ADDIS ABABA UNIVERSITY

College of Development Studies

Centre for Regional and Local Development Studies (CRLDS)

Master's Program in Regional and Local Development Studies (RLDS)

A Thesis on

Impact of the Urban Productive Safety Net Program on the Sustainable Livelihood of 'Graduated' Women Beneficiaries: The Case of Women in Kirkos Sub City Woreda 03, Addis Ababa, Ethiopia.

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A Thesis Submitted to the
Department of Regional and Local Development Studies (RLDS),
Addis Ababa University, in Partial Fulfilment of the Requirements for the Award of a Master's Degree in Regional and Local Development Studies.

October 2023

Declarations

I Sofia Said Siraj Registration Number/I.D. Number GSE/5660/12 do hereby declare that this Thesis is my original work and that it has not been submitted partially; or in full, by any other person for an award of a degree in any other university/institution.

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This Thesis has been submitted for examination with my approval as college supervisor.

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APPROVAL

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Acknowledgment

I am incredibly thankful to the almighty for making this accomplishment possible. I want to express my deep appreciation to my advisor, Dr. Andualem Goshu, for his invaluable guidance and unwavering support throughout this journey. The Department of Regional and Local Development Studies and its faculty members, especially Dr. Kumela, deserve my sincere thanks for their constant encouragement. I also appreciate my classmates' and friends' support and willingness to share information. Lastly, I am grateful to my family for their nurturing support, which has been instrumental in my completion of this thesis

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Abbreviations and Acronyms

ATT	Average Treatment Effect on the Treated
FGD	Focus Group Discussion
GDP	Gross Domestic Product
HH	Household
KII	Key Informant Interview
LLM	Local Linear Matching
NBE	National Bank of Ethiopia
NN	Nearest Neighbor
PMT	Proxy Means Testing
PPS	Probability Proportionate to Size
PS	Propensity Score
PSM	Propensity Score Matching
SLF	Sustainable Livelihood Framework
SN	Safety Net
UPSNP	Urban Productive Safety Net Program
WB	World Bank

Abstract

This study aimed to evaluate the impact of the Urban Productive Safety Net Program on the sustainable livelihood of women beneficiaries who graduated from the program in Kirkos Sub City Woreda 03, Addis Ababa, Ethiopia. Primary survey data was collected from a total of 365 women respondents, out of which 243 were beneficiaries and 122 were non-beneficiaries. The respondents were selected using multiple-stage sampling techniques. To complement the quantitative data, qualitative data was collected using two FGDs with eight group members each and one key informant interview. The study used the probit regression model and the propensity score matching (PSM) methods to analyze the data. The probit regression model found that marital status, educational background, duration of residency, and house ownership had statistically significant effects on participation in the UPSNP program. On the other hand, age, economically active status, number of household members, and number of children under the age of 18 did not significantly affect program participation. Using the propensity score matching with three matching algorithms; Nearest Neighbor, Radius, and Kernel; the study found that the UPSNP program intervention in Kirkos sub-city had a positive impact on some outcome variables, including savings, skills and training, access to sanitation, health care, food consumption, and means of transportation. However, the intervention did not significantly affect several other outcome variables, such as meals per day, access to improved nutrition, adequate monthly income, income variability, income compared to expenditure, children's educational improvement, housing area improvement, housing condition improvement, access to cooking fuel, building household asset, and improving the quality of clothes compared to non-beneficiaries. The quantitative findings suggest that the UPSNP intervention did not have a significant effect on most of the outcome variables used to measure the sustainability of the intervention on the livelihood of graduated beneficiaries. This finding was reinforced by the results of the focus group discussions and key informant interviews, which indicated that beneficiaries who graduated from the program did not achieve significant sustainable improvement in their livelihoods beyond addressing their immediate problems while they were directly supported by the program. It appears that the program tended to make the beneficiaries dependent on it instead of bringing sustainable change in their livelihood.

Keywords: UPSNP, PSM, Impact evaluation, Sustainable livelihood.

CHAPTER ONE

1. Introduction

1.1. Background of the Study

The sustainable development Goals (SDG) that were signed in 2015 by nations of the world, including Ethiopia, has outlined sets of goals that are targeted to improve the lives of people and bring about sustainable development. The 17 Goals of The SDG have specific goals in various areas primary among this is eradication of poverty sustainably by improving or creating means of livelihood for the poor and vulnerable parts of the society. Provision of a decent livelihood ensures wellbeing to the poor and marginalized sections of the society such as women.

Livelihood is defined as the capabilities, assets and activities required for a means of living (Chambers and Conway, 1992). Wellbeing, on the other hand is defined by Pawlyn and Carnaby (2009) cited in Upton (2015) as "a holistic, subjective state which is present when a range of feelings, among them energy, confidence, openness, enjoyment, happiness, calm and caring are combined and balanced'. It is essentially an emotional appraisal of once life. However, wellbeing encompasses a wide domain that covers social, physical, mental, spiritual, and cultural wellbeing. Standard indicators such as wealth, employment, the environment, physical and mental health, education, recreation and leisure time, social belonging, religious beliefs, safety, security, and freedom are used to measure well-being. The role of livelihood in ensuring wellbeing is thus clear, as it affects directly or indirectly the listed measures of well-being.

Reducing inequalities and ensuring no one is left behind is one of the targets of the United Nations Sustainable Development Goal Number 10. Countries employ many strategies to ensure well-being of their citizens. Of concern here is the well-being of the poor and vulnerable sections of society. The leading strategy used by governments around the world to ensure well-being of its vulnerable citizens is social protection. According to UNRISD (2010) social protection is concerned with preventing, managing, and overcoming situations that adversely affect people's well-being. Devereux & Sabates-Wheeler (2004) define social protection as "all public and private initiatives that provide income or consumption transfers to the poor, protect the vulnerable against livelihood risks, and enhance the social status and rights of the marginalized; with the overall objective of reducing the economic and social vulnerability of poor, vulnerable and marginalized

groups. It consists of policies and programs designed to reduce poverty and vulnerability by promoting employment, reducing exposure to risks, and enhancing capacity to manage economic and social risks, such as unemployment, exclusion, sickness, disability, and old age.

Social Protection has widely varying objectives. From reducing poverty and vulnerability, to building human capital, empowering women and girls and improving livelihoods. Responding to economic and other shocks could also be one objective of social protection. The broad nature of objectives means the approach, composition and implementation of social protection also varies greatly.

Social protection can have a positive role in addressing the needs of marginalized women. However, there is well documented evidence that standard social protection efforts in the world tended to side linewomen and leave them vulnerable. This is due to lack of a gender lenses in the design of social protection endeavors; thus, women face barriers and miss out from these programs, or the special needs of women are not addressed. Therefore, more recently, there is acknowledgement of the intrinsic value of increasing gender equality and facilitating women's empowerment in social protection endeavors. The Sustainable Development Goals (SDGs) identified social protection policies as vital to achieving targets under Goal 5 (gender equity and empowerment of women and girls). The gender dimension of well-being has thus become critically important. Thus, social protection, a policy instrument which has been traditionally promoted for its role in reducing poverty and vulnerability, is now also being recognized for its potential contributions to gender equality. This nexus between well-being of vulnerable citizens, women and social protection strategies is in the forefront of discussions revolving around poverty reduction and sustainability. Social safety net programs as one means of implementing social protection goals thus need to be critically seen through the gender lens how successfully they have improved the livelihoods of women. Therefore, this thesis aims to assess the direct impact of Urban Productive Safety Net Program (UPSNP) on Sustainable Livelihood of 'Graduate' women beneficiaries. Hence, the contribution of the UPSNP to Addis Ababa city's livelihood condition is considered in this study.

1.2. Statement of the Problem

Urban safety net programs are employed in cities across the world to ensure the urban poor find a safety net to carry them through hard times. This is especially important as more

people live today in urban than rural areas with increasing social divide between rich and poor. With rapid urbanization fueled by rural urban migration in developing countries, alarming portion of the population in these cities live under poverty. Urban safety net program is thus important in addressing the issue of poverty in an urbanizing world. Even though, urban areas in most contexts provide much greater opportunity and fewer social restrictions on the livelihood possibilities open to the poor, these opportunities can be realized only if urban development is tailored to the livelihood aspirations of the poor. In most developing countries unlocking these possibilities and bringing the poor out of poverty in a sustainable way requires appropriate policy and implementation instruments that address the livelihood needs of the poor.

Even though, Ethiopia has been implementing different poverty reduction strategies for many years, achieving poverty reduction sustainably seems to be an upward and elusive battle. The country has registered impressive growth in the past two decades. Its national GDP grew at an average annual rate of approximately 10 percent between 2007 and 2019, even though the COVID – 19 pandemic and the war in northern Ethiopia has slowed down this rate of growth in the last two years. Researches indicate that during these two decades a stronger reduction of poverty was seen in urban areas 11 %as compared to rural areas 5 % (World Bank, 2020a). However, poverty remains Ethiopia's primary challenge. The poorest 10 percent of the population have not benefitted from the strong economic growth and their expenditure has not grown in terms of consumption (World Bank, 2020a). With rapidly increasing urban population that is fueled by rural-urban migration, urban poverty has become a formidable challenge to the nation. Unemployment in urban areas for example was still quite high at 17.9% in 2021 and female unemployment is more than two times of the rate of male unemployment (IMO, 2021).The poverty rate based on the international poverty line of 2.15 USD (World Bank, 2022)[1] per day per person was predicted to be 27 percent in 2019 and is expected to remain about the same in 2020 or 2021 relapsing from 24% in 2016 (World Bank, 2021).

To address this challenge in urban poverty and meet SDG commitments of poverty reduction, Ethiopia has been implementing an Urban Productive Safety Net Program (UPSNP) since 2016. The UPSNP program is tailored to improve the livelihood of the urban poor in a sustainable way while contributing to the city in a productive way. The country has gained lessons from implementing a similar Productive Safety Net Program

[1] Fact Sheet: An Adjustment to Global Poverty Lines (worldbank.org)

PSNP for several years (since 2005) in vast rural areas with some, albeit, marginal, positive results on livelihood of households (Wheeler, R. et al. 2020; Bahru, B. et.al.2020, Peterman, A. et. al 2019). The UPSNP program is serving over 600, 000 urban poor and destitute in 11 cities across the country (World Bank, 2020b). Addis Ababa being the most populous city among these, takes up 66% (400,000) participants of the UPSNP (Alemayehu, 2020). The first phase of the UPSNP was completed in October 2022 and it is highly timely that the impacts of the program are studied to learn lessons.

Although there are some studies made on the impact of the UPSNP both in general as well as focused particularly on female headed families who are more vulnerable to poverty, the impact of the program from the aspect of achieving Sustainable Livelihood needs further study. Previous studies focused on limited aspects of the project such as food security (Henok, 2021; Abebe, 2021; Kassaye, 2020; Abiy, 2020; Muluken, 2019; Yeabsira, 2019; Tsion, 2019), empowerment (Yomiyu, 2020), implementation/practice and challenges (Alemayehu, 2011; Menen, 2019; Amsalu, 2021), Targeting (Yeabsira, 2019; Wieser, Franklin and Hari, 2021); Job creation (Abebe, 2021) etc. Some studies delved in to the issue of livelihood improvement in general (Misgana, 2018; Gashaw, 2019, Wieser, Franklin and Hari, 2021) but considered all participants and only evaluated improvement at the point when the intervention ended. However, none of these researches studied the impact of the program after graduation, i.e. after some time has passed since program support to beneficiaries is discontinued. Because of this, there is no clear knowledge if livelihood improvements have sustained after graduation. The studies however suggested that the program improved livelihood, food security, and empowerment while beneficiaries were receiving support. One outlier is Henok, (2021), who found that ultimately the program in Dessie, Amhara region, failed to improve beneficiary's ability to resist shocks, which indicates problems in achieving resilience. According to him, graduation from the program appeared to be more a matter of completing the designated time rather than achieving sustainable livelihood goals of a resilient household. Thus, many participating households who were considered graduated by the program, turned back into their previous vulnerable living standard (Henok, 2021).

Therefore, to address the gap, this study focused on identifying the impact of UPSNP on sustainable livelihood of beneficiaries evaluated after graduation. Furthermore, the research focused on graduated women beneficiaries, because a large percentage of the

beneficiaries of the UPSNP in Addis Ababa are women, and yet literature indicates that such programs have shortcomings in addressing the needs of vulnerable women.

Furthermore, the study area, Kirkos sub-city, Woreda 03, is unique for this thematic study. Othe researcher was able to find only one study done in Kirkos sub-city by Abiy, (2020), which is focused on food security improvements of both men and women beneficiaries in a different woreda than this study.

1.3. Objective of the study

1.3.1. General Objectives

The general objective of this study is to identify the impact of UPSNP on sustainable livelihood of graduated women beneficiaries in Kirkos Sub City Woreda 03, Addis Ababa.

1.3.2. Specific Objectives

The specific objectives of the study are:

1. To understand the factors that affect participating in UPSNP program.
2. To examine the impact of UPSNP on sustainable livelihood of graduated women beneficiaries

1.4. Research Questions

This research is proposed to answer the following basic questions which are derivatives of the above listed research objectives:

1. What are the determinants of participating in the UPSNP program?
2. What is the impact of UPSNP on sustainable livelihood of graduated women beneficiaries?

1.5. Significance of the Study

With rapidly rising urban population in Ethiopia, reduction of urban poverty has become a growing issue for the Federal Government as well as cities in the country. The launching of the UPSNP in 11 cities of Ethiopia is a testament to the importance of the issue and its pressing nature. Rural–urban migration continues in Ethiopia unabated and the rate of urbanization is faster than cities can cope with (Un-Habitat, 2017). Even though, on the one hand, meeting livelihood needs of the urban poor are manifest, on the other hand, urban areas provide much greater opportunity and fewer social restrictions on the livelihood possibilities open to the poor. But these opportunities can only be realized if

urban development is focused on sustainable livelihoods for the urban poor. UPSNP is a program that is being implemented since 2016 by the city government of Addis Ababa, to improve the livelihood of its poor population with the aim of achieving ultimately sustainable livelihood improvement. Understanding the impact of this program on sustainable livelihood achievement is thus significant at this stage in order to learn and draw lessons from the program implementation and improve for better results.

The outcome of the study is benefited women and urban development offices and other stakeholders that are working in the area of sustainable livelihood development by uncovering and depicting the existing situation in the study area. It is also vital to serve as a source of empirical evidence for better knowledge management on the interplay among sustainable livelihood development and UPSNP. Furthermore, experts in the areas of urban planning and development, social protection, gender equality, economic empowerment and sustainable livelihood development; policy makers and researchers can benefit from the results obtained through this study.

1.6. Scope of the Study

The thematic scope of this research shall be based in the sustainable urban livelihood approach while spatially the scope of the research shall be limited to Addis Ababa, with a particular case study area in Kirkos sub city, woreda 03. The study considered UPSNP beneficiary women since the launch of the program in the sub city in 2016. Since the study used Propensity Score Matching as a method of estimating the impact of UPSNP on sustainable livelihood development of graduated women beneficiaries, it has also used non-beneficiary groups who have similar characteristic profiles as participating beneficiaries for control group. The study was conducted in the second semester of 2023.

1.7. Limitation of the Study

Due to financial, time and other resource constraints, the study has limited its data collection to one Woreda of Kirkos sub-city. While the results are solid for that study area, it puts some limitations to generalize the results to the whole of Addis Ababa.

1.8. Organization of the Study

The study is organized in five chapters. Chapter one outlines the background of the study, statement of the problem, objectives of the study, research questions, scope of the study, significance of the study and limitations of the study. Chapter two presents the review of related literature that deals with the concept of theoretical framework, methodological

aspects, and conceptual framework. Chapter three is about the methodology of the study. Chapter four is about result and analysis. And, the final chapter focuses on the summary of major findings and recommendations.

1.9. Ethical Consideration

In this study, it is important to protect the privacy and dignity of all participants. It is unethical to conduct an experiment where one group receives treatment while the other does not. However, the treatment and control groups in this study were assigned using pre-recorded data, which did not violate ethical considerations. It is also worth noting that no physical harm was inflicted on the respondents to achieve the study's objectives.

CHAPTER TWO

2. Review of Related Literature

2.1. The Concept of Sustainable Livelihood

The concept of Sustainable Livelihood (SL) was put forward in 1987 by an advisory panel to the World Commission on Environment and Development (also known as the Brundtland Commission), that was formed by the United Nations. It proposed sustainable livelihood as integral concept made up of livelihood and sustainability defined as follows:

> "*Livelihood is defined as adequate stocks and flows of food and cash to meet basic needs. Security refers to secure ownership of, or access to, resources and income- earning activities, including reserves and assets to offset risk, ease shocks and meet contingencies. Sustainable refers to the maintenance and enhancement of resource productivity on a long-term basis. A household may be enabled to gain sustainable livelihood security in many ways – through ownership of land, livestock or trees; rights to grazing, fishing, hunting or gathering; through stable employment with adequate remuneration or through varied repertoires of activities*" (WCED 1987a: 2-5)

Sustainable livelihood was seen as a means of serving the objectives of both equity and sustainability. Chambers and Conway (1992) provided this modified definition which is most used by many in the field.

> "*A livelihood comprises of the capabilities, assets (stores, resources, claims and access) and activities required for a means of living: a livelihood is sustainable when it can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets and provide sustainable livelihood opportunities for the next generation, and which contributes net benefits to the livelihoods at the local and global levels in the short and long term*"

Two things can be pointed out from this definition. Livelihood is expected to 'maintain and enhance' capabilities and assets while at the same time be able to recover from 'stresses and shocks.' Therefore, sustainable livelihood is an approach that tries to enhance livelihood assets and capabilities to bring about resilience in the face of shocks and

stresses. The assets that contribute to livelihoods are not necessarily owned but could also be assets claimed or households have access to them. SL much like greater biodiversity helps ecosystem resilience; greater capabilities (that is to say more choices) promote resilience by reducing vulnerabilities of livelihood (Morse and McNamara, 2013). However, these choices are theoretically infinite and ever changing. To ensure, an enhanced livelihood that is capable of resisting shocks three essential choices must be available: choice for a healthy life, acquire knowledge and get access to resources for a decent living (UNDP, 1990).

