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## RESEARCH ARTICLE

# DETERMINANTS OF FOOD SECURITY AMONG FARMING HOUSEHOLDS IN SOUTH-SOUTH REGION OF NIGERIA

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## ABSTRACT

Food insecurity remains a significant global problem especially in developing countries like Nigeria. This challenge increases human suffering and predisposes young, adult and aged to disease attack, impaired human growth and reduced life expectancy. Hence, this study examined the determinants of food security among farming households of South-South region of Nigeria. Secondary data of General Household Survey data, wave 4, panel 2018/2019 from the National Bureau of Statistics was used for the study. Purposive sampling was used to select Delta and Akwa Ibom states from the region. Three hundred and sixty-seven (367) farming households were randomly selected for the study. Descriptive statistics, food security index and Ordinary Least Square (OLS) were used for data analysis. The result revealed that above average (60.39%) were food secure during post-harvest season. The regression result revealed that increase in food expenditure (p=0.001) has the likelihood to raise food security while increase in household size (p=0.016) and household head age (p=0.0001) have the probability of reducing their food security. It was also revealed that three prominent coping strategies that ranked first, second and third were eating less preferred food, eating few kinds/varieties of food and eating reduced quantity of food respectively. This study concluded that increase in food expenditure has the likelihood of affecting food security status of the farming households in South-South during post-harvest season. Farming households were therefore encouraged to spend more on cheaper but nutritive food items. Government should also make quick and informed policies to aid food security status of farming households in regions experiencing social and environmental disasters.

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# INTRODUCTION

Food, ranking only after air and water, holds paramount importance for all living beings. The availability, affordability, and accessibility of food, however, determine the food security of the world population. Despite its critical role, the absence of available, affordable, and accessible food leads to hunger and food insecurity. Food availability encompasses the supply chain through production, distribution, and exchange (Gregory 2005). During the early 1970s, amid global food crises, the concept of food security primarily centered on guaranteeing the availability of food and price stability for essential foods. This focus was driven by the extreme volatility in agricultural commodity prices and turbulence in currency and energy markets during that period (Berry, 2015). Famine, hunger, and food crises prompted the development of a food security definition recognizing the critical needs and behavior of potentially vulnerable populations (Shaw, 2007). The 1974 World Food Conference defined food security as the "availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices" (United Nations, 1975), emphasizing the need for increased production to address protein-energy deficiency affecting over 25% of the global population in 1970. A shift in emphasis occurred as a better understanding of food security crises emerged, moving from the availability of food to a broader approach. The Food and Agriculture Organization (FAO) expanded the definition in 1983 to include ensuring economic access to food for vulnerable populations (Berry, 2015). The revised definition emphasized that food security is achieved when all people, at all times, have both physical and economic access to the basic food they need (FAO, 1983). In 1986, the World Bank's report "Poverty and Hunger" introduced a time scale for food security, distinguishing between chronic and acute, transient food insecurity associated with natural or man-made disasters. This led to a further extension of the concept to include "access of all people at all times to enough food for an active, healthy life" (Berry, 2015). In 1994, the UN Development Program's Human Development Report integrated food security into discussions of human rights within the larger framework of social security. A redefinition of food security through international

consultations preceded the 1996 World Food Summit, highlighting the complex interaction among individuals, households, and the global level. The redefined concept stated that food security is achieved "when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life" (FAO, 1996). The mid-1990s witnessed the emergence of terms like "nutrition security" and "food and nutrition security," with subsequent developments in the definition of food security occurring in "The State of Food Insecurity in the World 2001" and the 2009 World Summit on Food Security. The latter introduced the fourth dimension of stability to the concept, and sustainability has recently been proposed as a fifth dimension to encompass the long-term time dimension (Berry, 2015). Food security is defined as the constant availability of food and one's unrestricted access to it. A household achieves food security when its members are not plagued by hunger or the fear of starvation. The four pillars of food security are identified as food availability, access to food, utilization and stability (Global Strategic Framework for Food Security and Nutrition, 2011). On the other hand, food insecurity, as defined by the United States Department of Agriculture (USDA), refers to a state of limited or uncertain access to nutritionally adequate and safe foods, or the inability to acquire acceptable foods in socially acceptable ways. Households can fall into two categories: food secure or food insecure. A household is considered food secure when it can easily access and afford food at reasonable prices. Conversely, a food insecure household faces challenges in accessing and affording food. The global population's sustainability relies heavily on individual households being food secure. The affordability of food is primarily influenced by income and food prices, with production costs playing a role in determining these prices (Abdulazeez, 2023).

