019

*** Significant al less than 1% probability level, ** Significant at 5% probability level.

The participation of the Safety Net Program is an important means by which low-income families may respond to the risk of food insecurity. The analysis present hears UPSNP doesn't have a significant impact on the model. Other literature indicates the effect of Productive Safety Net Programs does not much significant to improve food security status (Dessalegn, 2013). This finding was compatible with findings from other literature undertake in Addis Ababa sex and the age of household head didn't have a significant association with being food insecure (Tesfay, 2012).

Household size is statistically significant at P<0.05 (Table 4.4) and has a positive relationship with household food insecurity. The possible effect is that most of the family member is the inactive age group that has no contribution to income-generating rather than consumption. Similarly, the literature indicates, large household size creates more pressure on household food security status because more food non-food expenditures spent is an increase (Mekuanit, 2014)

The odds of being in food insecure status are predicted to grow 1.6 times larger than each additional change in age from youth to adults to elders respectively (See table 4.6). if the status of age change by two levels or compare youth to an elder are 1.6*1.6 or 1.6^2 times larger than those fewer age categories household head being food secure other variables are constant. On the other hand, increase one status from illiterate to primary education to high school to higher education respectively were 0.47 times shrink in the status of being food insecure other variables are constant.

Change the status of household head employment status to unemployed being food insecure increase by 1.3 times to compere from employed household heads when the other variables are constant. The same as one unit increase in the household size the household being food insecure increase by 1.3 times greater, given that all of the other variables in the model are held constant (see Table 4.6). An odds ratio greater than 1 corresponds to a positive effect because they increase the odds. Those between 0 and 1 correspond to negative effects because they decrease the odds. The odds ratio exactly 1 corresponds to no association whereas, the odds ratio cannot be less than 0 (Hailpern, 2018).

Households those head were educated were 53%more likely to be food secure or one educational categories change (*i.e*. from illiterate to primary school or to high school or higher education) being food secure changes by 5%with p value 0.000.

FDG shows, they participate in the UPSNP since 2016, and it has two components i.e. public work and direct beneficiaries (unable to work in public works not have family energy). All we are selected by the community using comparison poor to poor ranking. The *woreda* Job creation and social affairs office conduct assessments before deciding who received the benefits. The selected committee visited homes of applicants, witnessed their living conditions and heard testimonials from witnessed as a part of the screening process.

Table 4.8: Ordered logit model for UPSNP in Yeka sub city *Woreda 08.*

```
Iteration 0:   log likelihood = -349.66765
Iteration 1:   log likelihood = -251.99164
Iteration 2:   log likelihood = -246.52204
Iteration 3:   log likelihood = -246.46126
Iteration 4:   log likelihood = -246.46122
Iteration 5:   log likelihood = -246.46122
Ordered logistic regression          Number of obs     =        272
                                     LR chi2(12)       =     206.41
                                     Prob > chi2       =     0.0000
Log likelihood = -246.46122          Pseudo R2         =     0.2952
```

FSS	Odds Ratio	Std. Err.	z	P>z	[95% Conf.	Interval]
AGEGROUPS	1.580365	.4841232	1.49	0.135	.8669686	2.880788
SEX	1.428636	.4536739	1.12	0.261	.7666833	2.662115
MARTISTA	.9531778	.1257569	-0.36	0.716	.7359888	1.234459
EDUCA	.4741336	.0964091	-3.67	0.000	.3182875	.7062882
HSIZ	1.313667	.1367282	2.62	0.009	1.07125	1.61094
EMPLOYSTA	1.320994	.4075124	0.90	0.367	.7216293	2.418172
HEALTHSTA	1.025448	.1615803	0.16	0.873	.7529901	1.39649
AID	.5113024	.3169583	-1.08	0.279	.1517102	1.723221
CREDIT	1.329963	.6978873	0.54	0.587	.4755309	3.719638
logincome	.3858349	.0794493	-4.62	0.000	.2577069	.5776663
logasset	.8626447	.0249112	-5.12	0.000	.8151757	.9128779
UPSNP	.9325337	.2878926	-0.23	0.821	.5091911	1.707844
/cut1	-9.458449	1.900954			-13.18425	-5.732648
/cut2	-8.348638	1.870367			-12.01449	-4.682785
/cut3	-6.190675	1.833087			-9.783459	-2.597891

The discussion shows that the cash transfer had become the major source of income besides temporary works they had been involved in. before joining the project they were had exposed to food shortage and illegal works for example street trade and time waste in local alcohol selling bar but after this project, we gate living hopes and tray to live as humankind. In the public work component, we work for 5 days a week for 5 hours from 6:00 pm- 11:00 pm a day. In the project, they received 1,500 ETB per household for community package beneficiaries but for direct Support, it accounts for 215 ETB per month per individual.