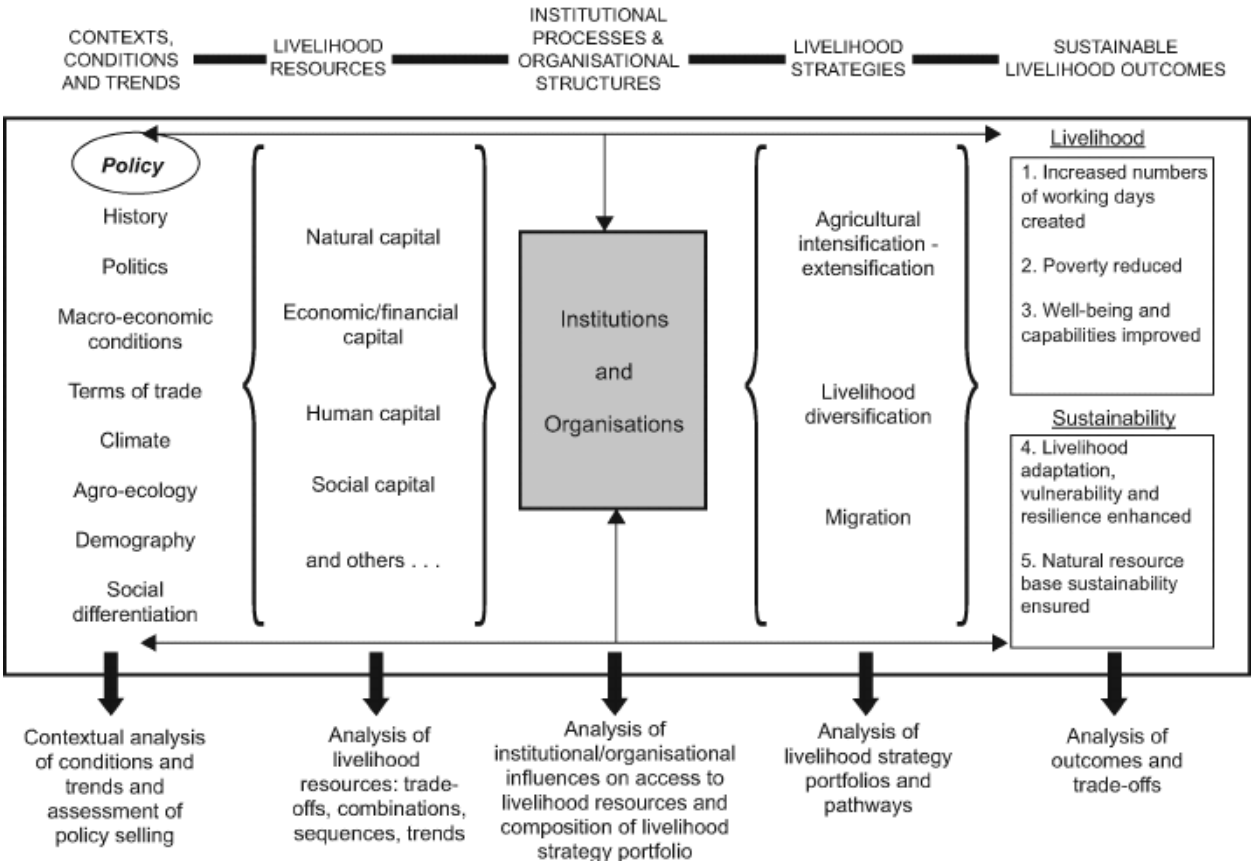


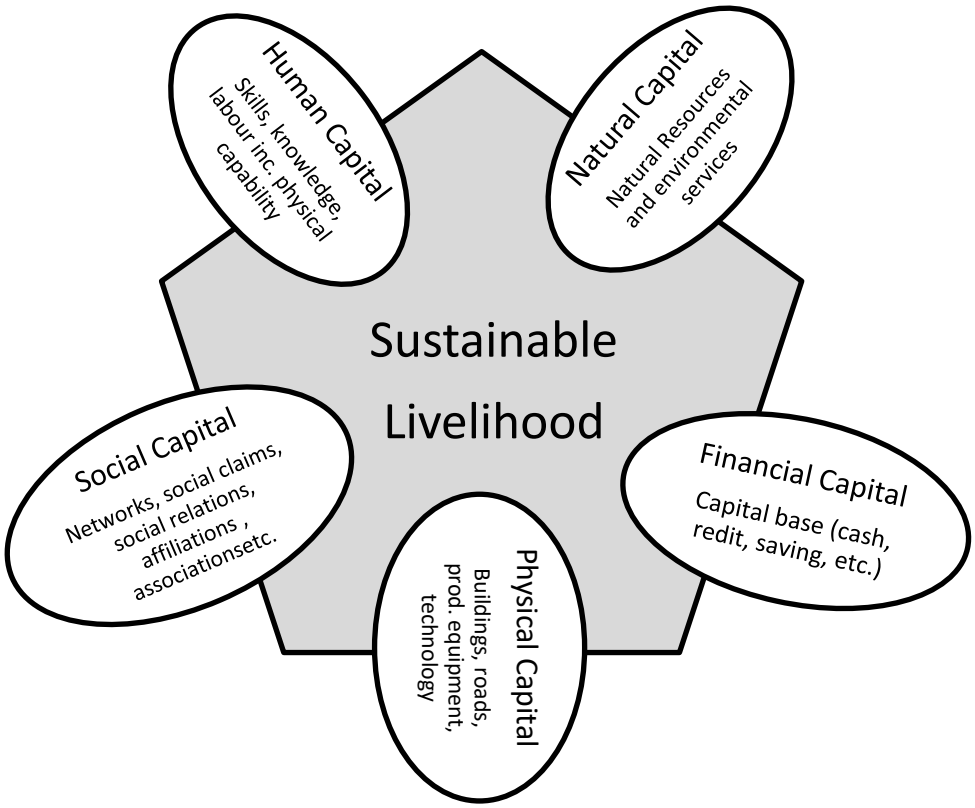
Figure 2.1 The Sustainable Livelihoods Framework
(Source: Scoones, 1998; Scoones, 2015; p 36)

Enhanced choices can be achieved with a wide capital base. SL exploits the 5 capitals of sustainability (natural, human, social, physical and financial) to assess livelihood.

Deferent NGOs working in developing nations use their own models of sustainable development approach to implement poverty reduction programs and projects. Among these the United Nations Development Program (UNDP) utilizes a sustainable livelihood

approach to development through the evaluation of the five capitals. According to the UNDP, a person's livelihood refers to their "means of securing the basic necessities of life". Livelihood is defined as a set of activities essential to everyday life that are conducted over one's life span. Such activities could include securing water, food, fodder, medicine, shelter, clothing (UNDP, 2010).

Figure 2.2. The five capitals of sustainable livelihood.
(Source: adapted from Morse and McNamara, 2013)



The UNDP defines the five capitals in some elaboration as follows (UNDP, 2010):

- **Human capital:** skills, knowledge, the ability to work and good health. Good health is not simply a means to earning a livelihood; it is of course an end in itself.
- **Social capital:** the social resources that people draw on to make a living, such as relationships with either more powerful people (vertical connections) or with others like themselves (horizontal connections), or membership of groups or organizations. Generally, relationships of trust, reciprocity and exchange that the poor can draw on in times of need, and that lower the costs of working productively together. Like human capital, social capital has an intrinsic value; good social relationships are not simply a means, they are an end in themselves.

- **Natural capital:** the natural resource stocks that people can draw on for their livelihoods, including land, forests, water, air and so on.
- **Physical capital:** the basic infrastructure that people need to make a living, as well as the tools and equipment that they use. For example, transport and communication systems, shelter, water and sanitation systems, and energy.
- **Financial capital:** savings, in whichever form, access to financial services, and regular inflows of money.

The SL Framework focuses on vulnerabilities and considers the different contexts they exist or happen (political, social and institutional contexts). Morse and McNamara (2013) state that, only when vulnerability and institutional contexts have been considered can it be possible to develop strategies that help enhance livelihood (i.e., generate positive livelihood outcomes); arguing that it is the feedback from these planned outcomes that enhances livelihood assets and make them more resilient.

The concept of sustainable livelihood in development discourse is centered on people rather than the resources they use. However, it does not mean the resources such as the environment are of secondary importance (Carney, 1998). It focuses on improving the life of poor people and it is based on a new way of understanding how the poor and vulnerable live their lives through a participatory process. It starts by identifying the important livelihood assets and capitals, their trends overtime and space as well as the nature and impact of shocks and stresses upon these assets. Based on the results of this, priorities are developed and interventions made. It is essentially an evidence-based policy making approach (Morse et. al., 2009).

SL has a comprehensive approach as a principle, bringing together multi sectoral assets in rural as well as urban contexts embracing the dynamic change that is inevitable in all aspects of life with a broad vision that only sets framework rather than detailed a precise methods and blueprints.

Cars well (1997) criticizes the SL definitions for lacking clarity, consistency and for being relatively narrow. The SL framework is also criticized for lacking a clear way of measuring and analyzing capitals as well as predicting vulnerabilities (shocks, trends etc.) even though this is central to its core idea of building resilience and thus sustainability (Morse et. al, 2009). The need to measuring complex subject such as livelihood has forced many NGOs who apply SLA in their development works to come up with over simplified

systems. The UNDP's attempt to measure capability for example using Human Development Index (HDI) uses only three emblements: health care, income, and education. Morse et. al, (2009) thus conclude:

> *"... while there is an undeniable logic to being aware of the assets available to a household and their vulnerability as a starting point for the framing of a basis for intervention, the creation of this knowledge amongst those engendering the intervention is a significant challenge; not simply in terms of a technical issue like measurement but also participation and trust."*

2.2. The Concept of Safety Net (SN)

Safety net programs are one form of social protection. It consists of non-contributory assistance (or transfers as referred to by some writers) to improve lives of vulnerable families and individuals experiencing poverty. Experience has taught that when they are well designed, safety nets (SN) can both redistribute the gains from growth and, at the same time, contribute to higher economic growth (Alderman, H., & Yemtsov, R., 2014). According to Alderman & Yemtsov (2014), the various channels by which SNs influence growth can be broadly classified into four pathways: i) enabling households to make better investments in their future by addressing market imperfections caused by barriers to obtaining credit, inputs, and insurance; ii) assisting in managing risk both before and after; iii) creation of community assets and iv) relaxing political constraints on policy. Thus, the evidence supports the view that transfers are not merely a means to reduce current poverty as measured by consumption but also a potential means to invest for future poverty reduction. That is to say, SN programs often serve dual objectives of raising current consumption while simultaneously promoting investments, (Alderman &Yemtsov, 2014).

Thus, there is increased interest in recent years to measure the real impart of SN programs. However, there are challenges to do this. One reason is that the full social value of transfers does not easily aggregate with outputs in a benefit cost assessment (Alderman &Yemtsov, 2014).

A variety of SN programs are implemented by governments around the world (World Bank, 2018). However, subsidies have very limited potential for redistributing income. While targeted food subsidies have greater potential; this can only be realized when adequate attention is given to the design and implementation, as well as to the social and

political factors influencing the adoption, of these programs. Although well-designed public works programs have impressive targeting performance, they have large non-wage costs; thus, to be cost-effective, they need to produce outputs that are especially beneficial to poor households. Traditional public works programs are particularly attractive for addressing vulnerability, but they require flexibility regarding choice of output. Targeted human capital subsidies appear to have great potential for addressing extreme poverty; but again, their design needs to reflect the human capital profile of countries and the administrative capability of the government.

2.3. The Urban Productive Safety Net Program in Ethiopia

The Productive Safety Net Program was launched in Ethiopia in 2005, focusing in rural areas. It is to date the largest social protection program in Sub-Saharan Africa. Several studies indicate that it has made positive contribution to poverty reduction in the country. Seven years ago, in 2016, the country embarked upon a program to expand safety net to cover the urban poor. The program called Urban Productive Safety Net Program (UPSNP) launched in 11 cities of the country (one each from 9 regional states and the two chartered city administrations of Addis Ababa and Dire Dawa) aims at providing comprehensive access to social protection programs to the urban poor. It has a long-term approach that involves graduating beneficiaries with the aim of moving beneficiaries out of poverty and into economic self-sustainability. The main activities of the UPSNP include labor-intensive public work opportunities combined with access to business training and a livelihood grant. Beneficiary households without any able-bodied members who can participate in public work and livelihood activities receive direct support in the form of cash transfers. These activities together (public work, direct support and the livelihood grant) are the safety net component of the UPSNP (Wieser et al., 2021).

The Urban Productive Safety Net Program (UPSNP) is the first social protection project addressing the binding constraints faced by Ethiopia's urban poor. The project aims to boost financial inclusion, encourage savings, provides skills and a substantial grant to beneficiaries. The UPSNP program focuses on providing beneficiaries with a longer-term outlook by focusing on a ‘graduation’ approach which provides an integrated development pathway. In the first year, beneficiaries participate in public works as well as life skills and financial skills training. They are encouraged to start savings from the beginning of the program to ensure they can later invest in their business. In the second year, beneficiaries receive support for business planning, technical training as needed, and job search support

from woreda-level One Stop Service Centers (OSSCs) which are specialized in supporting micro- and small business development. During the third year, beneficiaries work less time in public works to ensure they can engage in training and building their business plans and they also receive mentoring/coaching advice from the OSSCs. Based on the training and business plan, beneficiaries receive a livelihood grant at the end of the third year when they are considered to have 'graduated'. However, not all participants of the public work graduate. Target groups for these interventions are public work beneficiaries who desire more and higher-paid work (Wieser et al., 2021).

One individual per household can receive the livelihood support, which is comprised of counselling and life-skills development to support people successfully entering self-employment or wage employment. The first phase of livelihoods support focuses on (i) enhancing financial literacy and soft skills, useful across a range of livelihood choices; (ii) assessing the technical skills of beneficiaries; and (iii) providing individuals with information on entrepreneurship and wage opportunities in their location. To further improve employability, beneficiaries receive short trainings on financial literacy and soft skills, including learning skills on how to open a bank account, planning, budgeting and saving, attitude and expectations at work, and business and workplace readiness. Moreover, financial literacy training is provided to all PW beneficiaries early on to ensure that they can save from the income they receive from PW during the first year (Wieser et al., 2021).

2.4. Previous Studies on the effects of the UPSNP in Ethiopia

Even though, the UPSNP in Ethiopia started relatively recently in 2016, there are significant studies made on the effects of UPSNP. Many of the studies were carried out in Addis Ababa at different sub cities as this is where the lion's share of the UPSNP program was implemented, although a few ventured outside the capital in to regional towns. The Previous studies assessed generally agree that the UPSNP has shown positive effect on reduction of poverty in urban areas. One of the findings of previous studies indicated a selection bias during selection of beneficiaries (Wieser et al, 2021), (Henok, 2021).

Some of the studies conducted focused on livelihood improvement of beneficiaries in general for e.g., (Abiy, 2020), (Gashaw, 2021). Quite a few studies focused on the food security aspect of livelihood improvement for e.g., (Abate, 2018), (Mengistu, 2021), (Sisay, 2021). Other linked impact of UPSNP on livelihood with an added dimension such

as environmental protection (Misgana, 2018), job creation (Abebe, 2021), general practical challenges (Menen, 2019). Misgana (2018) and Yomiyu (2020) focused on female beneficiaries, Melaku took it one step higher and investigated impact of UPSNP on women empowerment. The selection of beneficiaries was also of interest to a number of studies. Kassaye (2020) studied the determinants for participation in the program, similarly, Tsion (2019) focused on beneficiary determinants. International organizations have also done studies mostly focused on assessing implementation effectiveness of UPSNP program. The effectiveness study conducted by the World Bank (Wieser et al, 2021) si one example. However, while most of the studies focused on benefits / effects of the UPSNP program to participants and found some positive improvements; almost none of them attempted to find out the sustainability of livelihood improvements after 'graduating' from the program. The sole study this research found is by Henok (2021), who conducted his study on Dessie city in north east Ethiopia and found that beneficiary's graduation from the program was based on time duration and not on achieving sustainable improvements on their livelihood as was the objective of the program.

2.5. Theoretical Framework

There has been different thinking in understanding urban poverty and underdevelopment by various theorists and thinkers. Numerous approaches had been introduced and applied to alleviate poverty and enhance urban development. Social protection, as one means of addressing extreme poverty, especially by states, is discussed below in relation to some approaches.

2.5.1. The Sustainable Livelihood Framework

Starting from 1990s the Sustainable Livelihood Framework (SLF) has become the dominant approach to undertake interventions by international agencies. It is considered as a more comprehensive and integrated approach to address poverty. Unlike more traditional approaches that have sought to tackle poverty by identifying and addressing needs of poor people, the SL approach seeks to improve their lives by building on what they have — their assets (UNDP, 1999 as cited by Majale, 2002).

As stated in Moser (2005), Department for International Development (DFID) has used SLF as an operational model/tool to develop the Sustainable Livelihood program containing a number of core principles: people-centered, responsive and participatory,

sustainability, working at multiple levels, conducted in partnerships, and dynamic – responding flexibly to changes in people's situation.

The framework includes the vulnerability context (the trends, shocks, and local cultural practices which affect livelihoods) in which people operate. Within this context, people have access to various assets or poverty reducing factors which gain their meaning and value through the prevailing social, institutional and organizational environment (Majale, 2002). Structures (organizations from government through to the private sector) and processes (police, laws, rules of the game and incentives) determine who gains access to which types of assets (Moser, 2005).

In general, based on the basic-need approach, social protection should focus on the need or deficiency of poor people to bring the poor above poverty line. According to right-based approach, by transferring resources to those living in extreme poverty, social protection programs contribute to the realization of rights. In the empowerment approach, social protection should facilitate the empowerment of people living in poverty through provision of support such as in planning, management and delivery of support. Lastly, based on the SLF, social protections should have successful strategies in order to create sustainable livelihoods for the poor. This study has used the DFID's Sustainable Livelihood Framework for extracting the analytical framework of the study which is described in the analytical part of the study.

2.5.2. The Empowerment Approach

Since 1980s, the empowerment development has come up with the idea of empowering the poor socially, politically and psychologically. As stated in World Bank (2002) empowering poor men and women requires the removal of formal and informal institutional barriers that prevent them from taking action to improve their wellbeing individually or collectively and limit their choices.

Empowerment and pro-poor growth form a cycle by mutually reinforcing economic, social and political aspects of empowerment allowing people to move out of poverty through participating in, contributing to and benefitting from growth processes on terms which recognize the value of their contributions, respect their dignity and make it possible for them to negotiate a fairer distribution of the benefits of growth (OECD, 2012). The poor should be involved in the decision making of matters affecting them directly. Therefore, they will be part of the process in improving their living conditions (DFID, 2001). As per

OECD (2012), without empowerment chronic poverty persists and people are incorporated into a political economy in which they are either excluded from growth or they contribute to wealth creation without themselves gaining from it. In other word, empowering poor people is essential for pro-poor growth. The approach can imply that social protection should facilitate the empowerment of people in poverty, where the state support empowerment processes through all of its social protection provision: planning, management and delivery.

