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EFFECT OF SOCIAL PROTECTION PROGRAMMES ON HOUSEHOLD FOOD SECURITY IN THE TOLON DISTRICT: A CASE OF THE LIVELIHOOD EMPOWERMENT AGAINST POVERTY PROGRAMME IN GHANA.

BY

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UNIVERSITY FOR DEVELOPMENT STUDIES

DECLARATION

I, AKURUGU SUMAILA hereby declare that this thesis "Effect of Social Protection Programmes on Household Food Security in Ghana: A Case of the Livelihood Empowerment against Poverty Programme in the Tolon District", is the result of my original work and that no part of it has been presented for another degree in this University or elsewhere:

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I hereby declare that the preparation and presentation of the thesis was supervised in accordance with the guidelines on supervision of thesis laid down by the University for Development Studies.

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ABSTRACT

Social protection programmes such as the LEAP have been identified as welfare enhancing approaches toward enhancing food security among rural households in developing countries including Ghana. The LEAP focuses more on health, education and poverty reduction with minimal attention to its impact on household food security. This study assessed the impact of the LEAP as social protection programme on household food security in the Tolon District of the Northern Region. A multi-stage sampling technique was employed to randomly select 400 participants and non-participants in the district. Food security indicators were computed using consumption expenditure on food (Adult equivalent), Household dietary diversity score (HDDS) and Household food insecurity access scale (HFIAS). An Endogenous Switching Regression (ESR) model was used to estimate the effects of determinants of participation in the LEAP programme and the impact of participation on household food security. Findings revealed that; the age of household head in the community, access to potable water and employment status of household head, receipt of remittance, ownership of farmland, ownership of livestock (sheep/goat), nearness to market and, access to electricity influence participation in the LEAP programme. Findings further revealed that participation in the LEAP programme has a positive impact on beneficiaries (ATT), which showed a percentage change in consumption expenditure, Household Dietary Diversity and a decrease in household food insecurity by 8%, 36% and 59% respectively. Free health insurance, Ghana education capitation grant, and the Ghana School Feeding programme are the most effective complementary services to the LEAP programme in the study area. It is recommended that Government should extend the programme to cover more poor households, especially those targeted and have not been enrolled. Authorities should also improve efforts to make other complementary social intervention programme to the LEAP more effective.

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DEDICATION

This work is fully dedicated to Almighty Allah for His abundance of love, grace and mercies and my entire family especially my wife and my son.

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ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
ATE	Average Treatment Effect
ATT	Average Treatment effect on the Treated
CCT	Conditional Cash Transfer
CCD	Center for Democratic Development –Ghana
COVID-19	Coronavirus Disease
DAC	District Assembly Common Fund
DFID	United Kingdom Department for International Development
DLIC	District LEAP Implementation Committee
DPCU	District Planning Coordinating Unit
DSW&CD	Department of Social Welfare and Community Development
ECLAC	United Nations Economic Commission for Latin America and the Caribbean
ESR	Endogenous Switching Regression Model
FANTA	Food And Nutrition Technical Assistance
FBO	Farmer Based Organization
FAO	Food and Agriculture Organisation
GHIPSS	Ghana Inter-bank Payment and Settlement System
GSFP	Ghana School Feeding Programme
GLSS7	Ghana Living Standard Survey round 7
GPRS	Growth and Poverty Reduction Strategy
GoG	Government of Ghana
GSS	Ghana Statistical Service

HCES	Household Consumption Expenditure Survey
HDDS	Household Dietary Diversity Score
HFIAS	Household food insecurity access scale
HIV	Human Immune Deficiency Virus
IFAD	International Fund for Agriculture Development
LEAP	Livelihood Against Poverty Programme
PFJ	Planting for Food and Jobs
PWD	Person With Disability
PHC	Population and Housing Census
MDGs	Millennium Development Goals
MMYE	Ministry of Manpower, Youth and Employment
MoFA	Ministry of Food and Agriculture
MoGCSP	Ministry of Gender, Children and Social Protection
NHIA	National Health Insurance Authority
NHIS	National Health Insurance Scheme
NGOs	Non-Governmental Organizations
NSPS	National Social Protection Strategy
ODK	Open Data Kit
OECD	Organization for Economic Co-operation and Development
OVC	Orphans and Vulnerable Children
PAMSCARD	Programme of Action to mitigate the Social Costs of Adjustment
PFJ	Planting for Food and Jobs
PIC	Public Information Committee

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PMT	Proxy Mean Test
PPS	Probability Proportional to Size
PSM	Propensity Score Matching
REP	Rural Enterprise Programme
ROSCA	Rotating Savings and Credit Association
SDGs	Sustainable Development Goals
UN	United Nations
UNDESA	United Nations Department of Economic and Social Affairs
UNICEF	United Nation Children Emergency Fund
UNDP	Untied Nation Development Programme
NYEP	National Youth Employment Programme
VSLA	Village Saving and Loan Association
WFP	World Food Program

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

The need to respond to extreme poverty, risk and vulnerability has given rise to a set of instruments broadly known as social protection. UNICEF (2015) defines social protection programmes as a combination of public and private policies and programmes aimed at preventing, mitigating, and eliminating economic and social vulnerabilities to poverty and deprivation. The main objective of many social protection programmes is to improve food security, increase purchasing power and smoothen consumption. Countries around the world have made significant progress in building and strengthening social protection systems to help alleviate food poverty.

Thus, globally, the provision of social protection programmes is directly linked to poverty reduction and addressing the vulnerabilities of poor households particularly for developing economies (Armando Barrientos, 2010; OECD, 2019). The proportion of people living below $1.90 daily in the world was estimated to be 767 million, and this number would rise by 136 million to 165 million if social security grants were not available (UNDESA, 2018). Poverty has been describe as a shameful disease of modern society, for which innovations are needed to curb it (Atulley, 2015). So therefore social protection system is a potent development approach to alleviating poverty, inequality and social exclusion (UNDESA, 2018). On the Global development agenda, social protection forms the core and even at the national poverty and vulnerability reduction programs (FAO, 2017; Alatinga *et al.,* 2019). This is evidenced in the 2030 agenda for Sustainable Development Goals (SDGs) which highlights the need for social protection for the

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attainment of the SDGs, especial the target 1.3 which seeks to address the role of social protection in ending poverty in all forms (Browne, 2015; Carter & Keetie Roelen, 2019; UNDESA, 2018). Social protection initiatives, particularly cash transfers, are known to be effective in addressing hunger and poverty in Sub-Saharan Africa (Burchi, 2016). It is also referred to governmental and non-governmental programmes that provide consumption or income advancement to the less privileged, protect the weak from threats to their livelihoods, and increase marginalized social standing and rights, all with the goal of mitigating the social and poor's economic vulnerability (Devereux & Sabates-wheeler, 2004). Social protection refers to the collection of programmes that use cash or in-kind distribution mechanism to manage risk, vulnerability, and poverty (Fiszbein *et al.,* 2014). Many social protection programmes are designed to improve food security, raise purchasing power, and smooth consumption. Evidence suggests that families that primarily buy food using social transfers can gradually increase the quality, quantity, and variety of food they consume (UNICEF, 2015).

Countries around the world have made significant progress in building and strengthening social protection systems to help alleviate poverty. According to UNICEF (2015), Social protection transfers are an effective and efficient strategy to achieve results in terms of consumption and food security across Africa. Success stories from nations, such as Turkey, Colombia, Brazil, Honduras, Nicaragua, Kenya, South Africa, Peru, and Mexico, for example, give the impetus for Ghana to implement social intervention programmes as a means of combating poverty. Social protection, according to research, not only improves welfare but also encourages constructive activity in beneficiary households and the local economy (Croppenstedt *et al.,* 2017). Social protection programmes and

experiments to fight food insecurity have sprung up on the African continent for some years now, often under the auspices of the World Bank (Inter-reseaux Developpement Rural, 2013).

According to Bhalla *et al.* (2018), social protection policies (cash transfers) are policy instruments that are helpful in building household resiliency towards access to food. More so, food insecurity in the home is becoming more widely recognized as a global issue, most importantly in sub-Sahara Africa (Frelat et al., 2016). Many developing countries are increasingly using cash transfers as a social intervention mechanism to improve the food security, nutritional condition, and poverty alleviation of lesser socio-economic individuals. (Mohammadi-Nasrabadi, 2016). These social protection interventions (cash transfers) are aimed at strengthening human capital as well as serving as an incentive the deprived and the less privileged to invest in their future to out of poverty (Sulemana *et al.,* 2018).

Alleviate income or food poverty, increase consumption of food and reduce vulnerability totally dependent on social transfers (Bhalla *et al.,* 2018; Devereux, 2016). Despite progress in poverty reduction and food insecurity, significant levels of poverty and food insecurity have demanded a focus on social protection (Croppenstedt *et al.,* 2017). Food insecurity is linked to poverty and vulnerability, particularly among rural agricultural families where income and food crops are intertwined (Devereux, 2016). As a result, social protection programs and home food security appear to have a link. As a result, frequent and predictable increase in cash transfers increases the size and quality of meals that households consume while simultaneously reducing food insecurity in the household (Tiwari et al., 2016). Government should not lag when it comes to payments

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(irregularities) or Cash transfers among beneficiaries' households to continue to improve households' food security and diversify their consumption.

Miller *et al.* (2011) concluded that transfers of funds promote food security by increasing food availability viz-a-viz steady income which rises individual and household agricultural production and purchasing power. They added that, there is the availability of food for purchase in local marketplaces, agricultural end products will rise with increased inputs, and end users will opt to buy or cultivate additional food through a share of their bi-monthly pay if their revenue is raised (Croppenstedt *et al.,* 2017). Family food insecurity is noted to be one of the high risk factors of poor nutrition, consuming about 300,000 lives every year, either directly or indirectly resulting from consumption of insufficient food and bad quality of diet (Drammeh *et al.,* 2019). Food insecurity is also responsible for more than half of all child fatalities in Sub-Saharan Africa (Drammeh *et al.,* 2019).

As commonly defined, food security is defined as a condition with which everyone has constant social, physical and economic access to safe, sufficient and nutritious food that meets their dietary requirements and preferences for a healthy and active lifestyle.(FAO, IFAD, UNICEF, 2019). The definition suggests that, four food security dimensions are being highlighted as; availability, accessible, utilization and stability. This necessitates a level of consistency in food availability, access, and consumption in homes. Food security as well also requires that families feel fairly secure about where their next meal is coming from. Hunger binds families in a never-ending cycle of poverty, which is passed down to the poor children, whose development is likely to be harmed. Poverty is largely viewed as a major contributor to food insecurity among households. Lower levels of education

have been associated with poorer households. They are characterized by smaller harvests and are known to expend a larger proportion of their meager income or means on food. They also purchase staple items when the prices in the market are at the highest when compared their counterparts who are wealthier (WFP, 2012).

According to studies, a number of countries, including Zambia, Malawi, Ethiopia, and Kenya, have implemented cash transfer programmes aimed at vulnerable children, which have proven to be highly effective in increasing food consumption at home and extending recipients' production assets. Again Cash transfers boost access to hygiene, health and sanitation services that are all critical to food security in Malawi and Lesotho (UNICEF, 2015; Burchi, 2016).

The number of Ghanaians based on GSS projection 2010 who live in extreme poverty between 2013 to 2017 has increased from 2.2 million to 2.4 million (GSS, 2018). The poorest people live in the northern part of the country. (GSS, 2018). The impact of food expenditure could have a direct or indirect impact on the food security of the household, as food accounts for the major amount of the expenditures of the poorest households (FAO, 2008b). Out of the estimated ,1.8 million persons who are extremely poor (food consumption poverty) in the rural communities of Ghana, subsistence farm households in the rural savannah form more than 40 percent of this quota (Namaa, 2017).

According to available data, in Ghana, Northern Region has the highest rate of different dimensions of poverty, with eight out of ten people (80.0 percent) being multidimensionally poor. The next region in terms of the poverty level is Upper East

Region, with approximately seven out of every ten people being multidimensionally poor (68.0 percent) (UNDP, 2020).

Social protection interventions in Ghana have been introduced by successive governments, the World Bank and several stakeholders (NGOs) to address the menace of household food insecurity and poverty. Health (Health Insurance Scheme), Education (Capitation Grant, School Feeding, and Free School Uniform) and Livelihoods (Livelihood Empowerment Against Poverty Programme) are just a few of the sectors where interventions are being made (Ofori-Addo, 2013). However, in rural communities, notably in the Northern Region, the problem of household food insecurity remains a severe barrier.

1.2. Problem statement of the study

Ghana has progressed toward the Millennium Development Goals (MDGs). However, about 8.2% of the population of Ghana lives in poverty and is unable to meet their basic food requirements (GSS, 2018).

Largely, Poverty is considered a major contributory factor in food insecurity among households. Households who are poor have been observed to have a lower educational level, and expend a greater proportion of their inadequate income or means on food, characterized by harvest which are usually small. They are also known as compared to the households that are wealthier to always purchase most of their basic food especially at the high market price (WFP, 2012).

Poverty and food insecurity levels in Ghana are a largely rural phenomenon and more prominent among poor household farmers (Aidoo & Tuffour, 2013; Nkegbe *et al.,* 2017).

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Food insecurity in the home is one of the primary causes of malnutrition, claiming the lives of around 300,000 people each year, either directly or indirectly as a result of insufficient food consumption and poor diet quality (Drammeh *et al.,* 2019). In Sub-Saharan Africa, food insecurity influences even above half of mortality in children (Hamid and Rohana, 2019).

Social protection programmes are important for many poor people because it gives them relief to cope with life's challenges (Fiszbein *et al.,* 2014). From the broader field of social interventions, cash transfers as a policy instrument have attracted much interest among national governments and international development agencies as a measure to address extreme poverty and household vulnerability (Sulemana *et al.,* 2018).

Social protection intervention programmes now appear to be an innovative and radical measures to reducing persistent food insecurity among poor households (Inter-reseaux Developpement Rural, 2013).

Even though monetary transfers alone are not enough to purchase at all times sufficient. This is a result of seasonal food price fluctuations, frequent food related items price inflation, unforeseen food price spikes, as well as market failures (Devereux, 2015). In light of this, Ghana has achieved significant progress in using social transfer measures to relieve poverty among the most vulnerable members of society. Prominent among them are; 1) Cash transfers for the poor vulnerable households (LEAP) with the intention of eliminating poverty in its short term and encouraging the development of human capital in the long term, 2) Capitation grants intended to remove tuition and fee requirements, 3) School Feeding Programme intended at increasing school attendance, enrolment, and

retention, as well as lowering hunger in its short-term, malnutrition between the school-age children (kindergarten and primary school) and increasing domestic food production, and 4) payment of National Health Insurance for the aged and LEAP beneficiaries households (indigents).   Again, Policies in the Agriculture sector such as fertilizer subsidies, and the current planting for food and jobs programme (PFJ) among others are all aimed at increasing food productivity, income and subsequently alleviate poverty among households (MGCSP, 2015; Dagunga *et al.,* 2021).

Since the implementation of the LEAP programme in Ghana, many studies have been conducted to assess its relevance using several indicators. For instance (Adu-okoree *et al.,* 2020; Bongfudeme & Bawelle, 2016; Handa *et al.,* 2013; Atulley, 2015; Osei-akoto, 2013; Sackey, 2019; Alatinga *et al.,* 2019) undertook an assessment of the programme with a focus on the effect of the LEAP programme in relation to health, education and poverty reduction. In an impact assessment, Handa et al, (2013) researched the influence of the LEAP Programme on household consumption. Also, Alatinga *et al.,* (2019) studies focused on community experiences with cash transfer (LEAP) in relation to five SDGs. Exploring evidence from Ghana's LEAP. Furthermore, Bongfudeme and Bawelle, (2016) also assessed the programme to ascertain the extent to which it has improved welfare and reduced poverty. But none of these studies has compared the beneficiaries (treated group) and non-beneficiaries (untreated groups) using counterfactuals to establish their food security status which have a strong policy implication in terms of the programme effectiveness, relevance, impact, efficiency as well as programme sustainability. Therefore the need to attempt to add knowledge to this gap by assessing

the effect of social protection programmes on household food security in the Tolon District. The study is design to address the following research questions:

1. How are the perceived targeting mechanism procedures of the LEAP programme?

2. What are the determinants of households' participation in the LEAP programme?

3. Has the participation in LEAP programme have effects on household's food security?

4. How effective are the LEAP programme components/complementary services toward achieving household food security?

1.3. Objective of the study

The broad objective of this study is to assess the effect of Social Protection Programmes on household food security in the Tolon District.

The specific objectives are:

1. To examine the perceived targeting mechanism of the LEAP programme

2. To examine the determinants of households' participation of the LEAP programme.

3. To determine the effects of participation in LEAP programme on household food security.

4. To examine the effectiveness of LEAP programme components/complementary services toward achieving household food security.

1.4. Justification of the study

This study serves as an evaluation of the programme since its inception in 2008 in terms of effectiveness, relevance, impact, efficiency as well as programme sustainability. Emphasis is placed on the influence of this programme on food security status of the household in the Tolon district especially in the midst of COVID-19. Evidence of WFP (2020), security and nutrition monitoring system report in Ghana examined the influence that COVID-19 pandemic is having on food prices revealed that, 40% of families in the Northern Region are severely food insecure. It reveals the contribution of social protection (LEAP) on rural farmers' food security condition in the Northern region amidst the variability in climate change. As a result, with the implementation of the LEAP programme, it is necessary to assess its effects on household food security. Also, the LEAP programme which uses proxy means test and community-based approach as a targeting mechanism for the selection of beneficiary households, it is imperative to understand how effective are these mechanisms contributing towards achieving household food security. This is because according to Devereux (2012), 'social justice' approach to targeting has a direct and considerable positive influence on household food security.

This study also adds to existent literature since there is scanty research in the area especially in Ghana and sub-Sahara Africa. The study's findings, recommendations, and conclusion serves as knowledge for students, academia, policymakers, NGOs, and civil society organizations, among others, leading to additional research or study. The study revealed the challenges in adding to literature and therefore suggest solution to help strengthening the programme going forward so as to achieve its intended purpose of

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leapfrogging the vulnerable and the less privilege group out of extreme poverty since household food insecurity is the major cause of poverty especially food consumption poverty.

1.5. Organization of the study

This research is categorized into five (5) chapters. The first chapters encapsulate the research background, research problem, questions, objectives and justification of the study. The second chapter presents a review of relevant literature related to the current study which includes definitions of concepts and terms, social protection and LEAP programme in Ghana, targeting mechanisms, the rise of social cash transfer in achieving household food security, examples of cash transfers applications, LEAP components toward achieving household food security, effects of participation of LEAP programme on household food security and empirical methods of data analysis. The third chapter presents the study's methodology which includes; the study area, data collection methods, theoretical and conceptual frameworks and methods of data analysis. Chapter four contains the results and the discussions of the findings of this research. The fifth chapter present's summary of the major findings, conclusions and recommendations of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

This chapter provides a literature review pertaining to the current research on the possible influence of the LEAP programme on food security status of the households. Section 2.2 presents definitions of concepts and terminologies. Section 2.3 presents overview of the of the LEAP programme in Ghana. Section 2.4 an overview of existing forms of social protection policies in Ghana. Section 2.5, LEAP components and Complementary services in Ghana. Section 2.6 Social cash transfer and household food security. Section 2.7 Targeting mechanisms of LEAP programme towards achieving household food security. Section 2.8 a review of indicators used in measuring food security.

2.2. Definition of Terminologies

Social protection: Countries and international development agencies have defined social protection in various ways. The definition of social protection in Ghana is expressed as "a set of activities taken by the government together with the other development partners as a way of fighting poverty and vulnerability, with the goal of providing relief to those parts of the population who are unable to provide for themselves for whatever cause."(MoGCSP, 2015a, p. 2). UNICEF defines social protection as "a set of private and public programmes and policies aimed at averting, decreasing, eradicating social and economic vulnerabilities to poverty and hardship."(UNICEF, 2015, p. 6).