There were some policies that were initiated by government to address food insecurity. Some of the agricultural programmes are: Farm Settlement Scheme (FSS/1959), National Accelerated Food Production Programme (NAFPP/1972), Agricultural Development Projects (ADP/1974), Operation Feed the Nation (OFN/1976), Green Revolution (1980), Directorate for Food, Roads and Rural Infrastructure (1986), Better Life Programme (BLP/1987), National Agricultural Land Development Authority (NALDA/1992), National Fadama Development Project (NFDP/Early 1990), National Special Programme on Food Security (NSPFS/2002), Root and Tuber Expansion Programme (RTEP/2003), National Policy on Infant and Young Child Feeding in Nigeria (2010), Agricultural Transformation Agenda (ATA/2011), National Policy on Food and Nutrition (2013), National Strategic Plan of Action for Nutrition (NPAN/2014), Agricultural Promotion Policy (APP/2016), Zero Hunger Initiative (ZHI/2016), Social Safety Net Programs (2016), National Cash Transfer Program (NCTP), National Home Grown School Feeding (NHGSF), N-Power Program, Government Enterprise and Empowerment Program (GEEP). (Togun, O., 2023)

**Problem Statement/Justification:** One of the greatest challenges facing the world of recent is the increasing lack of access to food and the escalation of hunger (FAO, 2015). After decades of steady decline, world hunger has slowly been on the rise since 2015. An estimated 821 million people in the world suffered from food insecurity in 2018. ('The State of Food Security and Nutrition in the World 2019').

Africa's state of food insecurity relative to other regions of the world, except for West Asia, is troubling and non-promising. Data from the World Food Program (WFP) in November 2022 for 26 states in Nigeria and the Federal Capital Territory (FCT) show that the share of those in stressed food security situations with minimally adequate food consumption was at 34 percent of the population. Nigeria is the most populous country in Sub-Saharan and is estimated to be approximately one-fifth of the total population in the region. Nigeria is a country that is fortunate to have possessed both human and natural resources, has the capacity to build a blossoming economy and provide for the basic needs of its population. However, Nigeria is still ranked among the poor and undernourished countries of the world (IFRI, 2016). Nigeria as a country is endowed with immense agricultural resources, over 81million arable and largely fertile hectares with maize, cassava, guinea corn, yam, beans, millet and rice being major crops (Odukoya, 2020). Despite rising domestic production of staples, the global increase in food prices is adversely affecting food security conditions. Nigeria still highly depends on food importation with growing food import bills from 964 million US dollars in 1995 to 4,566 million dollar in 2016 (FAO 2019). Having annual population growth rate of 2.64 percent and population of 206, 139,589 people, Nigeria ranked 94th among 113 countries based on the indices of availability, affordability, quality and safety (World Bank, 2019; GSFI, 2019).

Despite the concentrated efforts of government in order to achieve food security through various programs and projects put in place, larger percentage of Nigerians are still not food secure (Adepoju and Adejare, 2013). The interplay of climate variability, sudden food price shocks and conflicts contributes to food insecurity. The consequences include hunger, malnutrition and socio-economic disruptions. Despite efforts to address these issues, global hunger has been on the rise since 2015, with Africa facing particular challenges (FAO, 2015). Nigeria, despite its agricultural potential, struggles with food security due to factors such as rising global food prices and dependence on food imports (IFRI 2016). The lack of access to quality and sufficient food negatively affects the productivity of human resources, hindering the overall economic development of the nation (Omonona and Agoi, 2007).

World Bank (2021) discovered that over 40% of Nigerian population was considered penurious, which transformed to about 83 million people. It also mentioned that 4 out of 10 individuals typically in Nigeria have real per capita expenditures below 137,430 Naira per year", which is presently corresponding to about $320 USD. Even though Nigeria has received much benevolent aid to fight food security crisis (Onyeiwu, n.d ), but the suitable infrastructure to create stable change is not in place. Even though, food insecurity is a general problem found around the entire country and in all states, Northern Nigeria appeared to be the most affected. The Borgen Project (Agostini, n.d) found that between "the three northeastern states of Borno, Adamawa and Yobe, almost 4.5 million people are now at risk of hunger. Of that 4.5 million, more than 700,000 are at imminent risk of starving to death". In addressing these challenges, it is crucial to examine the factors contributing to insufficient food consumption and implement effective measures to achieve food security. The study aims to contribute valuable insights by examining food security and its determinants among

farming households in various regions of Nigeria. The major focus of the present government is to achieve food security among her people which makes this research work relevant at this time. There has been different works on food security determinants but the regional approach justifies this work and allows for meaningful comparisons between states of the region. This gives policymakers the real understanding of the severity of food insecurity in the region and helps to formulate effective policies to enhance household welfare, achieve sustainable development goals and provides region-specific solutions to the affected regions.