2.6. Analytical Framework

The study used the Sustainable Livelihood Framework (SLF) of Department for International Development (DFID) as its analytical framework. Many researchers affirm that, as per Majale (2002), the SLF provides a useful conceptual base for understanding urban poverty and the situation of people living in poverty in urban settlements, and is an effective tool for analyzing the impact of regulations on their livelihoods.

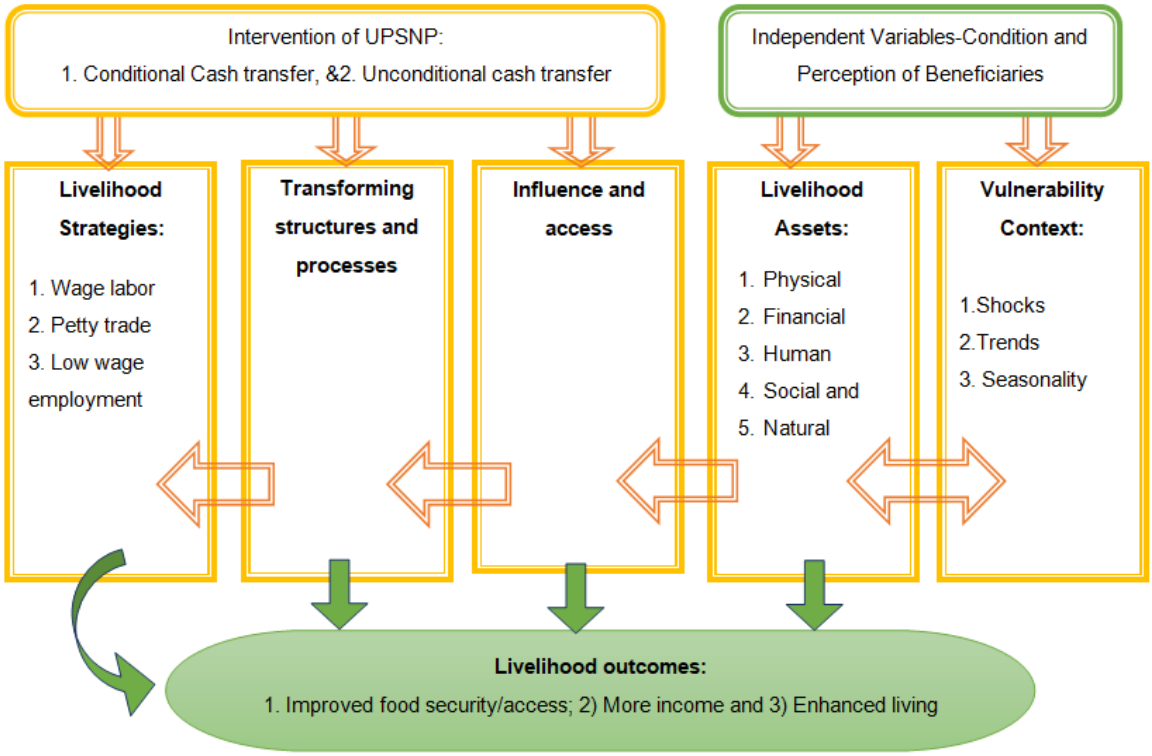


Figure 2.3 Analytical Framework of the study.
(Source: Modified from DFID Sustainable Livelihood Framework, 2000).

As shown in Figure 1.3., the framework includes the vulnerability context, assets, transforming structures and processes, livelihood strategies, livelihood outcomes, UPSNP intervention and perception of beneficiaries towards the program‘s support and

implementation. The arrows in the figure show the influence of one on the other. According to the framework, the vulnerability context (shocks, trends and seasonality) affects the assets that people have. The asset pentagon shows the different kind of assets that the poor people have and combine to achieve positive livelihood outcomes. The transforming structures and processes (institutions, organizations and policies) determine the access that people have to different kinds of assets as well as the type of livelihood strategy being used to build livelihoods. Access to different kinds of assets and structures and processes affect the strategies being employed.

The Urban Productive Safety Net Program supports the development of assets of the beneficiaries in several ways. The program improves the social assets (social networks), financial assets (income and saving), human assets (food security, skill and work habit), and physical assets (household assets) of the beneficiaries. By improving their assets, the program will enable them to engage in better livelihood strategies with better outcomes.

In addition, it makes intervention in order to enhance the urban poor‘s livelihood strategies through safety net support (conditional and unconditional cash transfers). In other words, it provides a stable and additional means of livelihood for the households besides the other means of living (wage labor, petty trade and low wage employment).

The perception of the urban poor towards the program determines the intervention of the program on the urban poor. In other words, beneficiaries’ perception towards the UPSNP‘s support and implementation determines the willingness of the beneficiaries to be included in the program and to continue receiving support from the program till graduation. The livelihood outcomes feed back into the assets to allow asset building which reduce vulnerability, to buffer shocks and stresses.

CHAPTER THREE

3. Research Design and Methodology

The data used in this paper come from a designed survey of 365 women headed household for quantitative analysis and two FGDs with one Key Informant Interview for qualitative parts. The appropriate methodology has been employed to resolve the objective of the study. The study followed the procedure of quasi-experimental method called propensity score matching that was introduced by Rosenbaum and Rubin in 1983.

3.1. Description of the Study Area

The selected case study area was Kirkos sub city woreda 03. Kirkos sub city is one of the sub cities that have the highest population below poverty line in Addis Ababa and it has also not been studied previously.

3.2. Research Approach and Design

A research design is the planning of circumstances for gathering and examination of data in a manner that aims to combine significance to the research purpose with economy in procedure. The main goal of scientific research is to answer questions for some problem and acquire new knowledge (Marczyk, Dematteo and Festinger, 2005). This study attempted to find out the impact of UPSNP program on sustainable livelihood of women beneficiaries who graduated from the program in the study area. Typically, the study employed both qualitative and quantitative approaches to address the research questions. In quantitative aspect, the study has tried to see the impact of UPSNP program on the livelihood improvement; in the qualitative part the study has tried to see in detail and identify impacts on sustainable livelihood in the selected area.

This study used proxy outcome variable to show the impact of the program intervention in the study area. The covariates like age, duration of residency, HH member, children age less than 18, marital status, education background, economic status, and house ownership of the respondents are used to match the treatment and control groups of the respondents, and after computing the match and checking the balance PSM method of data analysis is employed to see the impact of the UPSNP program intervention in the livelihood of beneficiary women who graduated from the program. Beside this, the study employed qualitative research methods to understand in detail and identify impacts on sustainable livelihood in the selected area. In this part of study one FGD was used to understand its

main activities, its contribution to improve household livelihood, and limitations of the program intervention. Based on the findings, the study forwarded some policy recommendations.

3.3. Sources of Data

The study employed both primary and secondary data. The primary data was collected from graduated women beneficiaries of UPSNP and women who fit the criteria but did not benefit from the program in the study area. In addition to this, focus group discussions involving beneficiary's representatives and program implementors, were conducted to gain more understanding and strengthen the data regarding the livelihood of beneficiaries compared to the control groups. On the other hand, the secondary data was collected from reports by implementing agencies such as the Ministry of Urban Development and Construction (MoUDC), Addis Ababa City Administration and concerned sectoral bureaus. Moreover, several books, research literatures, articles, journals and thesis, were consulted as secondary sources to this study.

3.3.1. Target Population

Target population is the number of people used to determine sample size in order to collect questionnaire. In this study the population is the total number of women beneficiaries graduated from UPSNP and women who are not participants of UPSNP on the study area. As per the office report, the total number of women in the selected Woreda who have graduated to date are 574.

3.3.2. Sampling Procedure

According to the program implementation manual 2016, UPSNP is targeted at urban areas, only in selected cities and towns in Ethiopia. Cities and towns are selected based on their high incidence of poverty and regional representation. Within each city/town, poverty classifications are made for Woredas/ Kebeles with low poverty level (less than 20 %), moderate poverty level (between 20-40%) and high poverty level (40% poverty and above).

In this study, a multistage sampling technique is used to determine the sampling procedure to select the final units of analysis or observation. The focus of the study was graduated women beneficiaries of Urban Productive SafetyNet program in Addis Ababa city administration. The study selected Kirkos sub-city, which is one of the sub-cities with a high percentage of its population living under poverty line. Kirkos is purposely selected

based on its high poverty rate among sub-cities as the program targets more beneficiaries in high poverty areas. From this sub-city one woreda is selected through simple random sampling, which is Woreda 03. The selection of one Woreda/district is based on the following points: 1) the researcher assumes that all possible scenarios can be captured by assessing issues on the study participants from a given woreda, 2) selecting one Woreda enables to reduce the potential difference among treatment and control groups, because they share similar socio-economic conditions, and 3) It fits the requirement of meeting representativeness in terms of number and strata/groups. Within the selected woreda, beneficiaries were selected from all Ketenas. Finally, the UPSNP participant and non-participant households (consisting of women beneficiaries) are identified from the households list available at each Ketena. Consequently, representative sample size was selected from the Ketenas based on probability proportional to sample size. Systematic random sampling is used to select specific households in each Ketena.

3.3.2.1. Sample Size Determination

According to Kothari C (2004), the size of sample should neither be excessively large, nor too small. It should be optimum. An optimum sample is one which fulfils the requirements of representativeness, and reliability. The principal considerations in the selection of the sample respondents included the following:

a) Resource and time constraints of the study: because getting fund to finance the study project is almost impossible, the researcher had to provide its own funding, which was not enough to study large sample size. In addition, since the duration of the field work is few days, it is not practical to have large size sample.
b) Accessibility and ease of management. Beneficiaries are listed based on the following characteristics. For treatment group;
    1. Female headed households; and
    2. Graduated UPSNP women beneficiary households.

For control group the following characteristics were considered:

1. Female headed households; and
2. Having similar characteristics with the graduated women UPSNP beneficiary households at the time, preferably screened and selected for the program (by the program using its own criteria) but not included in the program.

The total population of the graduated women beneficiaries to date in woreda 03 are 574. The overall sample size is determined by the formula adopted from Cohen (1988). The researcher used a level of significance of (a) 0.05 and a margin of error (e) of 5%. Zα is a value from the normal distribution related to and representing the confidence level (equal to 1.96 for 95% confidence). Using these inputs and the standard sample size calculation formula, the sample size calculated for this study is 243.

If sample size is greater than 10,000 the formula to apply is

$$N_0 = \frac{z^2 pq}{d^2}$$

However, since our sample size is less than 10,000, we shall use the formula

$$n = \frac{N_0}{1 + \left(\frac{N_0 - 1}{N}\right)}$$

Where:

N_o Desired sample size when population size is > 10,000

n Desired sample size when population size is < 10,000

z Value of standard score at a desired confidence limit (in this case 95% i.e. 1.96)

p Intended proportion of the population to be included in the sample (assumed to be 0.5 in this case; because of limitation of time & budget this would provide the minimum sample size).

q 1 – p (0.5 in this case)

N size of total population

d error margin (0.05 in this case i.e 5%)

$$N_0 = \frac{z^2 pq}{d^2}$$

$$= \frac{(1.96)^2 * (0.5)(0.5)}{(0.05)^2}$$

$$= \boxed{384.16 \cong 385}$$

$$n = \frac{N_0}{1 + \left(\frac{N_0 - 1}{N}\right)}$$

$$n = \frac{385}{1 + \left(\frac{385 - 1}{574}\right)}$$

$$= \frac{385}{1.67}$$

$$n = 231$$

Considering Non-respondent 5% total sample size become 231 + 12 = 243

Representative samples are arranged from each Ketena in the Woreda based on proportionate stratified sampling. In proportionate stratified sampling, the number of elements allocated to the various strata is proportional to the representation of the strata in the target population. That is, the size of the sample drawn from each stratum is proportional to the relative size of that stratum in the target population.

The study analyzed one-third of the total sample size to represent the control group households. This is half the size of the treated group of households. Therefore, the control group consisted of 121.5 households, which was rounded up to 122.Hence, the total sample size of treatment group is 243 and 122 for the control group making the total sample size 365.

3.4. Data Collection Methods

The study employed both primary and secondary source. The basic tools for primary data collection were structured interviews, focus group discussions and key informant interview. On the other hand, the secondary data were collected from documents/ reports, reviewed published and unpublished articles, research papers, journal and books.

i. **Questionnaire:** Qualitative and quantitative data were gathered by structured and semi-structured questionnaire. Structured questionnaires were used to gather information from the households that were selected in all the Ketenas of woreda 03. The purpose of qualitative data is to understand the experiences of the participants, to obtain detail information on UPSNP services, alternative livelihoods, and challenges related to achieving sustainable livelihood through the program.
ii. **Key Informant Interview Schedule:** This tool is used to acquire qualitative information through structured and open interview schedule with relevant experts and officials of Federal Urban Job Creation and Food Security Agency officials, project coordinators and Wereda officials. The food security officer at the Wereda level was engaged with activities such as targeting, coordination and other tasks related to UPSNP**.**

iii. **Focus Group Discussions:** FGD was carried out to complement the information collected through survey and semi-structured interview methods. The role of the program in enhancing households' livelihood, participant's perception towards the program, effects and drawbacks of the program were discussed. Two FGDs comprising of eight participants were conducted.

3.4.1. Variable Description

In PSM data analysis there are three main types of variables that are needed to conduct appropriate analysis. Those are the treatment, the covariate, and the outcome variables. Which are discussed as follows:

A. **Treatment Variable:** in this study the treatment variable is the graduated women beneficiaries who participate in UPSNP in the study area. It is represented as 1 and the other control variables are the women who do not participate in UPSNP it takes the value 0

$$D_i = \begin{cases} 1\ if\ participant \\ 0\ if\ not\ participant \end{cases}$$

Where D is treatment,

i - indexes an individual observation

B. **Covariates:** PSM can be used to adjust for differences in covariates among the treatment and control groups to identify causal effects that the selection is based on observable characteristics. Thus, the covariates x_s are variables that affect the treatments. The variables include age, marital status, education background, economically active status, duration of residency, HH member, Children less than age 18, and house ownership status. The variable description is present in table 3.1 below.

Table 3.1 Description of covariate variables.

Variable	*Description*
Age	*Continuous variable that takes the age values of the respondents in years.*
Marital status	*Dummy variable that takes the marital status of the respondents. Those are, "0" = unmarried, "1"= married, and "2" = divorced.*

Variable	*Description*
Education background	*Dummy variable that takes educational status of the respondents "1" = basic and less, "1" = take primary and secondary education, "2" = take preparatory and higher education.*
Economically active status	*Dummy variable that takes the economically active status of the respondents. "0" = inactive, "1"= active.*
Duration of Residency	*Continuous variable that takes the duration of living in the study area.*
HH member	*Continuous variable that takes the number of household member.*
Children < 18	*Continuous variable that takes the number of children whose age is less than 18.*
House ownership	*Dummy variable that takes the house ownership status of the respondents. "1" = owned freehold, "2" = owned leasehold, "3" = Condominium, and "4" = Rented.*

C. **Outcome Variables**: Outcome variables are the dependent variables that are observed. In this study the outcome variable is the result gained from participation in and graduation from UPSNP, thus the outcome variable is the sustainable livelihood achieved/ or not after the beneficiary women graduated from the program. There are different variables used to measure sustainable livelihood, the study used the following indicators:

Table 3.2 Description of outcome variables.

Outcome Variable	*Description*
Improved income	*Is a binary outcome variable that takes the value of response "0" for not improved and "1" for improved*
Income variation	*Is a binary outcome variable that takes the value of response "0" for not varied and "1" for varied*
Saving habits	*Is a binary outcome for saving habits that takes the value of response "0" for not having saving habits and "1" for having saving habits*

Outcome Variable	*Description*
Expenditure	*Is a binary outcome variable describing the income improvement as compared to expenditure that takes the value of response "0" for not improved and "1" for improved.*
Access to education	*Is a binary outcome of access to education of thier children that takes the value of response "0" for not accessing improved education and "1" for improved access to education*
Adequate sanitation	*Is a binary outcome variable that takes the value of response "0" for not getting adequate sanitation and "1" for getting adequate sanitation*
Improved housing area	*Is a binary outcome variable that takes the value of response "0" for not improved house size and "1" for getting improved house size*
Housing condition	*Is a binary outcome variable that takes the value of response "0" for not improved housing condition and "1" for improved housing condition of the respondents*
Cooking fuel	*Is a binary outcome variable that takes the value of response "0" for not improved cooking fuel access and "1" for improved cooking fuel access*
Asset	*Is a binary outcome for household asset ownership that takes the value of response "0" for not improved household asset ownership and "1" for improved household asset ownership*
Clothing condition	*Is a binary outcome variable that shows acceptable quality of clothing for the family and takes the value of response "0" for not improved clothing condition and "1" for improved clothing condition*
Healthcare Service	*Is a binary outcome variable that shows improvement on healthcare services and takes the value of response "0" for not getting improved healthcare service and "1" for getting improved healthcare service*
Food consumption	*Is a binary outcome that shows improvement in food consumption that takes the value of response "0" for not*

Outcome Variable	*Description*
	getting improved food consumption and "1" for getting improved food consumption
Improved nutrition	*Is a binary outcome for improved nutrition that takes the value of response "0" for not getting improved nutrition and "1" for getting improved nutrition*
Meals per day	*Is continuous outcome variable that shows the number of meals per day that the household gets every day*
Means of transportation	*Is a binary outcome for improved means of transportation that takes the value of response "0" for not getting improved means of transportation and "1" for getting improved means of transportation*
Skills and training	*Is a binary outcome for skills and training that takes the value of response "0" for not getting skills and trainings and "1" for getting skills and trainings*

3.5. Data processing and Analysis

The study employed propensity score matching technique to identify the impact of UPSNP on the sustainable livelihood of graduated women beneficiaries. Propensity score matching technique matches the treatment group (graduated women beneficiaries of UPSNP) with the control groups (women with similar characteristics as the beneficiaries of the UPSNP but who are not beneficiaries of the program) on some observable covariates to estimate the treatment effect by comparing matched samples (Khandker et al., 2010) from both treatment and control groups.