Livelihood Empowerment Against Poverty (LEAP) programme is a programme that ensure that funds are transferred which was established in 2008 by Ghana government in 2008 for those that are extremely poor, the less privileged families who have an orphan

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with vulnerable children (OVC) or a highly disabled persons that cannot carry out any productive activities, the aged people with age 65 and above, mothers whose children's age falls under one year and pregnant women.

Livelihood: This "includes the person's or household's capabilities, assets (natural, physical, human, financial, and social capital), activities, and access to these (mediated by organizations and social transactions) that all work together to determine the person's or household's success.'(Ellis, 2000, p. 10).

Poverty: refer to inadequate education, economic prospects, health, and nutrition, as well as a deficiency of empowerment and safety, as well as intolerable human deprivations.

Food security: This is a scenario where every individual has social, physical and economic access at all times to safe, adequate, and nutritious food that meets their dietary needs for a healthy and active life. (FAO, IFAD, UNICEF, 2019).

Cash transfers: These includes all forms of cash payment which are regular but non-contributory by either non-governmental organizations (NGOs), government, families, individuals within the border of a country or outside which aim to alleviate un-anticipated shocks resulting from poverty, economic vulnerability and social risk.

Regular non-contributory cash payments made by the government or non-governmental organizations (NGOs) to individuals or families to alleviate lingering or shock-induced poverty, minimizing social risk, and lowering economic vulnerability. (MMYE, 2007).

Effectiveness: Effectiveness refers to how well an intervention met, or is projected to meet, its goals and outcomes, including any differences in outcomes between

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groups.(ECLAC, 2010). The term "effectiveness" in this study refers to the extent to which the LEAP Programmes complementary services help recipients achieve household food security.

2.3. LEAP in Ghana: An Overview

This programme called LEAP is a flagship of Ghana's social protection intervention. It started on a pilot basis in March, 2008. The programme offers severely poor homes with conditional and unconditional fund transfers to help them satisfy their basic requirements and ultimately transition out of poverty.(MMYE, 2007, p. 11). The LEAP is based on the success of United Nation Children's Fund (UNICEF)-funded initiatives carried out by the Department of Social Welfare and Community Development under the direction of the Ministry of Gender, Children, and Social Protection. The programme (LEAP) covers the health insurance cost of beneficiary households**.** The three (3) main objectives of the LEAP's programme are to reduce extreme poverty, hunger, and starvation among the extreme poor, to increase access to and participation in education for extremely poor Orphaned and Vulnerable Children (OVC) aged 15 and under, and to empower caregivers to acquire hands-on skills and resources to break the intergenerational poverty cycle (MoGCSP, 2015b).

Individuals above the age of 65 who are also severely poor, as well as people with disabilities and no productive capacity, pregnant women, and mothers with children under the age of one year, are all eligible for unconditional transfers. Payments to caregivers of orphans and children who are vulnerable, as well as those amongst them who have been infected with HIV/AIDS, despite the fact that there are no penalties for non-compliance, and include: enrolment of children in schools, attendance at school, registration of births,

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utilization of antenatal and postnatal services, full immunization of children, protection of children from child labor, and enrollment in the National Health Insurance Scheme (Alatinga *et al.,* 2019; Owusu-Addo *et al.,* 2020).

The LEAP eligibility criteria are based on a person's poverty level and whether or not they have a family member who falls into one of the four (4) demographic categories. That is, households with orphans and vulnerable children, people over the age of 65 who are destitute, severely disabled people who are unable to work, the mothers who have under aged children and the pregnant ones (Owusu-Addo *et al.,* 2020). In 2015, a new eligibility criterion was added, focusing on pregnant women and mothers with children under the age of one year. Due to the critical role of cash in livelihood needs of the rural poor, cash transfer is central pivot of the LEAP. As a result, the LEAP in combination with other social security services is being proving to be effective. Amongst this other service in which it has been combine include the; Ghana School Feeding Programme (GSFP), National Health Insurance Scheme (NHIS), and Capitation Grant. Based on this, all LEAP guarantee households are automatically registered in the National Health Insurance System (NHIS), allowing them to receive free health care (Alatinga *et al.,* 2019).

The department of social welfare oversees LEAP, which is also an oversight responsibility of the Ministry of Gender, Children and Social Protection. A LEAP directorate exists in each of Ghana's sixteen (16) regions, which is led by the Regional Officers of the Social Welfare Department. The District Director of the Department of Social Welfare and Community Development and, in some situations, a LEAP focal officer is appointed at the district level. The District LEAP Implementation Committee

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(DLIC), made up of the Information Director, Health Director, District NGOs/CSOs, District Director of Education, and the District Chief Executive, assists the District Director of the Department of Social Welfare and Community Development in implementing the LEAP programme. The DLIC ensures that underserved areas of the district are picked. A community LEAP Implementation Committee (CLIC) identifies and selects beneficiary families, who are then validated by Ministry of Gender Children and Social Protection at the community level. These many procedures of targeting recipient families via the DLIC and CLIC practically reveal the elite capture selection process.(Alatinga *et al.,* 2019; Devereux, 2012). For this reason, the government implemented objective targeting and a transparent instrument in the form of a Proxy Means Testing (PMT) process for the selection of recipient households in the final (Ragno *et al.,* 2016). The Proxy Means Testing approach uses income levels and housing situations of potential beneficiaries to arrive at the actual recipients. For all government-sponsored social assistance programmes, the PMT technique was proposed as a national approach for selecting applicants (Alatinga *et al.,* 2019). Between 2008 and 2012, the LEAP programme targeted and reached just 1,654 beneficiary homes in 21 designated districts, and it was still a test programme. LEAP had reached a total of 213,048 families in 216 districts as of April 30th, 2017, benefiting approximately 943, 842 people throughout the country (Ragno *et al.,* 2016)

The cash advancement amount has been amended twice since the LEAP's launch, in 2012 and 2015, and transfer amounts determined by the number of recipients in a family. The amounts paid to receivers have climbed significantly from GH8 to GH₵15 (about USD$8–15) per month in 2008 to GH₵64 to GH₵106 (approximately USD$15–25) in

2015. Cash transfers ranges from GH₵64 to GH₵106 since programme inception. Table 2.1 presents a breakdown of the cash transfer payment per household.

Table 2.1: LEAP Bi-Monthly Payment

Households category	Total cash payment to households Beneficiary	
	Bi-monthly Payment Amount (GHc)	**Annual Payment Amount (GHc)**
Household with One eligible beneficiary	64	384
Household with two eligible beneficiary	76	456
Household with three eligible beneficiary	88	528
Household with four and more eligible beneficiary	106	636

Source: Authors construct, (2021).

Beneficiary Families receive LEAP cash transfers every two months through the E-zwich platform, and with an Upgraded LEAP Management Information System (MIS) to do an automatic payment reconciliation with payment information from Ghana Inter-bank Payment and Settlement Systems (GHIPSS) (MoGCSP, 2017, p. 10).

The Government of Ghana (GoG), UNICEF, World Bank, DFID, are among the key financial supporters of the LEAP programme. The Ghanaian government contributes 47 percent of the funds, while the World Bank, DFID, and UNICEF each provide 28 percent, 22 percent, and 3 percent, respectively (Alatinga *et al.,* 2019). Since the inception of LEAP, there has been a political commitment by successive governments to ensure the LEAP financial viability. Over the years, the LEAP budget estimates allocation has been amended upwards from 2017 to 2020. That is from GH₵80 million in 2017, GH₵168.2

million in 2018, GH₵168 million in 2019, and GH₵200,746,481 in 2020 (GOG, 2020; MoGCSP, 2019; UNICEF, 2019).

2.4. An overview of existing forms of social protection policies in Ghana

All actions in social protection programmes are geared toward a long-term aim of assisting the vulnerable population in minimizing poverty and ensuring food security amidst variety of hazards and shocks. Ghana has proved, among other African countries, its democratic stability and efforts to eradicate extreme poverty through numerous social safety programmes (Abebrese, 2012). A continual stream of policy measures aimed at alleviating poverty and preserving economic stability has been implemented over the years. As a result, the purpose of social protection programmes is to alleviate poverty while also acting as a buffer against various risks and shocks by ensuring social and economic stability among vulnerable populations (MoGCSP, 2015b).

Social protection measures in Ghana are a combination of two policy frameworks; that is those based on states financial support to employees and those based on contributions of employers on social security schemes usually in the formal sector employment. This is primary to support for healthy life, secure retirement, and income securities at old age. This form of support benefits only those in the formal sectors of the economy and exempt an important majority of the rest of the population (Abebrese, 2011). Table 2.2 summarizes some important social protection interventions in Ghana in a chronological manner.

Table 2.2: Existing Social protection Policies in Ghana: An Overview

Year	Programme/Strategy/Law	Description/focus area
1965	Social security act	Invalidity and survivors' benefits, provident fund system, lump-sum payments for the elderly
1991	Social security law	Conversion of a provident fund plan to a pension plan (SSNIT)
2002-2005	Ghana growth and poverty reduction strategy (GPRS I)	Established in order to achieve the Millennium Development Goals of the United Nations
2003	National Health Insurance Scheme (NHIS)	Introduction of a health-insurance contribution system
2005	Ghana School feeding programme (GSFP)	Every schoolchild gets one hot lunch per day
2006-2009	Ghana growth and poverty reduction strategy II (GPRS II)	The goal is for Ghana to achieve middle-income status by 2015
2007	National social protection Strategy (NSPS)	Several social protection programs were launched as part of the approach.
2008	Livelihood Empowerment Against Poverty Programme (LEAP)	Cash transfer for vulnerable households

Source: Abebrese (2011)**.**

2.5. LEAP Components and Complementary Services in Ghana

2.5.1. Ghana School Feeding Programme (GFSP)

The Ghana School Feeding Programme provides social support, encourages children to attend school, improves dietary intake needs, and supports local food cultivation efforts by providing access to market for farm produce (MoGCSP, 2015a). As a result, the school feeding programme can be seen of as a social service that complements the LEAP cash transfer intervention. School feeding programmes are targeted social safety net method which delivers health and educational benefits to the most vulnerable children with the goal of increasing enrollment rates, decreasing non-attendance, and improving household food security (Yendaw & Dayour, 2015). Despite the fact that the Ghana School Feeding Programme may give farmers in the rural areas with an organized market value in a year of around Ghc10,000.00 in direct investment, allowing them to develop and improve production (Biliguo, 2020). The GSFP is further linked to the National Food Buffer Stock Company (NAFCO) for provision and supply of food stuff to cater in the respective intervention communities. This addresses issues of accessibility and guarantees food quality. The Ghana School Feed Programme requires a reliable and viable funding with a strict organizational measure, committed staff and instituting learning outcomes for accountability of which can help spread the benefits of GFSP to the LEAP payment programme, which is aimed at improving household food security.

2.5.2. Free National Health Insurance

Complementary service programmes are critical for education, health and nutrition advantages, greater well-being, and a boost in their potential to escape poverty (Miller &

Tsoka, 2010)**.** Act 650 of 2003 (as amended in 2012 to become Act 852) is expected to assist efforts to provide basic health care to the communal, public, and private sectors. The Act (650, 2003, amended in 2012 as Act 852) aimed to ensure improve the ability of the poor to access services, equal access to health services, protect the vulnerable from economic risk, administer the NHI Fund, and handle issues through a system that allows NHIS members and health providers to solve problems at the grass roots level. Children, pregnant women seeking antenatal care, birth, and postnatal treatment, mentally sick patients, the poor, Social Security and National Insurance Trust clients, those who have disabilities, and anyone over the age of seventy (70) are all exempt. Under Act 852, LEAP recipients (caregivers, OVCs, PWDs, and the elderly poor) are classified as indigents by the Ministry of Gender, Children, and Social Protection (Biliguo, 2020). The Ministry of Gender, Children, and Social Protection (MoGCSP) and the National Health Insurance Authority (NHIA) have agreed to register all LEAP grantees for free on the National Health Insurance System (NHIS). Over 1.8 million people have been identified as beneficiaries of Ethiopia's Cash Transfer program, which has seen an increase in Indigent Health Fee Waiver over time. The majority of the respondents who are beneficiary used more of a health services as compared to their counterparts who are non-beneficiaries. This information is expected because LEAP participants are freely enrolled in the NHIS, which records their frequent visits to health care facilities. In recent decades, social safety net programmes have grown quickly as a tool for combating extreme poverty and food and nutrition insecurity.

2.5.3. Ghana Education Capitation grant

In 2005, Capitation Grant for Basic Schools was introduced in Ghana to give financial help in government schools for non-salary expenses depending on enrolment. This was supposed to do away with the necessity for a tuition charge. The Capitation grant was marked by delays in transferring money to schools(Amoako, 2014). According to a study of the literature, no studies have been conducted on how school capitation linked in complementary the LEAP funding programme towards home food security. However, it should be noted that the capitation grants' design is a social protection measure in and of itself, and they can be used in conjunction with the LEAP cash transfer program to help attain household food security.

2.5.4. Agricultural input support

Agriculture development and social protection programs are integrated through Food and Agriculture Sector Initiatives. The target of the Ghana's Ministry of Food and Agriculture (MoFA) is the people who are at risk and vulnerable with a variety of involvements which can strengthen social protection, including inputs (seeds and fertilizer) subsidies, free planting materials for farmers, Northern Rural Growth Program and credit support under the rice sector initiative and rural and agricultural credit youth in agriculture rural and agricultural credit youth in agriculture (Martin & Hurley, 2019). Agricultural support programs can be used in conjunction with social cash transfers to help maintain social protection outcomes. According to Nyasha Tirivayi (2016), at the family and local economic levels, there are probable linkages between agriculture and social protection. Food security was improved among customers who received about half of the anticipated

grants, according to research conducted in Ethiopia by Productive Safety-Net Programs (PSNP) (Agnes Akosua Aidoo, 2017; Biliguo, 2020). The planting for food and jobs program (PFJ) can also augment the social protection (LEAP) Programmes in reducing food poverty amount LEAP beneficiaries' households. The PFJ programme aimed at increasing farm productivity, income and to help reduce the incidence of poverty (Dagunga *et al.,* 2021).

2.5.5. Micro Finance/VLSA support

In most circumstances, the terms microfinance and microcredit have been used interchangeably (Chliova *et al.,* 2014). According to DFID (2011), Complementary services can help people find new ways to make a living, improve their access to money, and learn about different financial options. Microfinance programs have been highlighted as LEAP cash transfer programme components/complementary services. The issue of collateral which is usually a prerequisite for taking loans from microfinance institutions in Ghana services as a constraint to access to credit by poor, particularly in the rural areas. Village Savings and Loans Associations (VSLAs), which are based on the model of rotating savings and credit associations (ROSCAs), which bring together people who can pool their savings to provide a funds lending source by charging interest toward the growing of funds and are designed to address the credit needs of rural people (Gifty *et al.,* 2021). The approach offers the economically weak in society an alternative to reducing poverty by combining borrowing and investing in their daily life as a strategy of poverty alleviation. The term "micro-finance scheme" is used in this study to refer to the issuance of modest loans to the households with low income and are poor primarily

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LEAP participants, in augmenting the LEAP cash transfer programme for home production or consumption. This will help improve household food security.

2.6. Social Cash Transfer and Household Food Security

It is known fact Asia, Latin America, and Sub-Saharan Africa suggests that cash transfers have direct effects on overall household consumption, particularly household food consumption. According to the DFID (2011), evaluation of evidence on cash transfers, "it's a consistent finding that cash transfer is connected to the effect of cash transfers programmes is its involvement in ensuring food security and reduction in hunger. Irrespective of the transfer type, a higher proportion of the income of those who receive transfers is being spend on food. Cash transfers have had the greatest influence on hunger in low-income nations, where poverty is often the worst. Households with extra income are more inclined to focus spending on improving the quality of food that is being consumed. This is supported by evidence from countries in Sub-Saharan African and Latin American (Groot *et al.,* 2015; Holmes & Bhuvanendra, 2013; Owusu-addo, 2014; Tiwari *et al.,* 2016; Vincent & Cull, 2009). In Malawi,75% of cash transfers were spent on groceries (DFID, 2011). Also, increase in income through cash transfer is also invested to improve household agricultural production for own consumption (Slater *et al.,* 2014). In a related trend, the research of Alatinga *et al.* (2019) on Community Experiences with Cash Transfers in Relation to Five SDGs which focus on LEAP programme indicated better food security as a major benefit of the LEAP programme. Sulemana *et al.* (2018) discovered that a considerable amount of families used the money to buy food for their families in the LEAP programme in Karaga district, Ghana. Despite this, the study was unable to determine if the beneficiaries' households are now food

secure as a result of the LEAP grant transfer. On the contrary, Handa *et al.* (2015) found no influence on consumption in their research on the LEAP Programme - Impact Evaluation Report. In the majority of beneficiary households, dietary diversification was also improved (Bhalla *et al.,* 2018; Miller *et al.,* 2011).

2.7. Targeting

Targeting is the most important phase in the execution of social protection programmes, according to the relevant literature examined so far. LEAP programmes intended to assist the vulnerable and the poor as well as individuals who fit into one of numerous categories, including the children, elderly, and people with disabilities. Because of the programmes efficacy and buy-in, the topic of who and how social protection programmes (cash transfers) should be targeted or delivered is critical (Attah, 2017). As a result, diverting resources to those who are most in need, helps in the saving of money/resources and further reduces errors of inclusion and exclusion. Proxy means testing and a community-based selection approach are used in the LEAP programme as a mix of targeted methods. The selections is premised on the Ghana Statistical Service's poverty mapping of the district. Poverty, a high percentage of child labor, HIV/AIDS prevalence, and access to social assistance are just a few of the variables considered throughout the selection process (MMYE, 2007). The District LEAP implementation committee (DLIC) and the community LEAP implementation committees (CLIC) work together to carry out the LEAP programme. The District LEAP Implementation Committee is made up of the District Chief Executive, a representative from the social services subcommittee, a representative from the assembly men and women, the district director of education, the district director of social welfare and community development, the Department of

Children Director, the District Health Director, the District Information Service Officer, the District Planning Officer, and others. According to Devereux (2012), Community-based targeting is popular in social protection programmes, because it makes use of local knowledge to identify the poorest and most vulnerable individuals of the community, allowing outsiders and insiders to share information. It also appears to be a more inclusive and 'bottom-up' approach to testing recipients' identity than externally administered methods such as the proxy means test. The mechanism of targeting poorer beneficiary households is crucial in assessing the impact of household food security or otherwise of the LEAP programme. On the other hand, community-based targeting is prone to elite capture by wealthy and powerful organizations, as well as the replication of local power structures, which could result in many underprivileged community members being excluded rather than included in the program (Devereux, 2012). He argues that this requires a new solution to the targeting challenge. The 'Triangulated community wealth ranking,' which has been used successfully in Malawi to target emergency cash transfers in response to drought-related food insecurity, is more robust than relying on community leaders or an elite-dominated committee to make decisions, and it also ensures that minorities, such as women, are heard (Devereux, 2008). Better targeting results will be attained as a result of this. This method to targeting that emphasizes "social justice" has the ability to directly increase household food security (Devereux, 2012). However targeting implementation requires skill, time and money (Attah, 2017; Mkandawire, 2005). Especially proxy mean test which requires verification of households socio-economic characteristics situations. For an effective and error free process of targeting needs regular monitoring from Implementing Agencies which often involves increases in

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cost (Attah, 2017). Because there are so many weak institutions, and poor infrastructure in low-income nations, identifying those who truly require this cash transfer can be difficult. This must be considered in the context of high poverty rates (Joha, 2012). According to Amartya Sen (1995),"the more accurate a subsidy is in really reaching the poor, the less wastage, and the less it costs to fulfill the specified aim, it's an issue of cost-effectiveness in getting a specific benefit," As a result, targeting has a number of advantages. The first is to ensure that the correct beneficiaries receive the funds, and the second is to decrease waste and costs associated with benefit delivery. Aside from self-targeting, LEAP targeting mechanisms necessitate the acceptance of a potential beneficiary's application or the determination of a beneficiary's eligibility by a government official (Joha, 2012; MMYE, 2007). Given that, Ghanaian society places a high value on social ties and family, putting relationships above regulations in all aspects of life, this generates preconceptions, not to mention the cost of going through these processes (Attah, 2017). As a result, officials are more likely to make exceptions for their friends and associates, and vice versa.