Table 4.9: Ordered logit model for UPSNP in Yeka sub city Woreda 08.

Iteration 0: log likelihood = -188.52868
Iteration 1: log likelihood = -137.65746
Iteration 2: log likelihood = -137.38021
Iteration 3: log likelihood = -137.37962
Iteration 4: log likelihood = -137.37962
Ordered logistic regression Number of obs = 272
LR chi2(12) = 102.30
Prob > chi2 = 0.0000
Log likelihood = -137.37962 Pseudo R2 = 0.2713

participation in UPSNP	dy/dy	Std. Err.	z	P>z	[95% Conf.	Interval]
AGE	.0046027	.0138103	1.36	0.174	.9918703	1.046012
SEX	-.0143474	.3272392	-0.17	0.868	.4787128	1.862411
MARTISTA	.031482	.180712	0.79	0.429	.8299848	1.549932
EDUCA	-.2230749	.0886767	-4.12	0.000	.2680606	.626187
HSIZ	.003356	.117779	0.12	0.908	.8070741	1.272761
EMPLOYSTA	.2110072	.7549455	2.60	0.009	1.231025	4.394071
HEALTHSTA	.1539914	.3468264	3.29	0.001	1.282529	2.672814
AID	.5137683	7.478567	2.15	0.032	1.194615	51.03111
CREDIT	.2135731	1.191672	1.68	0.092	.8696455	6.349025
logincome	.0459452	.1790428	1.23	0.217	.8974323	1.609283
logasset	-.0125619	.0305485	-1.56	0.118	.8929645	1.012792
FSS	-.0254939	.1587536	-0.58	0.562	.6398415	1.274531
/cut1		1.776355		-1.231717	5.731466	

However, besides the benefit of the project, the FGDs had also mentioned the insignificant impact of the program to meet food security(access) based on the receiving cash. The beneficiaries have complained no change in their food security status as the cash transfer is very low or not meet their monthly expenditures. It covers only two weeks of food demand of the household. Besides this, the food market price becomes worse due to its expensive and the project doesn't have scheduled inspection systems. On the other hand, they complain about the daily working hour because it shares big time to work in other jobs. They concluded the discussions the project has a contribution to their living condition but the receiving cash too small needs to increase the cash amount.

CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

Ethiopian Productive Safety Net Program is the largest social protection program and has more than a decade's implementation time and literature indicated PSNP have a positive influence on being food security at the household level as well as an individual level. But Urban PSNP is a recent timely project and has a short period implementation scenario. In this study, the researchers focus on the effect of UPSNP on urban household's food security status and the determinants of food insecurity of urban households. This study used both descriptive statics and econometric methods used to analyze the empirical data that were collected from the study areas.

The result of the study in the targeted population that all sample respondent reports indicates 29% and 14% only food secure from non-beneficiaries and beneficiaries of UPSNP respectively. On the other hand, 21% and 36% were food insecure households in both non-beneficiaries and beneficiaries of UPSNP respectively. This shows the UPSNP beneficiary household still has a higher-level prevalence of food insecure (access).

According to descriptive statistics of the sample households, some variables such as illiterate education status of the household head have 20.96% & 6.62%, higher mean household size with 3.9 & 3.6, higher mean age 47 & 38 years and unemployment status 36.4% & 19.49 % of beneficiaries and non-beneficiaries of the UPSNP. On the other hand, higher mean income 20233 & 41329 ETB, higher asset holding household 53806 & 239213 ETB and married 26 % & 35.66 to their marital status beneficiaries and non-beneficiaries of the UPSNP.

The ordered logit model was used to identify determinant of urban household food security status, household head education status and household combined income and household holding asset have significant variables to food security status, whereas age, marital status and access to credit statically insignificant to determine the food security status of the urban households. Household food security status was more determined by educational levels were more educated household heads has more likely to become more food secure than those illiterates. Similarly, more asset holders have more likely to become food secure in both beneficiary and non-beneficiary urban households.