After the data collection and entry, the PSM algorithm is used to observe the average impacts of the program intervention with appropriate common support and conditional independence assumption. Firstly, Rosenbaum and Rubin (1983) introduced the technique in 1983. In the statistical analysis of observational data, PSM is a statistical matching technique that is used to estimate the effect of a treatment, policy, or other intervention by accounting for the covariates that predict receiving the treatment and provides a way to summarize covariate information about treatment selection into a single scalar. Then, outcomes of participating and non-participating households with similar propensity scores are compared to obtain the program effect. Households for which no match is found are dropped because no basis exists for comparison (Khandker et al., 2010). The general idea

of PSM is to compare units that, based solely on their observable characteristics, had very similar probabilities of being placed into treatment i.e., the control group. However, the direct comparison of these two groups misleads the impact of intervention (Rosenbaum and Rubin, 1983). PSM attempts to reduce the bias due to confounding variables that could be found in an estimate of the treatment effect obtained from simply comparing outcomes among units that received the treatment versus those that did not receive treatment (Rosenbaum and Rubin, 1983).

The first step in the estimation of treatment effect PSM is estimating the propensity score. The propensity score is defined as the selection probability conditional on the confounding variables:

$$p(X_i) = Pr(D = 1|X_i) \quad \text{..... (i)}$$

Where: X_i are covariates

The estimation of propensity score is done by using logit or probit binary model and matching can be performed conditioning only on *p(X)* rather than on covariates directly. According to Gujarati (2004), in estimating the logit and probit binary estimation model, the dependent variable was participation, which takes the value of 1 if a household participated in the program and 0 otherwise.

PSM model perform the comparison based on the estimated propensity score under the basic assumptions. These two basic assumptions of propensity score matching are:

1. conditional independence assumption

$$(Y^0, Y^1) \perp\!\!\!\perp D|X$$

Where: *Y* is potential outcome

The conditional independence tells us that after controlling X observable covariates, the treatment assignment is independent of potential outcomes. This means after controlling for X covariates, the units of treatment assignment are as good as random. This allows the construction of an unbiased counterfactual for the treatment group using the non-experimental control group units. It is called unconfoundedness (Rosenbaum and Rubin, 1983).

2. Common support assumption

$$0 < Pr(D_i = 1|X_i) < 1$$

Common support ensures that for each value of *Xs*, there is a positive probability of being both treated and untreated; or it ensures there is sufficient overlap in the characteristics of treated and untreated units to find adequate matches. This implies that the probability of receiving treatment for every value of the vector *X* is strictly within the unit interval, as is the probability of not receiving treatment. Rosenbaum and Rubin (1983) define the treatment to be strongly ignorable when both unconfoudedness and overlap are valid. This condition ensures that treatment observations have comparison observations "nearby" in the propensity score distribution (Hekman, Lalonde, & Smith , 1999)

Specifically, the effectiveness of PSM also depends on having a large and roughly equal number of participant and nonparticipant observations so that a substantial region of common support can be found. For estimating the TOT, this assumption can be relaxed to P (Di = 1|Xi) < 1.

Treatment units therefore must be similar to non-treatment units in terms of observed characteristics unaffected by participation; thus, some of the non-treatment units may have to be dropped to ensure comparability. However, sometimes a non-random subset of the treatment sample may have to be dropped if similar comparison units do not exist (Ravallion 2008). This situation is more problematic because it creates a possible sampling bias in the treatment effect. Examining the characteristics of dropped units may be useful in interpreting potential bias in the estimated treatment effects.

According to Heckman, Ichimura, and Todd (1997) encourage dropping treatment observations with weak common support. Only in the area of common support can inferences be made about causality.

If conditional independence holds, and if there is a sizable overlap in P(X) across participants and nonparticipants, the PSM estimator for the TOT can be specified as the mean difference in Y over the common support, weighting the comparison units by the propensity score distribution of participants. A typical cross-section estimator can be specified as follows:

$TOT_{PSM} = E_{P(X) \mid T=1}\{E[Y^T \mid T = 1, P(X)] - E[Y^C \mid T = 0, P(X)]\}$.

Application of the PSM Method

To calculate the program treatment effect, firstly calculate the propensity score P(X) on the basis all observed covariates X that jointly affect participation and the outcome of interest. The aim of matching is to find the closest comparison group from a sample of nonparticipants to the sample of program participants. "Closest" is measured in terms of observable characteristics not affected by program participation (Khandker et al. 2010).

Step 1: Estimating a Model of Program Participation

First, the samples of participants and nonparticipants should be pooled, and then participation T should be estimated on all the observed covariates X in the data that are likely to determine participation. When one is interested only in comparing outcomes for those participating (T = 1) with those not participating (T = 0), this estimate can be constructed from a probit or logit model of program participation (Khandker et al., 2010).

According to Caliendo and Kopeinig (2008) also provide examples of estimations of the participation equation with a non-binary treatment variable, based on work by Bryson, Dorsett, and Purdon (2002); Imbens (2000); and Lechner (2001). In this situation, one can use a multinomial probit (which is computationally intensive but based on weaker assumptions than the multinomial logit) or a series of binomial models.

Step 2: Defining the Region of Common Support and Balancing Tests

Next, the region of common support needs to be defined where distributions of the propensity score for treatment and comparison group overlap. As mentioned earlier, some of the nonparticipant observations may have to be dropped because they fall outside the common support. Sampling bias may still occur, however, if the dropped nonparticipant observations are systematically different in terms of observed characteristics from the retained nonparticipant sample; these differences should be monitored carefully to help interpret the treatment effect (Khandker et al., 2010).

Balancing tests can also be conducted to check whether, within each quantile of the propensity score distribution, the average propensity score and mean of X are the same. For PSM to work, the treatment and comparison groups must be balanced in that similar propensity scores are based on similar observed X. Although a treated group and its matched non treated comparator might have the same propensity scores, they are not necessarily observationally similar if misspecification exists in the participation equation.

The distributions of the treated group and the comparator must be similar, which is what balance implies. Formally, one needs to check if ˆ P(X |T = 1) = ˆ P(X |T = 0).

Step 3: Matching Participants to Nonparticipants

Different matching criteria can be used to assign participants to non-participants on the basis of the propensity score. Doing so entails calculating a weight for each matched participant-nonparticipant set. Different approaches are used to match participants and nonparticipants on the basis of the propensity score. They include nearest-neighbor (NN) matching, caliper and radius matching, stratification and interval matching, and kernel matching and local linear matching (LLM). Regression-based methods on the sample of participants and nonparticipants, using the propensity score as weights, can lead to more efficient estimates.

A. Nearest-neighbor matching: One of the most frequently used matching techniques is NN matching, where each treatment unit is matched to the comparison unit with the closest propensity score. One can also choose n nearest neighbors and do matching (usually n = 5 is used). Matching can be done with or without replacement. Matching with replacement, for example, means that the same nonparticipant can be used as a match for different participants (Khandkeret al, 2010).

B. Caliper or radius matching: One problem with NN matching is that the difference in propensity scores for a participant and its closest nonparticipant neighbor may still be very high. This situation results in poor matches and can be avoided by imposing a threshold or “tolerance” on the maximum propensity score distance (caliper). This procedure therefore involves matching with replacement, only among propensity scores within a certain range. A higher number of dropped nonparticipants is likely, however, potentially increasing the chance of sampling bias (Khandkeret al, 2010).

C. Stratification or interval matching: This procedure partitions the common support into different strata (or intervals) and calculates the program’s impact within each interval. Specifically, within each interval, the program effect is the mean difference in outcomes between treated and control observations. A weighted average of these interval impact estimates yields the overall program impact,

taking the share of participants in each interval as the weights (Khandkeret al, 2010).

D. Kernel and local linear matching: One risk with the methods just described is that only a small subset of nonparticipants will ultimately satisfy the criteria to fall within the common support and thus construct the counterfactual outcome. Nonparametric matching estimators such as kernel matching and LLM use a weighted average of all nonparticipants to construct the counterfactual match for each participant (Khandkeret al, 2010).

Matching Quality

The quality of the matching procedure is evaluated on the basis of its capability in balancing the control and the treatment groups with respect to the covariates used for the propensity score estimation. There are several procedures for this the basic idea of all approaches is to compare the distribution of these covariates in the two groups before and after matching on the propensity score. If there are significant differences after matching, then matching on the propensity score was not successful in making the groups comparable and remedial measures must be taken. A good matching procedure should reduce the standardized bias for each of the covariates used in the estimation of the propensity scores. Thus, this approach requires comparing the standardized bias for each covariate X before and after matching. A similar approach uses a two-sample t-test to check if there are significant differences in covariant means for both groups. After matching the covariates should be balanced in both the treatment and the non-treatment group therefore no significant difference should be found. After matching there should be no systematic differences in the distribution of the covariates between both groups. The pseudo-R2 after matching should be fairly low. The same can be done inspecting the F-statistics before and after matching. In fact, these statistics indicate the joint significance of all regresses used for the estimation of the propensity score. (CaliendoandKopeinig, 2005)

Calculating the Average Treatment Impact

If conditional independence and a sizable overlap in propensity scores between participants and matched nonparticipants can be assumed, the PSM average treatment effect is equal to the mean difference in outcomes over the common support, weighting the comparison units by the propensity score distribution of participants. To understand the potential observed mechanisms driving the estimated program effect, one can examine

the treatment impact across different observable characteristics, such as position in the sample distribution of income, age, and so on (Khandker et al., 2010).

Estimating Standard Errors with PSM: Use of the Bootstrap

The estimated variance of the treatment effect in PSM should include the variance attributable to the derivation of the propensity score and the determination of the common support. Failing to account for this additional variation beyond the normal sampling variation will cause the standard errors to be estimated incorrectly (Caliendo and Kopeinig 2008). It is possible to use bootstrapping as a solution where repeated samples are drawn from the original sample, and properties of the estimates (such as standard error and bias) are re estimated with each sample.

Sensitivity Analysis

Propensity scores are obtained from observational data that lacks randomization the matching only control for the differences on the observed variables and there may be some bias resulting from the unobserved covariates that could affect whether subjects receive treatment or not (Luellen et al.,2005).

Estimation based PSM is unbiased if there are no unmeasured confounders and if all relevant covariates have been incorporated in the estimation model (Keele, 2010). If there are unobserved variables which affect assignment into treatment and the outcome variable simultaneously hidden bias may arise to which matching estimators are not robust (Becker & Caliendo, 2007)

CHAPTER FOUR

4. Result and Discussion

4.1. Introduction

This chapter of the study presents the results of data analysis and discussion based on the findings of the study. Based on the sample size determined, 365 sampled households were targeted to participate in this study, however, 314 (87%) participated in the study and the data analysis is computed based on 314 respondents with their prospective demographic characteristics.

The first section of this chapter is about the general information gathered from the respondents. In the second section, the study presents Determinants of participation on UPSNP program in the study area by using the probit binary estimation method. The next section presents the impact evaluation by using the PSM model and finally the chapter presents a discussion of the findings on focus group discussion for deep understanding.

4.2. Demographic Information

The demographic characteristics of the respondents are summarized in table 4.1 and 4.2 based on the data collected during the survey.

Table 4.1. Continuous demographic characteristics of the respondents.

Covariate	*Group*	*Observation*	*Mean*	*Std. Dev.*	*Min*	*Max*
Age	*Treatment*	*191*	*41.40*	*5.61*	*29*	*56*
	Control	*122*	*42.20*	*5.73*	*27*	*56*
Duration of	*Treatment*	*191*	*29.29*	*9.65*	*10*	*50*
Residency	*Control*	*122*	*30.25*	*10.02*	*11*	*50*
HH	*Treatment*	*191*	*3.43*	*0.92*	*2*	*6*
member	*Control*	*122*	*3.42*	*0.95*	*2*	*5*
Children< 18	*Treatment*	*191*	*1.84*	*0.66*	*0*	*4*
	Control	*122*	*1.88*	*0.74*	*1*	*4*

Source: Survey data 2023

Based on the data of the respondents the average age of the respondents treatment group is 41.40 year with the range of age between 29 and 56 years, and for the control group is 42.20years with the range of age between 27 and 56 years; the average duration of

residency of the respondents of the treatment group in the study area is 29.29 years with the range of years between 10 and 50, and the control group is 30.25 years with the range of duration between 11 and 50; The average member of the household for the treatment group is 3.43 person with the range between 2 and 6, and the control group is 3.42 person with the range between 2 and 5; and, the average number of children less than 18 years old in the family of the respondents for the treatment group is 1.84 children with the range between 0 and 4 children, and for the control group is 1.88 children with the range between 1 and 4 children.

Table 4.2 Dummy demographic characteristics of the respondents.

Covariate	*Group*	*Description*	*Observation*	*Percentage*
Marital status	*Treatment*	*Unmarried*	*27*	*14.21%*
		Married	*147*	*77.37%*
		Divorced	*16*	*8.42%*
	Control	*Unmarried*	*40*	*32.79%*
		Married	*63*	*51.64%*
		Divorced	*19*	*15.57%*
Education background	*Treatment*	*Basic and bellow*	*65*	*34.03%*
		Primary & secondary	*86*	*45.03%*
		Preparatory& above	*40*	*20.94%*
	Control	*Basic and bellow*	*25*	*20.49%*
		Primary & secondary	*77*	*63.11%*
		Preparatory & above	*20*	*16.39%*
Economically Active	*Treatment*	*Active*	*89*	*46.60%*
		Inactive	*102*	*53.40%*
	Control	*Active*	*60*	*49.18%*
		Inactive	*62*	*50.82%*
House ownership	*Treatment*	*Owned freehold*	*1*	*0.54%*
		Owned leasehold	*24*	*12.97%*
		Condominium	*19*	*10.27%*
		Rented	*141*	*76.22%*
	Control	*Owned freehold*	*2*	*1.65%*
		Owned leasehold	*1*	*0.83%*
		Condominium	*5*	*4.13%*
		Rented	*113*	*93.39%*

Source: Survey data 2023

Based on the demographic characteristics of the respondents 14.21% (27) are unmarried, 77.37% (147) are married and 8.42% (16) are divorced for the treatment group and 32.79% (40) are unmarried, 51.64% (63) are married and 15.57% (19) are divorced for control group; 34.03% (65) have took basic and bellow education, 45.03% (86) have took primary

and secondary education and 20.94% (40) have took preparatory and above education in the treatment group, and 20..49% (25) have took basic and bellow education, 63.11% (77) have took primary and secondary education and 16.39% (20) have took preparatory and above education in the control group; 46.60% (89) are economically active and 53.40% (102) economically inactive for the treatment group and 49.18% (60) are economically active and 50.82% (62) economically inactive for the control group; 0.54% (1) is lived in owned freehold house, 12.97% (24) are lived in owned leasehold house, 10.27% (19) condominium house and 76.22% (141) are lived in rented house for the treatment group, and, 1.65% (2) is lived in owned freehold house, 0.83% (24) are lived in owned leasehold house, 4.13% (5) condominium house and 93.39% (113) are lived in rented house for the control group.

4.3. Determinants of Participation on UPSNP

Determinants of program participation are determined by using probit model of binary outcome estimation. The variable that is affected by the program, in any case, is discarded from the estimation. In this study, the covariates, age, marital status, education background, economically active status, duration of residency, HH member Children less than age 18, and house ownership status of the respondents were included to understand the determinants of participating in the UPSNP program. The probit estimation of the program participation is given in the equation:

$$Treatment_i = \beta_0 + \beta_1 Age + \beta_2\, Mstatus + \beta_3\, Educ + \beta_4 Economicalyy\ activeness + \beta_5\, Living\ duration + \beta_6 HHMember + \beta_7 Children < 18 + \beta_8 House\_ownersh + \varepsilon_i$$

Where: β_i = Are the coefficients of the covariates
ε_i = unobservable factors that affect the program participation.

Table 4.3 Probit estimation of women's participation in UPSNP program.

Variables	***Coefficient***	***Std. Err.***	***Marginal effect***
Age	*.-.0103*	*.0156*	*-.0029*
Marital status			
Married	*.8533****	*.2032*	*.2851*
Divorced	*.4599*	*.2874*	*.1556*
Educational background			
Primary and Secondary	*-.8674****	*. 1941*	*-.2709*
Preparatory and above	*-.5985***	*.2543*	*-.1808*

Variables	*Coefficient*	*Std. Err.*	*Marginal effect*
Economically active status (active =1, inactive = 2)	*.1578*	*.1614*	*.05091*
Duration of Residency	*-.0249****	*.0092*	*-.0079*
HH Member	*.1109*	*.1180*	*.0336*
Children<18	*-.0218057*	*.1538*	*-.0073*
House ownership status			
Owned leasehold	*2.680****	*.9381*	*.6094*
Condominium	*1.467*	*.8472*	*.4573*
Rented	*.4897*	*.7945*	*.1675*
_cons	*.2951*	*1.067389*	
LR $chi^2(12)$	*71.86*		
Prob > chi^2	*0.0000*		
Pseudo R^2	*0.1758*		

Source: probit estimation from survey data 2023

**** Significant at 1%., **significance at 5%*

Based on the characteristics used to capture the relevant to participation in the program, results from the default probit model, with estimates expressed in terms of the odds ratio. The probit regression estimation gave a Pseudo R2 of about 0.1758 which implies all the explanatory variables included in the model are able to explain 17.58 percent of the probability of participating in the UPSNP. The p-value tells the overall significance of the model, which is 0.000, and this implies that the overall model is statistically significant.

In addition, the result of the model found the factors that determining the UPSNP program participation. According to the probit estimation (Table 4.3) married women as compared to unmarried, educated as compared to non-educated, and duration of residency in the area is statistically significant effect in UPSNP program participation. The result shows that married women are more likely to participate in the UPSNP program as compared to unmarried and divorced, i.e., married is associated with 0.8533 odds of participation in the UNSNP program; women who are took primary and secondary education and preparatory and above level are less likely to participate in the UPSNP program as compared to women whose education back ground are basic and non-educated, i.e. primary and secondary is associated with -0.8674 and preparatory and above is associated with -0.5985 odds of participation in the UPSNP program; as the duration of residency of the women in the area is increases the participation in the program show decreases, i.e., duration of residency is associated with -.0249 odds of participation in the program; women who are lived in

leasehold house as compared to women who lived in owned freehold house are more likely to participate in program, i.e., leasehold house ownership is 2.680 odds of participation in the UPSNP program. On the other hand, age, economically active status, and size of the household, and number of children less than the age 18 has an insignificant effect on UPSNP participation, however, the sign of the coefficient indicates that the age of the respondents increase are less likely to participate in the program; economically inactive respondents are more likely to participate in the program as compared to economically active women; and the women who have higher family size are more likely to participate in the program according to the probit binary estimation result. The marginal effect tells about how a dependent variable changes while a specific independent variable changes by holding other covariates constant.