2.8. Indicators used in measuring food security

Food security, which supports people's health, productivity, and frequently their very existence, continues to be a major development concern around the world (Smith and Subandoro, 2007). The creation of sound policy recommendations, the identification of vulnerable populations for help, and the evaluation of programmes and projects all require accurate information on the measurement of food security (Burke and Lobell, 2010). However, because the phrase is so complicated and has so many facets, measuring food security is sometimes fraught with difficulty. Despite these challenges, there are

scientific indicators that are methodically developed and validated for measuring food security and largely concentrate on identifying people's dietary and nutritional needs. Experts advise using information on a range of distinct situations, experiences, and behaviors that serve as markers of varied degrees of severity of the condition in order to ensure accuracy and avoid biasness in gauging food security (Bickel et al., 2000).

Indicators of food security have been used in a variety of scenarios to evaluate and comprehend the condition of food security within and among nations as well as the conventional measures of food security for the person and the household. According to Carletto et al. (2013), a number of variables, such as food consumption scores, months of adequate food provision, and household food spending, among others, can be used to assess food security. At the individual, household, and national levels, these indicators can be gathered and measured. Once more, the choice of using food security indicators relies on the researcher's field of study or expertise. For example, food security analysts concentrate on the amount of food that is available for consumption, whereas economists and poverty analysts are more interested in the amounts of food that are actually consumed and the amount of money spent on purchasing it (Pérez-Escamilla et al., 2017). Consumption expenditures, dietary diversity, and household food insecurity access scale measurements are frequently used indicators that can be found in the literature and used by many economists.

2.8.1. Household Consumption and Expenditure Survey

The value of all households' consumption, which includes in-kind and outright purchases of goods and products as well as domestic production, is described by household expenditures. The procedure gathers data on household spending on both food and non-

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food products, which will be translated from monthly spending to annual spending. Household Consumption and Expenditure Surveys (HCES) are frequently used to measure consumer prices as well as examine food trends, poverty, and household economic status (Jones et al., 2013). According Jones et al. (2013), HCESs are highly favoured despite being more expensive than Food Frequency Questionnaires and Dietary Diversity measures since they are less expensive and time-consuming compared to dietary recall. HCESs are also preferable because they are more likely to be accessible and most governments regularly conduct them for purposes other than measuring food insecurity. Data generated from HCES are considered quality and often used for: a) identification of households at risk of food insecurity; b) mapping food insecurity national, regional and local level; and finally c) assessing the impact of food, nutrition and anti-poverty programmes (Fitzgerald et al., 2008). HCES is a superior strategy since it measures food acquisition rather than food consumption (Jones et al., 2013); and b) cannot be administered frequently and consistently due to the time needed to collect the information (Carletto et al., 2013).

There are many methods to define food consumption. Food security experts look at how much food is available for household use, while economists and poverty analysts analyze how much money is spent on food purchases. Nutritionists, on the other hand, are primarily concerned with how much food is actually consumed. To create consumer pricing indices (CPIs) or to update national accounts, HCES gathers data on food. In essence, the food data gathered refers to the food products bought by households within a specific reference period.

HCESs have grown throughout time to include households' food purchases made through gifts, cash, domestic production, and payment-in-kind.(Jones et al., 2013). HCESs are designed to collect food that has been acquired with the intention of being consumed later. Studies have gradually shifted their attention to the actual meals consumed as well as the varied ways that food was obtained. Researchers are worried about the systemic disparities in the approach used to collect data on food utilizing surveys of the acquisition, consumption, or combinations of these two categories.

2.8.2. Dietary diversity measures

Dietary diversity (DD) is one of the key proxies or measures used to gauge food security. By counting the number of foods or food types consumed throughout a reference period, dietary diversity measures food access. (Carletto et al., 2013). Dietary Diversity measures have been shown to have a relationship with calorie sufficiency and can be used in a variety of contexts as proxies for diet quality(Pérez-Escamilla et al., 2017).

2.8.3. Household Dietary Diversity Score

Household surveys that focus on dietary requirements are a more practical way to evaluate household food security. Dietary diversity is frequently used as a gauge of food security. DDS is distinguished from and applied at various levels as the household dietary diversity score (HDDS) and the individual dietary diversity score (IDDS), which also includes the child diversity score (CDDS) and the women's dietary score (WDDS) (Habte & Krawinkel, 2016; Swindale & Bilinsky, 2006). A measure of food security at the household level called the household dietary diversity Score counts the amount of nutrient-dense foods or food types a household consumes during a specified time. (Hatløy et al., 2000; Workicho et al., 2016). It is a common instrument often used by USAID to

assess programmes (Deitchler et al., 2010). HDDS often times uses a recall period of 24 hours or 7 days or 30 days interval. For the recall periods, this method heavily relies on the research participants' memories. The nutritional value of a person's meal, specifically the amount of micronutrients in the meal, is measured using the IDDS indicator (Levi et al., 2001).

The main advantage of this method for assessing food security is how accurately it measures nutritional quality and caloric consumption.(Coates et al., 2007; Swindale & Bilinsky, 2006), adequate measure of the variety of foods and food groups within the meal which ensures enough intake of vital nutrients and promotes good health (Workicho et al., 2016). This element is essential for accurately estimating the variety of food that households can purchase and consume, and the higher the score, the better the nutritional variety. Evidence from numerous industrialized countries demonstrates that dietary diversity is certainly strongly correlated with nutrient sufficiency and is therefore a crucial component of a high-quality diet. This approach to measuring food security is also preferred and regarded as attractive because it can accurately record food that was consumed but was not readily available to the household at the time of the survey; once more, the approach can address dietary quality in addition to calorie intake at the individual level. Understanding recent and long-term dietary intake habits is particularly helpful. This strategy has drawn a lot of criticism. For instance, this approach, according to Shim et al.(2014), is biased, costly, and time-consuming, frequently requiring multiple days to assess usual intake. Numerous research have found that different numbers of food groups are required for the calculation of dietary scores, and the ideal range of food groups that should be used to determine this range has not yet been thoroughly

investigated and defined (Habte & Krawinkel, 2016). Once more, DDS frequently omits information on the amount of food ingested as well as the frequency with which different food groups are consumed.

2.8.4. Household Food Insecurity Access Scale

The HFIAS is a scale that quantifies and summarizes the various behavioral and psychological elements of food insecurity (Coates *et al.,* 2007). The Food Insecurity Access Scale (HFIAS), is a modification of the Household food security survey model (HHFSM) designed for use in poor nations, measures access to food (Deitchler et al., 2010). The HFIAS measures the severity of Food Insecurity(FI) by asking questions about three aspects of family Food insecurity: anxiety and skepticism about the availability of food, inadequate quality and amount of food intake, and the physical effects of these factors.(Pérez-escamilla et al. 2017). The HFIAS questions allow for the calculation of four different sorts of indicators: Household food insecurity access scale score, domains linked to FI access, conditions connected to FI access in households, and prevalence of FI access in households are all listed.(Coates *et al.,* 2007). The HFIAS can be used to: a) measure FI status within regions or households; b) track and analyze the results of interventions or programs; and c) identify initiatives that need to be targeted.(Jones et al., 2013). A home gets a score of 0 if there is no evidence of food insecurity (better food access). A food-secure household with a high frequency of eating less desired items and skipping meals because there is insufficient access to food has a maximum score of 27 (Coates *et al.,* 2007; Issahaku and Abdulai, 2019).

HFIAS has been discovered to be applicable and intelligible in a variety of situations, including both urban (Mohammadi et al., 2012) and rural (Knueppel et al., 2010) settings.

One of its weakness is that, several of the questionnaire's items do not adhere to strict psychometric standards for cultural invariance (Deitchler et al., 2010). International organizations such as the World Food Programme (WFP), FAO, and USAID have used these indicators in conjunction with other metrics to assess food security in various developing country surveys. (Maxwell, Vaitla and Coates, 2014).

CHAPTER THREE

METHODOLOGY

3.1. Introduction

The methodology for the investigation is described in this section. The study area, study design, target population, data source and types, sample methodologies, conceptual frameworks, theoretical framework, and data analysis method are all part of it.

3.2. Study area

3.2.1. Study Area

The research was carried out in the Tolon District of the Northern Region of Ghana. LI. 2142 established the Tolon District Assembly in 2012, with Tolon as the district capital. Previously, the district was named as Tolon/Kumbungu, and it was one of 45 districts established in 1988 by Provisional National Defense Council (PNDC) Law 207. Kumbungu became a separate district after the creation of 42 new districts in 2012, resulting in the formation of the Tolon District. The District has a total number of 173 communities(DPCU, 2014).

The District's projected population according to Ghana Statistical Service stands at 72,990. The Males are 36,360 (49.8%) and the Females are 36,630 (50.1%) (GSS, 2014). This indicates a slightly female dominated population. The dependency ratio in the District is estimated to be 96.5 percent, compared to 96.8 percent across the Region (DPCU, 2014). This means that nearly every working individual in the District is responsible for the care of at least one other person.

The district has a single rainy season that starts in late April and peaks in July and August before gradually diminishing and finally ceasing between October and November. The average yearly rainfall is between 950 and 1,200 mm. The dry season runs from November to March, with temperatures ranging from 330 to 390 degrees Celsius during the day and 200 to 260 degrees Celsius at night. Storms are common in the area, and depending on the frequency and power of the storms, they can cause base soil erosion, especially at the end of the dry season. Because of the short rainfall duration, staple crop farming, for example, is severely constrained. Characterised by Harmattan mostly between October and December. These winds, normally blow across the District from the North-East of the Sahara Desert to the South-West. It comes with cold and dry temperature in the morning and night but warm in the afternoon causing significantly daily temperatures to rise. Between March and April, maximum day temperatures of approximately 45°C have been recorded, with minimum night temperatures of around 12°C recorded in December and January. Humidity levels can reach 95 percent at night and drop to 70 percent during the day between April and October. For the rest of the year, night time humidity will be between 80 and 25 percent. Around February to April, the average annual day sunshine is roughly 7.5 hours, resulting in temperatures that are generally mild, dry, and foggy. The District generally sunny environment provide a great potential for solar electricity generation. It is also significant to note that, the nature of weather and temperature is a contributory factor to the one seasonal farming associated with farmers in the area.

The major vegetation is grassland, which is interspersed by guinea savannah forest, which is characterized by drought-resistant trees like as acacia, mango, baobab (Adansonia

digitata Linn), shea nut (Vitellaria paradoxa), dawadawa, and neem (Adansonia digitata Linn) (Azadirachta indica). Sheanut, dawadawa, and mango are three major tree species that are economically important and serve an important role in the people's lives. There's also neem, which is mostly used for medicinal purposes. Extensive woodlands and forests in river valleys (especially regions within the basin of the White Volta and its tributaries) are gradually changing due to the inflow of humans. Bush fires, which rage through the savannah woods every year, also have an impact on the vegetation. As a result, education and severe measures are required to decrease bushfires.

Tolon District's economy offers numerous options for private investment and joint venture partnerships between the private and public sectors. In the agricultural sector, research have shown that irrigation farming along the White Volta's banks is possible and can be done all year. At Golinga, there is a dam with a small-scale irrigation system for farmers to cultivate a variety of crops ranging from vegetables to cereals. According to available information, the Tolon District has a comparative advantage over the other districts in the northern region because of its varied potentials. The District Assembly strongly supports dry-season farming through its National Youth Employment Programme (NYEP). Equally the Rural Enterprise Programmes (REP) aims at promoting business development and promotion at the district. The district has a lot of pasture that can be used for animal production. There are also good breeds of cows, sheep, goats, and pigs in the district, as well as a small but growing poultry sector. Around 74 percent of the district's workforce is employed in this industry. This reflects the economy's rural roots. In both rural and urban areas, the majority of the district's residents cultivate food crops like as maize, rice, groundnuts, yam, and others. Farming is done with hoes and

cutlasses, which is a traditional approach. Animal traction and a few tractors are used in some circumstances to mechanize food production. The traditional methods of farming are often associated with poor yields. The yield from cultivated land demonstrates that, in most circumstances, the production falls short of expectations. As a result, farmers are dissatisfied with the situation, and many of them are looking for new ways to supplement their income. As a result, farming is no longer appealing to certain people, particularly the youth. The industry requires some innovation in order to re-establish itself as a viable source of income for the general public.

Figure 3.1 indicates the map of the Tolon District showing the study communities.
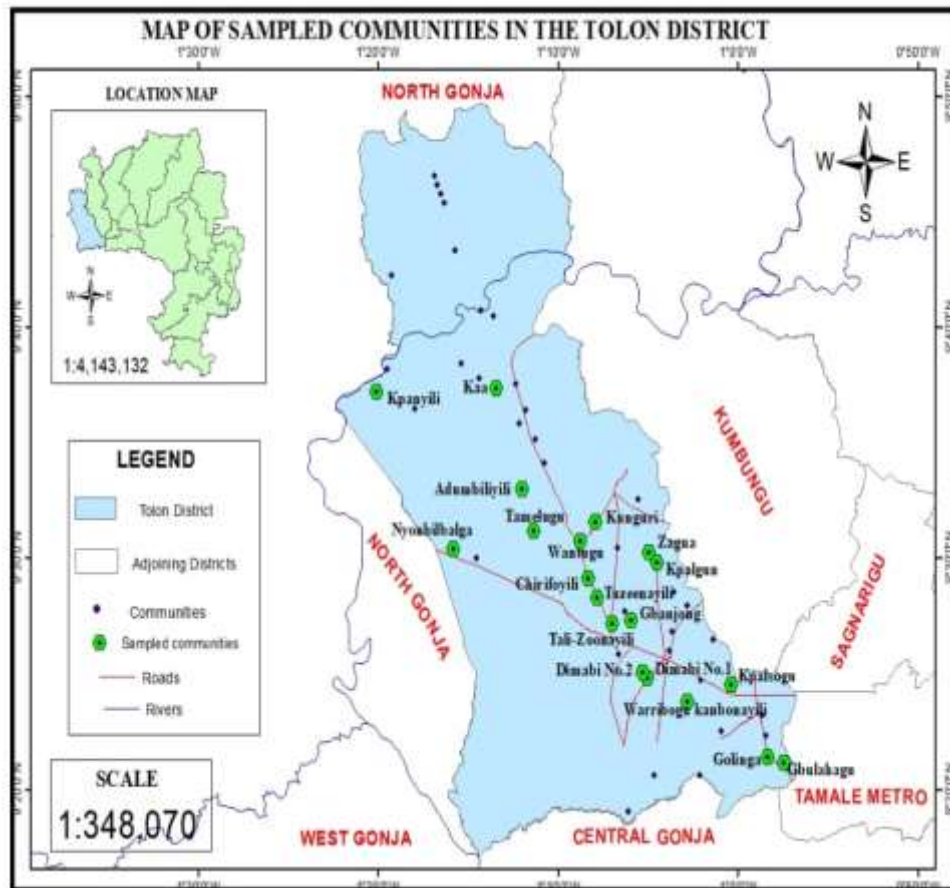

Figure 3.1: A Map of Tolon District showing sampled communities for the study
Source: DPCU, (2014)**.**

3.2.2. Food security

The people of Tolon District mainly rely on local produce from farmers. Cereals (99.8%), legumes (88.3%), and tubers (80.6%) are grown by the majority of farming households, but vegetables and fruits are grown by 35.7 percent and 15.3 percent of farming households, respectively (GSS, 2014). Tomatoes, peppers, onions, okro, and garden eggs are among the others. Cotton, tobacco (which is grown as a revenue crop as well as for local consumption), cashew, and sheanuts are among the industrial crops grown. The majority of the people here are subsistence farmers who eat only what they grow. As a result, there isn't much left to sell. Smallholders also raise livestock and poultry, which they use as a food security adaptation or Mitigation Avenue for the rural poor when the rains fail or the barns are empty. LEAP in this sense will also serve as a buffer stock for the vulnerable households in the district. The fundamental issue confronting agricultural production is the hazardous environment for crop growing, as evidenced by periodic farmland flooding, unfavorable climatic conditions (drought), irregular rainfall, perennial bushfires, and deteriorating soil fertility. However, some of these challenges, such as inefficient farming techniques and fuel wood poaching, are the result of inadequate environmental management. In most households, firewood is the primary source of energy for cooking, as per the findings of a baseline research. These actions increase the problem of land degradation, eventually leading to desertification in the District.(DPCU, 2014).

As shown in the District poverty mapping, When compared to the national average, the standard of living is frequently low (GSS, 2015). The People make very little money and are unable to save in order to build up capital for development. A household's average

monthly income is around GH20.20. The district is one of the many poor districts in the country because the bulk of its residents are peasants and subsistence farmers who find it difficult to even sell portion of their produce. As a result, the majority of the youth are fleeing to the South in search of jobs that do not exist. Thus, The District is well-known for serving a vital role in the spread of the national canker 'Kayaye.' This, along with other difficulties like as hunger and unemployment, can attest to the district's low standard of living. The Tolon District has an average of 1.9% of its population being disable compared to the Northern Region of 2.5 percent and the national average of 3.0 percent (GSS, 2014).

The vast majority of these people, around 91 percent of the disabled population, reside in rural areas. As a result, a higher proportion of PWDs exist in rural areas than urban areas. PWDs have a poor level of educational achievement. Only 25% of PWDs are literate, despite the fact that 75% of them cannot read or write in any language. In the entire district, less than 5% of all PWDs have completed secondary school. Furthermore, the majority of PWDs in the District are unemployed (65%), with only 0.9 percent employed and 33.2 percent unemployed. The number of male disabled workers outnumbers the number of female disabled workers. Visual or sight impairment accounted for 41% of all reported disabilities in the district, indicating a higher proportion of the population with these physically challenged (ibid). This could be a reflection of the fact that, Acute Eye Infection has been among the Top Ten (10) cause of OPD attendance. The situation generally makes these people venerable in terms of education, employment and other needs of life. Though the Assembly through its Common Fund (DAC) is providing financial support to some of them. In addition, the most vulnerable including poor

pregnant women, children, the aged, severe PWDs, orphan among others, about 1805 people are currently benefiting from the LEAP programme.

3.3. Sampling frame and design

A simple random sampling procedure was used to choose respondents from a list of district beneficiaries and non-beneficiaries. The targeted LEAP beneficiaries' year group was from 2008 to 2013 for the study. A neighbouring non-beneficiary community with similar characteristics was chosen for each beneficiary community (supposed beneficiaries who were targeted in 2015/2016 but did not enrol to benefit from the LEAP initiative). The selection of LEAP recipients was unequal among the examined neighbourhoods in the district, and selectivity bias was easier to account for by using a probability proportional to size (PPS) sampling approach. To choose both beneficiary and non-beneficiary families for the study, a multistage sampling approach was used. In the first stage, the Tolon District was chosen because it is among one of the top five (5) poorest districts in the Northern region, according to the poverty map (GSS, 2015) and it is also a LEAP implementation district. This was followed by a simple random sampling of nine (9) beneficiaries and non-beneficiaries in neighbouring communities across the district. At this time, each beneficiary community was paired with a non-beneficiary community that served as the control. In all, a total of nine (9) communities each were considered randomly for the study from both beneficiaries and non-beneficiary communities respectively. In all eighteen (18) communities were chosen for the study.

The target demographic was divided (stratified) between LEAP beneficiaries and non-beneficiary households in the second stage. Prior to the study, a list of LEAP beneficiary households was obtained from the Department of Social Welfare and Community

Development respectively. The list indicated that, there were 1,805 LEAP beneficiaries' households and 1,442 non-beneficiaries' household (even though they were targeted, but yet to be enrol into the LEAP programme since 2015/2016) during the period of the data collection in the district. Two hundred (200) beneficiaries were randomly selected spreading across the district. Also, two hundred (200) non-beneficiaries with similar characteristics were randomly selected to match the beneficiaries for the study. Considering the fact that the beneficiaries were more than the non-beneficiaries, we admit that we could have used proportional sampling to select proportionately more beneficiaries than non-beneficiaries but we also felt that by picking equal samples we could do a more effective comparison of the LEAP programme in terms of home food security among the treated and the untreated group.