In line with the foregoing, this study intends to look into the following specific objective:

**Objectives of the Study**

- determine the food security status of farming households in South-South region;
- compare the food security status of farming households in selected states of South-South;
- examine the determinants of food security among the farming households of the region and
- determine the coping strategies adopted by farming households of the region.

# LITERATURE REVIEW

**Conceptual Framework:** The concept of food security has undergone many changes over the last five decades, from an initial focus on food production and availability to a more comprehensive approach that takes into account food access, utilization and sustainability. According to the Food and Agriculture Organization (FAO), "food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life" (FAO, 2009). It is important to highlight that the food security concept includes food availability, along with food affordability, accessibility and adequate nutrition. Food security is normally defined from the following four interrelated dimensions: food availability, food access, food utilization and food stability (FAO, 2008). Food availability entails the physical availability of enough amounts of food through domestic food production, food imports, food stocks and food assistance. Food access entails the ability of households to have enough food economically and physically through production, acquisition, exchange or transfer. Food utilization relates to the proper biological use of food involving good nutritional value, clean water, hygiene and health care services. Food stability implies that the first three dimensions must remain consistent over time without being interrupted by economic shocks, climate shocks, conflicts or seasonality (FAO, 2009; Global Strategic Framework for Food Security and Nutrition, 2021). Food security in the case of farming households is determined by many socio-economic, demographic, institutional, environmental and market factors. Farming households act as producers as well as consumers of food. Therefore, their food security does not only depend on food production but also on the ability to earn income, access markets and resist shocks such as climate change, floods, insect attacks, increase in food prices and cost of production (Barrett, 2010). In developing countries such as Nigeria, these interacting factors determine whether households can maintain adequate dietary intake throughout the year.

The conceptual framework under which this research was conducted was based on the livelihood theory that acknowledges that household food security is a product of interaction of household attributes, production capabilities, institutional support, markets and environment. The factors affect food production, income, food expenditures and finally the food consumption levels which is measured in terms of calories consumed per adult equivalents. The dependent variable in this research is food security status of the household which is measured in terms of Food and Agriculture Organization's recommended daily dietary energy requirement of 2,500 kilocalories per adult equivalent. Households with calorie consumption greater than or equal to this value are considered food secure while those below it are considered food insecure (FAO, 2001; Ahungwa *et al*., 2013). The explanatory variables used in this research were household head's age, household size, expenditure on food, frequency of adult meals and rainfall together with increase in agricultural input price. These variables have been chosen taking into account both theoretical aspects and empirical evidence which shows that these factors significantly affect food security of households in developing countries (Omonona & Agoi, 2007; Adepoju & Adejare, 2013). Increase in price of agricultural inputs affects food security of households through production cost. Price increase of fertilizers, improved seeds, agrochemicals and farm machines raises production cost, decreases farm profitability and discourages usage of technology. As a result of low production level, food and income levels drop down and hence increase the probability of households being food insecure (FAO, 2023).

Furthermore, households experiencing food insecurity frequently adopt coping strategies to minimize food shortages. Such coping strategies include reducing meal sizes, consuming less preferred foods, reducing dietary diversity, skipping meals and borrowing food from relatives or neighbours (Maxwell & Caldwell, 2008). Although these strategies may temporarily cushion food shortages, they often reduce dietary quality and nutritional outcomes if sustained over long periods. Under this particular study, farm households in the South-South region are faced with various environmental and socioeconomic factors that impact on their food security. Variability of weather conditions, floods, degradation of the environment due to the discovery of crude oil, high prices of food, high cost of inputs for agriculture and population growth impacts on agricultural production and the welfare of the farm household. Food security is thus viewed as the result of interaction of demographic, economic, environmental and agricultural factors.

**Theoretical Framework:** This study is stand on two main theories; sustainable Livelihood Framework (SLF) and Household Utility Maximization Theory.