The information obtained from the focused group discussion supports the same findings of the survey results. Generally, this study revealed the effect of UPSNP) has a positive contribution to household food security status, but statically insignificant in the survey in the same in the FGD raise the same thing that they received a small amount of cash to cover monthly food price.

5.2 Recommendations

Since food insecurity is very common events among low-income urban households, The Ethiopian government expands Productive safety Net program from rural to urban areas but when we see the setting of Urban areas were differ from that rural areas so, in the urban areas Productive Safety Net Project could be incorporate other income-generating activity beside to environmental cleaning in the public work components. And on the other side, income, and food insecurity is strongly negatively related to the ordered logit model result, searching and providing productive technical skills make trainees competitive on the economic structure and generate income be sought and promoted.

- The UPSNP beneficiaries' main thing raises the received cash was very low to cover monthly expenditures due to the expensiveness of food products. To cover this besides to increase the cash based on living wages the project could incorporate food supply in the UPSNPs. The adjustment could be based on the current living condition and wage rate of the city.
- Based on the study, a household with higher educated household heads have better food security status than households with illiterate or lower grade heads in the study areas. Therefore, we recommended that the urban administration could enhance the education system beside coverage it needs to increase the education level of the household heads.
- For long term action, food security has a close relation to household combined income as well as asset holdings. So, the government should enhance job creation opportunities and revised living standard wages.
- Monitoring and learning are crucial tools to enhance the performance of the UPSNP through identifying improve weaknesses and to continue the strength of the projects.
- Finally, the researcher recommended further investigation and studied the need to know the effectiveness of UPSNP to enhance the food security status of urban households.

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Annex

Questionnaire

Informed consent

My name is Muluken Moges and I am from the Addis Ababa university, College of development studies, Center of Food Security. I'm collecting data for my thesis research title The Effect of Urban Productive Safety Net Project to Household Food Security Status in Addis Ababa: A Case Study from Yeka Sub-City *Woreda* 08, Addis Ababa, Ethiopia.

The objective of the study is to assess and examine urban Productive Safety Net Project effect to urban household food security status in Yeka *Woreda* 08, Addis Ababa Ethiopia.

Please, could I ask a question? So that you understand what this about. You are not under obligation to give permission for this study if you agree to take part please read this form and sign the consent sheet at the end. This study was approved by the college of development studies, Addis Ababa University research and ethical review board.

I will be asking you for approximately 30 minutes question, about the sociodemographic characteristics and food insecurity experience. if you are not willing to take part in this study you can stop at any point of the interview.

All information about your household will kept private and confidential. We randomly choose you and we did not collect any identifier of you. You will not receive any money or benefit for taking part in this study. To make sure that your right is protected Contact to make sure that your right is protected.

Contact of the Research Scientific and Ethical review office Collage of Development Studies, Center of food security, Addis Ababa university. Tel.----------

Do you have any questions? (if yes, answer the questions. If no, continue)

If you agree

Name ---------- Signature----------

Date: ____ ____/ ____ ____/ ____ ____ ____ __

DD MM YYYY

Sub-City Woreda

Household Number Survey number

Name of Household Head (if have allow) [----------]

Time interview started: 2019 year_____Month _____Day_____Hour

Time interview concluded: 2019 year_____Month _____Day_____Hour

	Part One Demography and Economic Characteristics	please take this symbol (✓) or write the answer on the given place
101	What is your position in the household?	Head ☐ partner ☐ Member ☐ other ☐
102	Age of respondent?	[---------]
103	Sex of respondent?	Female ☐ Male ☐
104	Religion of respondent?	Orthodox ☐ Muslim ☐ Catholic ☐ Protestant ☐ Other specify ☐
105	What is your ethnic background?	Amhara ☐ Oromo ☐ Gurage ☐ Tigray ☐ Other specify ☐
106	What is your marital status?	Married ☐ Divorce ☐ Single ☐ Widowed ☐

107	What is education level of household head	Illiterate ☐ Primary school (1-8th) ☐ High school (9-12th) ☐ Diploma/degree & above ☐
108	How many people are currently living in your household, including yourself?	[----------]
109	Are you employed?	Yes ☐ No ☐
110	How many of your family members employed including you?	[----------]
111	How many of your family members unemployed including children and oldies?	[----------]
112	What is your total combined family income for the previous 6 months?	[----------]
113	How much your total wealth including any assets in birr? (House, Account Saving, Car and any business)	[----------]
114	How would you describe your health condition?	Excellent ☐ Good ☐ Fair ☐ Poor ☐
115	Do you have any physical disabilities?	Yes ☐ No ☐
116	If Q.115 yes Did it have impact on your normal work, study and life?	Yes ☐ No ☐
117	How much far your resident area from local market to purchase foods (Km)	[----------]
118	Did you gate agriculture products from the nearest market at a normal price (availability of food items)	Yes ☐ No ☐
119	Did you gate any gift or aid from others NGO or other persons in the past 6 months?	Yes ☐ No ☐