Finally, using the probability proportion to Size sampling approach, LEAP beneficiaries and non-beneficiaries were randomly selected from each designated community. The sample size for the investigation is summarized in Table 3.1.

Table 3.1: Summary of the sample size for the study by PPS

Households	Name of Community	Total Number	Sample size
	Gbulahagu	89	36
	Golinga	47	19
	Dimabi 1&2	38	15
Beneficiaries	Tali-Zoolanyili	159	63
	Wantagu	36	14
	Zagua	15	6
	Gbanjong	52	21
	Chirifoyili	36	14
	Kaa	29	12
Non-Beneficiaries	Kpalsogu	55	19
	Worribogu	74	25
	Kanbonayili		
	Kunguri	102	34
	Tamalegu	85	29
	Kpalgun	73	25
	Kpanyili	63	21
	Adumbilyili	34	11
	Nyonbilbalga	66	22
	Tuzeenayili	41	14
Total sample size		1094	400

Source: Author's construct, (2021).

3.4. Sources and Type of Data

Primary and secondary data were gathered for this study, with an emphasis on social protection and cash transfer programmes. A semi-structured questionnaire was used to obtain primary data from LEAP recipients and non-beneficiaries who were both equally

qualified to engage in the programme. Secondary data was gathered from records on cash transfer implementation in the district, as well as worldwide publications by the World Bank, UNICEF, DFID, and the Ghanaian government, to name a few. The research looked at literature on cash transfers from development partners, academics, and civil society organizations in countries such as Brazil, Mexico, South Africa, Kenya, and Uganda. Again, specify policy documents on LEAP by the MoGCSP and some impact evaluation estimates on LEAP programme were also reviewed. The secondary data was useful in providing greater details on the different perspectives and concerns associated with the implementation of cash transfers in developing countries.

3.5 Conceptual Framework of the Study

This study is based on Figure 3.1, which depicts a typical conceptual framework. By boosting household food spending, increasing the quantity and quality of food, increasing dietary diversity, and increasing household food intake, cash transfers from LEAP will improve household food security. These will intend boost the household nutritional status, decrease morbidity, thus resulting in good health. Additionally, financial transfers from LEAP will promote household investment through increasing crop production, livestock, household assets, as well as increasing income and expected improvements for some of the persons within the household, such as children and adult caregivers. Due to the overall effect, household food security will increase, and poverty will decrease. However, these effects are motivated or limited by two main attribution factors called the enablers (the mediators and moderators). The Mediators are factors that are determined by the programme and so fall into the causal chain directly. For example, social networks may

foster social contact among individuals, allowing for the flow of information and knowledge that may eventually affect their behavior. Also, the program provides health insurance for beneficiaries which enable them to access health care. Thus, the well-functioning of these mediators will enhance the chain resulting to the overall improvement in food security thus improving the general welfare and reduction in poverty. On the contrary, the moderators which from the diagram links with the red broken lines are not influenced by the programme. Cash transfers, for example, may have a milder or larger impact considering the local conditions in the District or Communities. Food availability, market access, and other services, as well as prices, shocks, and literacy rates, are all moderators. Beneficiaries will not receive the full benefit of the intervention if these moderators are absent or inadequate, and vice versa. For instance, the LEAP grant will not have the anticipated impact if prices of goods and services are high such that beneficiaries cannot afford basic necessities such as food with the grant. Beneficiaries will also be unable to benefit from the intervention if they are unable to absorb shocks such as drought, floods, and climate change.

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Moderators
1. Availability of food /quality of services   2. Literacy rate 3.infrastructure
4. Price   5. Shocks 6. Access to market

| INTERVENTIONS | OUTCOMES | IMPACT |

Cash transfer (conditional & unconditional)

Complimentary services/Components of Leap

Free Health Insurance

Education (Capitation)

School Feeding

Micronutrient Support for pregnant/lactating mothers

Agric. input support

Microfinance Support/VSLA

Free School Uniforms

Disability Common Fund

Household Level

Consumption
1. Increase Food
2. Material well-being

Boost Investment
1. Crop
2. Livestock
3. Asset
Reduce Time poverty
1. More time to use services
2. Improved care services
3. More time for labour

INDIVIDUAL LEVEL

Children
1. Increased food consumption
2. Increased dietary diversity
3. Nutrition
Adult-caregivers
1. Increased food consumption
2. Increased dietary diversity
3. More time for

HOUSEHOD

FOOD SECURITY

Mediators
1. NHIS
2. Social network

Figure 3.2: Conceptual framework of the Study

Source: Adapted from MoGCSP, (2016).

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3.6. Theoretical Framework

The random utility maximization theory is the foundation of this research. Following McFadden (1995), this theory is based on random utility and indicates that a household's decision to engage in a social intervention programme and receive benefits is deemed voluntary. A family will weigh the pros and cons of getting a LEAP benefit (Álvarez *et al.,* 2008). One disadvantage of involvement could be the stigma associated with receiving social assistance (LEAP benefits) (De Brauw & Hoddinott, 2011). A household may opt to join in a social protection program only if the utility gotten from participation is seen to be higher than the benefit derived from non-participation in the programme. Assuming U_1 and U_0 are the utilities one drives from participating and not in the LEAP programme respectively, the linear random model for the utility (U_1) derived from one's decision to participate in the programme is expressed as a function of independent or explanatory variables X_i and it is given by:

$$U_1 = X_i \beta_1^{"} + \mu_1 \tag{1}$$

Also, the utility (U_0) one derives for not participating in the LEAP programme is also given as:

$$U_0 = X_i \beta_0^{"} + \mu_0 \tag{2}$$

Where X_i is explanatory or independent variables (such as age, educational level, occupation, etc), β_1 and β_0 are parameters for decision to receive or not to receive the benefits of the LEAP programme respectively, μ_1 and μ_0 are error terms for Beneficiaries

and non-Beneficiaries in the programme respectively. According to (Damodar N. Gujaati and Dawn C. Porter 2006) the error terms in the above equations are assumed to be normally independently and identically distributed. For an individual to make the decision to participate in LEAP, the expected utility derived from participating in LEAP must be greater than the expected utility derived for not participating in it thus $E(U_1) > E(U_0)$.

The probability of participating in the programme is given by:

$$P(U = 1/X) = P[(X_i \beta_I^* + U_1) > (X_i \beta_0^* + U_0)] \tag{3}$$

$$P(U = 1/X) = P[(X_i \beta_I^* + U_1) - (X_i \beta_0^* + U_0) > O/X] \tag{4}$$

$$P(U = 1/X) = P[(X_i (\beta_I^* - \beta_0) - +(U_1 - U_0) > O/X] \tag{5}$$

$$P(U = 1/X) = P[(\beta_I^* X_i + U^*) > 0/X] \tag{6}$$

$$P(U = 1/X) = F(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_n X_n) \tag{7}$$

Where P is a probability function, $\mu^* = \mu_1 - \mu_0$ is a random term, $X^* = \beta_1 - \beta_2$ is a vector of unknown parameters and F is the cumulative distribution function of μ^*. The distribution of "F" depends on the distribution of the error term, μ^*. Given that the effect of X which is a vector of explanatory variables on the response probabilities (Y) can be estimated a binary probit model stated below.

$$Y = (\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_n X_n + U_1) \tag{8}$$

3.7. Method of Data Analysis

The data from the field survey was analyzed using descriptive and inferential statistics in this study. The success of the LEAP program's perceived targeting mechanism and the effectiveness of the LEAP program complementary services towards achieving household food security were assessed using descriptive statistics such as percentages, means, and frequencies. The Endogenous Switching Regression (ESR) model was used to investigate what factors influence participation in the LEAP program and its impact on household food security.

3.7.1. Chi-square tests

The Chi Square (X2) test is without a doubt the most essential and widely used nonparametric statistical analysis test (Manikandan, 2019). The Chi Square test is used to determine whether an actual sample differs from a hypothetical or previously known distribution, such as one that may be anticipated by chance or probability. It's also possible to utilize the Chi Square to compare two or more real-life samples. It is intended for ordinal or nominal data and makes no assumptions regarding normal distribution or variance in the populations from which the samples were drawn. The fundamental disadvantage of nonparametric tests, and the Chi Square in particular, is that they are less powerful than parametric tests. For instance, when the null hypothesis is untrue, people are less inclined to reject it. Because parametric tests are the most powerful tests available, they should be used when the assumptions of parametric tests can be met. Nonparametric approaches, on the other hand, have some advantages; for example, nonparametric tests are frequently much easier to compute. Nonparametric techniques also offer the advantage of being able to handle data that has been measured on nominal (classificatory)

scales. For summarizing categorical variables, cross tabulations are beneficial. The crosstabs chi square test is used in two-way and multi-way contingency tables to assess if there is any level of link between categorical variables (Bonabana-wabbi & Taylor, 2002). Variables that have a significant test statistic at a given cut-off point are deemed related. Those for which the test statistic is not significant are unrelated. The test, however, does not reveal the direction or degree of the relationship.

3.7.2. Analytical framework

The adoption of poverty reduction programs such as the Livelihood Empowerment against Poverty (LEAP) is projected to have a favorable influence on beneficiary households' general well-being and, as a result, on their food security status. Many studies (e.g., Handa *et al.,* 2015; Mohammadi-Nasrabadi, 2016; Tiwari *et al.,* 2016; CDD-Ghana, 2017; Hamel, 2018; Alatinga *et al.,* 2019) have documented the impact of the LEAP programme and welfare of beneficiaries households. Impact assessment evaluates the transformation change that brings to the outcome (e.g., household food security, poverty reduction and welfare, etc.) of the beneficiaries that would not have happened if the intervention did not exist.

The ability to generate a counterfactual circumstance (control group) against which the impact may be quantified is a challenge in impact assessment for observational data (non-experimental) such as the data for this study (Shiferaw *et al.,* 2014). Thus, what would have happened if the programme did not exist; For example, what would have been the situation of beneficiaries if they had not been part of the intervention? The counterfactual effect refers to the beneficiaries' 'leapfrogging' outcome of the LEAP program if they had not participated. In examining the impacts of the LEAP programme on household food

security, it will be excessively prejudiced to blame the variations in home food security situations between the two groups (Beneficiaries and Non-Beneficiaries).

When dealing with experimental data, the problem of causal inference is not an issue if the counterfactual condition is known (Gertler *et al.,* 2016; White, 2010). But, when dealing with cross-sectional survey data, such as the one utilized in this study, when the counterfactual situation is unknown, causal inference becomes crucial. According to (Dehejia, 2005; Austin, 2011), this problem can be solved by examining the impact of LEAP program participation and studying the differences in outcomes between enrolled and non-enrolled beneficiary families using appropriate econometric models.

Rosenbaum and Rubin (1983) offered a propensity score matching strategy as one of the models, which has been largely employed to analyze the impacts of programmes, particularly when endogeneity or self-selection is an issue. Propensity score estimation attempts to balance the observed distribution of variables across beneficiary and non-beneficiary groups. As a result, participation determinants cannot be derived from the probity or logit estimates generated during the estimation. The technique of endogenous switching regression, which was invented by (Heckman, 1979) as a universal model of the Heckman sample selection model. By addressing selectivity as an omitted variable problem, it also account for selection bias (Heckman, 1979).

In contrast to the endogenous switching regression model, programme outcomes such as household food security can be observed for the whole sample of participants of the LEAP programme and non-participants of the programme. The endogenous switching regression technique divides the groups based on their classification as LEAP

Beneficiaries and non-Beneficiaries to collect the differential responses of the two categories. We used the endogenous switching regression model to account for selection bias from both observed and unobserved factors in our estimation of the determinants of LEAP program participation and its related impact on household food security because we were interested in examining the effect of the LEAP program on the beneficiaries' household food security. This approach allowed us to measure in respect of Household consumption expenditure, Household Dietary Diversity Score (HDDS), and Household Food Insecurity Access Scale (HFIAS).

The HDDS simply means a tally of all food groups consumed by family members, whiles the HFIAS scale is based on the premise that food insecurity (access) leads to predictable reactions and behaviors (Issahaku & Abdulai, 2019). A high HDDS indicates better household food security, but a high HFIAS indicates household food insecurity. Furthermore, because food poverty remains prevalent problems in many poor countries which Ghana is not exception, particularly in the northern savannah zones, the question of how social protection programmes such the LEAP programme impacts household food security of the beneficiaries is of critical importance for research and policy.

The HFIAS is a scale that measures and sums up the behavioral and psychological aspects of food insecurity (access) (Coates *et al.,* 2007). A home with no evidence of food insecurity obtains a zero score (improved access to food). A food-secure household with a high frequency of consuming less desirable items and skipping meals due to poor food access receives the maximum score of 27 (Coates *et al.,*, 2007; Issahaku and Abdulai, 2019). In various developing country surveys, international agencies such as the World

Food Program (WFP), FAO, and USAID have utilized these parameters in conjunction with other metrics to assess food security(Maxwell, Vaitla, and Coates 2014).

3.7.3. Specification of Endogenous Switching Regression (ESR) model

LEAP participation as indicated earlier is modelled under the Random utility Theory, which says that households will choose between to be beneficiary and non-beneficiary based on their expected utility. It is assumed that a family will weigh the advantages and disadvantages of getting a LEAP programme benefit (Álvarez *et al.,* 2008). One disadvantage of involvement could be the stigma associated with receiving social assistance (LEAP benefits) (De Brauw & Hoddinott, 2011). Under the assumptions that, the utility (increase in household food security and welfare) derives from receiving LEAP benefits is (D_1^*), and the utility from not receiving LEAP benefits represented as (D_0^*). As expected, utility is not observed, but participation in the LEAP programme is observed, the participation decision (D) is treated as a dichotomous choice: $D = 1$ if $D_1^* > D_0^*$ and $D = 0$ if $D_0^* > D_1^*$. Thus, using an underlying latent variable model, the participation decision can be modelled as follows:

$$D^* = Z_\alpha + \varepsilon \qquad\qquad (1)$$

Where Z represents an $\boldsymbol{nxm}$ matrix of the explanatory variables, α is an $mx1$ vector of parameters to be estimated, and ε is an $nx1$vector representing a normally distributed error with mean zero and constant variance (σ_ε^2).

It is expected that the choice of a household to participate in the LEAP programme affects his/her household food security. Based on this assumption, separate outcome equations are specified for the participants and non-participants. The outcome equation (in this case,

food security condition) is corrected for endogeneity for a home that has benefited from the programme since its commencement as follows (Khonje *et al.,* 2015).

Regime 1 (LEAP Beneficiary): $Y_1 = X_1\beta_1 + e_1$ if $D = 1$ (2)

Regime 2 (Non-beneficiary): $Y_0 = X_0\beta_0 + e_0$ if $D = 0$ (3)

Where Y_j with j =1, 0 is an $nx1$ vector of dependent variables representing binary food security status of the ith household; Y_1 and Y_0 indicate food security status under equation (2) (LEAP Beneficiaries) and equation (3) for those that are non-beneficiary of the programme respectively. X_j represents an nxk matrix of explanatory variables and β_j is a $kx1$ vector of parameters to be estimated.

The selection problem arises if the error ε of the selection equation [equation (1)] is correlated

with the errors e_1 and e_0 of the outcome equations [equations (2) and (3)] (Puhani, 2000). In other words, if unobserved household characteristics, such as household head ability and skills influence both the decision to participate and household food security, it means the estimated parameters β_j will be biased. The error terms ε, e_1 and e_0 are assumed to have a trivariate normal distribution with mean vector zero and the covariance matrix in Equation 4 below:

$$\text{Cov } (\varepsilon, e_1, e_0) = \begin{bmatrix} \delta e_0^2 & \delta e_1 e_0 & \delta e_o \varepsilon \\ \delta e_1 e_0 & \delta e_1^2 & 0 \\ \delta e_0 \varepsilon & 0 & \delta \varepsilon^2 \end{bmatrix}$$ (4)

Where δ_ε^2 is the variance of the selection equation [equation (1)] which is assumed to be 1 as ε is estimable up to a scale factor. $\delta_{e_1}^2$ and $\delta_{e_0}^2$ are the variances of the outcome

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equations [equations (2) and (3)] and $\delta_{e_1\varepsilon}$ and $\delta_{e_0\varepsilon}$ represent the covariance between e and 1 and 0, respectively. In the presence of selection bias, the expected values of the error terms in equations (2) and (3) are non-zero conditional on the LEAP participation and the solution to the above specified problem is to find expressions for $E(e_1/D = 1)$ and $E(e_0/D = 0)$:

$$E(e_1/D = 1) = E(e_1/\varepsilon > -\alpha z) = \delta_{1z}\frac{\phi(z\alpha)}{\phi(z\alpha)} = \delta_{e1\varepsilon}\lambda_1 \tag{5}$$

$$E(e_0/D = 0) = E(e_0/\varepsilon > -\alpha z) = \delta_{1z}\frac{\phi(z\alpha)}{1-\phi(z\alpha)} = \delta_{e1\varepsilon}\lambda_0 \tag{6}$$

Where φ and Φ are the probability density and the cumulative distribution function of the standard normal distribution, respectively. Substituting $\lambda_1 = \frac{\varphi(z\alpha)}{\Phi(z\alpha)}$ and $\lambda_0 = \frac{-\varphi(z\alpha)}{1-\Phi(z\alpha)}$, the food security outcome equations can be written as follows (Maddala, 1983; Teräsvirta et al., 2010):

$$y_1 = X_1\beta_1 + \delta e_1\varepsilon\lambda_1 + u_1 \qquad \text{if} \qquad D = 1 \tag{7}$$

$$y_0 = X_1\beta_0 + \delta e_0\varepsilon\lambda_0 + u_0 \qquad \text{if} \qquad D = 0 \tag{8}$$

Ordinary least square (OLS) estimation of equations (2) and (3) will therefore lead to biased and inconsistent estimates of the parameters β_j as the terms $\delta_{ej\varepsilon}\lambda_j$ are omitted. Of course, this bias only appears if $\delta_{ej\varepsilon}$ takes a non-zero value.

Furthermore, given that the variances of the error terms u_j are heteroscedastic, OLS estimation of equations (7) and (8) will be inefficient. An efficient method to fit the endogenous switching regression model is full information maximum likelihood (FIML) estimation (Enders and Bandalos, 2001; Khonje et al., 2015). The FIML method

simultaneously estimates the selection and outcome equations to yield consistent estimates. However, identification of the model requires instruments, that there is at least one variable in *Z* which is not included in *X*. More specifically, for the model to be identified, it is important to use variables as selection instruments that directly affect the participation decision but not the outcome variable. In empirical investigations, finding valid selection instruments is always difficult (Kassie *et al.,* 2014), the reason for this is that variables that influence the selection equation also influence the result equation. We looked at a number of valid variables that could be used as valid instrumental factors before settling on four dummy variables. That is political influence, FBOs, extension services support and ownership of mobile phone. The instruments were chosen based on available literature, for example. political influence is likely to play in the selection of LEAP beneficiaries (Desmond Tweneboah-Koduah, 2018). The results also show that a number of individual and household level characteristics are significant in explaining LEAP households' participation into the programme The other instruments are based on the assumption that any family with one or more members has possession or belonging to any farmer-based organization (FBOs) and receiving extension service support have a greater social network of connection which can influence their participation in the LEAP programme.

As per Di Falco et al., (2012), the admissibility of these instruments is determined by performing a simple falsification test: if a variable is a valid selection instrument, it will affect the participation decision but it will not affect the outcome variable.

3.7.3.1 Estimating treatment and heterogeneity effects

The endogenous switching regression model discussed can be used to compare the expected household food security for the Beneficiaries of the LEAP programme as shown in equation (8) and those that are Non-beneficiaries of the LEAP as shown in equation (9), and to estimate the expected food security outcomes in the counterfactual hypothetical cases in equation (10) that is Beneficiaries if they were not benefitting, and equation (11) that is Non-beneficiaries if they were benefitting from the programme. The conditional expectations for our outcome variables in the four cases are presented in Table 3.2 and also defined. Where equation (12) and equation (13) represent observed expected food security outcome; equations (14) and (15) represent counterfactual expected outcome.