**Sustainable Livelihood Framework (SLF):** The Sustainable Livelihoods Approach (SLA), also referred to as the Sustainable Livelihood Framework (SLF), is an extensively used theoretical framework that describes the process through which people and their families utilize available resources in order to develop sustainable means of living in response to economic, social, and environmental problems. The SLF was devised by the Department for International Development within its approach to sustainable livelihoods in the context of poverty alleviation and rural development (Carney, 1998; DFID, 1999).

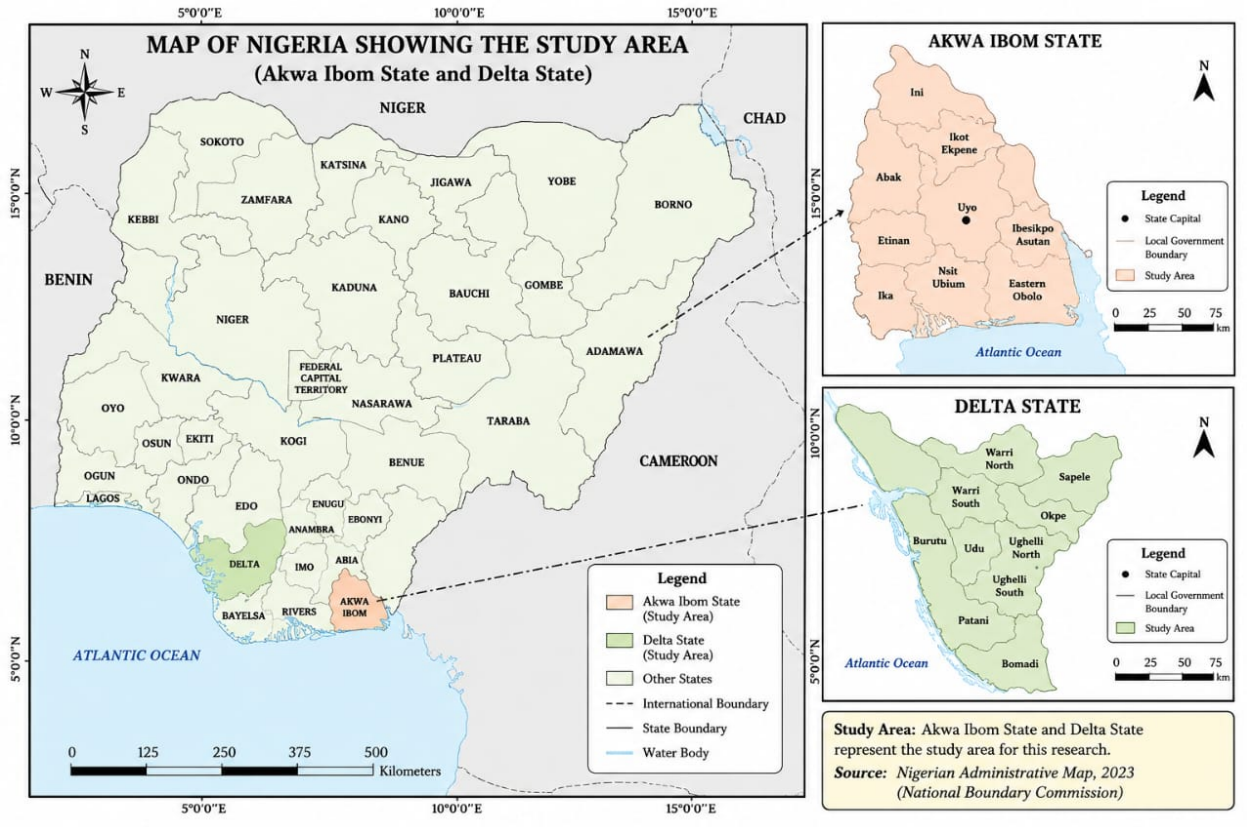


**Fig. 1. Map of Nigeria showing the study area**

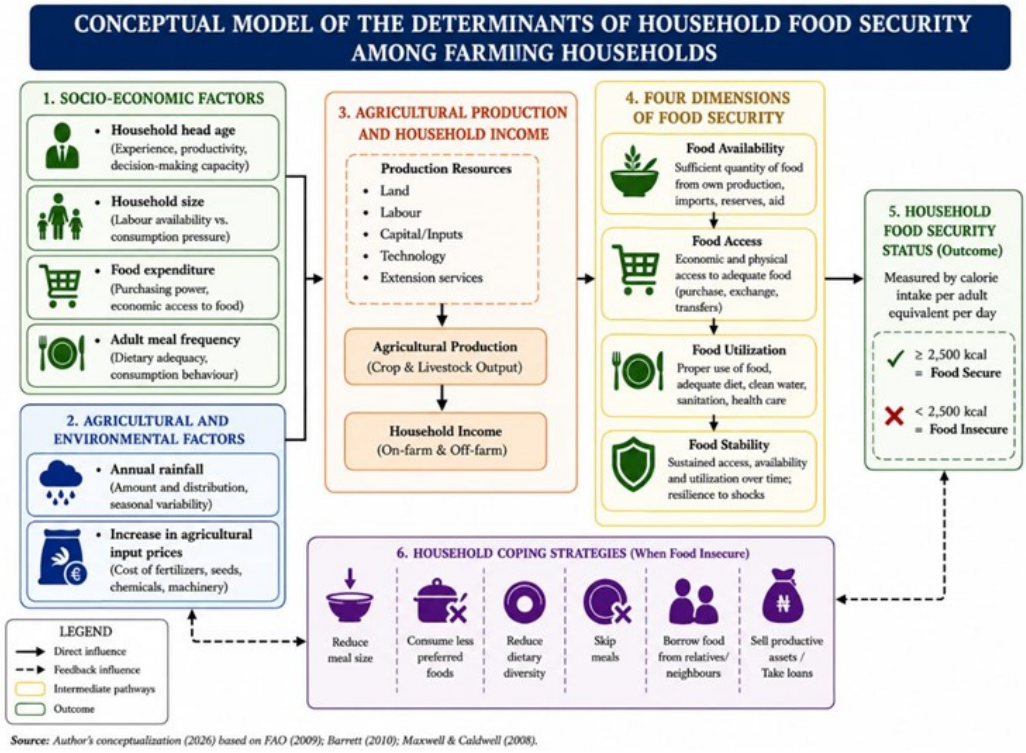


**Fig. 2. Conceptual framework for the determinants of household food security**

As described by Robert Chambers and Gordon Conway (1992), a livelihood consists of capabilities, assets (both tangible and intangible), and activities needed for a way of living. The concept of sustainability in terms of livelihood is achieved when a livelihood is able to cope with and adapt to stress and shocks, sustain and improve capabilities and assets, and provide livelihood opportunities in the future without depleting the natural resource base.

The Sustainable Livelihoods Approach defines five types of livelihood assets which are popularly known as livelihood capitals. The capital is what households have in the form of assets which allow them to explore different types of livelihood approaches (DFID, 1999; Ellis, 2000). Human capital is comprised of education, knowledge, skills, health, and labor of the household members. Human capital increases

efficiency, innovativeness, and flexibility in engaging in diverse livelihoods. More educated and healthy families usually have more chances to develop their livelihoods (Ellis, 2000).