120	If Q.119 yes, how much did you gate in the past 6 Months in birr?	Amount in birr [----------]
121	Did you gate loans /credit from financial organization during you want?	Yes ☐ No ☐
122	If Q.121 yes, which financial organization you gate?	Bank ☐ Association ☐ Government organization ☐ credit organization ☐
	Urban Productive SafetyNet Project Issue	
123	Did you participate in the UPSNP?	Yes ☐ Continue No ☐ go to Q.130
124	In which benefit package you participate?	Direct support ☐ public work ☐
125	How much benefit you and your family got from this intervention project in the previous 6 months?	Total benefit in Birr ☐
126	If you participate in the public work package how much day participate in the previous 6 months?	Total working day ☐
127	If you participate in the public work package how much hour work in a day?	Total working day ☐
128	Are you satisfied with Direct Support?	Yes ☐ No ☐
129	Are you satisfied with Public work?	Yes ☐ No ☐
	Household Expenditures habit 6 month recalling	
130	How much do you estimate this household spent on food purchased from market (including market shops and home delivery)?	Total expenditures in Birr ☐
131	How much of this amount was for non-food items such as products, and household supplies, etc.?	Total expenditures in Birr ☐

132	Did this household buy any prepared food or non-alcoholic beverages from markets for weddings and other occasions not reported in Q. 130 or Q. 131 above?	Yes ☐ Continue No ☐ go to Q.134
133	What amount was spent?	Total expenditures in Birr
134	How much did household spend on food and non-alcoholic beverages purchased from markets while away from home overnight or longer during the previous month? For example, road food purchased from food purchased from markets, etc.	Total expenditures in Birr
135	How much were you and your family total medical expenses on the illness in the last 12 months? (including reimbursements or the reduced amount of expenses)	Total expenditures in Birr
136	How much were you and your family total Transport expenses in the last 6 months?	Total expenditures in Birr
137	How much were you and your family total Housing expenses in the last 6 months? (including house rent Light, Rent, water services)	Total expenditures in Birr
138	How much were you and your family total refreshment expenses in the last 6 months?	Total expenditures in Birr
139	How much were you and your family total education expenses in the last 6months? (including Uniform, school fee and other school materials)	Total expenditures in Birr
	Part Two – Food insecurity Experience Scale	
201	You or others in your household worried about not having enough food to eat because of a lack of money or other resources?	No [-------} Yes [------] Don't Know [------] Refused [------]

202	Still thinking about the last 12 MONTHS, was there a time when you or others in your household were unable to eat healthy and nutritious food because of a lack of money or other resources?	No [------] Yes [------] Don't Know [------] Refused [------]
203	Was there a time when you or others in your household ate only a few kinds of foods because of a lack of money or other resources?	No [------] Yes [------] Don't Know [------] Refused [------]
204	Was there a time when you or others in your household had to skip a meal because there was not enough money or other resources to get food?	No [------] Yes [------] Don't Know [------] Refused [------]
205	Still thinking about the last 12 MONTHS, was there a time when you or others in your household ate less than you thought you should because of a lack of money or other resources?	No [------] Yes [------] Don't Know [------] Refused [------]
206	Was there a time when your household ran out of food because of a lack of money or other resources?	No [------] Yes [------] Don't Know [------] Refused [------]
207	Was there a time when you or others in your household were hungry but did not eat because there was not enough money or other resources for food?	No [------] Yes [------]

		Don't Know [------] Refused [------]
208	Was there a time when you or others in your household went without eating for a whole day because of a lack of money or other resources?	No [------] Yes [------] Don't Know [------] Refused [------]

Focus Group Discussions Guidelines

i. What is food security and urban Safety net project mean?

ii. To what extent and how do these projects participate the community?

iii. When time Start Urban Productive Safety Nat Project Start and how do you register?

iv. What is the major Opportunities gat the participate in the UPSNP to alleviate food shortage?

v. Are you satisfied with the work norms, conditions and number of days required to work? Is there anything that makes it difficult to participate in PWs?

vi. What are you forward and recommended to solve the current UPSNP implementation challenges and threats?