$D_i = 1$ if households participated in LEAP programme (LEAP): Di = 0 if households did not participate in the LEAP programme (NLEAP):

Y_{jLEAP} =food security situation of the ith household of beneficiaries

Y_{jNLEAP}= food security status of the ith household of non-beneficiaries

ATT= average treatment effect on treated

ATU= average treatment effect on untreated

BH1= the base heterogeneity for households benefitting from LEAP

BH2= the base heterogeneity for households not benefitting from LEAP

TH= transitional heterogeneity (ATT-ATU)

$TH = ATT - ATU$ = (ATT-ATU) that is transitional heterogeneity

Beneficiaries of LEAP (Actual)

$$E(Y_{jLEAP}/D = 1) = X_{jLEAP}\beta_{LEAP} + \delta_{LEAP\varepsilon}\lambda_{jLEAP} \tag{9}$$

Non-Beneficiaries of LEAP (Actual)

$$E(Y_{jNLEAP}/D = 0) = X_{jNLEAP}\beta_{NLEAP} + \delta_{NLEAP\varepsilon}\lambda_{jNLEAP} \tag{10}$$

Beneficiaries if they were not benefitting (counterfactual)

$$E(Y_{jNLEAP}/D = 1) = X_{jLEAP}\beta_{NLEAP} + \delta_{NLEAP\varepsilon}\lambda_{jLEAP} \tag{11}$$

Non-beneficiaries if they were benefitting (counterfactual)

$$E(Y_{jLEAP}/D = 0) = X_{jNLEAP}\beta_{LEAP} + \delta_{LEAP\varepsilon}\lambda_{jNLEAP} \tag{12}$$

Following Di Falco et al., (2011) and Khonje *et al.,* (2015),we calculate the average treatment effect on the treated (ATT) as the difference between equations (9) and (11).

$$ATT = E[Y_{jLEAP}/D = 1] - E[Y_{NLEAP}/D = 1] = X_{JLEAP}(\beta_{LEAP} - \beta_{NLEAP}) + (\delta_{LEAP\varepsilon} - \delta_{LEAP\varepsilon})\lambda_{LEAP} \tag{13}$$

Similarly, we can calculate the average effect of treatment on the untreated (ATU) for household that actually did not participate in the LEAP programme as the difference between equation (10) and (12)

$$ATU = E[Y_{jLEAP}/D = 0] - E[= Y_{NLEAP}/D = 0] = X_{jLEAP}(\beta_{LEAP} - \beta_{NLEAP}) + (\delta_{NLEAP\varepsilon} - \delta_{NLEAP\varepsilon})\lambda_{jNLEAP} \tag{14}$$

The expected change in the mean outcome of beneficiaries' households if they are

benefitting or not benefitting had similar features to non-beneficiaries of LEAP if they are not benefitting is capture by the first on the right of equation (8) and (9). The second term (λ) is the selection term that captures all potential effects of the difference in unobserved variables.

The difference between equations (12) and (13) will give us the heterogeneity effects. This refers to differences in the outcome due to their inherent differences such as access to other benefits and not that of the treatment. Carter and Milon (2005) define heterogeneity effect for the LEAP group as the difference between equation (12) and equation (13),

$$BH_{LEAP} = E[Y_{jLEAP}/D = 1] - E[= Y_{jNLEAP}/D = 0] = \beta_{jLEAP}(X_{jLEAP} - X_{jNLEAP}) + (\lambda_{jleap} - \lambda_{jNLEAP})\delta_{NLEAP\varepsilon} \quad (15)$$

and that of the non-LEAP(NLEAP) group as the difference between equation (14) and equation (15)

$$BH_{NLEAP} = E[Y_{jNLEAP}/D = 1] - E[= Y_{NLEAP}/D = 0] = \beta_{JNLEAP}(X_{JLEAP} - X_{JNLEAP}) + (\lambda_{jLEAP} - \lambda_{jNLEAP})\delta_{NLEAP\varepsilon} \quad (16)$$

Finally, transitional heterogeneity (TH) is explored by looking at whether the effect of the LEAP programme on family food security is greater for families that are actually benefitting than for household that are not benefiting in the counterfactual case that they would have been benefiting, that is the difference between equations (12) and (13) (ATT) and (ATU). The estimating equations for the average treatment effect under actual and counterfactual scenario is summarized and specified in Table 3.2.

Table 3.2: Estimating treatment and heterogeneity effects

Category	Decision rule		Treatment effects
	To be a Beneficiary	**Not to be a Beneficiary**	
Beneficiary of the LEAP programme	$E(Y_{jLEAP}/D = 1)$	$E(Y_{jNLEAP}/D = 1)$	ATT
Non-Beneficiary of the LEAP programme	$E(Y_{jLEAP}/D = 0)$	$E(Y_{jNLEAP}/D = 0)$	ATU
Transitional heterogeneity	BH_{LEAP}	BH_{NLEAP}	TH

Source: Authors construct, (2021).

3.7.4. Specification of the Kendall's coefficient of concordance

Objective four (4) of this study was accomplished through the use of the Kendall's coefficient of Concordance.

The LEAP complementary services were initially identified through literature. Second, participants were asked to affirm whether such services are available in their district and whether they had benefited from them. Respondents were made to select the effectiveness of the LEAP complementary services in patronage in ascending order or access during the interview. The weighted score of these various LEAP complementary services (in terms of efficacy) was also determined, with the weights representing or reflecting the frequency of effectiveness when beneficiaries' households try to access or encounter them.

Based on this, the mean of the respective effectiveness of the LEAP complementary services used by beneficiary families were ranked in ordered of highest to the least effective.

Kendall's coefficient of concordance was then used to confirm agreement among rankings.

The empirical expression of Kendall's coefficient of concordance (W) was as follows:

$$W = \frac{12S}{P(n3 - n) - PT} \; ; 0 \leq W \leq 1 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3.13)$$

$$S = \sum_{i=1}^{n} (R - \bar{R}) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3.14)$$

Where R_1 = Total rank for $_i$th LEAP component/complementary services, $\bar{R}$= Mean value for each total rank LEAP component/complementary services, P= Number of observations (rankers), n= Number of LEAP component/complementary services to be ranked, and T= Correction factor for ties.

Decision Rule:

When the test statistic (W) equals 1, all members of the beneficiaries' household (respondents) are judged to have made a unanimous decision. This implies that the list of components/objects would be assigned to each beneficiary's household in the same order. Again, when the result of (W) is equal to 0, it implies that the beneficiaries' household responded at random or generally, therefore there is no discernible pattern of agreement. The final result is that when the value of (W) is between 0 and 1, the respondents had varying levels of agreement (either higher or lesser).

3.7.5. Definitions of the variables and a priori expectations

3.7.5.1. Dependent variables

Household Dietary Diversity Scores

The dietary diversity score of a household was calculated by measuring the number of food types ingested by the families throughout a seven-day recall period (Bilinsky & Swindale, 2006). The counting process is first undertaken by classifying the various foods items consumed by households in the past seven (7) days into food groups following the guidelines of FANTA (FAO, 2008a). Consumption of the food items were determined by LEAP beneficiaries and non-beneficiary households. Food group categorization was based on the nutritional characteristics such as energy content, protein, mineral and vitamins (Habte & Krawinkel, 2016). In line with the food groups of FAO (2008a), the HDDS for the study was computed from; Cereals, Roots and tuber, Vegetables, Legumes and Nuts, fruits, meat and poultry, Eggs, fish and diary and dairy products, oil and fats, sugar and spices.

3.7.5.1.1. Household Consumption and Expenditure

Household expenditures refers to the total value of all household consumption, which includes both cash and in-kind purchases, as well as household production. Each household's monthly expenses were transformed to yearly expenditures using this technique, which captures information on food and non-food expenditures. Household Consumption and Expenditure Surveys are frequently used to examine food trends, poverty, household economic status, and consumer pricing (Jones *et al.,* 2013). Data generated from HCES are considered quality and often used for identification of homes in danger of being hung; mapping food insecurity at the local level, regional and national;

and subsequently, assessing the impact of food, nutrition and anti-poverty programs (Fitzgerald *et al.,* 2008).

3.7.5.1.2. Household Food Insecurity Access Scale

The HFIAS is a scale that quantifies and summarizes the various behavioral and psychological elements of food insecurity (Coates *et al.,* 2007). A home with no documented food insecurity receives a score of zero (better food access). The maximum score for a home is 27 for a food-secure household with a high frequency of consuming less preferred foods and skipping meals due to insufficient food access (Coates *et al.,* 2007; Issahaku and Abdulai, 2019). In various developing country surveys, international agencies which includes the World Food Program (WFP), FAO, and USAID have utilized these parameters in conjunction with other metrics to assess food security (Maxwell, Vaitla and Coates, 2014).

3.7.6. Description of Variables, Measurement and *A Priori* Expectations

Table 3. 3: Description, measurement and a priori expectation of explanatory variables

Variable	Measurement	*A priori* Expectation
HHs	Household receiving LEAP-benefits (no = 0, yes = 1)	**+/-**
Sex	Sex of household head (male = 1, female = 0)	+/-
Age(years)	Number of years of a household head	+/-
Marital Status	1=yes, 0=no	+/-
Household size	Number of persons in the household	+
Education (years)	Number of years in Education	+
Income	GH₵	+/-
Remittance	1 = owned, 0 = otherwise	+/-
Ownership of Farmland	1 = owned, 0 = otherwise	+
Ownership of Sheep or goat	1 = yes, 0 = otherwise	+/-
Ownership of Bicycle	1 = yes, 0 = otherwise	-
Ownership of House	1 = yes, 0 = otherwise	+/-
NGOs support	1 = yes, 0 = otherwise	+/-
Access to portable water	1=yes, 0=no	+
Nearness to market	1=yes, 0=no	+
Access to Sanitation Amenities	1=yes, 0=no	+
Access to Electricity	1=yes, 0=no	+
Employment status of household head	yes = 1, no = 0	+/-

Source: Authors construct, (2021).

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter presents the results and findings of the study. The chapter starts with a descriptive statistics of household socio-economic and demographic characteristics in sections 4.1 Section 4.2 presents a description of household. This was followed by the examination of the effectiveness of the LEAP components/complimentary services toward achieving household food security (4.3) and Section 4.4 further presents the determinants of participation in the LEAP programme. Determinants of household food security was presented in section 4.6 and the effect of Participating in the LEAP programme on household food security presented in section 4.8. Finally, effective of the targeting mechanisms towards household food security in section 4.9.

4.2 Descriptive Statistics

4.2.1 Demographic characteristics of respondents

Sex of household head: With a mean of 0.56, indicating that more than half of both respondents' households are headed by males, the data gathered and presented in Table 4.1 revealed that the majority of the household heads for both LEAP beneficiaries' households and non-beneficiaries in the study area were males. Given that 1 denotes male household head, this indicates that more than half of both respondents' households are headed by males. This is in line with GSS (2013) report that majority of households in Northern region are headed by males. This conclusion can also be explained by the fact that in Northern Ghana, men are considered the family's breadwinners. The patrilineal

system of inheritance in the district reinforces the notions of males as home heads, while females are viewed as housewives and are frequently responsible for household duties, as well as being seen as assistants in off-farm and on-farm household activities. It's worth noting that females only take over as the head of a home when their husbands die or they become widowed. Among the research area, there was also a 10% significant mean difference in both beneficiaries and non-beneficiaries, as shown in Table 4.2.

Age of household head: The results in table 6 again shows that the minimum and maximum age of household head interviewed were 26 and 75 years respectively, with an average age of 47 years. The average age of respondents' households (both beneficiaries and non-beneficiaries) indicates that they are economically engaged and have the potential to cultivate more acres for food if farm inputs and capital are available. In the case of beneficiaries' households, the LEAP grant can be channel through the purchasing of farm inputs to increase yield to complement household food security.

Table 4.1: Descriptive statistics of explanatory variables

Variable	Mean	SD	Min	Max
Sex	0 .56	0 .4975	0	1
Age(years)	47.46	13.396	26	75
Marital Status	0.8525	0 .355	0	1
Household size	8.04	4.012	2	22
Education(years)	1.33	3.513	0	16
Income	124.37	99.772	10	562
Remittance	0 .12	0 .319	0	1
Ownership of Farmland	0 .79	0.406	0	1
Ownership of Sheep or goat	0 .44	0 .496	0	1
Ownership of Bicycle	0 .46	0.499	0	1
Ownership of House	0.44	0 .497	0	1
NGOs support	0.15	0 .353	0	1
Access to portable water	0.12	0 .325	0	1
Nearness to market	0.33	0 .470	0	1
Access to Sanitation Amenities	0.13	0 .339	0	1
Access to Electricity	0.81	0 .391	0	1
Employment status of household head	0.07	0 .247	0	1
Consumption Expenditure	87.66	50.298	20	345
HDDS	8.59	2.004	3	12
HFIAS	10.46	5.114	1	19
Selection variables				
Political influence	0 .73	0 .444	0	1
FBOs	0.27	0 .442	0	1
Extension support	0.14	0 .342	0	1
Owner of mobile phone	0.77	0.425	0	1
Total observation		400		

Source: Author's Computation, (2021).

Marital status: On average mean of respondents according to the results is 85% are married. Representing 85.07 % and 85.43% married beneficiaries and non-beneficiaries respectively. Again, those who were widows/widower were also 12.94% and 14.57% for beneficiaries and non- beneficiaries respectively with 1.99% recorded for beneficiaries' households. See Figure 4.1.
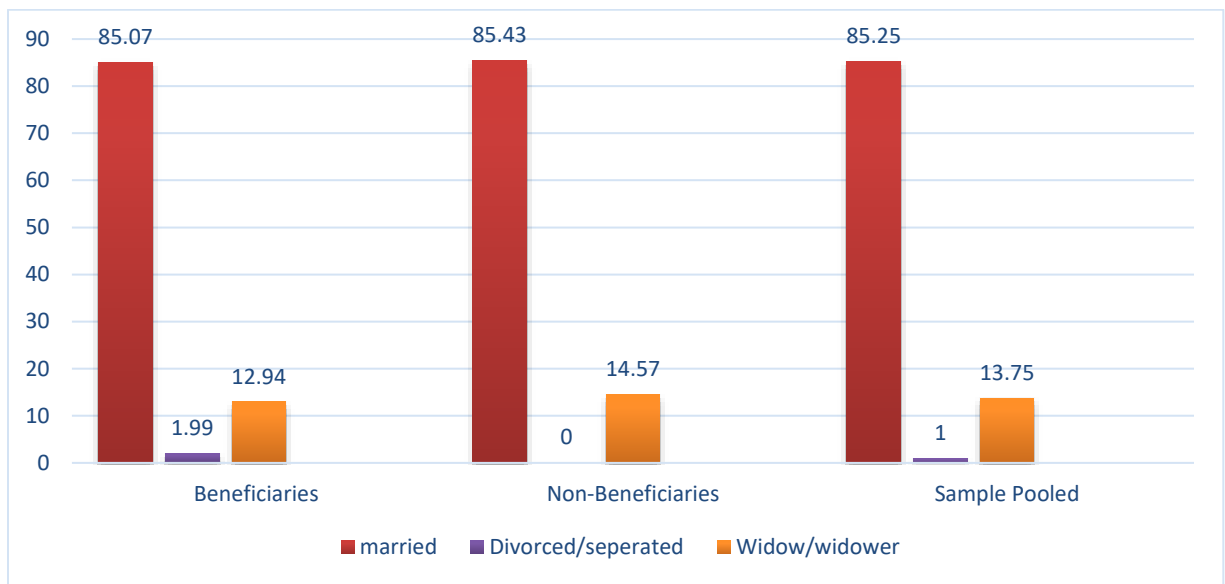
Figure 4.1: Marital status of respondents
Source: Field survey, (2021).

Educational level of respondents: With regards to education, it was discovered that household heads have a low degree of formal educational attainment. Majority (86%) of household heads had no form of formal education whilst only few had formal education ranging from 4% of the household heads that had primary education, 4.25% had junior high education and 5% had secondary education. It was observed that only 1% of the household heads had tertiary education as presented (fig 4.2). There was also a 5% significant level of mean difference between LEAP beneficiary's households and non-

beneficiaries' household heads. This show that illiteracy rate in the district is very high. The GSS (2014) report on the demographic features of rural inhabitants, which found significant illiteracy rates in the research area, supports these findings. This could be due to the fact that, as the findings reveal, educated persons are less likely to be poor or vulnerable, and thus are not represented in the sample families.

Educational Level

	No formal education	primary	JHS	SHS	Tertiary
Percent	86	4	4.25	4.75	1
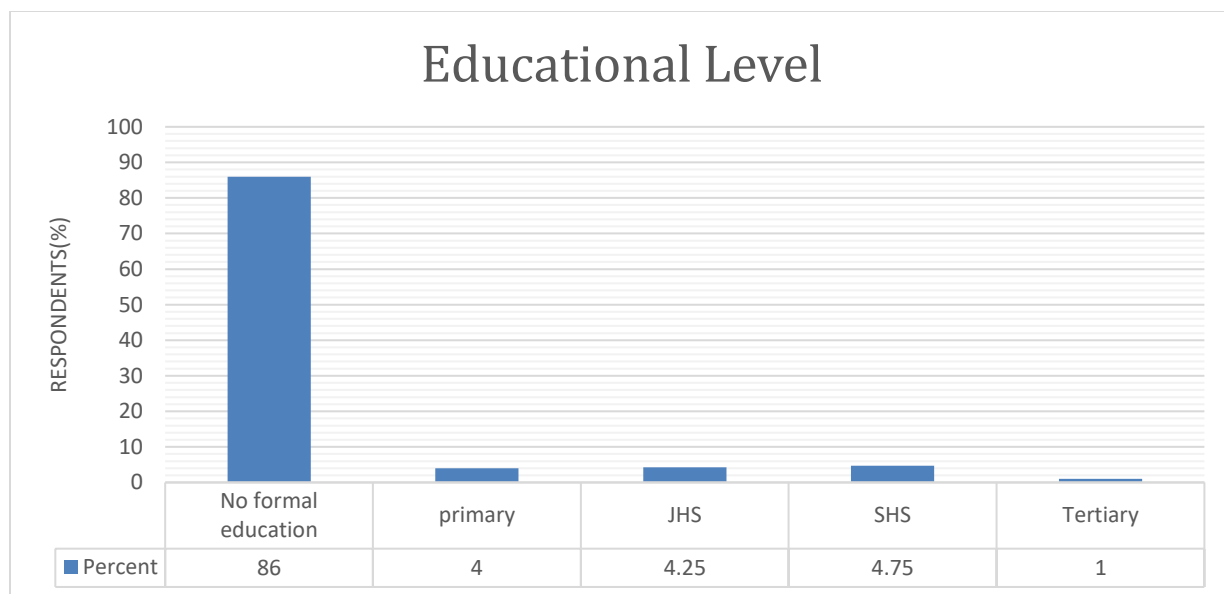
Figure 4.2: Level of formal education of respondents
Source: Field survey, (2021)

Household size: In line with Namaa, (2017), a household is a group of people who live together, not necessarily under the same roof or in the same house, but who eat from the same pot and pool their income and other resources to buy or produce food. In comparison, LEAP household sample has a larger mean value of 8.199 compared to 7.869 in the non-beneficiary households. The average household size per adult equivalent for beneficiaries and non-beneficiaries was 8.04. These estimates are in consistent with district PHC report of GSS (2014).