- Natural capital includes all the natural resources such as land, forests, water, fishery, biodiversity, and fertility of soils that are used by households for producing livelihoods. In rural areas, natural capital usually is the basis of agricultural and natural resources-based livelihoods (Scoones, 1998).
- Physical capital is defined as the infrastructure and productive capital which enables people to engage in productive activities. This includes roads, transport infrastructure, irrigation infrastructure, electricity, buildings, communications infrastructure, machinery and agricultural equipment. Good infrastructure facilitates productive efficiency and market access (DFID, 1999).
- Financial capital is defined as financial assets such as money income, savings, access to credit, remittances, insurance and pensions. Financial capital allows households to be able to engage in productive activities (Ellis, 2000).
- Social capital refers to social relationships, networks and institutions that permit cooperation among individuals. High levels of social capital facilitate access to information, finance, labor and markets (Putnam, 1993; DFID, 1999).

The Sustainable Livelihood Framework therefore viewed food security as an achievement resulting from the ability of the household to convert their livelihood assets into sustainable agricultural production, income generation and improved welfare.

**Household Utility Maximization Theory:** The theory of Household Utility Maximization is rooted in the classical consumer demand model of Alfred Marshall (1890), which was further built on by other economists like Gary Becker (1965). Households need to optimize their use of scarce resources that satisfy different requirements, such as food, clothing, healthcare, education, and housing. The amount of money spent on food is an indicator of a rational consumption choice that leads to utility maximization.