Stata Commands (Do files)

** t test and Chi-square of each Variables**

- ttest AGE,by(PUPSNP)
- ttest SEX ,by(PUPSNP)
- ttest HSIZ ,by(PUPSNP)
- ttest DRATIO ,by(PUPSNP)
- ttest EDUCA ,by(PUPSNP)
- ttest EMPLOYSTA ,by(PUPSNP)
- ttest HEALTHSTA ,by(PUPSNP)
- ttest CREDIT ,by(PUPSNP)
- ttest INCOM6 ,by(PUPSNP)
- ttest MARK ,by(PUPSNP)
- ttest ASSET ,by(PUPSNP)
- ttest ASSET ,by(PUPSNP)
- ttest AID ,by(PUPSNP)

tabulating Food security Status

- tab FSS AGE, row col
- tab PUPSNP SEX

tabulating Productive Safety Net Projects Status

- tabulate MARTISTA PUPSNP, chi2
- tabulate EDUCA PUPSNP, chi2
- tabulate EMPLOYSTA PUPSNP, chi2
- tabulate HEALTHSTA PUPSNP, chi2
- tabulate DISABILITY PUPSNP, chi2
- tabulate MARAVA PUPSNP, chi2
- tabulate CREDIT PUPSNP, chi2
- tabulate AID PUPSNP, chi2
- tabulate FSS PUPSNP, chi2
- label var PUPSNP "UPSNP Participant or UPSNP Non Participant"
- label value PUPSNP PUPSNP_lbl
- tab PUPSNP
- ttest AGE , by(PUPSNP)
- ttest HSIZ , by(PUPSNP)

- ttest MARK , by(PUPSNP)
- ttest INCOM6 , by(PUPSNP)
- ttest ASSET , by(PUPSNP)
- ttest EXP_TOTAL , by(PUPSNP)

** goodness test** using VIF

- regress UPSNP SEX MARTISTA EDUCA HSIZ HEALTHSTA DISABILITY AID CREDIT AGE INCOM6 ASSET
- vif

** Cheick multicollinearity using VIF**

- cor SEX MARTISTA EDUCA EMPLOYSTA DRATIO HEALTHSTA DISABILITY MARAVA AID CREDIT

generate log data

- gen logincome= log(INCOM6)
- gen logasset= log(ASSET)
- gen logexpen_total= log(EXP_TOTAL)
- replace logincome=0 if INCOM6==0
- replace logasset =0 if ASSET ==0
- replace logexpen_total =0 if EXP_TOTAL ==0

dependent variable has categories denoted 1,2,3,

- global ylist FSS
- global xist AGE SEX MARTISTA EDUCA HSIZ EMPLOYSTA HEALTHSTA AID CREDIT logincome logasset
- tab FSS
- describe FSS

** regress ordered logit model**

- ologit FSS AGE SEX MARTISTA EDUCA HSIZ EMPLOYSTA HEALTHSTA AID CREDIT logincome logasset UPSNP
- ologit FSS AGEGROUPS SEX MARTISTA EDUCA HSIZ EMPLOYSTA HEALTHSTA AID CREDIT logincome logasset UPSN, or
- margins, at(UPSNP=(1(1)2)) at(AGEGROUPS MARTISTA EDUCA=(25)) at(EDUCA=(1))

Contingency coefficient for discrete variables.

	SEX	MARTIS	EDUCA	EMPLO	HEALT	DISABI	MARK	AID	CREDIT
SEX	1.0000								
MARTIS	0.2071	1.0000							
EDUCA	-0.316	-0.2861	1.0000						
EMPLO	0.1348	0.2420	-0.4070	1.0000					
HEALT	0.1047	0.3397	-0.3626	0.2364	1.0000				
DISABI	0.0362	0.1224	-0.0517	0.0602	0.1597	1.0000			
MARK	0.0006	-0.0802	-0.0758	-0.0815	-0.1319	-0.0740	1.0000		
AID	0.0145	0.0251	-0.0102	0.1072	0.0045	0.0415	-0.0052	1.0000	
CREDIT	-0.1450	-0.0852	0.2506	-0.1461	-0.1249	0.0223	-0.0146	-0.0763	1.0000