Table 4.2: T-test of explanatory variables

Variables	Beneficiary	Non-Beneficiary	Mean different Ben Non-Ben	p-values
Sex	0.617	0.492	-0.124* (0.049)	0.0122
Age(years)	45.592	49.347	3.755** (1.328)	0.0049
Marital Status	2.279	2.291	0.013 (0.069)	0.853
Household size	8.199	7.869	-0.330 (0.401)	0.4120
Education(years)	1.408	1.251	-0.157 (0.352)	0.656
Income	189.93	58.146	-131.785*** (7.494)	0.0000
Remittance	11.417	4.698	-0.059* (0.033)	0.0653
Farmland	0.945	0.638	-0.307*** (0.038)	0.0000
Sheep or goat	0.221	0.647	-0.426*** (0.045)	0.0000
Bicycle	0.542	0.372	-0.170*** (0.049)	0.0006
House	0.478	0.407	-0.071 (0.040)	0.1561
NGOs support	0.214	0.075	-0.139*** (0.035)	0.0001
portable water	0.0597	0.1809	0.121*** (0.032)	0.0002
Nearness to market	0.448	0.206	-0.242*** (0.045)	0.0000
Sanitation Amenities	0.134	0.131	-0.004 (0.034)	0.9139
Access to Electricity	0.886	0.739	-0.147*** (0.038)	0.0002
Employment status	0.059	0.070	0.011 (0.025)	0.6667
Consumption Expenditure	107.54	67.57	-39.977*** (4.620)	0.0000
HDDS	9.935	7.226	-2.709*** (0.148)	0.0000
HFIAS	5.697	15.266	9.570*** (0.179)	0.0000
Selection variables				
Political influence	0.657	0.804	0.147*** (0.044)	0.0009
FBOs	0.383	0.146	-0.237*** (0.042)	0.0000
Extension support	0.204	0.065	-0.139*** (0.034)	0.0000
mobile phone	0.846	0.6834171	-0.162*** (0.042)	0.0001

Note: Standard errors in parentheses, ***, **, and * denotes statistical significance at 1%, 5% and 10% respectively. **Source:** Author's Computation, (2021).

4.3 Perceived effectiveness of the targeting mechanism of the LEAP programme

The objective one was achieved by soliciting views from beneficiaries and non-beneficiaries' households and key implementing officers about the process involve in the targeting mechanism of the LEAP programme. Many stakeholders have expressed concern about the LEAP program's poor targeting as a result of political influence (Jaha & Sika-Bright, 2015). According to the officers of social welfare and community development when asked about the procedure about the targeting mechanisms and whether Targeting mechanism processes are strictly followed when it comes to selection of beneficiaries' households? They replied by saying, *the selection is strictly based on household eligibility criteria which they think cannot be compromised. According to them the LEAP programme is for poor households in the community which are been stated clear in the policy document as follows*; *1) orphans and vulnerable children (single or double orphans, disable children, chronically ill children (children with prolong chronic diseases), children in a household with a head who is a child (under 18 years old) or children in a household with the head who is chronically ill or children in a household with a child in a household with a parent whose where about are unknown), 2)the aged (65 years and above) without productive capacity and 3) Severely disabled (persons with severe disabilities).*

They added that, LEAP 1000 is also available for poor pregnant women/Lactating mothers (children under 1 year) in the district which started in 2015. They further said, DLIC (District Implementation Committee) discusses and provides a list of the poorest and most disadvantaged household in the community. For example, a household with a caregiver who has very little to eat, no children attending school and among others. To

check whether the family (household) are poor, there is always few prepared questions form (PMT) administered in the community. After checking the forms, a final list of households that are considered to be very poor are selected. The list is then sent back to the community in the district for discussion. This is what we know.

Are they improvement in Targeting mechanism processes when it comes to selection of beneficiaries' households?

Answers: *They emphasized that the community selection process has vastly improved over time. They went on to say that the ministry of Gender, Children, and Social Protection, which has supervision authority, has employed two techniques in the targeting mechanism processes over the years, with the difference being community selection. Previously, communities were chosen based on the Ghana poverty map of the district, which was created by the Ghana Statistical Services; however, with the current targeting mechanism, communities are chosen by the District LEAP implementation committee (DCLIC). After the community selection, the PIC (public information committee) which comprises of the Department of social welfare and community development officer, District planning unit officer and District Information services department officer goes to the selected communities to do the community engagement/sensitization to create awareness about what the LEAP programme is about. After that, a non-governmental organization called ESOKO visits the villages with the help of the community focal person to gather data on the families, which is then transmitted to the LEAP Secretariat to be processed. The LEAP Secretariat gets data from ESOKO for the assessment of household poverty status and compiles a list of homes eligible to participate in the LEAP program. The list is then sent back to the District for*

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the Department of Social Welfare and Community Development and the community focal persons to verify the list and prepare beneficiaries households to be enrolled into the E-zwitch card for payment to commence.

4.3.1 Category of beneficiaries' household in the study area

The results from respondent beneficiaries' household represented in table 4.7, revealed that, a greater number of the beneficiaries' homes 32.34% fall under extremely poor aged over 65 years households, follow by 24.39% as care givers households, 19.90% under poor pregnant/Lactating mothers (under one-year child) households, 16.42% under persons with Disability without productive capacity households and 6.97% did not know the category they belong to. In a study to assess the coverage of non-receipt of LEAP and the associated factors among older individuals (65+ years) in the Mampong Municipality, Ghana, Ottie-boakye (2020) found the opposite. The author found that more aged people in the LEAP programme targeted communities were not LEAP grant beneficiaries.

Table 4.3: Category of beneficiaries household

Category of beneficiaries households	Frequency	Percentage
Extremely poor aged over 65yrs	65	32.34
Care- giver of OVC	49	24.39
Persons with disabilities without productive	33	16.42
Poor lactating/pregnant mothers	40	19.90
Do not fall in any category/target group	14	6.97
Total	201	100.00

Source: Authors computation, (2021)

From Table 4.3 and Figure 4.3, revealed about the mean percentage of 49.54% of both LEAP beneficiaries and non- beneficiaries held a positive and favourable view of the perceived effectiveness of the targeting mechanism of the LEAP programme in the study Area. Less than half of the mean percentage of 46.5 disagreed with the notion, and a mean of 4.04% were undecided/ Neutral or do not have an opinion. This further revealed about 81.25% of household heads strongly agreed/agreed with the statement that household were targeted because, they were extremely aged (65 and above), 16% strongly disagreed/disagreed with the statement and 2.75% undecided/neutral. The Chi- square test which was at 1% significant level i.e., χ^2 =32.18, P<0.000 indicates the level of association between these two dummy variables. Irrespective whether you are benefitting or not, they all agreed on this targeting mechanism of selection.

Besides, 70.75% of household heads strongly agreed/agreed and 26% strongly disagreed /disagreed with the statement that households were targeted, because they are taking caring of Orphans and vulnerable children (OVCs). The chi-square test shows a 1% significant, showing an existing association between the dummy variables. Thus, the perceived targeting mechanism of the selection process among both beneficiaries and non- beneficiaries.

Again, 62.75% of household heads strongly agreed/agreed, 33.5% strongly disagreed/disagreed and 3.75% undecided or does not have an opinion on the statement that, household were selected because, they have person/s with disabilities without productive capacity. This reveals a chi square test of 1% significant level, indicating both beneficiaries and non -beneficiaries share the same opinion about the statement.

Also, about 61.25% of household heads strongly agreed/agreed on the statement of household were selected because, they have a poor pregnant women or lactating mother (child under one year), with 31.5% of household heads strongly disagreed/disagreed on the statement. This gives a chi-square test of 1% significant level of association among the beneficiaries and non-beneficiaries' responses to the statement.

Table 4.4: Response on the Targeting Mechanism Process of the LEAP Programme

Variable	S.D/D		U/N		A/S.A		Chi square	
	F	**%**	**F**	**%**	**F**	**%**	**Value**	**Prob**
Household were selected because, they have extremely elderly person 65yrs +?	64	16	11	2.75	325	81.25	39.18	0.000***
Household were selected because, they are taking Care of Orphans and Vulnerable Children?	103	26	13	3.25	283	70.75	32.97	0.000***
Household were selected because, they have person/s with disabilities without productive capacity?	134	33.5	15	3.75	251	62.75	33.46	0.000***
Household were selected because, they have a poor pregnant or lactating mother?	126	31.5	29	7.25	245	61.25	21.66	0.000***
Household were selected because, they know one of the implementing officers?	367	91.75	16	4.00	17	4.25	6.16	0.187
Household were selected because, they are affiliated to a ruling political party during the selection process?	321	80.25	13	3.25	66	16.5	17.80	0.001***
Mean	185.83	46.5	16.17	4.04	197.83	49.54		

S.D =Strongly Disagree; D=Disagree; U/N= Undecided /Neutral; A=Agree; S. A=Strongly Agree; F=Frequency; %=Percentage

Total number of observations = 400

Source: Authors computation, (2021).

More than 91.75% of both beneficiaries and non-beneficiaries' household heads strongly disagreed /disagreed that, Household were selected because, they know one of the implementing officers during the selection process. Only 4.25% and 4.00% strongly agreed/agreed and undecided respectively. This gives a non-significant level of chi- square test.

Finally, majority (80.25%) of the respondents' household heads strongly disagreed /disagreed that, household were selected because, they are affiliated to a ruling political party during the selection process. Only 16.5% and 3.25% strongly agreed/agreed and undecided respectively. This gives 1% significant level of chi- square test. This finding also shows an association between the dummy variables. That is whether one is benefiting or not, they all share on the same believed of the statement of the selection process concerning political interference. This finding is consistent with (Jaha & Sika-Bright, 2015) who reported interference in the LEAP programme by influencing Authority as a challenged, even though about 20% of the sample in the study area of household heads strongly agreed/agreed to this notion. Therefore, the results suggest that the respondents perceived an error of exclusion and inclusion in the LEAP program targeted mechanism in the selection of beneficiaries' household.

Targeting mechanisms procedure

	Extremely elderly person 65yrs +?	Taking Care OVC	person/s with disabilities without productive	Pregnant/lactating mother	Know one of the implementing officers	Affiliated to a ruling political party
S.D/D	16	26	33.5	31.5	91.75	80.25
N	2.75	3.25	3.75	7.25	4	3.25
S.A/A	81.25	70.75	62.75	61.25	4.25	16.5
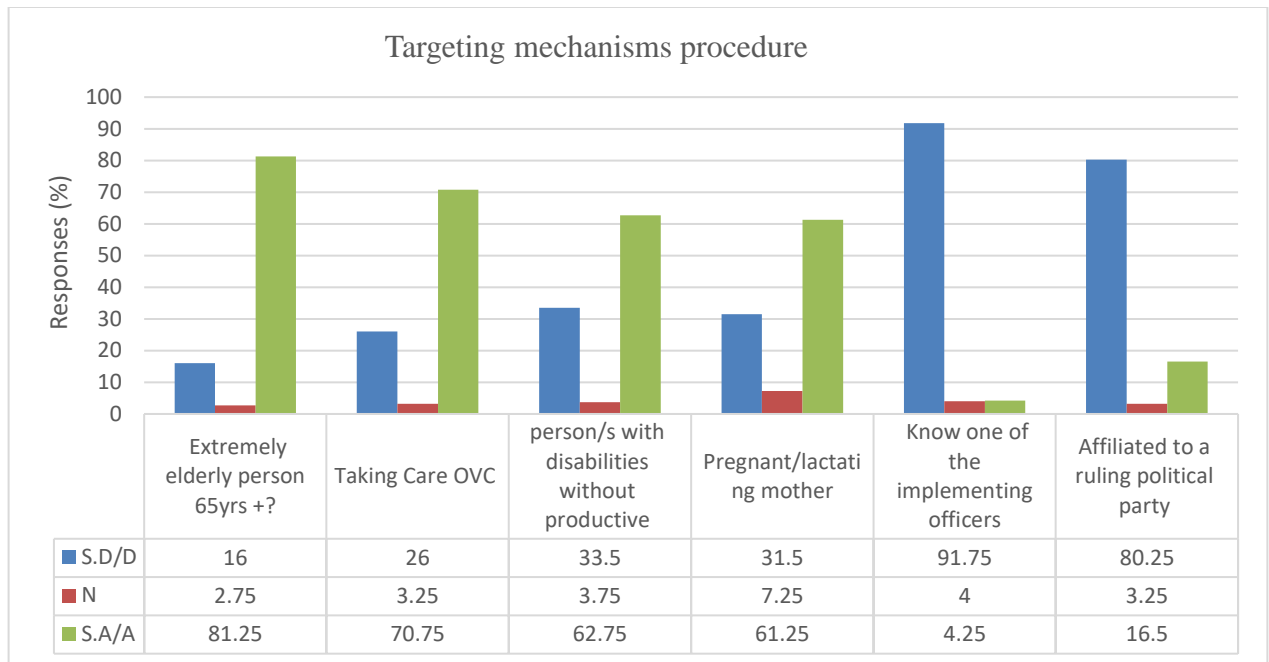
Figure 4.3: Responses of the targeting mechanisms procedure

Source: Authors computation, (2021)

4.4. Determinants of households' participation in LEAP programme

This objective was achieved using the Endogenous Switching Regression Model in estimating the determinants of participation in the LEAP programme and determinants of household food security among beneficiaries and non- beneficiary households. Given the several food security variables utilized (household food consumption expenditure, HDDS, and HFIAS), six different outcomes for the first step of the regression were produced; hence the predictors of LEAP programme participation. That is, two regression results for each indicator. The result of the ESR estimates for household consumption expenditure, HDDS and HFIAS are provided in the Table 9 below. The independent variables are both statistically significant, according to the Wald test statistics. The result estimates of rho_1, is negative and statistically significantly different from zero. This confirms that selection bias occurred in selecting beneficiaries (El-Shater *et al.,* 2016; Missiame et al,. 2021) in the first outcome equation (HDDS) in table 4.4.

Additionally, rho 1/rho 0 in the second outcome equation (household consumption expenditure) in table 4.5 and the third outcome equation (HFIAS) in table 4.6 suggest that selection bias resulting from unobserved factors is undetected due to poor statistical power. In other words, there is no proof that unobserved factors in this study simultaneously affect both beneficiaries and non-beneficiaries. However, since the ESR approach also accounts for selection bias from observed factors, its use in this study is still relevant. For the identification of the outcome equation, the selection equation must involve selection instruments in addition to those created automatically by the non-linear process of the participation selection model (Azeem *et al.,* 2019; Shiferaw *et al.,* 2014). In empirical investigations, finding valid selection instruments is always difficult (Kassie *et al.,* 2014), the reason for this is that variables that influence the selection equation also influence the result equation. We looked at a number of valid variables that could be used as valid instrumental factors before settling on four dummy variables. That is political influence, FBOs, extension services support and ownership of mobile phone. The instruments were chosen based on available literature, for example. political influence is likely to play in the selection of LEAP beneficiaries (Desmond Tweneboah-Koduah, 2018). The other instruments are also based on the assumption that any family with one or more members has possession or belonging to any farmer-based organization (FBOs) and receiving extension service support have a greater social network of connection which can influence their participation in the LEAP programme. We use the falsification test given by Di Falco *et al.,*(2011) to see if the instruments are jointly important as shown in appendix A. The regression estimates of the explanatory variables are;

Age of household head: Age of a household head had a negative effect on the participation in the LEAP programme and was found to be statistically significant at 1%. The result was

same under all the indicators with same magnitude. This show that age of household head has a negative relationship with the likelihood of obtaining LEAP benefits. This means that younger household heads are more likely than older households to enroll in the programme. The reason could be as someone is ageing might have additional support from his older children in the family. This findings is consistent with one of the selection criteria been children (OVCs) in a household with a head who is a child (under age) (MoGCSP, 2015b).

Receipt of Remittance: The study also found a statistically significant and a positive association between receipt of remittances and participation in the LEAP programme. Implying households receiving Remittance are positively associated with the probability of receiving LEAP benefits. This supports our expectation in the sense that many poor households rely on remittances from domestic to improve their household livelihoods. This finding is contrary to that of Ottie-boakye, (2020) who attributes his finds to the targeting methods which measured home-level characteristics and not that of aged persons receipts of remittance.

Ownership of farmlands by household heads (assets) is positively correlated with the probability of housed holds receiving LEAP benefits which is statically significant at 1% level. This implies that households with farmland ceteris paribus, are more likely to participate in the LEAP programme. Every rural household are normally considered to own farmlands which belong to the family through inheritance for farming purpose. Most of them are subsistence farmers and are considered poor rural households. This indicates that, poor rural dwellers have increased vulnerability because of poor agro climate conditions. Therefore, having landholding correlates with the probability of participating in the of LEAP programmes.

Ownership of livestock (sheep/goat): Ownership of livestock is positively correlated with the probability of receiving LEAP programme benefits at 1% significant level. This implies that households with livestock are more likely to participate in the LEAP programme, ceteris paribus. Poor rural households are usually associated with rearing of animals for their livelihood and do not sell their livestock for cultural and prestige means.

Access to portable water: Access to portable water is associate with negative participation in the LEAP programme. Holding all other factors constant, households that have access to portable water are less likely to participate in the LEAP programme. Lack of access to portable water are usually confronts poor households and further deepens their economic woos and this may explain why the program may target people with lack of access to portable water as a measure of economic status to enroll them into the program.

Nearness to market: This has positive correlation with participation in the LEAP programme at 1% significant level. This also has a positive relationship to improve house dietary diversity and this implies that ceteris paribus, the closer a respondent is to market the more likely the person will participate in the program. This could be as a result of the fact that beneficiary receive cash transfer and may engage in trading activities and for that the closer, they are to the market the better the advantage of trading.

Table 4.5: ESR results estimates of the LEAP programme and household food security (HDDS)

Variables	Equation 1	Regime1, Equation 3.1	Regime 2, Equation 3.2
		Endogenous Switching Regression	
		LEAP=1 (Beneficiaries)	LEAP= 0 (Non- beneficiaries)
	Probability of participation, LEAP(1/0)	HDDS	HDDS
Sex	0.310	-0.043	-0.194
	(0.216)	(0.282)	(0.275)
Age	-0.018***	-0.015*	0.008
	(0.006)	(0.008)	(0.009)
Marital status	-0.315	-0.571*	-0.436
	(0.248)	(0.302)	(0.342)
Household size	0.000	0.073***	-0.016
	(0.021)	(0.024)	(0.029)
Education (years)	-0.027	0.062**	0.019
	(0.023)	(0.028)	(0.033)
Income (log)	0.096	-0.233	-0.030
	(0.117)	(0.158)	(0.158)
Remittances	0.611**	-1.218***	0.114
	(0.290)	(0.306)	(0.508)
Ownership of Farmland	1.193***	-0.059	-0.080
	(0.228)	(0.457)	(0.285)
Ownership of sheep/goat	0.957***	-0.400*	0.348
	(0.161)	(0.230)	(0.353)
Ownership of Bicycle	-0.044	-0.257	0.121
	(0.218)	(0.280)	(0.283)
Ownership of House	-0.149	-0.524**	0.194
	(0.199)	(0.246)	(0.270)
NGOs support	0.242	-0.192	-0.157
	(0.264)	(0.245)	(0.456)
Access to water	-0.763***	0.703*	-0.187
	(0.279)	(0.414)	(0.359)
Near to market	0.527***	0.383*	0.652**
	(0.172)	(0.202)	(0.308)
Access to sanitation amenities	0.086	-0.244	-0.269
	(0.238)	(0.293)	(0.338)
Access to Electricity	0.726***	-0.165	-0.001
	(0.209)	(0.308)	(0.273)
Employment status of	-0.588	1.290***	-0.082
	(0.373)	(0.437)	(0.541)

household head			
instrumental variables			
Political influence	-0.594*** (0.170)		
FBOs	0.641*** (0.163)		
Extension support	0.426 (0.261)		
Mobile phone	0.384** (0.180)		
Constant	-1.638** (0.729)	12.942*** (1.060)	7.582*** (0.947)
Σi		0.339*** (0.073)	0.379*** (0.064)
ρ_j		-0.997*** (0.276)	0.325 (0.344)

Diagnosis:
Wald χ^2 (17) = 70.53***
Log likelihood = -846.37
LR test of independent equations: χ^2 (17) = 12.88***
Sample size = 400

Source: Author's Computation, 2021

Note: Standard errors in parentheses, ***, **, and * denotes statistical significance at 1%, 5% and 10% respectively. Equation 1 is the selection equation, jointly estimated with the consumption expenditure regime equation 3.1 and 3.2. Using the full information maximum Likelihood (FIML) estimated method is used. The square-root of the variances of the error terms of the μ_1 and μ_0 in in equations 3.1 and 3.2, respectively, is Sigma (Σi). Rho (ρ_j) is the correlation coefficient between the error term of the selection equation ε and the error terms of the consumption expenditure equations (μ_1 and μ_0).