The theory assumes that households maximize utility subject to the following budget constraint:

$$\mathbf{U} = f(X_1, X_2 \ldots\ldots\ldots\ldots X_n)$$

Subjected to:

$$\sum P_i X_i = Y$$

Where:

U = Household utility
X = Goods consumed
P = Prices of goods
Y = Household income

As per food security, households allocate their income towards the consumption of food and non-food goods. Higher income or higher purchasing power allows households to purchase better food products for themselves, while higher food prices lead to lower purchasing capacity. In this sense, the amount of spending on food becomes a key determinant of household food security since it signifies the type of food purchased. Moreover, the model suggests that higher prices of inputs will lower the profitability of farms, which leads to lower income and food expenditures by the households. Household food security is influenced by income and food prices. Higher income or purchasing power enables households to buy better food, while higher food prices reduce purchasing capacity. Food expenditure is crucial as it reflects the quality of food purchased. Additionally, the model indicates that increased input prices will decrease farm profitability, leading to lower household income and food spending.

**The Study Area:** Nigeria, located in West Africa, occupies a position between the Sahel in the north and the Gulf of Guinea in the south, along the Atlantic Ocean. Encompassing an area of 923,769 square kilometers and home to a population exceeding 230 million, Nigeria stands as the most populous nation in Africa and the sixth-most populous globally. Sharing borders with Niger to the north, Chad to the northeast, Cameroon to the east, and Benin to the west, Nigeria operates as a federal republic divided into six geopolitical zones, established during the presidency of General Sani Abacha. North Central, also referred to as the Middle Belt, the North East, the North West, the South East, the South West and the South-South which is the study area for this study, are the six geopolitical zones of Nigeria. The study utilized a post-harvest, secondary data from the General Household Survey, wave 4, panel 2018/2019, which was obtained from the National Bureau of Statistics. The study comprised 215 farming households from Akwa Ibom state and 152 farming households from Delta state from South-South. Akwa Ibom and Delta are oil producing states and as such seen as wealthy states. As the third largest oil and gas producer, Akwa Ibom state is Nigeria's ninth richest state. Apart from farming, being a coastline state, they also engage in fishing as primary occupations. Delta state is the fourth richest state in Nigeria having oil and gas as natural resources and also endowed with Silica, Lignite, Kaolin, Tar sand, gemstones and limestone. They were selected from South-South for this study in order to grasp the effect of these natural endowment and image on the food security status of their farming households. The dataset comprised food consumption data and variables influencing food security, such as household size, annual rainfall, adult meal frequency, input prices and food expenditure over the last 30 days.

# METHODS OF DATA ANALYSIS

Descriptive statistics, including percentages, frequency tables, bar charts and pie charts was employed to describe the coping strategies and Weighted Mean Score was used for the ranking. A food security index was constructed to determine and compare the food security status of farming households in both selected states. FAO food security baseline (2500kcal/adult equivalent/day), was used to categorize households as either food secure or food insecure.

**Model Specification:** The food security model specification used for this study was according to the design of Ahungwa *et al.* (2013) and expressed empirically as:

$$Z = \frac{\text{Household's daily per capita calorie availability (A)}}{\text{Household's daily per capita calorie requirements (R)}} \quad (1)$$

Based on Z, some food security measures will be calculated: the shortfall or surplus index, P, as

$$P = \frac{1}{M} \sum_{i=1}^{m} GK \quad (2)$$

$$GK = \frac{(Xk-1)}{I} \quad (3)$$

P= shortfall or surplus index

$X_k$= Average daily calories availability to the $j^{th}$
M = the number of households that are food secure (surplus index) or food insecure (shortfall index)
The head count ratio (h) is given as

$$H = \frac{m}{n} \quad (4)$$

Where m = the number of food secure or insecure members of the sample population

n = total population understudy.