4.4. Impact of UPSNP Program on Sustainable Livelihood

It is difficult to measure the impact of program intervention directly unless it is represented by some proxy outcome variable. This study also employed proxy outcome variables to understand the impact of the UPSNP program. To measure the impact of UPSNP program on sustainable livelihood of the women, meals per day of the household member feeds on, access of improved nutritious food, adequate monthly income to support the household, income increment, monthly income, savings, income improvement as compared to expenditure, skills training, children education improvement, change in homing condition, improvement on sanitation, access to cooking fuel improvement, household assets, quality of clothes, health care service improvement, food consumption pattern and means of transportation are used as a proxy outcome variable. The impact estimation has been done by using the STATA command called “psmatch2”. The “psmatch2” command has different types of impact estimation methods namely nearest neighbor (with or without caliper, and with or without replacement), k-nearest neighbors, radius, kernel, local linear regression, and Mahalanobs matching in STATA version 14. Those options are used to estimate the impact of the program intervention and for this study, only 5–nearest neighbors (5-NN), radius, and kernel matching methods were employed since they reduce bias on covariates and lowered the standard error as compared to the other matching method for the estimation data set that was collected to study.

4.4.1. Balancing for Covariates

Balancing the characteristics of the treated and control group is important to see the effect of the program intervention. Balancing covariates means ensuring that the distribution of

covariates variable (***X***) is consistent across treatment levels. In causal effect estimation using matching has three main purposes those are; target of optimization using matching, ensuring the quality of the matches, and closing the gap between the estimated effect and the true effect of the intervention. Therefore, a balancing test for each matching mechanism for matched and unmatched covariates is important in checking whether the covariate is matched well or not. The common support tells if there is sufficient overlap in the characteristics of treated and untreated units to find adequate matches. Figure 4.1 is the common support futures of the 5-nearest neighbor estimation and for the purpose of reserving the space the common support figures of radius and kernel matching is not included.

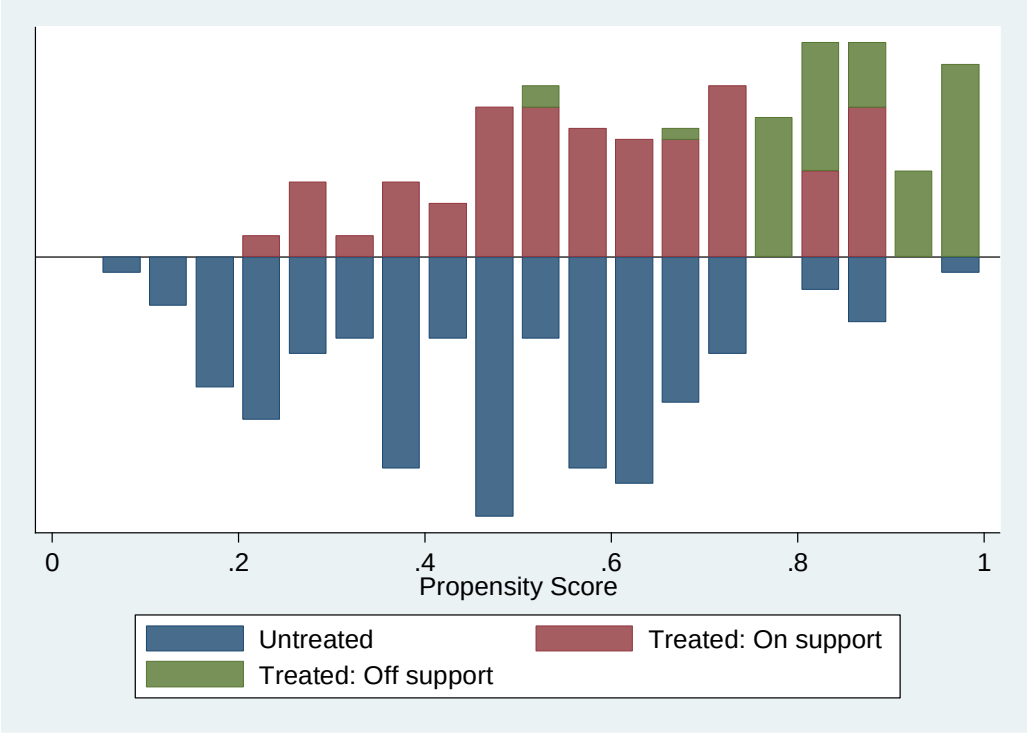


Figure 4.1 Overlapping of the covariates for treated and untreated group.
Source: Survey Data 2023

Once the region of common support is defined, individuals that fall outside the specified region must be discarded and for these individuals the treatment effect cannot be estimated. Common support ensures there is sufficient overlap in the characteristics of treated and untreated units to find adequate matches (Rosenbaum and Rubin, 1983). The common support region for the 5-NN matching is 0.0631441 - 0.9936822 and 60 treated observations fell out of the support region, while the common support region for the kernel matching is between 0.0631441 and 0.9936822 which resulted in 60 treated observations

being out of the support region. The common support region for the radius matching is between 0.2188052 and 0.8702815 and only 5 treated observations fell out of the support region. Within the common support, both groups were matched on the pre-intervention characteristics.

In addition to this, a statistical testing mechanism to check the balance between the covariates was used. In the "psmatch2" command the "ptest" was used to test the balance of covariates before and after matching.

Table 4.4 Mean balancing test for the covariates before and after matching.

Variables	*U / M*	*Matching type*								
		5-NN			*Radius*			*Kernel*		
		Mean			*Mean*			*Mean*		
		Treated	*Control*	*% bias reductio*	*Treated*	*Control*	*% bias reductio*	*Treated*	*Control*	*% bias reductio*
Age	*U*	*41.42*	*42.11*	*8*	*41.42*	*42.11*	*24*	*41.42*	*42.11*	*129*
	M	*41.38*	*40.64*		*41.38*	*40.53*		*41.34*	*39.75*	
Marital status										
Married	*U*	*.7705*	*.5124*	*93*	*.7705*	*.5124*		*.7705*	*.5124*	*99*
	M	*.6829*	*.6639*		*.6829*	*.6641*	*93*	*.7485*	*.7515*	
Divorced	*U*	*.0874*	*.157*	*82*	*.0874*	*.157*	*77*	*.0874*	*.157*	*77*
	M	*.1220*	*.1348*		*.1220*	*.1378*		*.0958*	*.1117*	
Education background										
Primary and secondary	*U*	*.4590*	*.6364*	*90*	*.4590*	*.6364*	*93*	*.4590*	*.6364*	*94*
	M	*.5285*	*.5192*		*.5285*	*.5159*		*.4551*	*.465*	
Preparatory &above	*U*	*.2022*	*.1570*	*60*	*.2022*	*.1570*	*70*	*.2022*	*.1570*	*57*
	M	*.1707*	*.1526*		*.1707*	*.1572*		*.1737*	*.1542*	
Economically active status	*U*	*.5355*	*.5041*	*47*	*.5355*	*.5041*		*.5355*	*.5041*	*135*
	M	*.5041*	*.5501*		*.5041*	*.5417*	*20*	*.5329*	*.6066*	
Duration of Residency	*U*	*29.50*	*30.31*	*48*	*29.50*	*30.31*		*29.50*	*30.31*	*119*
	M	*28.40*	*27.98*		*28.40*	*28.00*	*50*	*28.86*	*27.10*	
HH Member	*U*	*3.465*	*3.413*	*89*	*3.465*	*3.413*		*3.465*	*3.413*	*84*
	M	*3.415*	*3.421*		*3.415*	*3.418*	*93*	*3.419*	*3.325*	
Children<18	*U*	*1.858*	*1.876*	*53*	*1.858*	*1.876*		*1.858*	*1.876*	*82*
	M	*1.829*	*1.821*		*1.829*	*1.818*	*36*	*1.844*	*1.721*	
House ownership status										
Leasehold	*U*	*.1312*	*.0083*	*80*	*.1312*	*.0083*		*.1312*	*.0083*	*78*
	M	*.0244*	*0*		*.0244*	*0*	*80*	*.0479*	*.0206*	
Condominium	*U*	*.1038*	*.0413*	*62*	*.1038*	*.0413*		*.1038*	*.0413*	*83*
	M	*.0813*	*.1050*		*.0813*	*.1047*	*63*	*.1138*	*.1031*	
Rented	*U*	*.7596*	*.9339*	*96*	*.7596*	*.9339*		*.7596*	*.9339*	*77*
	M	*.8862*	*.8787*		*.8862*	*.8778*	*95*	*.8323*	*.8719*	

Source: Survey data 2023

Table 4.4 shows the mean balancing covariates before and after matching. The matching mechanisms reduce the bias and make comparable the treated and control group in their covariates. For example, before matching the average age is 41.42 years old in the treatment group and 42.11 years old in the control group, however, after matching the average age is 41.38 years in the treatment group and 40.64 years old in the control group the percent bias reduction is 8% in 5-NN matching; before matching the average age is 41.42 years old in the treatment group and 42.11 years old in the control group, however, after matching the average age is 41.38 years old in the treatment group and 40.53 years old in the control group the percent bias reduction is 24% in radius matching; before matching the average age is 41.42 years old in the treatment group and 42.11 years old in the control group, however, after matching the average age is 41.34 years old in the treatment group and 39.75 years old in the control group the percent bias reduction is 129% in kernel matching. The matching also reduced biases in marital status, education background, economically active status, duration of residency, HH member, children less than age18 and house ownership status as well.

Meanwhile, the overall model bias reduction was checked to see whether the matching has reduced the overall bias or not. Rubin (2001) introduced the two standard measures to check the bias. Those are standard percentage bias (B) and variance ratio (R). the standard percentage bias (B) is the absolute standardized difference of the means of the linear index of the propensity score in the treated and control group, and the variance ratio (R) is the ratio of treated to the control variances of the propensity score index.

Table 4.5 Balancing test for the covariates before and after matching in the three matching mechanisms.

Matching Mechanism												
Balancing test	*5-NN [with caliper (0.01)]*				*Radius with caliper (0.01)*				*kernel with kernel type (normal) caliper (0.01)*			
	Before matching		*After matching*		*Before matching*		*After matching*		*Before matching*		*After matching*	
	B	*R*	*B*	*R*	*B*	*R*	*B*	*R*	*B*	*R*	*B*	*R*
	*104.0**	*1.63*	*23.4*	*0.78*	*104.0**	*1.63*	*24.5*	*0.82*	*104.0**	*1.63*	*18.3*	*0.95*

Source: Balancing estimation after psmatch2 matching from survey data 2023.
Note: B and R are standard percentage bias and variance ratio respectively.
** if B>25%, R outside [0.5; 2], i.e., asterisk.*

Rubin's standard percentage bias (B) is the absolute standardized difference of the means of the linear index of the propensity score in the treated and control group, and Rubin's variance ratio (R) is the ratio of treated to the control variances of the propensity score

index. Rubin (2001) recommends that standard percentage bias (B) be less than 25 and the variance ratio (R) be between [0.5 and 2] for the samples to be considered sufficiently balanced. Table 4.5 shows that in nearest neighbor, radius, and kernel match mechanisms, the standard percentage bias is less than the threshold level of 25% and the variance ratio is between the range of 0.5 and 2 as specified on Rubin (2001). This indicates that the employed matching mechanism ensured balancing the covariates between the observations on the treated and control group. Therefore, the resulting effect estimate is now less sensitive to model misspecification and it is closer to the true treatment effect of the program intervention.

4.4.2. The impact of UPSNP Program on Sustainable Livelihood

In this sub-section is discussed the average treatment effect of the UPSNP using propensity score matching estimation. To understand the impact of the program intervention on the beneficiaries, nearest neighbor (5-NN), radius with caliper 0.01, and kernel with normal kernel type with common support; the smaller the caliper width (i.e., 0.2δ variance of estimated PS) would minimize the bias (Rosenbaum and Rubin, 1985). Common support drops the treatment observations whose propensity score is higher than the maximum or less than the minimum propensity score of the control observations.

Testing the statistical significance of treatment effects and computing their standard errors is not straightforward to do. The problem is that the estimated variance of the treatment effect should also include the variance due to the estimation of the propensity score, the imputation of the common support, and possibly also the order in which treated individuals are matched. Hence, the standard error is estimated by bootstrapping estimation method after employing the treatment effect estimation. The advantage of bootstrapping is that it is a direct way to derive the estimates of standard errors and confidence intervals, and it is convenient since it avoids the cost of repeating the experiment to get other groups of sampled data. Here table 4.4 is the average treatment effect estimation.

Table 4.6 ATT estimates

Matching mechanism	*Statistical measures*					
	Mean		*ATT*	*S.E for ATT before bootstrapping*	*Bootstrapping S.E*	*t-test*
	Treated	*Control*				
Meals per day						
NN	*2.6585*	*2.6257*	***.0328***	*.0795*	***.0624***	*0.41*
Radius	*2.6585*	*2.6237*	***.0348***	*.0795*	***.0640***	*0.44*

Matching mechanism	*Statistical measures*					
	Mean		*ATT*	*S.E for ATT before bootstrapping*	*Bootstrapping S.E*	*t-test*
	Treated	*Control*				
Kernel	*2.6503*	*2.6510*	***-.0008***	*.0705*	***.0519***	*-0.01*
Ability of getting improved nutrition						
NN	*.5854*	*.4878*	***.0976***	*.0828*	***.0641***	*1.18*
Radius	*.5854*	*.4874*	***.0979***	*.0827*	***.0708***	*1.18*
Kernel	*.6120*	*.4802*	***.1318***	*.0736*	***.0606***	*1.79*
Adequate monthly income						
NN	*.5203*	*.4814*	***.0389***	*.0831*	***.0573***	*0.47*
Radius	*.5203*	*.4781*	***.0422***	*.0831*	***.0823***	*0.51*
Kernel	*.5956*	*.4370*	***.1586***	*.0735*	***.0501***	*0.89*
Income variation						
NN	*.6423*	*.5993*	***.0430***	*.0817*	***.0568***	*0.53*
Radius	*.6423*	*.5925*	***.0498***	*.0816*	***.0635***	*0.61*
Kernel	*.6667*	*.5487*	***.1180***	*.0729*	***.0462***	*0.62*
Savings						
NN	*.6341*	*.3889*	***.2453***	*.0799*	***.0521***	*3.07**
Radius	*.6341*	*.3873*	***.2469***	*.0798*	***.0567***	*3.09**
Kernel	*.6393*	*.2971*	***.3422***	*.0712*	***.0614***	*4.81**
Income as compared to expenditure						
NN	*.3089*	*.3070*	***.0019***	*.0770*	***.0657***	*0.02*
Radius	*.3089*	*.3087*	***.0003***	*.0769*	***.0554***	*0.00*
Kernel	*.3716*	*.2996*	***.0720***	*.0694*	***.0472***	*0.04*
Skills and training						
NN	*.9675*	*.4081*	***.5593***	*.0688*	***.0501***	*8.12**
Radius	*.9675*	*.4067*	***.5608***	*.0688*	***.0427***	*8.16**
Kernel	*.9617*	*.3947*	***.5671***	*.0626*	***.0480***	*9.06**
Children education						
NN	*.7642*	*.7474*	***.0168***	*.0676*	***.0522***	*0.25*
Radius	*.7642*	*.7486*	***.0157***	*.0676*	***.0436***	*0.23*
Kernel	*.7923*	*.7711*	***.0212***	*.0599*	***.0536***	*0.35*
Sanitation						
NN	*.9106*	*.7335*	***.1771***	*.0647*	***.0445***	*2.74**
Radius	*.9106*	*.7276*	***.1830***	*.0646*	***.0445***	*2.83**
Kernel	*.9236*	*.7152*	***.2083***	*.0575*	***.0380***	*3.63**
Housing area						
NN	*.4797*	*.4272*	***.0524***	*.0821*	***.0648***	*0.64*
Radius	*.4797*	*.4289*	***.0508***	*.0821*	***.0642***	*0.62*
Kernel	*.5683*	*.3956*	***.1727***	*.0728*	***.0454***	*1.37*

Matching mechanism	*Statistical measures*					
	Mean		*ATT*	*S.E for ATT before bootstrapping*	*Bootstrapping S.E*	*t-test*
	Treated	*Control*				
Housing condition						
NN	*.4146*	*.3782*	***.0364***	*.0810*	***.0472***	*0.45*
Radius	*.4146*	*.3789*	***.0357***	*.0810*	***.0680***	*0.44*
Kernel	*.4481*	*.3720*	***.0761***	*.0718*	***.0662***	*1.06*
Cooking fuel						
NN	*.8943*	*.8240*	***.0703***	*.0445*	***.0360***	*1.58*
Radius	*.8943*	*.8234*	***.0709***	*.0444*	***.0343***	*1.60*
Kernel	*.9016*	*.8973*	***.0043***	*.0387*	***.0329***	*0.11*
Household asset						
NN	*.5691*	*.5042*	***.0649***	*.0829*	***.0616***	*0.78*
Radius	*.5691*	*.5086*	***.0605***	*.0828*	***.0542***	*0.73*
Kernel	*.6175*	*.4632*	***.1542***	*.0735*	***.0597***	*1.20*
Clothes						
NN	*.7154*	*.6822*	***.0332***	*.0755*	***.0477***	*0.44*
Radius	*.7154*	*.6829*	***.0325***	*.0754*	***.0536***	*0.43*
Kernel	*.7596*	*.7065*	***.0530***	*.0657*	***.0481***	*0.81*
Health care						
NN	*.7967*	*.5780*	***.2187***	*.0778*	***.0568***	*2.81**
Radius	*.7967*	*.5799*	***.2169***	*.0778*	***.0594***	*2.79**
Kernel	*.8197*	*.6195*	***.2001***	*.0700*	***.0472***	*2.86**
Food consumption						
NN	*.6098*	*.4327*	***.1771***	*.0817*	***.0569***	*2.17**
Radius	*.6098*	*.4357*	***.1741***	*.0817*	***.0542***	*2.13**
Kernel	*.6667*	*.4471*	***.2196***	*.0728*	***.0572***	*3.02**
Means of transportation						
NN	*.6667*	*.4317*	***.2350***	*.0816*	***.0553***	*2.88**
Radius	*.6667*	*.4331*	***.2335***	*.0815*	***.0623***	*2.87**
Kernel	*.6995*	*.4289*	***.2706***	*.0722*	***.0581***	*3.75**

Source: survey data 2023.