Access to social amenities (Electricity) is also significant at 1% and positively correlate with the participation of LEAP programme. This could be because access to electricity at the household level enable rural dwellers to get access to information concerning social protection issues and other social networks. This therefore could be an influencing factor for the probability of poor households to participate more in the LEAP programme. Source of getting information is relevant in participating in the social protection (LEAP) programmes. This may influence the probability of poor households to avail themselves to participate in the

programme during data collection processes. This will even prevent poor households from hiding children with disability or other associated vulnerability challenges since poor households associated with such children has a greater chance of being in the LEAP programme.

Employment status of household head: Employment status of the household head is negatively correlated with the probability of benefiting from thee LEAP programme at 5% significant level. Household whose heads are formally employed are less likely to participate in the LEAP programme ceteris paribus. This meet our a prior expectation, because, it is believe that poverty is normally associated with household heads who are not economically employed or formally employed (Azeem *et al.,* 2019). Being employed in a household provides indication of economic ability to support the household meet its basic needs including food and targeting may therefore discriminate such households to make way for rather households without employed head to participate in the programme.

Table 4.6: ESR results estimates of the LEAP programme and household food security (consumption expenditure (log)

	Equation (1)	Regime1, Equation 3.1	Regime 2, Equation 3.2
		Endogenous Switching Regression	
		LEAP=1 (beneficiaries household)	LEAP= 0 (Non-beneficiaries)
Variables	**Probability of participation, LEAP(1/0)**	**Consumption Expenditure (log)**	**Consumption expenditure (log)**
Sex	0.205	0.145	-0.094
	(0.225)	(0.101)	(0.097)
Age	-0.018***	0.001	-0.000
	(0.006)	(0.003)	(0.003)
Marital status	-0.406	0.003	0.165
	(0.251)	(0.1038)	(0.119)
Household size	0.012	-0.010	-0.022**
	(0.021)	(0.008)	(0.010)
Education (years)	-0.023	0.016*	-0.008
	(0.025)	(0.010)	(0.012)
Income (log)	0.068	-0.057	-0.002
	(0.121)	(0.056)	(0.055)
Remittances	0.636**	0.171	0.053
	(0.310)	(0.110)	(0.177)
Ownership of Farmland	1.186***	0.046	0.046
	(0.230)	(0.191)	(0.098)
Ownership of sheep/goat	1.021***	0.019	0.098
	(0.163)	(0.091)	(0.118)
Ownership of Bicycle	0.062	-0.072	0.016
	(0.219)	(0.098)	(0.100)
Ownership of House	-0.183	-0.096	-0.078
	(0.199)	(0.085)	(0.096)
NGOs support	0.255	0.166*	-0.121
	(0.271)	(0.086)	(0.151)
Access to water	-0.720**	-0.002	0.055
	(0.282)	(0.152)	(0.122)
Nearness to market	0.533***	-0.145**	0.032
	(0.179)	(0.073)	(0.108)
Access to sanitation amenities	0.156	-0.091	-0.202*
	(0.249)	(0.104)	(0.119)
Access to Electricity	0.600***	-0.055	0.142
	(0.212)	(0.121)	(0.097)
Employment status of household head	-0.712*	0.059	0.046
	(0.366)	(0.154)	(0.190)

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instrumental variables

Political influence	-0.587***		
	(0.185)		
FBOs	0.589***		
	(0.181)		
Extension support	0.413		
	(0.274)		
Mobile phone	0.452**		
	(0.201)		
Constant	-1.483**	4.820***	4.142***
	(0.754)	(0.413)	(0.334)
Σi		-0.774***	-0.666***
		(0.051)	(0.059)
ρ_j		0.103	0.290
		(0.313)	(0.296)

Diagnosis:
Wald χ^2 (17) = 25.01*,
Log likelihood = -445.298
LR test of independent equations: χ^2 (1) = 0.90
Sample size = 400

Source: Author's Computation, 2021

Note: Standard errors in parentheses, ***, **, and * denotes statistical significance at 1%, 5% and 10% respectively. Equation 1 is the selection equation, jointly estimated with the Consumption Expenditure regime equation 3.1 and 3.2. Using the full information maximum Likelihood (FIML) estimation approach. Sigma (Σi) is the square-root of variances of the error terms of the μ_1 and μ_0 in the equation 3.1 and 3.2, respectively. Rho (ρ_j) is the correlation coefficient between the error term of the selection equation ε and the error terms of the consumption expenditure equations (μ_1 and μ_0).

Table 4.7: ESR results estimates of the LEAP programme and household food security (HFIAS)

Variables	Equation 1 Probability of participation, LEAP(1/0)	Regime1, Equation 3.1 LEAP=1 (BENEFICIARIES household) HFIAS	Regime 2, Equation 3.2 LEAP= 0 (Non-beneficiaries) HFIAS
		Endogenous Switching Regression	
Sex	0.240	0.427	0.356
	(0.219)	(0.341)	(0.367)
Age	-0.018***	-0.004	-0.002
	(0.006)	(0.011)	(0.012)
Marital status	-0.422*	0.291	-0.240
	(0.246)	(0.374)	(0.452)
Household size	0.004	-0.046	-0.052
	(0.021)	(0.028)	(0.039)
Education (years)	-0.025	0.034	0.018
	(0.024)	(0.033)	(0.044)
Income (log)	0.134	-0.065	0.121
	(0.124)	(0.188)	(0.206)
Remittances	0.606**	-0.603	-0.828
	(0.309)	(0.396)	(0.667)
Ownership of Farmland	1.215***	0.177	-0.951**
	(0.234)	(0.767)	(0.372)
Ownership of sheep/goat	0.988***	0.070	-0.364
	(0.171)	(0.352)	(0.452)
Ownership of Bicycle	0.045	-0.544*	-0.386
	(0.221)	(0.330)	(0.378)
Ownership of House	-0.235	0.207	0.254
	(0.199)	(0.289)	(0.360)
NGOs support	0.203	0.308	0.040
	(0.281)	(0.294)	(0.599)
Access to water	-0.628**	-0.112	0.407
	(0.280)	(0.507)	(0.475)
Near to market	0.554***	0.275	-0.464
	(0.176)	(0.259)	(0.404)
Access to sanitation amenities	0.209 (0.248)	0.042 (0.346)	-0.531 (0.448)
Access to Electricity	0.664***	0.549	0.114
	(0.212)	(0.445)	(0.361)

Employment status of household head	-0.720** (0.367)	-0.147 (0.530)	-0.525 (0.715)
instrumental variables			
Political influence	-0.571*** (0.178)		
FBOs	0.566*** (0.175)		
Extension support	0.422 (0.293)		
Mobile phone	0.470** (0.192)		
Constant	-1.804** (0.773)	5.165*** (1.571)	15.557*** (1.262)
Σi	-	0.449*** (0.077)	0.681*** (0.079)
P_j	-	0.409 (0.432)	-0.555 (0.360)

Diagnosis:
Wald $\chi^2 (17) = \chi^2 (17) = 18.56$
Log likelihood = -945.51
LR test of independent equations: $\chi^2 (1) = 3.49*$
Observation = 400

Source: Author's Computation, 2021
Note: Standard errors in parentheses, ***, **, and * denotes statistical significance at 1%, 5% and 10% respectively. Equation 1 is the selection equation, jointly estimated with the HFIAS regime equation 3.1 and 3.2. Using the full information maximum Likelihood (FIML) estimation approach. Sigma (Σi) is the square-root of variances of the error terms of the μ_1 and μ_0 in the equation 3.1 and 3.2, respectively. Rho (ρ_j) is the correlation coefficient between the error term of the selection equation ε and the error terms of the consumption expenditure equations (μ_1 and μ_0).

4.4.1. Determinants of household Food Security among Beneficiaries and non-Beneficiaries

Age of household head: The coefficient of Age of household head is negative and significant at 10% level for the HDDS of Beneficiaries households, suggesting that household heads that are younger are associated with low dietary quality, ceteris paribus. This probably suggest that as people are ageing, they pay considerable attention to the choice of food to eat and may therefore diversify their foods in order to avoid more of foods that are associated with age

related diseases. This is therefore likely to increase their dietary diversity score and influence their food security relative to the young age brackets.

Marital status of household head: The coefficient of marital status of beneficiaries' household head is negative and significant at 10% level for the HDDS of Beneficiaries households, suggesting that household heads   that are married are associated with low dietary quality, ceteris paribus. This could imply that married household heads may have more social and economic needs to meet in the household and may not be able to provide for diversity of foodstuffs to be prepared in the house. On the contrary, non-married households may resort to buying and are able to buy assorted foods to consume thereby increasing their dietary diversity score and influencing their food security status.

Household size: The coefficient of household size is positive and statistically significant at 1% level for the HDDS. This implies that larger family size, holding all other things constant is associated with high dietary quality for beneficiaries' households. This could be possible because households that have more beneficiaries under receives appreciable amount which could make them diversify the dietary quality. Also, the coefficient of household size is negative and significant at 5% level for the per capita consumption expenditure of non-beneficiaries household, suggesting that larger family size of non-beneficiaries household are associated with low daily food consumption, ceteris paribus.

Education (years) of household head: From the Estimated results of the ESR, the coefficient of Education is positive and significant at 1% and 5% level for the HDDS and per capita consumption expenditure for beneficiaries' households. This implies holding all other factors constant, higher education attainments of LEAP beneficiaries' household heads may have

greater dietary quality and consumption expenditure than households with lower educational status. This findings is consistent with a related literature (e.g. Issahaku & Abdulai, 2019; Jones *et al.,* 2014). This may be that, higher education attainments enhance ones' knowledge on food and nutrition status.

4.5. Effects of participation in LEAP programme on household food security

An important objective of this study is to determine the effects of participation in LEAP programme on household food security. The study estimated the effect of participation in the LEAP programme on household food security using per capita consumption expenditure on food, HDDS and HFIAS (as proxies for food security). The expected household food security (log consumption expenditure by LEAP beneficiaries' households that participated is higher (5.513) than for the group of targeted but Non-beneficiaries' households that did not participate in the LEAP programme (4.167). In the observed sample, the difference between the expected consumption expenditure of those who participated and those who did not is about 1.346. Besides, the measurement of the LEAP programme on HDDS for LEAP beneficiaries' households that participated is also higher (11.585) than for the group of Non-beneficiaries' households that did not participate in the LEAP programme (7.577), with difference of about (4.008). Finally, also comparing for HFIAS with LEAP beneficiaries' households that participated is smaller (6.278) than for the group of Non-beneficiaries households that did not participate in the LEAP programme (14.477), showing a difference of about (-8.199).

This simple comparison, however, can mislead the researcher to wrongly arrive at a conclusion that participation helped LEAP beneficiaries' household that participated to be

more food secure on average than the non-beneficiaries household that did not participate. Such comparison can erroneously underestimate the impact of participation on household's food security.

Therefore, results on ATT and ATU demonstrates using Endogenous Switching Regression (ESR) in table 11 shows the impact of LEAP programme under actual and counterfactual circumstances with the use of the ESR approach. The result is reported in the fifth (5) column of table 4.11. The findings clearly suggest that LEAP has a favorable impact on the food security of households (represented by food security indicators such as consumption expenditure per adult equivalent, HDDS and HFIAS). Households that received LEAP benefits, in particular, would have had 8% (0.395/5.112) less consumption expenditures per adult equivalent per day had they not benefited from the LEAP grants. This is the average treatment effect on the treated (ATT). From the household level, the increase in average consumption expenditure due to LEAP programme was Gh₵3.20 (0.395* 8.04) where 8.04 is the average household size per adult equivalent in the study data collected. Also, the average treatment effect on the untreated (ATU) is 0.373.

This means that households who did not receive LEAP grants would have had about 9% (0.373/4.167) higher consumption expenditures had they received the benefits. This findings is contrary to Handa & Park, (2014), in their researcher on Livelihood Empowerment Against Poverty Program Impact Evaluation, found that the LEAP programme do not have impact on household consumption. The results also reveal that expected HDDS, given the participation in the LEAP programme, changed by 3.066, representing a 36% increase in household food dietary at the households. Also, the average treatment effect on the untreated (ATU) is 3.028

for HDDS. This implies that households who did not receive LEAP grants would have had about 40% (3.028/4.167) chances of higher dietary diversity scores in their household food dietary had they received the benefits. Furthermore, LEAP program participation has a -9.138 impact on household food insecurity access scores (HFIAS), which reflects a 59 percent reduction in household food insecurity, while the average treatment effect on the untreated (ATU) for HFIAS is -9.181.

This means that households who did not receive LEAP grants would have had about 63% (-9.138/14.477) lower chances of being food insecure had they received the benefits. Overall, the findings suggest that the LEAP program assists Tolon District households in becoming more food secure. This could be because consistent payment transfers to households reduce liquidity and credit constraints, allowing households to migrate out of poverty and gain access to farm inputs, so improving household food security (Daidone *et al.,* 2015). The direct benefits of cash transfer to beneficiaries also provides indication that poorer and vulnerable households are able to buy foodstuffs at least, in a bimonthly basis thereby enhancing their food security status.

Table 4.8: ESR results on Impact of participation in LEAP on household food security

Outcome variables	Households type and treatment effect	To be Beneficiaries	Not to be Non-Beneficiaries	ATE	% change in outcome
Consumption Expenditure (log)	Household that received LEAP grant (ATT)	5.513	5.112	0.395***	7.727
	Households that did not received LEAP grant (ATU)	4.540	4.167	0.373***	8.947
HDDS	Household that received LEAP grant (ATT)	11.585	8.519	3.066***	35.990
	Households that did not received LEAP grant (ATU)	10.605	7.577	3.028***	39.963
	Household that received LEAP grant (ATT)	6.278	15.416	-9.138***	59.276
HFIAS	Households that did not received LEAP grant (ATU)	5.296	14.477	-9.181***	63.418

Note: Standard errors in parentheses, ***, **, and * denotes statistical significance at 1%, 5% and 10% respectively.

Source**:** Author's Computation, (2021).

4.6. Effectiveness of LEAP programme components/complementary services toward achieving household food security.

The study identified some of the LEAP programme complementary services and tried to examine the perception of respondents on the effectiveness of these services. About Eight (8) of these components/complementary services were presented for the beneficiaries to rank them in order of the most effective to the least effective. A total of 201 LEAP Beneficiaries households in the study area were made to rank these components/complementary services to the LEAP programme from 1 to 8 with 1 being the most effective and 8 being the least effective. The Kendall's Coefficient of concordance (Kendall's W) estimated was 0.838 (84%), which implies a strong level of agreement among the rankers (LEAP Household beneficiaries) of the effectiveness of the various LEAP components/complementary services. Indeed, the respondents had about 83.8% level of agreement to the ranking of the effectiveness of the components/complementary services. This also shows that household beneficiaries in the LEAP programme communities faces similar reservation in terms of the effectiveness, hence policy recommendations can be made towards the most ineffective of the LEAP programme components/complementary services in the district to help contribute to achieving household food security of the Beneficiaries. Cash transfer only is not adequate in addressing monetary poverty (consumption poverty) and household food security.

Table 4.9: Results on mean ranks of the effectiveness of the LEAP Components/complementary services

LEAP components/complementary services	Mean Ranks	Ranks
Free health insurance	1.78	1st
Ghana education capitation grant	2.00	2nd
Ghana school feeding	2.43	3rd
Micronutrient support for pregnant/lactating mothers	5.09	4th
Agric. Input support	5.15	5th
Microfinance support/VSLA	6.25	6th
Free school uniforms	6.46	7th
Disability common fund	6.84	8th
Number of observation	201	
Kendall's W^a	0.838	
Chi-Square(X^2)	1179.573	
Df	7	
Asymp. Sig.	0.000	

Source: Author's Computation, 2021.

According to the results, the mean rank of free national health insurance to LEAP beneficiaries' household was the least (1.78) indicating that, this LEAP component was very effective towards achieving household food security among beneficiaries households in the district. Probably due to the UNICEF integrated social services delivery programme in the district might have informed this ranking and it also be a component to the LEAP households. This could also be the proactive nature of the National health insurance Authority. This findings corroborated with Biliguo, (2020) who reported that majority of LEAP beneficiaries have NHIS card and therefore could have access to Health services (Nutrition). The Beneficiaries also ranked ''Ghana Education Capitation Grant'' as the second most effective of the LEAP Components/complementary services with a mean score of 2.00. A beneficiaries' in

KAA community state that "their children don't ask for examination and tuition fees at the primary level and therefore money that could have use for that purpose can now channel in consumption''. This could be one of the reasons it was ranked 2nd. Ghana school feeding was ranked 3rd with a mean of 3.43 as one of the effective of the LEAP complimentary services. This implies that Ghana school feeding is doing well in the study area. But Micronutrient support for pregnant women /lactating mothers, Agricultural input support, microfinance support/VSLA, Free school uniforms and Disability common fund were ranked 4th, 5th, 6th, 7th and 8th with mean rankings of 5.09, 5.15, 6.25, 6.46 and 6.84 respectively. This shows that, these complementary services are least effective in the study area for the LEAP beneficiaries' household.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

The chapter concludes the study. The chapter presents summary of the study in section 5.1 and key findings in section 5.2. In section 5.3, the chapter present conclusions drawn from the results of the study. In section 5.4, the study policy recommendations.

5.2. Summary of the study

Several studies have demonstrated the effect of social protection programmes as well as food security in many developing countries including Ghana. Interest in how participation in the Livelihood empowerment against poverty programme (LEAP) improves health indicators, education and poverty reduction has also been widely discussed and documented. However, the study on the impact of the Livelihood empowerment against poverty on household food security has been little and scanty information in Ghana.

In Tolon District, Northern Region, the study was conducted to investigate the impact of participation in the Livelihood Empowerment against Poverty (LEAP) program on household food security. More specifically, the research examined the perceived effectiveness of the target mechanism of the LEAP selection procedure, determinants or drives of participation in the LEAP programme. In addition, the study examines the impact of participation in LEAP programme on household food security. Finally, the study examines the effectiveness of the LEAP components/ complementary services towards achieving household food security.

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The study systematically considered 201 LEAP beneficiaries' households and 199 non- beneficiaries' households through a multi-staged sample procedure and stratified them as LEAP beneficiaries and non-beneficiaries. Food security indicators were computed using consumption expenditure on food (Adult equivalent), Household food insecurity access scale (HFIAS) and household dietary diversity score (HDDS). Descriptive statistics mainly means, frequencies and percentages were used to describe the effectiveness of the targeting mechanisms in the selection procedure of the LEAP programme, Endogenous Switching Regression (ESR) model was used. In the ESR method, the selection and outcome equations are both evaluated simultaneously in a two-stage framework. In the first step, the first equation is estimated, while the second and third equations are computed in the second stage using the Full-information Maximum Likelihood (FIML) estimation approach (Lokshin *et al.,* 2004), which was used to investigate the factors that influence participation in the LEAP program as well as the factors that influence household food security. We then estimate the effects (impact) of participation in the LEAP programme on household food security. Finally, the Kendall's coefficient of concordance was used to rank the effectiveness of the LEAP components/ complementary services in contributing to achieve household food security among LEAP beneficiaries' households.

The key findings of the study were as follows:

Objective one

To begin, the study reveals that approximately 81.25 percent agree that households were targeted because they have extremely poor aged over 65 years, 70.75 percent as Orphans and Vulnerable Children (care-givers), 62.44 percent as Persons with

disabilities without productive work, 61.9 percent as Lactating/pregnant mother, 16.5 percent influence by a ruling political party, and 4.25 percent influence by an implementing officers.

Objective two

The result of the ESR estimation showed that receipt of remittance, ownership of farmland, ownership of livestock (sheep/goat), proximity to market, and access to electricity are positive and significant in explaining poor households' decision to participate in LEAP programme. However, the age of the household head in the neighborhood, availability to portable water, and the household head's work position are negative and significant in explaining households' decision to participate in the LEAP programme.

Objective three

Findings further revealed that participation in the LEAP programme has a positive impact on beneficiaries (ATT), which showed a percentage change in consumption expenditure, Household Dietary Diversity and a decrease in household food insecurity by 8%, 36% and 59% respectively.