$HFS_i$ = Total net calorie consumed by a household daily / Household size measured by adult equivalent

Where: $HFS_i$ is Household Food Security of the ith household and i=1, 2, 3…130. Therefore, based on the $HFS_i$ value, the households' food security status was determined and those households whose $HFS_i$ is greater or equals to 2500 kcals per day were categorized as food secured and the others were concluded as food insecure. Double-log Regression was used for a robust outcome to determine the food security determinants among farming households in the study area. The double log regression model specification for the study is written thus as follow:

$$InY_i = \beta_0 + \beta_1 In_{HHA} + \beta_2 In_{AMFr} + \beta_3 In_{HZ} + \beta_4 In_{AR} + \beta_5 In_{FEXP} + \varepsilon \quad (5)$$

Where,

$Y_i$ = Food consumption (Kcal/Adult Equivalent (AE))
$\beta_0$ = Constant estimate
$HHA$ = Household head age (yrs)
$AMFr$ = Adult meal frequency (number)
$HZ$ = Household size (number)
$AR$ = Annual Rainfall (mm)
$FEXP$ = Food expenditure (₦)
$INCIP$ = Increase in Input Price
$\varepsilon_i$ = Error term

# RESULT AND DISCUSSION

The level of calorie intake and the result of the food security analysis of the farming households in South-South region is presented in the tables and the bar chart below. It shows that 68.39% of the households in South-South were food secure while 31.61% were not food secure. The level of food security in the South-South (expected to be more food secure) could be as a result of the too much rainfall that results into persistent flooding that is usually detrimental to their farming activity. Also, oil spillage that has limited the level of agricultural productivity of the people as well as the Niger-Delta militants' invasion could also be responsible for their food security status.

**Comparison of Food Security Status of Farming Households in Akwa Ibom and Delta:** Figure 4 presents the food security status of farming households in Akwa Ibom and Delta States.

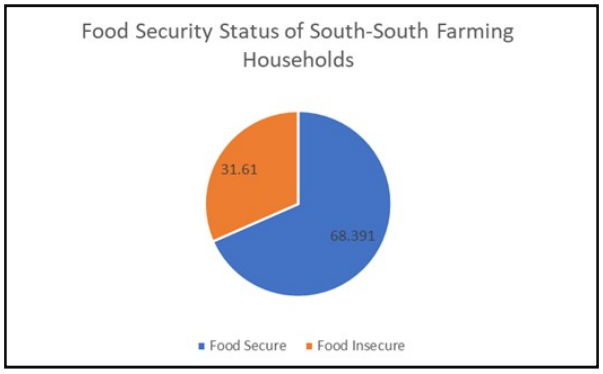


**Figure 3. Food Security Status of Farming Households in South-South**

The results reveal that 64.64% of farming households in Akwa Ibom are food secure, while 35.35% are food insecure. In contrast, 73.68% of farming households in Delta State are food secure, with only 26.32% classified as food insecure. These findings indicate that the majority of farming households in both states are food secure; however, Delta State exhibits a relatively higher level of food security than Akwa Ibom. The higher proportion of food-secure households in Delta suggests better household access to food, which may reflect more favourable socio-economic conditions, agricultural productivity or coping strategy to climate-related shocks. Nevertheless, the presence of over one-quarter of households experiencing food insecurity in Delta and more than one-third in Akwa Ibom underscores the need for targeted interventions aimed at improving household food access, agricultural productivity and coping strategy especially in Akwa Ibom State.

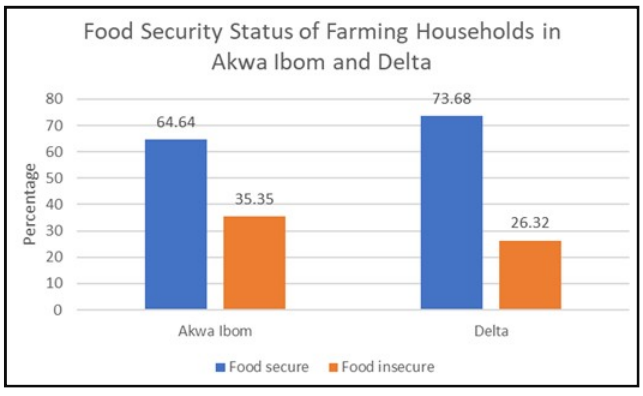


**Figure 4. Comparison of Food Security Status of Farming Households in Akwa Ibom and Delta**

**Determinants of Food Security Status among Farming Households in the South-South**

**Region of Nigeria:** The table further shows the regression results for determinants of food security status for the South-South region.