**Indicates* /T/ *is above* $T_{critical}$ *which is2.09; indicating that the program had significant impact on the marked outcome variable*

i. Number of Meals Per Day

After matching the treated and controlled respondents with the specified covariates, the result shows that the effect of UPSNP program on getting higher number meals per day as compared to non-beneficiaries is not statistically significant. The average treatment effect

on the treated (ATT) result of all NN, radius, and kernel shows the difference is not significant. The t-test for all matching mechanisms is not statistically significant and it ensures to accept the null hypothesis, H_o: UPSNP program does not have significant impact on meals per day and $|T| < (T_{critical} = 2.09)$.

ii. Ability of Getting Improved Nutrition

After matching the treated and controlled respondents with the specified covariates, the result shows that the impact of UPSNP program on the ability of getting improved nutrition as compared to non-beneficiaries is statistically insignificant. The average treatment effect on the treated (ATT) result of all NN, radius, and kernel shows the difference between treatment and control group is not significant and impact of the program on improving the ability of getting more nutritious food is not enough. The t-test for all matching mechanisms is not statistically significant and it ensures to accept the null hypothesis, H_o: UPSNP program does not have significant effect on getting more nutritious food $|T| < (T_{critical} = 2.09)$.

iii. Food Consumption

After matching the treated and controlled respondents with the specified covariates, the result shows that the UPSNP program has significant impact on food consumption pattern. The beneficiaries' food consumption pattern as compared to non-beneficiaries is statistically significant. The ATT result of all NN, radius, and kernel shows the difference between treatment and control group is significant and impact is significantly positive. The t-test statistics result ensures to reject the null hypothesis H_o: UPSNP program does not have significant impact on food conception pattern since $|T_{calculated}| > (T_{critical} = 2.09)$ for all matching mechanisms ensures that the impact is statistically significant.

iv. Adequate Monthly Income

After matching the treated and controlled respondents with the specified covariates, the result shows that the impact of UPSNP program on getting adequate monthly income to support the household as compared to non beneficiaries is not statistically significant. The average treatment effect on the treated (ATT) result of all NN, radius, and kernel shows the difference between treatment and control group is not significant and the impact of the program on adequate monthly income is not enough. The t-test for all matching mechanisms is not statistically significant and it ensures to accept the null hypothesis, H_o:

UPSNP program does not have significant impact on getting adequate monthly income to support the household and $|T| < (T_{critical} = 2.09)$.

v. Income Variation

After matching the treated and controlled respondents with the specified covariates, the result shows that the impact of UPSNP program on income variation as compared to non-beneficiaries is not statistically significant. The average treatment effect on the treated (ATT) result of all NN, radius, and kernel shows the difference between treatment and control group is not significant and the impact of the program on income variation is not sufficiently enough. The t-test for all matching mechanisms is not statistically significant and it ensures to accept the null hypothesis, H_o: UPSNP program does not have significant impact on income variation since 2016 and $|T| < (T_{critical} = 2.09)$.

vi. Saving Habits

After matching the treated and controlled respondents with the specified covariates, the result shows that the UPSNP program has significant impact on savings of the household. The beneficiaries have developed good saving habits as compared to non-beneficiaries and the difference is statistically significant. The ATT result of all NN, radius, and kernel shows the difference between treatment and control group is significant and impact is significantly positive. The t-test statistics result ensures to reject the null hypothesis, H_o: UPSNP program has not impact on saving habits since $|T_{calculated}| > (T_{critical} = 2.09)$ for all matching mechanisms ensures that the impact is statistically significant. Since the difference is positive the impact of UPSNP program on saving is significantly positive on savings.

vii. Expenditure

After matching the treated and controlled respondents with the specified covariates, the result shows that the impact of UPSNP program on income improvement compared to expenditure is not statistically significant. The average treatment effect on the treated (ATT) result of all NN, radius, and kernel shows the difference between treatment and control group is not significant and the impact of the program intervention on income improvement compared to expenditure is not sufficient. The t-test for all matching mechanisms is not statistically significant and it ensures to accept the null hypothesis, H_o:

UPSNP program does not have significant impact on income improvement regarding to expenditure since 2016 and $|T| < (T_{critical} = 2.09)$.

viii. Skills and Training

After matching the treated and controlled observations with the specified covariates, the result shows that the UPSNP program has significant impact on skills and trainings on the beneficiaries. The beneficiaries have skills and trainings as compared to non-beneficiaries. The ATT result of all NN, radius, and kernel shows the difference between treatment and control group is significant and the impact is significantly positive. The t-test statistics result ensures to reject the null hypothesis, H_o: UPSNP program has not impact on skills and trainings since $|T_{calculated}| > (T_{critical} = 2.09)$ for all matching mechanisms and it ensures that the impact is statistically significant. Hence the difference is positive as well as the impact of UPSNP program on skills and training is positive and significant. The result is consistence with Misgana (2018) and Yomiyu (2020).

ix. Access to Improved Education for Children

After matching the treated and controlled respondents with the specified covariates, the result shows that the impact of UPSNP program on access to improved education for children is not statistically significant. The ATT result of all NN, radius, and kernel shows the difference between treatment and control group is not significant and the impact of the program intervention on education improvement of the children is not sufficiently enough. The t-test for all matching mechanisms is not statistically significant and it ensures to accept the null hypothesis, H_o: UPSNP program does not have significant impact on children education improvement since 2016 since $|T| < (T_{critical} = 2.09)$.

x. Access to Sanitation

After matching the treated and controlled observations with the specified covariates, the result shows that the UPSNP program has significant impact on access to sanitation for the beneficiaries. The treatment group gets access to sanitation as compared to the non-beneficiaries. The ATT result of all NN, radius, and kernel shows the difference between treatment and control group is statistically significant and the impact is significantly positive. The t-test statistics result ensures to reject the null hypothesis, H_o: UPSNP program has no impact on access to sanitation since $|T_{calculated}| > (T_{critical} = 2.09)$ for all matching mechanisms and it ensures that the impact is statistically significant. Since the

difference is positive, UPSNP program has significant impact on improving access to sanitation.

xi. Housing Area

After matching the treated and controlled respondents with the specified covariates, the result shows that the impact of UPSNP program on change in housing size is not statistically significant. The ATT result of all NN, radius, and kernel shows the difference between treatment and control group is not significant and the impact of the program intervention change in housing size is not sufficiently enough. The t-test for all matching mechanisms is not statistically significant and it ensures to accept the null hypothesis, H_o: UPSNP program does not have significant impact on improving housing size since 2016 since $|T| < (T_{critical} = 2.09)$. Housing area improvement refers to any expansions in room area, addition of rooms, and expansion in compound, or moving to new housing with bigger size than before.

xii. Housing Condition

After matching the treated and controlled respondents with the specified covariates, the result shows that the impact of UPSNP program on housing condition improvement is not statistically significant. The ATT result of all NN, radius, and kernel shows the difference between treatment and control group is not significant and the impact of the program intervention on housing condition improvement of the children is not sufficiently enough. The t-test for all matching mechanisms is not statistically significant and it ensures to accept the null hypothesis, H_o: UPSNP program does not impact improvement of housing condition since 2016 since $|T| < (T_{critical} = 2.09)$.

xiii. Cooking Fuel

After matching the treated and controlled respondents with the specified covariates, the result shows that the impact of UPSNP program on access to cooking fuel is not statistically significant. The ATT result of all NN, radius, and kernel shows that the difference between treatment and control group is not significant and the impact of the program intervention on cooking fuel is not sufficiently enough according to the findings. The t-test for all matching mechanisms is not statistically significant and it ensures to accept the null hypothesis. The null hypothesis H_o: UPSNP program does not impact improvement of cooking fuel since 2016 since $|T| < (T_{critical} = 2.09)$.

xiv. Household asset Ownership

After matching the treated and controlled respondents with the specified covariates, the result shows that the impact of UPSNP program on household asset ownership is not statistically significant. The ATT result of all NN, radius, and kernel shows that the difference between treatment and control group is not significant and the impact of the program intervention on household asset ownership is not sufficiently enough. The t-test for all matching mechanisms is not statistically significant and it ensures to accept the null hypothesis, H_o: UPSNP program does not have significant impact on improving household asset ownership since 2016 since $|T| < (T_{critical} = 2.09)$.

xv. Quality of Clothes

After matching the treated and controlled respondents with the specified covariates, the result shows that the impact of UPSNP program on quality of clothes is not statistically significant. The ATT result of all NN, radius, and kernel shows that the difference between treatment and control group is not significant and the impact of the program intervention on quality of clothes is not sufficiently enough. The t-test for all matching mechanisms is not statistically significant and it ensures to accept the null hypothesis, H_o: UPSNP program does not have significant impact on improving quality of clothes worn since 2016 such that $|T| < (T_{critical} = 2.09)$. Quality of clothe measured in terms of garment quality, design quality, level of comfort, attractiveness, and color effect.

xvi. Health Care

After matching the treated and controlled observations with the specified covariates, the result shows that the UPSNP program has significant impact on ability to afford health care service improvement in the beneficiaries. The beneficiaries have improved the ability to afford health care service as compared to non-beneficiaries. The ATT result of all NN, radius, and kernel shows the difference between treatment and control group is significant and the impact is significantly positive. The t-test statistics result ensures to reject the null hypothesis, H_o: UPSNP program has significant impact on ability to afford health care service since $|T_{calculated}| > (T_{critical} = 2.09)$ for all matching mechanisms and it ensures that the impact is statistically significant.

xvii. Means of Transportation

After matching the treated and controlled observations with the specified covariates, the result shows that the UPSNP program has significant impact on means of transportation for the beneficiaries. The treatment group has improved their means of transportation as compared to the non-beneficiaries. The ATT result of all NN, radius, and kernel shows the difference between treatment and control group is statistically significant and the impact is significantly positive. The t-test statistics result ensures to reject the null hypothesis, H_o: UPSNP program has positive impact on means of transportation, since $|T_{calculated}| > (T_{critical} = 2.09)$ for all matching mechanisms and it ensures that the impact is statistically significant. Since the difference is positive, the impact of UPSNP program on means of transportation is positive and significant.

Generally according to the finding of the study UPSNP program intervention in Kirkos sub-city has positive effect on some outcome variables like savings, skills and training, access to sanitation, health care, food consumption, and means of transportations. The finding of the study is consistent with some of the studies conducted that focused on livelihood improvement of beneficiaries such as (Misgana, 2018), (Gashaw, 2021), and (Henok, 2021) who found that the UPSNP program has positive impact on food security aspect of livelihood improvement. International organizations such as the World Bank have also done studies mostly focused on assessing implementation effectiveness of UPSNP programs. A study that was conducted by Weiser et. al. (2021) on the effectiveness of the UPSNP program has confirmed that there are some positive improvements to the participants.

However, the intervention has not had significant impact in meals per day, access to improved nutrition, improving an adequate monthly income, income variation, income as compared to expenditure, children education improvement, housing area, housing condition, cooking fuel, household asset, and quality of clothes. Henok's (2021) study conducted on Dessie city in north east Ethiopia, found that beneficiary's graduation from the program was based on time duration and not on achieving sustainable improvements on their livelihood as the objective of the program.

4.4.3. Sensitivity Analysis

Sensitivity analyses quantify the effect that a possible unmeasured confounder could have on study results. The sensitivity analysis is done by Rosenbaum bound. The study

conducted sensitivity analysis for all outcomes, in the interest of saving space, only one sample sensitivity analysis is shown below for sanitation.

Table 4.7 Rosenbaum bound for outcome sanitation.

Gamma	sig^+	sig^-	$t\text{-}hat^+$	$t\text{-}hat^-$	CI^+	CI^-
1	4.6e-09	4.6e-09	.2	.2	.125	.25
1.3	1.5e-06	2.2e-12	.166667	.25	.1	.25
1.6	.000055	1.0e-15	.1	.25	.1	.3
1.9	.000597	0	.1	.25	-3.4e-07	.35
2.2	.00323	0	.1	.266666	-3.4e-07	.366666
2.5	.011154	0	.1	.3	-3.4e-07	.4
2.8	.028437	0	-3.4e-07	.35	-3.4e-07	.45

Source: Survey data 2023.

Note: Gamma - log odds of differential assignment due to unobserved factors

sig^+ - upper bound significance level

sig^- - lower bound significance level

$t\text{-}hat^+$ - upper bound Hodges-Lehmann point estimate

$t\text{-}hat^-$ - lower bound Hodges-Lehmann point estimate

CI^+ - upper bound confidence interval (a = .95)

CI^- - lower bound confidence interval (a = .95)

Rosenbaum bound for sensitivity test assume that (Null hypothesis) log odds of differential assignment due to unobserved factors. The results in table 4.5 show that the average treatment effect is sensitive to unobserved selection bias, since the upper and lower bound of significant level is not support to accept the null hypothesis. Therefore, the effect of the treatment intervention is not affected by unobserved confounders.

4.5. FGD Discussion and Key Informant Interview

This part of the study tried to get a deep understanding on the sustainability of the impact on the livelihood of the beneficiaries. The selection of the participants took place under great care and consideration. Two FGD with eight group members of each and one key informant interview were conducted in this part of the analysis.

4.5.1. FGD discussion

The beneficiaries to the UPSNP are selected based on their economic status, especially food insecurity level. According to the FGD discussions, the UPSNP program has been operating in two ways to solve the user's problem. One is through direct support and the

other is by engaging them in various development works and paying them for their labor. However, the FGD participants believe that the support from both did not bring tangible and sustainable change in the livelihood of participants.

The data obtained from the focus group discussions indicates that most of the graduates who were beneficiaries of the UPSNP program have slipped to their previous living standard and poverty situation after graduation, even though, some aspects of their livelihood showed improvement during the time they were getting support from the program. The participants said, "The support that was given us during the program, helped to go beyond covering our daily expenses, but it did not make a big difference in our long-term livelihood condition." This reinforces the findings of the quantitative study which showed that improvement in most of the livelihood indicators were found to be statistically insignificant

According to the responses obtained from the discussion regarding food security, participants saw some improvement during the time they were getting support because they fulfill their food need by using the monthly salary transferred from the UPSNP, however, there has been many women who were now graduates of UPSNP and still have problems with food insecurity. The participants said, "If you ask me about the level of food security in our district, most of us live in poverty because the living conditions are hand to mouth. For us, food security means eating what our stomach can find without being hungry, not eating nutritious food. Although the program gave us enough knowledge and understanding about food security through various trainings, our living conditions could not allow us to live as we have been taught about it. We cannot easily afford housing, food, and clothing". The ability to get health care services has improved. This is mainly because participants have started to pay contributions for the government sponsored health insurance program since they became participants in the UPSNP. In terms of income and asset improvement, some of the beneficiaries have shown slight improvement. However, the majority have not achieved any significant change.

One participant stated that "the program benefited us at the time, but we are now faced problems again after we are 'expelled' from the program as graduates". The respondent said "It is difficult to say that the UPSNP program has really brought about a change in the living conditions of the residents, however, the support was useful in addressing some of our life challenges for the time being. But eventually, I do not believe it has made a difference in terms of food security, health security, education, and wealth creation." The

other participant also supports this idea and said, “Although it is difficult to say that the UPSNP program has brought about real change in the situation of the beneficiaries, but at the time, it filled some of our deficiencies. However, this participant too does not believe the program has made a difference in terms of food self-sufficiency, education and wealth creation.”

According to the results obtained from the discussion, it is difficult to say that the program has brought sustainable change to the beneficiaries. It should be noted that particularly the participants who graduated in the first round were faced with in numerous challenges due to the Covid-19 pandemic and political unrest in the country due to the war in northern Ethiopia. And it was clear from the discussion that the seed money that was given to participants for starting their business at the time of graduation did not consider inflation. Due to this, the beneficiaries used up the money to cover expenses in their daily lives instead of for starting a business. In addition, beneficiary’s perception of the program appears to have negatively influenced their success. This was because, most of the participants in the program did not understand that this was supposed to be a life changing process, and they were supposed to strive towards such a goal. The FGD participants believe due to the above reasons the program did not bring significant and sustainable impact on livelihood of most of the beneficiaries.

Regarding graduation, it was learned from the discussions that the criteria set for graduation by UPSNP is: first, money saved for three years and second, time of participation (i.e three years). But participants said that this does not consider how much their situation has improved and whether these changes can be sustained by beneficiaries once they graduate. The participants added that as far as they are concerned, they take it simply as a termination of their monthly income received from the program, rather than graduation.

To summarize, it was clear from the FGD discussions that beneficiaries who graduated from the program did not achieve significant and sustainable change in their lives beyond solving some of their problems in life just for the duration when they were directly supported by the program. It is consistent with Henok (2021), who found that ultimately the program in Dessie, Amhara region, failed to improve beneficiary’s ability to resist shocks, which indicates problems in achieving sustainable livelihood. Instead, it was understood from the FGD discussions that the program tends to make the people experience dependency instead of bringing sustainable change.

4.5.2. Key Informant Interview

The findings from interview with key informant is discussed here. According to the interview, the selection process is based on the proxy means testing (PMT)of their livelihood before joining the program. The beneficiaries were given training on life skills, business plans, and technical skills. Regarding the money transfer, the beneficiaries saved 20% of their monthly salary to start their own business after graduation, However, the key informant also believes that the monthly salary is not adequate and has not considered the effect of inflation that greatly reduced the value of the saving. The beneficiaries also participated in environmental protection and cleaning schemes.

According to the interview response, the graduation criteria are based on saving, training participation and duration of engagement. Every participant graduated when their season expired. In the study area, around 90% of the participants graduated from the program.

After graduation, beneficiaries face many problems, and to minimize the challenge the program funder is working in cooperation with the government to organize the graduates in 1 to 5 grouping that is typical of the government sponsored job creation scheme so that they can get work area sheds and loans to start their business. Regarding the livelihood improvement, the key informant believes, the 20% saving from beneficiary's monthly income/salary that the program offers will go a long way to help them start their business after graduation. However, in the focus group discussions, it was understood that the money they saved was not enough to start any business and most of the graduates used the initial capital given for their daily consumption. Nevertheless, the key informant believes that, what is making graduated beneficiaries it ineffective is that they are not organized by 1 to 5 scheme of the government which will give them support to set up their businesses and facilitate market linkage.

According to the findings, only 15% of the graduates are improving their lives sustainably, but most of the graduates are not able to change their livelihoods for the better. This indicates that the UPSNP needs to make improvements on how it determines graduation for its beneficiaries. Furthermore, the program should consider follow through plan after graduation.