Finally, the determinants of household food security using household dietary diversity score was found to be age of household head, marital status of household, household size, Educational level of household head and Nearness to Market.

Objective four

The first three ranks as to effectiveness of the components/complementary services in achieving household food security by LEAP beneficiaries households demonstrated that Free health insurance (1st), Ghana education capitation grant (2nd) and Ghana school feeding (3rd) were the most effective complementary services in

achieving household food security in the study area. The respondents had about 83.8% level of agreement to the ranking of the effectiveness of the components/complementary services.

5.3. Conclusions

From the key findings the following conclusions may be made:

The findings indicate that the LEAP programme has a statistically significant positive influence on beneficiaries' family food security. The good impact of the LEAP programme is very policy relevant, particularly in Ghana's pursuit of the 2030 Agenda for Sustainable Development Goals. The first set of SDGs focuses on reducing susceptibility to a variety of shocks and eradicating all types of poverty. Most especially target 1.3 by the year 2030 (UNDESA, 2018). In this context, the empirical findings reported in this research is very important because it emphasizes the importance of the social protection (LEAP) program in ending family food insecurity among the vulnerable and less privileged in Tolon District, Northern Region, and Ghana as a whole. The data further indicates that beneficiary households in the study region are food secure.

Lastly, free health insurance, Ghana education capitation grant, and Ghana school feeding programme are the most effective complementary services to the LEAP programme in the study area.

The study therefore concluded that LEAP programme positively impacts the households' food security and among the factors which determine the household involvement in a LEAP programme are; the age of the household head in the neighborhood, availability of portable water, and the household head's work position.

5.4. Policy recommendations

Based on the findings the following suggestions are recommended for policy:

Firstly, Age which is having a negative direction from the findings suggest that the programme favoured the youthful household heads than the aged. To cure this errors of inclusion and exclusion in the programme, the ministry of gender, children, and social protection should step up their proactive efforts in the feedback and accountability procedure.

It is also suggested that, in order to promote transparency in the targeting mechanism for selecting LEAP beneficiaries, regular auditing by independent auditing firms be conducted to ensure that individuals who do not deserve to be in the programme are not only removed from the programme, but also that the officials who assisted them are punished by requiring them to refund the money.

Besides, Politicians and implementing agencies/officers should desist from influencing households who are not qualify to be part of the LEAP programme.

Furthermore, the government should expand the programme to include additional impoverished households, particularly those who have not yet been enlisted.

Again, the Government should not fall behind when it comes to payments (irregularities) or cash transfers to beneficiaries' homes in order to maintain food security and diversify consumption.

Last but not least, authorities should increase efforts to improve the effectiveness of other complementing social intervention programmes to the LEAP. If the programmes are well integrated with the LEAP, it will help improve household food security of beneficiaries.

Finally, there should also be a clear plan to make existing beneficiaries to exit the programme for new entrance especially those who are now better off and more resilient in food security and improvement in their poverty situation. Because it was discovered that many of the beneficiaries' households were in better financial shape.

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APPENDICES

Appendix A

Test of Validity of Instrument

Consumption expenditure	Beneficiaries	Non-Beneficiaries
Joint significance of instruments		
	$F(4, 179) = 0.69$	$F(4, 177) = 0.34$
HDDS		
Joint significance of instrument	$F(4, 179) = 1.03$	$F(4, 177) = 0.63$
HFIAS		
Joint significance of instrument	$F(4, 179) = 2.97$	$F(4, 177) = 1.23$

UNIVERSITY FOR DEVELOPMENT STUDIES

DEPARTMENT OF AGRICULTURE AND RESOURCE ECONOMICS,

FACULTY OF AGRICULTURE, FOOD AND CONSUMER SCIENCES,

NYANKPALA CAMPUS

TOPIC: EFFECT OF SOCIAL PROTECTION PROGRAMMES ON

HOUSEHOLD FOOD SECURITY IN THE TOLON DISTRICT: A CASE OF

THE LIVELIHOOD EMPOWERMENT AGAINST POVERTY PROGRAMME.

HOUSEHOLD QUESTIONNAIRE

INTRODUCTION

Dear Respondents,

Please, I am conducting a survey on the above topic. This forms part of fulfilling a requirement towards the award of a Master of Philosophy (MPhil) degree in Agricultural Economics in the University for Development Studies. This study is purely for academic purpose and all the answers that you provide will be kept anonymous and confidential- only members of the survey team would have access to the data.

I would like to spend some few minutes of your time to answer these questions. You can stop answering at any time if you feel uncomfortable, or ask me to clarify any question if you do not understand. Your cooperation is greatly appreciated.

Interviewer Name_____

 Contact number of interviewees: _____

Date of interview: _____

SECTION A: DEMOGRAPHIC CHARACTERISTICS

This section is meant to elicit information on you and the household

LOCATION AND HOUSEHOLD DETAILS

1. District : _____

2. Name of area council_____

3. Name of community: _____

4. House no./Household ID: _____

5. Sex of HH head? [   ] 1= Male 2= Female

6. Household size _____

7. Age of household head/care giver (yrs.)? _____

8. Level of education of HH head? (1) No education 2. Primary 3. JHS 4. Secondary 5. Tertiary

9. Number of years of education of Household head_____

10. Marital status of HH head/Care giver? _____ 1. Single [   ] 2. Married [   ]   3. Divorced/separated [   ]

11. Occupation of HH head /caregiver? 1. Farming 2. Teaching [   ] 3.Petty trading [   ] 4. Fishing [   ]   5.Others specify _____

12. Ethnicity: 1. Dagbomba [   ] 2. Gonja [   ] 3. Akan[   ] 4.others [   ]

13. Please asset(s) owned by your household? 1. Farm land   [   ] 2. Store [   ] 3. Bicycle   [   ] 4. House [   ] 5. Mobile phone [   ] 6. Cattle [   ] 7. Sheep/goat [   ] 8. others specify [   ]

14. Religion: 1. Christian [   ] 2. Islam [   ] 3. ATR [   ]   4. Others [   ] specify_____

15. Is there any disable person in your household? 1=Yes[   ] 0=No [   ]

16.   Number of HH members with NHIS

114

17. Is your household benefiting from the LEAP Programme? 1=Yes[ ] 0= No [ ] if no, skip to Q22

18. If yes, how many beneficiaries? One =1[ ] two=2[ ] three=3 [ ] four and above [ ]

19. Under what category/target group do you benefit from the LEAP programme? 1=Subsistence farmer & fisher folk [ ] 2=Extremely poor aged over 65yrs[ ] 3=care giver for OVC [ ] 4= persons with disabilities without productive capacity [ ] 5=Lactating/pregnant women with HIV/AIDS 6= Do not fall in any category/target group   [ ]

20. If care -giver, how many children are you caring for_____

21. Relationship of beneficiary to household head or caregiver [1] Household Head , [2] wife of HHH, [3] son/daughter of Household Head, [4] brother/sister of Household Head, [5] father in-law/mother in-law, [6] Others specify_____

HOUSEHOLD INCOME AND EXPENDITURE

22. Sources of income for your Household? [1] Farming, [2] LEAP grant [3] trading [4] others specify_____

23. Main source of income for your Household [1] Farming, [2] LEAP grant [3] trading [4] Others specify _____

24. What is your average amount of income per month?

25. How much do you receive from LEAP bimonthly? 1=GH₵64 [ ] 2=GH₵76 [ ] 3=GH₵88 [ ] 4 plus=GH₵106 [ ]

26. Is the amount you/your HH received sufficient to cover your basic expenses

    1=very sufficient [   ] 2= sufficient [   ] 3= somewhat sufficient [   ] 4= not

    sufficient [   ]

27. Do you receive any remittance? 1=Yes [   ] 0=No [   ]

28. If yes, how much? GH_____

29. Which   of the following do you use most of the LEAP grant on? (**Tick as**

    many as applicable)

    [1]. Consumption

    [2]. farming

    [3]. Livestock rearing

    [4]. Education

    [6]. Health

    [3] Savings

    [4]. Trading

    [5]. Others specify_____

30. Amount spent on food Stuffs (Household consumption Expenditure) per year

    GH₵_____

31. Do you or your HH member belong to any FBOs? 1=Yes [   ] 0=No [   ]

32. Do you/Household member benefit from any NGOs yearly farm support?

    1=Yes [   ] 0=No [   ]

33. If yes, what form of support? 1.Extension advisory services [ ] 2.input [   ]

    3.financing [   ] 4.market access [   ]

34. Do you/Household participate in the PFJ programme? 1=Yes [   ] 0=No [   ]

35. Do you/Household benefit from any Agric extension service support? 1=Yes

    [   ] 0=No [   ]

SECTION B: **EFFECTIVENESS OF LEAP PROGRAMME COMPONENTS/COMPLEMENTARY SERVICES TOWARD ACHIEVING HOUSEHOLD FOOD SECURITY**

36. Do your household children attend school? 1=Yes [   ] 0= No [   ]

Table 1.

No.	Options	Code	Response: Yes=1 and No=0
37. Does your household or any member of your HH enjoys the following components/complimentary services?			
a	Ghana school feeding,	1	
b	Free National health insurance,	2	
c	Education Capitation grant	3	
d	Agricultural input support	4	
e	PWD common fund	5	
f	Micronutrient support and supplement under GHS	6	
g	The Labour Intensive Public Works	7	
h	Free school uniform	8	
i	Micro finance support	9	

Table 2.

No.	Possible options	Rank
38. Indicate your level of agreement on the following statement as it apply to the effectiveness of the leap programme components/complimentary services toward achieving household food security? **(use a scale of 1-5, where 1- strongly disagree, 2-disagree, 3- neutral,4-agree, 5- strongly agree)** **(Note: rank the following leap component programmes using the scale above)**		
a.	Ghana school feeding,	
b.	Free National health insurance,	
c.	Educational Capitation grant	
d.	Agricultural input support	
e.	PWD common fund	
F	Micronutrient support and supplement under GHS	
G	The Labour Intensive Public Works	
H	Free school uniform	
I	Micro finance support	

SECTION D: DETERMINANTS OF HOUSEHOLDS' PARTICIPATION IN LEAP PROGRAMME

39. Do you or any member of your relatives belong to any political party? 1= Yes [ ] 0=No [ ]

40. Do you/ any relatives have a party card?   1= Yes [ ]   [ ] no

41. If yes, which political party? 1. NPP [ ] 2. NDC [ ]

42. How long have you or your family member been in active politics (months/years)? [1] 0-5yrs [2] 6-10yrs [3] 10 and above yrs.

43. Do you think there is political influence in selecting LEAP beneficiaries? 1= Yes [ ]   0=No [ ]

44. If yes, explain_____

45. Which of the following do you have access to?   [ ] Portable water   [   ] School   [ ] Market [   ] Sanitation amenities [   ] Availability of Electricity

46. Do you have any member of your household or family being gainfully employed? 1= Yes [ ] 0=No[ ]

47. If yes, how many are they?_____

48. Do you get any form of support from him/her/them?   1= Yes [ ] 0=No [ ]

SECTION F: EFFECT OF THE LEAP PROGRAMME ON HOUSEHOLD FOOD SECURITY

49. What do you consider as basic daily food requirement for your household?
    _____
    _____
    _____

50. Has the participation in LEAP program have effects on your households food security? 1=Yes [   ] 0=No [   ]

51. *In the last 7 days*, how many days has your household consumed any of these food items in the table below?

Table 4: Food diversity and consumption score (HDDS)

No	Food group	Examples	Responses: Yes=1 No=0
1.	**Cereals**	Maize and food prepared from maize, Millet and food prepared from millet, Sorghum and food prepared from sorghum, Rice and food prepared from rice, Wheat and food prepared from wheat, bread, biscuits, flour pastries, Other starchy grains, etc.	
2.	**Roots and Tubers**	Yams, Cassava, plantains, Cocoyam/arrow roots, Potatoes Other starchy (fufu, gari, wasawasa and konkonte) roots/tubers, etc.	
3.	**Legumes/Pulses**	Beans, cowpeas, Soybeans, all other beans and peas, Groundnuts etc.(Tobani, gablei)	
4.	**Other Nuts and seeds**	any nuts, cashews, seeds like pumpkins (agushie) or sunflower, sesame, etc.	
5.	**Green Leafy Vegetables**	All green leafy vegetables, leaves such as beans leaves, pumpkin leaves, potato leaves, cassava leaves, moringa, amaranths (aleafy), Jute/kenaf (peeto/barie) Ayoyo etc.	
6.	**Other vegetables**	Cabbage, carrot, green pepper, cucumber, tomatoes, onions, garden eggs, okro, pepper, etc.	
7.	**Fruits**	Mango, Pawpaw, Orange, Water melon, Pineapple, Banana, Avocado (pear), airborne fruits, others (sheanut, black berry, red berries) etc.	
8.	**Red meat and Poultry**	Beef, pork, sheep, goat, chicken, guinea fowl, duck, grass-cutter other bush meats, etc.	
9.	**Organs**	Liver, kidney, heart, etc	
10.	**Fish and Seafood**	Fresh, smoked or dried Fish or Shellfish, crabs, lobsters, etc.	
11.	**Eggs**	Any Eggs	
12.	**Milk and milk products:**	Milk, fresh milk, fermented milk, fresh yoghurt, cheese, other milk foods and products, wagashi, etc.	
13.	**Oils & fats:**	Palm oil/soup, palm kennel oil, Vegetable oil, shea butter, margarine, other fats / oil, etc.	
14.	**Sugar/Sweets:**	Sugar, honey, cakes, candy, cookies, pastries, cakes and other sweet (sugary drinks)	
15.	**Spices and Condiment:**	Spices, coffee, tea, salt, fish powder, etc.	

52. What do you consider as basic daily food requirement for your household?

_____

_____

_____

53. Considering basic daily food requirements as minimum food intake required for life: do you think that the basic daily food intake of your household has improved? 1=Yes [   ] 0=No [   ]

54. If yes, to what extant? 1. Slightly better [   ] 2. Better [   ] 3. Much better [   ]

55. If no, then? 1. Same [   ] 2. Worse [   ] 3. Much worse [   ]

56. During the last 30 days, was there a time where due to lack of money or other resources, the following occurred?

Table 5: Household Food Insecurity Access Scale (HFIAS)

No.	Description	Response:	Code:
1	In the past four weeks, did you worry that your household would not have enough food?	1=Yes 0= No (skip to Q2) 99 =don't know / refused to answer	
1b	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 =Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	
2	In the past four weeks, were you or any household member not able to eat the kinds of foods you preferred because of a lack/Inadequate of resources?	1=Yes 0= No (skip to Q3) 99 =don't know / refused to answer	
2b	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 =Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	
3	In the past four weeks, did you or any other household member have to eat a fewer variety of foods because of lack of resources?	1=Yes 0= No (skip to Q4) 99 =don't know / refused to answer	
3b	How often did this happen?	1 = Rarely (once or twice in the past four weeks)	

		2 =Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	
4	In the past four weeks, did you or any household member have to eat some foods that you really did not want to eat because of a lack of resources to obtain other types of food?	1=Yes 0= No (skip to Q5) 99 =don't know / refused to answer	
4b	How often did this happen??	1 = Rarely (once or twice in the past four weeks) 2 =Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	
5	In the past four weeks, did you or any household member have to eat a smaller meal than you felt you needed because there was not enough food?	1=Yes 0= No (skip to Q6) 99 =don't know / refused to answer	
5b	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 =Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	
6	In the past four weeks, did you or any other household member have to eat fewer meals in a day because there was not enough food?	1=Yes 0= No (skip to Q7) 99 =don't know / refused to answer	
6b	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 =Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	
7	In the past four weeks, did you or any household member go a whole day and	1=Yes 0= No (skip to Q8) 99 =don't know / refused to answer	

	night without eating anything because there was not enough food?		
7b	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 =Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	
8	In the past four weeks, did you or any household member go to sleep at night hungry because there was not enough food?	1=Yes 0= No (skip to Q9) 99 =don't know / refused to answer	
8b	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 =Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	
9	In the past four weeks, did you or any household member go a whole day and night without eating anything because there was not enough food?	1=Yes 0= No (skip to Q10) 99 =don't know / refused to answer	
9b	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 =Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	

SECTION G: EFFECTIVENESS OF THE TARGETING MECHANISM OF LEAP PROGRAMME TOWARDS ACHIEVING HOUSEHOLD FOOD SECURITY.

57. What role did you play in the selection process? OR can you tell me the procedures you went through before you were selected?

_____

_____

_____

How many times do you receive the cash transfer in a typical year? 1. Once a year [ ] 2. Two times in a year [ ] 3. Three times in a year [ ] 4. Four times in a year [ ] 5. More than four times in a year [ ]

58. Has there been any increase or reduction in the amount you receive? 1=Yes

[   ] 0=No [   ]

59. If yes, amount Before GH₵ _____ and amount now GH₵_____?

Table 6: LEAP programme selection procedure

No.	60. Indicate your level of agreement on the following statement as it applies to the LEAP programme selection procedure (use a scale of 1-5, where 1- strongly disagree, 2-disagree, 3- neutral,4-agree, 5-strongly agree) (Note : rank all the statements below using the options defined above)	
No.	Possible options	Rank
a.	Household were selected because, they are extremely poor subsistence farmers/fishers	
b.	Household were selected because, they have extremely elderly person 65yrs +?	
c.	Household were selected because, they are taking Care of Orphans and Vulnerable Children	
d.	Household were selected because, they have person/s with disabilities without productive capacity?	
e.	Household were selected because, they have a Lactating mother with HIV/AIDS (able to work)/ ill diseases that needs support.	
f.	Household were selected because, they know one of the implementing officers	
g.	Household were selected because, they are affiliated to a ruling political party during the selection process?	

SECTION F: MAJOR CHALLENGES ASSOCIATED WITH THE LEAP PROGRAMME

Finally, this section is meant to solicit your opinion on the major challenges and suggested solutions relating to the LEAP programme implementation in your community.

61. Is there any challenges associated with the LEAP programme grant? 1= Yes [   ] 0= No [   ]

Table 6: Challenges of the LEAP programme

62. Indicate your level of agreement on the following statement as it applies to the challenges of the LEAP programme implementation in your community/HH access of the LEAP programme Grant? (use a scale of 1-5, where 1- strongly disagree, 2-disagree, 3- neutral,4-agree, 5-strongly agree) (Note : rank all the statements below using the options defined above)		
No.	Possible options but not exhaustive	Rank
a.	Low amount of Bi-monthly transfer of cash	
b.	Irregular and delay of cash transfer	
c.	Complex process of becoming a LEAP beneficiary	
d.	Difficulty accessing some of the benefits of LEAP e.g. NHIS, school feeding	
e.	Difficult in enrolling or renewing NHIS card	
f.	Perceive corruption in the LEAP programme e.g. payment of cash	
g.	Some beneficiaries are favoured than others	
h.	Political interference	
i.		
j.		
k.		

64. **Suggest any solutions to the challenges identified**

a) _____

 b) _____

 c) _____

KEY INFORMANT QUESTIONNAIRE

Introduction: I am Akurugu Sumaila, an Mphil Student from the University for Development Studies, Nyankpala Campus, and studying Agricultural economics. I am writing my thesis on effect of social protection programmes on household food security in the Tolon district: a case of the livelihood empowerment against poverty programme. I will appreciate if you could kindly complete this Questionnaire for me. Please be assured that information provided will be treated with confidentiality and used for the purposes of this study only.

District Level and Community (DLIC's/CLICs)

1. Brief explanation of how LEAP is working in the district?

2. How many villages have LEAP beneficiaries?

3. Out of the communities which one will be considered better off in terms of food security and which one is worst off?

4. How is the selection of beneficiaries done?

5. Do you think there have been some effects of LEAP on people's life in the District?

6. Specification of where impacts have been made?

7. Are there any negative effects as a result of LEAP?

8. Challenges associated with the LEAP programme?

EFFECT OF SOCIAL PROTECTION PROGRAMMES ON HOUSEHOLD FOOD SECURITY IN THE TOLON DISTRICT: A CASE OF THE LIVELIHOOD EMPOWERMENT AGAINST POVERTY PROGRAMME IN GHANA

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