**Table 2. Determinants of Food Security among Farming Households in South- South Region**

| LnFSS S-S | Coef. | T | P>/t/ |
|---|---|---|---|
| HZ | -0.033 | -2.43 | 0.016** |
| FEXP | 0.000 | 6.75 | 0.000*** |
| AR | -1.80e-06 | -0.07 | 0.944 |
| AMFr | 0.004 | 0.07 | 0.942 |
| HHA | -0.009 | -4.48 | 0.000*** |
| INCIP | 0.192 | 1.19 | 0.234 |
| Constant | 8.462 | 40.78 | 0.000*** |
| R-squared = 0.171, Adj R-squared = 0.157, F(6, 360) = 12.38, Prob > F = 0.000 | | | |

**Table 3. Food Coping Strategies Adopted by Households in South-South Region**

| Coping Strategy | South-South | | | |
|---|---|---|---|---|
| | Yes | No | WMS | Rank |
| Eating less preferred food in the last 30 days | 271 (73.84) | 96 (26.16) | 1.74 | 2nd |
| Eating few kinds/varieties/types of food in the last 30 days | 281(76.57) | 86 (23.43) | 1.77 | 1st |
| Skipping meals/fasting/ in the last 30 days | 232 (63.22) | 135 (36.78) | 1.63 | 4th |
| Eating reduced quantity food in the last 30 days | 269 (73.30) | 98 (26.70) | 1.73 | 3rd |
| Restrict consumption for children to eat in the last 30 days | 166 (45.23) | 201(54.77) | 1.45 | 5th |
| Borrow food/rely on friends or relatives in the last 30 days | 41(11.17) | 326 (88.83) | 1.11 | 6th |

The results revealed that household size, food expenditure and the age of the household head all exhibited statistical significance at 5%, 1%, and 1%, respectively. The results demonstrated a negative relationship between household size and food security. This implies that with each unit increase in household size, food security decreases by 0.729 and significant at 5% which agrees with the aprior expectation. This suggests that larger household sizes incur more expenses on food, thereby diminishing the overall food security status. The presence of an extensive household size tends to impact the household's wealth, making it more prone to food insecurity. This finding aligns with Ahmed et al. (2015), who asserted that an expanding household size can exert additional pressure on overall household consumption. This, however, contrasts with the perspective of Faustine et al. (2016), who suggested that a larger household size contributes positively by providing more labor for production, thereby enhancing food security. Conversely, food expenditure exhibited a positive relationship with food security status among households in the South-South zone, significant at 1%. Adequate financial resources allocated to food expenses lead to improved consumption patterns in terms of both quantity and quality. This is consistent with the aprior expectation and the conclusion of Obayelu and Akinmulewo (2020), who emphasized that increased household income, facilitated by remittances, results in higher per capita food expenditure, consequently enhancing overall food security. The age of the household head displayed a negative relationship with food security status. A one-year increase in the age of the household head corresponded to a 0.011 decrease in food security status. This implies that as household heads age, there is a decline in their agility, strength and overall health, essential for effective engagement in farming activities. Therefore, households headed by older heads are more susceptible to experiencing food insecurity.

This observation aligns with Scott (2005), who concluded that advancing household head age raises the likelihood of the household transitioning into a state of food insecurity.

**Food Coping Strategies Employed by Households in the South-South Region of Nigeria:** As a means of coping, the majority (73.84%) of the selected households faced the challenge of being unable to consume their preferred food in the preceding 30 days. A significant portion (76.57%) resorted to consuming a limited variety of food types during the same period. A considerable number (63.22%) implemented the strategy of meal skipping or intermittent fasting in the past month. The practice of consuming reduced quantities of food was embraced by the majority (73.30%) of these households. Slightly below the average (45.23%) restricted their own consumption to ensure their children had enough to eat. A minority (11.17%) resorted to borrowing food or relying on friends and relatives for sustenance during the last 30 days. Among these strategies, the most prevalent was the consumption of limited varieties of food, followed closely by opting for less preferred food items. The strategy of reducing the quantity of food consumed ranked third in terms of Weighted Mean Score (WMS) and was also widely adopted by many households.

## CONCLUSION AND RECOMMENDATIONS

This study concludes that food-secure farming households outnumbered insecure one. Household heads in both regions were characterized as older adults exhibiting disciplined food consumption habits. Increased food expenditure significantly heightened food security while larger household sizes and older household heads diminished security. Coping strategies, notably consuming less preferred food, limited food variety and reduced quantity, played a pivotal role in determining food security. Therefore, based on the major findings, it was recommended that; Government should make quick and informed policies to aid food security status of farming households in all the regions of the nation especially those experiencing social and environmental disasters. Farming households are encouraged to allocate more resources to affordable yet nutritious food items. Farming households should also cultivate the habit of adopting food coping strategies that are suitable to enhance their food security status.

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