CHAPTER FIVE

5. Summary, Conclusion and Recommendation

5.1. Summary and Conclusion

The study examined the impact of the UPSNP on the sustainable livelihood of women beneficiaries' who graduated from the program. in Woreda 03 of Kirkos sub-city, Addis Ababa. The impact analysis was done using the propensity score matching method. As impact indicators of the intervention, the study took improvements in meals per day, access to nutrition, adequate monthly income, income variation, income to expenditure, ratio, child education, housing area, housing condition, cooking fuel, household asset, quality of clothes, savings, skills and training, access to sanitation, health care, food consumption, and means of transportation. To perform the matching between the treatment and control groups, the pre-intervention characteristics of age, marital status, educational background, economically active status, duration of residence, number of households, number of children less than 18 years old and house ownership were used. The matching was implemented under the specified common support region by the matching algorithm and with the balanced covariates of the respondents. The nearest neighbor, radius, and kernel method of matching algorithm and impact estimation were employed to perform the analysis.

The study identified the determinants for participation in the program. Among the pre-intervention characteristics; marital status, educational background, duration of residency and house ownership had statistically significant effects in UPSNP program participation. On the other hand, age, economically active status, household number, and number of children less than 18years of age, did not have a significant effect on UPSNP participation.

The findings of the study showed that the UPSNP intervention did not have a significant impact on most of the outcome variables that were used to measure sustainable livelihood improvements in the lives of graduated women beneficiaries. However, in some outcome variables, the program has shown some significant positive effects. According to the findings of the study, all 5-NN, Kernel, and radius matching showed that the UPSNP program intervention in Kirkos sub-city had a positive effect on savings, skills and training, access to sanitation, health care, food consumption, and means of transportations. This is consistent with previous studies including studies by Misgana (2018), Gashaw

(2021), and Henok (2021), all of which found that the UPSNP program had a positive impact on food security. A study by the World Bank on the effectiveness of the UPSNP has also confirmed that there are some positive improvements for program participants (Wieser et. al., 2021). On the other hand, the study showed that the intervention had no significant impact on meals per day, access to improved nutrition, adequate monthly income, income variation, income as compared to expenditure, children's educational improvement, housing area, housing condition, cooking fuel, household assets, and quality of clothing compared to the non-beneficiaries. Thus, overall, the intervention of the program has not been sufficient to bring about sustainable livelihood improvement for graduated women beneficiaries.

The findings from the FGDs also confirm that the beneficiaries who graduated from the program did not achieve significant sustainable change in their lives beyond addressing their immediate problems while they were directly supported by the program. In addition to the FGDs, the findings from the Key informant interview also supported this. From the key informant interview, the study found that only 15% of the graduates improved their lives sustainably, while most of the graduated beneficiaries remained stuck with no improvement or worse conditions. This indicates that the intervention of the program did not bring sustainable livelihood improvement to beneficiaries after their graduation. Instead, the program appears to make the beneficiaries experience dependency

5.2. Recommendation

The study recommends the following based on its findings:

- The Propensity score matching analysis of the data in this study showed that the UPSNP intervention failed to have significant impact on most of outcome variables, thus it is recommended that the Ethiopian Government as well as the primary donor, the World Bank, should find out why these livelihood outcome variables failed to show improvement and they should incorporate remedial measures in the program in future implementations.

- The criteria used for graduation of beneficiaries should be reevaluated. Completion of the term, is currently being used to determine graduation (together with consistent saving from income). However, completion of term by itself does not indicate readiness for graduation or ability to continue to improve livelihood sustainably. The study also indicates that there is a sudden discontinuation of

support after graduation, which together with ineffective criteria for graduation, doomed the chances of success in attaining sustainable livelihood improvement for beneficiary women after graduating from the program. Therefore, it is recommended that some form of follow up support such as small business formation, market linkage, further access to financing, business counselling etc. be availed for beneficiaries after graduation. This can be as part of the UPSNP or through existing or new government support schemes.

- There are indications that the covid pandemic, and the war in the northern part of Ethiopia are having adverse effects on the economy, which in turn is negatively affecting the ability of the program intervention to have positive impact on the outcome variables for livelihood improvement. Future implementation should consider these challenges. Furthermore, it is recommended to create a collaborative platform where other governmental as well as non-governmental stakeholders working in poverty alleviation so their works could complement the gaps in this umbrella program. One example could be to take advantage of the support systems already in place for small business formation and market linkage as well as access to finance through microfinancing programs already in place in the city.

- The results of the FGD and Key informant interview in the study also indicates that majority of beneficiaries appear to have acquired tendencies of dependency rather than achieving sustainable livelihood improvement. Therefore, the study recommends that the government and the World Bank should take into account the side effects of the support the program provides and design mitigating strategies in future implementations of the UPSNP and other similar programs.

- The determinants for participation in the program identified by the study has shown that some key determinants linked to poverty such as household number, and number of children less than 18 years of age, did not have a significant effect on UPSNP participation. This should be further investigated and remedial measures taken in the targeting and selection of participants in the way forward.

Reference

1. Abebe Fenta (2021). Urban Productive Safety Net Program: It's Impacts on Food Security and Job Creation, The Case of Woreda 4, Lideta Sub-City Addis Ababa, Master's Thesis, Addis Ababa University.

2. Abiy Mekbib (2020). Urban Productive Safety Net Program Contribution to Beneficiary Households Food Security: A Case of Woreda Seven, Kirkos Sub City, Addis Ababa, Master's Thesis, Addis Ababa University.

3. Alderman, H., &Yemtsov, R. (2014). How Can Safety Nets Contribute to Economic Growth? The World Bank Economic Review, 28(1), 1–20. http://www.jstor.org/stable/43774124

4. Alemayehu Kebere (2011). Opportunities and challenges of Urban Productive Safety Net Programs in Africa: The Case of Ethiopia and Rwanda, Master's Thesis, Addis Ababa university

5. Amsalu Tadesse (2021). Urban Productive Safety Net Program/UPSNP/ Implementation Practices and its Effect on Food Security Status of Poor Households in Arada Sub-City, Addis Ababa, Master's Thesis, Addis Ababa University.

6. Bahru, B. et.al. (2020). Impact of Ethiopia's productive safety net program on household food security and child nutrition: A marginal structural modeling approach

7. Becker, S.; Caliendo, M. (2007): Mhbounds - sensitivity analysis for average treatment effects, IZA Discussion Papers, No. 2542, Institute for the Study of Labor (IZA), Bonn, https://nbn-resolving.de/urn:nbn:de:101:1-20080425540

8. Beebeejaun, Y. (2017). Gender, urban space, and the right to everyday life, Journal of Urban Affairs, Vol. 39, No.3,Http://doi.org/10.1080/07352166.2016.1255526

9. Bryson, A., Dorsett, R., & Purdon, S. (2002). The Use of Propensity Score Matching in the Evaluation of Labour Market Policies. Working Paper No. 4, Department for Work and Pensions: London, UK.

10. Caliendo, M. and Kopeinig, S. (2005). Some Practical Guidance for the Implementation of Propensity Score Matching, IZA discussion paper No. 1588, Institute for the Study of Labor (IZA), Bonne

    http://dx.doi.org/10.2139/ssrn.721907

11. Carney D (Ed.) (1998). Sustainable rural livelihoods. What contribution can we make? Department of International Development. Nottingham: Russell Press Ltd.

12. Chambers, R. and Conway, G. (1992). Sustainable Rural Livelihoods: Practical Concepts for the 21st Century, IDS Discussion Paper 296, Brighton: IDS.

13. Cohen, J. (1988), Statistical Power Analysis for the Behavioral Sciences, 2nd ed., Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers

14. CSA (2021). Population Projection Woredas as of July 2021, found at https://www.statsethiopia.gov.et/population-projection/ viewed on February 12, 2021

15. Dawit Benti Erena et.al (2017). City profile: Addis Ababa. Report prepared in the SES (Social Inclusion and Energy Management for Informal Urban Settlements) project, funded by the Erasmus+ Program of the European Union. http://moodle.donau-uni.ac.at/ses/

16. DFID (2001). Sustainable Livelihoods Guidance Sheet. London.

17. FDRE (2016). Urban Food Security Strategy. Federal Democratic Republic of Ethiopia: Ministry of Urban Development and Housing

18. GashawMengie (2021). The Impact of Urban Productive Safety Net Program on The Livelihood of The Urban Poor in Addis Ababa: The Case of Yeka and Gulele Sub-Cities, Master's Thesis, Addis Ababa University.

19. Gujarati, D.N. (2004) Basic Econometrics. 4th Edition, McGraw-Hill.

20. HenokSisay (2021). Impact of Urban Productive Safety Net Program on Household Food Security in Dessie City, Master's Thesis, University of Gondar.

21. Heckman, J.; Ichimura, H.; Todd, P. (1997). Matching As An Econometric Evaluation Estimator: Evidence from Evaluating a Job Training Programme, The Review of Economic Studies, Volume 64, Issue 4, PP 605–654, https://doi.org/10.2307/2971733

22. Heckman, J., Lalonde, R., & Smith, J. (1999). The economics and econometrics of active labour market programs. In O. Ashenfelter & D. Card (Eds.) Handbook of Labor Economics, Vol. III, Amsterdam: Elsevier.

23. KassayeAmoshaHulluka (2020). Urban Productive Safety Net Program in Ethiopia: Beneficiaries Food Security Status, Participation Determinants and Its Contributions in Gulele Sub-City, Addis Ababa, Master's Thesis, Addis Ababa University.

24. Khandker, Shahidur R.; Koolwal, Gayatri B.; Samad, Hussain A. (2010). Handbook on Impact Evaluation: Quantitative Methods and Practices. World Bank. http://hdl.handle.net/10986/2693

25. Kothari, C.R. (2004). Research Methodology; Methods and Techniques. India. New Age International Publishers.

26. Luellen, J. K., Shadish, W. R., & Clark, M. H. (2005). Propensity Scores: An Introduction and Experimental Test. Evaluation Review, Vol. 29 No. 6, Pp 530–558. https://doi.org/10.1177/0193841X05275596

27. Majale, M. (2002). Towards Pro-Poor Regulatory Guidelines for Urban Upgrading: A Review of Papers presented at the International Workshop on Regulatory Guidelines for Urban Upgrading Held at Bourton-On-Dunsmore, May 17-18, 2001. United Kingdom.

28. Marczyk, G. R., Dematteo, D., & Festinger, D. (2005). Essentials of research design and methodology. Hoboken, N.J., John Wiley & Sons.

29. Menen Melese (2019). An Assessment on The Practices and Challenges of Urban Productive Safety Net Program in Addis Ababa City Administration, Master's Thesis, Addis Ababa University.

30. Misgana Abate (2018). Contribution of Urban Productive Safety Net Program to Households' Livelihood Improvement and Environmental Protection in Addis Ababa: Case Study of Addis Ketema and Arada Sub Cities, Master's Thesis, Addis Ababa University.

31. Morse, S.; McNamara, N and Acholo, M. (2009). Sustainable Livelihood Approach: A critical Analysis of Theory and Practice, Geographical Paper, no.189, The University of Reading

32. Moser, C. (2005). Assets, Livelihoods and Social Policy. Arusha Conference, "New Frontiers of Social Policy"– December 12-15, 2005.

33. MulukenMoges Mengistu (2019). The Effect of Urban Productive Safety Net Project to Household Food Security Status in Addis Ababa: A Case Study fromYeka Sub-City Woreda 08, Addis Ababa, Ethiopia, Master's Thesis, Addis Ababa University.

34. OECD (2012). Growth: The Role of Empowerment. Policy Guidance Note. The Role of Empowerment for Poverty Reduction and Growth.

35. Parpart, Jane; Connelly, Patricia; and Barriteau, Eudine eds. (2000). 'Theoretical Perspectives on Gender and Development', International development Research Centre (Publisher)

36. Peterman, Amber; Kumar, Neha; Pereira, Audrey; and Gilligan, Daniel O. (2019). Toward gender equality: A critical assessment of evidence on social safety nets in Africa. In 2019 Annual trends and outlook report: Gender equality in rural Africa: From commitments to outcomes, eds. Quisumbing, Agnes R.; Meinzen-Dick, Ruth Suseela; and Njuki, Jemimah. Chapter 10, Pp. 140-148. Washington, DC: International Food Policy Research Institute (IFPRI). https://doi.org/10.2499/9780896293649_10/

37. Ravallion, Martin, 2008. "Evaluating Anti-Poverty Programs," Handbook of Development Economics, in: T. Paul Schultz & John A. Strauss (ed.), Handbook of Development Economics, edition 1, volume 4, chapter 59, pages 3787-3846, Elsevier

38. Rosenbaum, P and Rubin, D (1983). The Central Role of Propensity Score in Observational Studies for Casual Effects, Biometrika, Vol. 70 No. 1 pp. 41-55

39. Rosenbaum, P.R. & Rubin, D.B. (1985). The Central Role of the Propensity Score in Observational Studies for Causal Effects. Oxford University Press.

40. Rubin, D (2001). Using Propensity Scores to Help Design Observational Studies: Application to the Tobacco Litigation Kluwer Health Services and Outcomes Research Methodology. Academic Publishers, vol.2 No.3, pp 169–188.

41. Tadesse Yadete (2008). Assessment of The Impact of Productive Safety Net Program on Household Welfare: The Case of Adami Tulu JidoKombolchaWereda, East Shoa, Oromia Regional State. Master's Thesis, Addis Ababa University.

42. TsionTadele (2019). Food Security Status and Determinates of UPSNP Beneficiaries in Addis Ababa, Master's Thesis, Addis Ababa University.

43. Un-Habitat (2017). The State of Addis Ababa: The Addis Ababa We Want, State of World Cities Series, Un-Habitat

44. United Nation (2018). World Urbanization Prospectus: Country Profile – Ethiopia, viewed on February 13, 2022, https://population.un.org/wup/Country-Profiles/

45. United Nations Department of Economic and Social Affairs (UNDESA), Sustainable Development the 17 Goals, at https://sdgs.un.org/goals/ viewed 1/03/2022

46. United Nations Development Program UNDP (1990). Human Development Report 1990. New York: UNDP, Human Development Report Office.

47. United Nations Research Institute for Social Development (UNRISD) (2010). Combating Poverty and Inequality: Structural Change, Social Policy and Politics

48. Upton, D., Upton, P. (2015). Quality of Life and Well-Being. In: Psychology of Wounds and Wound Care in Clinical Practice. Springer, Cham. https://doi.org/10.1007/978-3-319-09653-7_4/

49. WCED (1987). Food 2000: Global Policies for Sustainable Agriculture: A Report of the Advisory Panel on Food Security, Agriculture, Forestry, and Environment to the World Commission on Environment and Development, Zed Books Ltd.

50. Wheeler, R. et al. (2020). Graduation after 10 years of Ethiopia's Productive Safety Net Program: Surviving but still not thriving, Development Policy Review, vol. 39 no. 4

51. Wieser, C., Franklin, S., Hari, S. (2021). Effectiveness of the Urban Productive Safety Net Project, World Bank, Washington DC

52. Wieser, C. and Mesfin, W. (2021). Employment in Urban and Rural Ethiopia. World bank, Washington, dc.

53. World Bank (2002). Empowerment and Poverty Reduction: A Sourcebook.

54. World Bank (2016). Urban Productive SafetyNet Program: Project Implementation Manual

55. World Bank (2020a). Ethiopia Poverty Assessment: Harnessing Continued Growth for Accelerated Poverty Reduction. World Bank, Washington, DC. https://openknowledge.worldbank.org/handle/10986/33544/

56. World Bank (2020b). Ethiopia - Urban Productive Safety Net and Jobs Project, Washington, D.C.: World Bank Group. http://documents.worldbank.org/

57. World Bank (2021). Poverty & Equity Brief – Ethiopia, Africa, World Bank website https://databank.worldbank.org/data/download/poverty,

58. YeabsiraBirhanu Desalegn (2019). Targeting practices in Urban Productive Safety Net Program and its Implications to Household Food Security in Addis Ababa, Ethiopia: A Case Study from Woreda 05, Addis Ketema Sub-City, Master's Thesis, Addis Ababa University.

59. YirgaDessalgn (2021). The Contribution of Urban Productive Safety Net Program on Food Security of Female Headed Households in Woreda Six, Yeka Sub City, Addis Ababa City Administration, Ethiopia, Master's Thesis, Addis Ababa University

60. YomiyuMelaku (2020). Exploring Women's Economic Empowerment Through Urban Productive Safety Net Program: The Case of Gullele Sub-City in Addis Ababa, Master's Thesis, Addis Ababa University.

ANNEX I: Structured Interview Questionnaires

Annex 1A: Household Survey for Treatment Group (UPSNP Beneficiaries)

Introduction by interviewer

My name is _____. I am collecting data for Sofia Said who is working on her Master's thesis as a requirement to complete postgraduate degree in Regional and Local Development Studies from Addis Ababa University. This survey is to be used to study the impact of UPSNP on livelihood, food security and income conditions of women who graduated through the program. Your response will be kept confidential and will not be shared with anybody other than for this project purpose. Your name will not appear in any report of results. No one will use the information in any way that could cause problems for you. Interview will take approximately 20-30 minutes. If you agree to participate, I will schedule an interview time and location that is convenient for you.

Your participation is completely voluntary.

Do you agree to participate in this survey? **1. Yes** **2. No**[If the response is no, the interviewer will end the questionnaire here].

Study Contact Information

If you have any questions about this assessment, you may contact the researcher at:

Mrs. Sofia Said *ssiraj.2001@gmail.com*

Thank you very much for your participation!!!

Module1: Details of interviewer and location

Q101	Unique questionnaire number				
Q102	Name of supervisor				
Q103	Name of enumerator				
Q104	Date of interview (G.C)	Day	Month	Year	(_____/___/_____)
Q105	Time of Interview Started				
Q106	Woreda				
Q107	Ketena				
Q108	Is theinterviewee a beneficiary/treatment group or control group (1=Beneficiary/Treatment,2=Control)				

Module 2: Household characteristics

Q1	Code of the household head	
Q2	What is your age (age of household head)?	

Q3	What is your (household head) marital status?	1. Single 2. Married 3. Divorced 4. Widowed 5. Not together for any reason (separated) 6. Live with partner/cohabit	
Q4	What is your (household head) highest grade of schooling completed?	1. Illiterate 2. Basic Education 3. Primary (grade 1-8) 4. Secondary (grade 9-10) 5. Preparatory (11-12) 6. 10+TVET 7. College/university education	
Q5	Is the head of the household economically active?	1. Yes 2. No	
Q6	If not economically active, why?	1. Sick 2. Aged 3. Living with disability 4. Unemployed 5. Other, specify	
Q7	How many years have you lived in this dwelling or location?		
Q8	How many household members currently live in this household?	1. Boys	
		2. Girls	
		3. Total	
Q9	How many children under the age of 18 live in this house?	1. Boys	
		2. Girls	
		3. Total	
Q10	What is the major income source of the household?	1. Direct support from UPSNP 2. Payment through public work from UPSNP 3. Wage labor 4. Petty trade 5. Low wage employment 6. Shop, trade, market vending 7. Other (Specify)	
Q216	Please mention your monthly income		
Q217	How do you spend your income?	1. Food Related Expenditure 2. Education 3. Transport 4. Medical Expense 5. Water and Electric fee 6. Loan 7. House Rent 8. Other Specify	
Q218	Housing ownership condition	1. Owned-Freehold 2. Owned Leasehold 3. Strata title (e.g., Condominium) 4. Rented (Specify in Birr)	Birr (_____)

Module 3: Impact of UPSNP on Graduate Women's Livelihood

Q301	How many UPSNP beneficiaries are there in the HH?	1. One 2. Two 3. Three 4. Four	

Q302	What kind of support is the household getting from UPSNP?	1. Financial assistance through direct support 2. Financial assistance through conditional support 3. Counselling 4. Seed money for business start-up 5. Other(specify)	
Q303	Does the household get support from any other source?	1. Yes 2. No	
Q304	If yes, what kind of support is the household getting from other sources?	1. Direct food assistance 2. Counselling 3. Clothing assistance 4. Others (specify)	
Q305	How many meals per day does the household members feed on?	1. One meal 2. Two meals 3. Three meals and above	
Q306	Has the HH improved its ability to afford more nutritious food after UPSNP?	1. Not improved 2. Improved 3. Other	
Q307	If yes, what are the factors affecting food access variation? Specify		
Q308	What is the amount of monthly cash transfer to the HH from UPSNP (in birr)		
Q309	For how long does the monthly cash transfer from UPSNP fulfill the food demand of the HH?	1. One week 2. Two weeks 3. Three weeks 4. Four weeks 5. Five weeks 6. Other (Specify)	
Q310	Is the monthly income adequate to support the household?	1. Yes 2. Fair but not fully adequate 3. Not at all	
Q311	What are the HH ‘s main expenses?	1. Food 2. Education 3. Transport 4. Medical 5. House rent 6. Water and electric fee 7. Loan 8. others	
Q312	Has your income varied after joining the UPSNP?	1. Increased 2. Decreased 3. Not changed	
Q313	What are the major factors that caused your HH income variability / change?	1. Illness of HH member 2. Variation of income earned from casual work 3. Increment of HH size 4. Support from UPSNP 5. More work, salary increase 6. Others (Specify)	
Q314	Does any adult household member/s have savings?	1. Yes 2. No	
Q315	If yes, how much is the estimated amount saved per month in birr?		

Q316	Would you say the HH income improved when compared to your expenditures since joining UPSNP program?	1. No improvement 2. Improvement 3. Other	
Q317	Have you received any skills training and/or education by the UPSNP	1. Yes 2. No	
Q318	If yes what kind of education &skills trainings have you received?	1. Business planning 2. Life skill training 3. Technical skill 4. Other, specify	
Q319	If yes, how do you rate the level of change the training you received brought on your livelihood.	1. The training/s have brought major difference in the HH's ability to generate income 2. The trainings have brought some difference 3. The trainings have brought no difference in the HHs ability to generate income	
Q320	Has there been any improvements on access to education for your children since joining the UPSNP.	1. Yes 2. No 3. N/A (no children)	
Q321	Has the HH acquired ownership of any of the following home appliances since 2016 GC	1. Refrigerator 2. Cooking stove 3. Clothes Iron 4. Other specify	
Q322	Have improvements been made on access to sanitation to the HH since joining UPSNP?	1. Yes 2. No	
Q323	If yes, please indicate the improvement on access to sanitation?	1. Accessible and functional latrine or toilets 2. Availability of hand washing stations with soap or alcohol-based hand rubs 3. Improved bathing facility 4. Other (Specify)	
Q324	Is there any change in housing area (size) since you joined the UPSNP (as a beneficiary)?	1. Yes 2. No	
Q325	If yes, please indicate the improvement made on size at your house? Check all that apply	1. Expansions in room area 2. Addition of rooms 3. Expansion in compound 4. Moved to new housing with bigger size than before	
Q326	After joining UPSNP, has the standard of housing condition improved?	1. Yes 2. No	

Q327	If yes, are there improvements on the condition of the following house parts? check all that apply	1. Flooring 2. Roof 3. Wall 4. Compound 5. All	
Q328	Has the HH's access to cooking fuel improved after joining UPSNP?	1. Yes 2. No	
Q329	If yes, to which source of cooking fuel has it improved?	1. Electricity 2. Solar 3. Biomass (Fire wood, Charcoal etc.) 4. Kerosine 5. Butane gas 6. All	
Q330	Has the HH managed to own household assets after being included in UPSNP?	1. Yes 2. No	
Q331	If yes, which assets have you added to your ownership as a result of the benefit from UPSNP? Check all that apply	1. Telephone 2. Radio 3. TV 4. Bicycle 5. Motorbike 6. Bed 7. Sofa 8. Chair 9. Other Specify	
Q332	Has the quality of clothes the family wears improved after joining the UPSNP program 2016 GC?	1. Yes 2. No	
Q333	If yes, indicate the improvements?	1. Garment quality 2. Design quality 3. Level of Comfort 4. Attractiveness 5. Color effect 6. All	
Q334	Have your health care services seeking behavior and ability to afford health care improved after being included in the UPSNP?	1. Yes 2. No	
Q335	If yes, on which types of health care services do your health care seeking behavior and affordability improved?	1. Medical treatment service 2. Nutrition information service 3. Reproductive health service 4. Pregnancy care before birth 5. Use of Mid-wife 6. Family planning 7. Children clinics 8. Emergency and injury 9. Vaccinations	
Q336	Has your food consumption pattern improved since joining the UPSNP?	1. Yes 2. No	

Q337	If yes indicate the improvement/s in your food consumption pattern? Choose all that apply	1. More meals in a day 2. More variety of food 3. More expensive food 4. More animal products in a meal 5. More vegetable products in a meal	
Q338	Has your use of means of transportation improved since joining UPSNP?	1. Yes 2. No	
Q339	If yes, indicate which transportation services you use now that you did not use before 2016GC?	1. Mass transportation (bus, light rail) 2. Taxi (Mini Bus) 3. Meter / Contract tax (Ride, Feres etc) 4. Automobile 5. Railway (out of town) 6. Animal pack 7. Airplane	
Q340	As a beneficiary of UPSNP how do you rate the level of change the program brought on your livelihood	1. We have more income and food 2. We received fair assistance but the change in our lively hood is limited (unsatisfactory) 3. There is no change	
Q341	Has your livelihood changed since graduating from the UPSNP program?	1. Continued to Improved 2. Not changed (stayed as it was during UPSNP) 3. Deteriorated	
Q342	What factors affected your livelihood since graduating from UPSNP program? Check all that apply?	1. Discontinuation of UPSNP support 2. Changes in my family situation (illness, more dependents in family) 3. Lost my job or business was bad, 4. Negative effect of covid pandemic 5. Increased living cost, high inflation 6. Business got better or managed to get better paying job 7. Additional family member started generating income, & contributing. 8. Received other outside support such as other NGO or government or relatives.	
Q343	What could have been done to improve the PSNP program to ensure your continued improvement after graduation, please specify		

Annex 1B: Household Survey for Control Group (Non-Beneficiaries)

Introduction by interviewer

My name is _____. I am collecting data for Sofia Said who is working on her Master's thesis as a requirement to complete postgraduate degree in Regional and Local Development Studies from Addis Ababa University. This survey is to be used to study the impact of UPSNP on livelihood, food security and income conditions of women who graduated through the program. Your response will be kept confidential and will not be shared with anybody other than for this project purpose. Your name will not appear in any report of results. No one will use the information in any way that could cause problems for you. Interview will take approximately 20-30 minutes. If you agree to participate, I will schedule an interview time and location that is convenient for you.

Your participation is completely voluntary.

Do you agree to participate in this survey? **1. Yes** **2. No** [If the response is no, the interviewer will end the questionnaire here].

Study Contact Information
If you have any questions about this assessment, you may contact the researcher at:
Mrs. Sofia Said *ssiraj.2001@gmail.com*

Thank you very much for your participation!!!

Module1: Details of interviewer and location

Q101	Unique questionnaire number				
Q102	Name of supervisor				
Q103	Name of enumerator				
Q104	Date of interview (G.C)	Day	Month	Year	(_____/___/_____)
Q105	Time of Interview Started				
Q106	Woreda				
Q107	Ketena				
Q108	Is the interviewee a beneficiary/treatment group or control group (1=Beneficiary/Treatment, 2=Control)				
Q109	Has the interviewee ever been a beneficiary of the UPSNP program? (1 Yes, 2 No). If the answer is **Yes,** the interviewee does not meet the criteria to be a control group thus the interview will end here.				

Module 2: Household characteristics

Q201	Code of the household head		
Q202	What is your age (age of household head)?		
Q203	What is your (household head) marital status?	1. Single 2. Married 3. Divorced 4. Widowed	

		5. Not together for any reason (separated) 6. Live with partner/cohabit	
Q204	What is your (household head) highest grade of schooling completed?	1. Illiterate 2. Basic Education 3. Primary (grade 1-8) 4. Secondary (grade 9-10) 5. Preparatory (11-12) 6. 10+TVET 7. College/university education	
Q205	Is the head of the HH economically active?	1. Yes 2. No	
Q206	If not economically active, why?	1. Sick 2. Aged 3. Living with disability 4. Unemployed 5. Other, specify	
Q207	How many years have you lived in this dwelling or location?		
Q208	How many household members currently live in this household?	1. Boys	
		2. Girls	
		3. Total	
Q209	How many children under the age of 18 live in this house?	1. Boys	
		2. Girls	
		3. Total	
Q210	What is the major income source of the household?	1. Wage labor 2. Petty trade 3. Low wage employment 4. Shop, trade, market vending 5. Direct support from an NGO 6. Direct Support from Government 7. Other (Specify)	
Q211	Please mention your monthly income		
Q212	How do you spend your income?	1. Food Related Expenditure 2. Education 3. Transport 4. Medical Expense 5. Water and Electric fee 6. Loan 7. House Rent 8. Other Specify	
Q213	Housing ownership condition	1. Owned-Freehold 2. Owned Leasehold 3. Strata title (e.g., Condominium) 4. Rented (Specify in Birr)	Birr (_____)

Module 3: Change in Livelihood Condition

Q301	How many dependants are there in the HH?	1. One 2. Two 3. Three 4. Four or more	
Q302	Does the household get support from sources outside the family? (e.g NGO, Government, Relatives etc.)	1. Yes 2. No If Yes Specify the source	(_____)

Q303	If yes, what kind of support is the household getting?	1. Financial assistance through direct support 2. Financial assistance through conditional support 3. Direct food assistance 4. Counselling 5. Seed money for business start-up 6. Others (specify)	
Q304	If No. 1 or 2 is selected above, what is the amount of monthly cash transfer to the HH from these outside sources (in birr)		
Q305	How many meals per day does the household members feed on?	1. One meal 2. Two meals 3. Three meals and above	
Q306	Has the HH improved its ability to afford more nutritious food since 2016 G.C	1. Not improved 2. Improved 3. Other	
Q307	If improved, is your ability to afford more nutritious food a result of any outside assistance you received?	1. Yes 2. No	
Q308	What other factors affect your ability to afford more nutritious food? Specify		
Q309	If the HH is getting support, for how long does the monthly cash transfer (support) from outside sources (NGO, Government etc.) fulfill the food demand of the HH?	1. One week 2. Two weeks 3. Three weeks 4. Four weeks 5. Five weeks 6. Other (Specify)	
Q310	Is the HH monthly income adequate to support the household?	1. Yes 2. Fair but not fully adequate 3. Not at all	
Q311	What are the HH ‘s main expenses?	1. Food 2. Education 3. Transport 4. Medical 5. House rent 6. Water and electric fee 7. Loan 8. others	
Q312	Has the HHs income changed since 2016GC?	1. Increased 2. Decreased 3. Not changed	
Q313	What are the major factors that caused your HH income variability?	1. Illness of HH member 2. Variation of income earned from casual work 3. Increment of HH size 4. Support from outside sources 5. More work, salary increase etc. 6. Others (Specify)	

Q314	Does any adult household member have savings?	1. Yes 2. No	
Q315	If yes, how much is the estimated amount saved per month in birr?		
Q316	Would you say the HH income improved when compared to your expenditures since 2016 GC?	1. No improvement 2. Improvement 3. Other	
Q317	Have you received any skills training and/or education by government or other NGO support since 2016 G.C.?	1. Yes 2. No	
Q318	If yes what kind of education & skills trainings have you received?	1. Business planning 2. Life skill training 3. Technical skill 4. Other, specify	
Q319	If yes, how do you rate the level of change the training you received brought on your livelihood.	1. The training/s have brought major difference in the HH's ability to generate income 2. The trainings have brought some difference 3. The trainings have brought no difference in the HHs ability to generate income	
Q320	Has there been any improvements on access to education for your children since 2016 GC.	1. Yes 2. No 3. N/A (no children)	
Q321	Has the HH acquired ownership of any of the following home appliances since joining UPSNP?	1. Refrigerator 2. Cooking stove 3. Clothes Iron 4. Other specify	
Q322	Has the HH made any improvements on access to sanitation since 2016 GC?	1. Yes 2. No	
Q323	If yes, please indicate the improvement on access to sanitation?	1. Accessible and functional latrine or toilets 2. Availability of hand washing stations with soap or alcohol-based hand rubs 3. Improved bathing facility 4. Other (Specify)	
Q324	Is there any change in the HH's housing area (size) since 2016 GC?	1. Yes 2. No	
Q325	If yes, please indicate the improvement made on size at your house? Check all that apply	1. Expansions in room area 2. Addition of rooms 3. Expansion in compound 4. Moved to new housing with bigger size than before	
Q326	Since 2016 GC, has the standard of housing	1. Yes 2. No	

	condition improved for the HH?		
Q327	If yes, are there improvements on the condition of the following house parts? check all that apply	1. Flooring 2. Roof 3. Wall 4. Compound 5. All	
Q328	Has the HH's access to cooking fuel improved after 2016 GC?	1. Yes 2. No	
Q329	If yes, to which source of cooking fuel have you improved?	1. Electricity 2. Solar 3. Biomass (Fire wood, Charcoal etc.) 4. Kerosine 5. Butane gas 6. All	
Q330	Has the HH managed to own household assets since 2016 GC?	1. Yes 2. No	
Q331	If yes, which assets have you added to your ownership since 2016 GC? Check all that apply	1. Telephone 2. Radio 3. TV 4. Bicycle 5. Motorbike 6. Bed 7. Sofa 8. Chair 9. Other Specify	
Q332	Has the quality of clothes the family wears improved since 2016 GC?	1. Yes 2. No	
Q333	If yes, indicate the improvements?	1. Garment quality 2. Design quality 3. Conformability 4. Attractiveness 5. Color effect 6. All	
Q334	Have your health care services seeking behavior & ability to afford health care improve since 2016 GC?	1. Yes 2. No	
Q335	If yes, on which types of health care services do your health care seeking behavior and affordability improved?	1. Medical treatment service 2. Nutrition information service 3. Reproductive health service 4. Pregnancy care before birth 5. Mid-wife 6. Family planning 7. Children clinics 8. Emergency and injury 9. vaccinations	
Q336	Has your food consumption pattern improved since 2016?	1. Yes 2. No	

Q337	If yes indicate the changes in food and nutrition conditions?	1. More meals in a day 2. More variety of food 3. More expensive food 4. More animal products in a meal 5. More vegetable products in a meal	
Q338	Has your habit of using means of transportation improved since 2016 GC?	1. Yes 2. No	
Q339	If yes, indicate which transportation services you use now that you did not use before joining the UPSNP?	1. Mass transportation (bus, light rail) 2. Taxi (Mini Bus) 3. Meter / Contract tax (Ride, Feres …) 4. Automobile 5. Railway (out of town) 6. Animal pack 7. Airplane	

ANNEX – II:Key Informant Interview Guide

1. Can you describe the livelihood and living condition of the beneficiaries in this woreda before joining the program?

2. How do you describe the UPSNP program targeting?

3. What are the requirements to select beneficiaries for livelihood program? What criteria do you use for targeting Do you think the targeting mechanism helped you to choose the right beneficiaries?

4. What kind of support do you provide to beneficiaries?

5. Are there skills trainings and educational programs for the beneficiaries?

6. Are there criteria for money transfer?

7. Do you think the transfers are timely and adequate?

8. Does the public work offered to beneficiaries have standards and norms?

9. How do you evaluate participants for graduation? Are there criteria for graduation? At which year after joining do you evaluate for graduation?

10. What happens if a participant is not fit for graduation at the time of evaluation?

11. What percentage of the participants have graduated.

12. Do you provide support after graduation? What kind of support do you provide participants after graduation

13. Do you think that UPSNP is helping beneficiaries to maintain/ improve their livelihood?

14. What improvements have you seen in the households since the launch of UPSNP? Do you think the participants are able to sustainably continue to improve their livelihood after graduation? If no, what do you think can be doon to improve sustainability of lively hood improvement after graduation

15. How do you level coordination between stakeholders?

16. What are the strengths and limitations of UPSNP in improving the livelihood conditions of the beneficiaries?

ANNEX – II: Focus Group Discussion Guide

*A. **Basic Information:***

1. Name of the interviewer: _____
2. Name of Woreda: _____Ketena_____
3. Date consultation is conducted: _____
4. Consultation Start Time: _____
5. Consultation End Time: _____
6. Venue: _____
7. Name of Consultation Moderator: _____
8. List of participants

S.No.	Name	Sex	Social status	Phone number	Signature
1					
2					
3					
4					
5					
6					
7					
8					
Total					

B. Discussion Points (Agenda)

1. Can you explain the livelihood insecurity condition in this woreda? (Food insecurity, income poverty, living physical environment condition and facilities)

2. Explain about the number of beneficiary individuals and households, females and males in the woreda.

3. How do you assess the effect of UPSNP on livelihood improvement (access to and/or improvement of: food /nutrition, healthcare, sanitation, education, housing, assets, Quality of life in general of beneficiary households in this woreda?

4. In what way does the UPSNP contribute to address households' problems?

5. How do you assess the effect of UPSNP on income status of beneficiary households in this woreda? (Changes, effectiveness, limitations, challenges)

6. The perception of women beneficiaries on the general effect of UPSNP on livelihood improvement?

7. Adverse effects towards the beneficiary households and community What do you think of the graduation program of UPSNP (is it good to graduate,), is the evaluation process for graduation effective.

8. Are beneficiaries able to maintain an improved livelihood after graduation? How? What challenges do they face after graduation?