Determinants of Food Insecurity using Household Food Insecurity Access Scale: A Cross-Sectional Study in Enset-Based Agricultural Practice of Sidama Regional State, Ethiopia

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Abstract

This study investigates the determinants of food insecurity in the Sidama Regional State, Ethiopia, using the Household Food Insecurity Access Scale (HFIAS) as a measure of food insecurity. Employing a cross-sectional research design, the study integrates both quantitative and qualitative approaches. Data were collected from 620 sampled farming households through a multi-stage sampling method and analyzed using SPSS software version 26. Both descriptive and inferential statistics including frequencies, percentages, Chi-square, independent-sample t-test, and binary logistic regression, were utilized for data analysis. The findings reveal that higher levels of education, larger land sizes, longer birth intervals, and greater household asset ownership positively influence household food security. Conversely, heavy reliance on enset (false banana) is associated with lower food security, likely due to limited agricultural yields and reduced dietary diversity. Additionally, the study identifies common coping strategies, such as reducing meal variety, opting for cheaper meals, and limiting portion sizes, as prevalent responses to food insecurity. These results highlight the importance of education, land access, family planning, and diversified food production in enhancing food security in the region.

Keywords: Farmer, Household, Food insecurity, HFIAS, Sidama, Ethiopia

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1. Introduction

Food is a fundamental human need, essential for survival, health, and societal progress. Ensuring access to sufficient, nutritious food remains a global challenge, with millions of people worldwide facing chronic hunger and malnutrition. According to the Food and Agriculture Organization (FAO), approximately 815 million people were chronically undernourished in 2016, reflecting a persistent and pressing issue despite some progress over the years (Herforth et al., 2017). Food insecurity, defined as the lack of consistent access to enough food for an active and healthy life, is a complex problem influenced by a range of factors, including poverty, agricultural productivity, environmental degradation, and population growth.

In Sub-Saharan Africa (SSA), food insecurity is particularly acute due to a combination of structural, economic, and environmental challenges. Ethiopia, the second-most populous country in SSA, exemplifies these struggles. With a population exceeding 104 million and a heavy reliance on agriculture for livelihoods, Ethiopia faces significant food security challenges. Despite its abundant natural and human resources, the country struggles to feed its population, with smallholder farmers who constitute the majority of the agricultural sector bearing the brunt of food insecurity. Even in years without drought or in regions with surplus production, food insecurity remains widespread, underscoring the systemic nature of the problem (Petr, 2010).
The Sidama Regional State, historically considered a high-productivity and food-sufficient area, now grapples with rising food insecurity due to rapid population growth, environmental degradation, low agricultural productivity, and limited economic opportunities (Sidama Agricultural Office, 2020). These challenges have transformed Sidama into a region where food insecurity is increasingly prevalent, despite its agricultural potential. Understanding the determinants of food insecurity in this context is critical for developing targeted interventions and policies to address the issue.

This study focuses on identifying the key factors influencing household food insecurity in Sidama, Ethiopia, using the Household Food Insecurity Access Scale (HFIAS) as a measurement tool. The HFIAS provides a comprehensive framework for assessing food insecurity, capturing dimensions such as

inadequate food access and nutritional deficiencies (Dachner & Tarasuk, 2018). By examining the interplay of agricultural shocks, socio-economic conditions, and environmental factors, this research aims to shed light on the drivers of food insecurity in Sidama's Enset-based agricultural food systems. The findings will contribute to the broader discourse on food security in Ethiopia and inform evidence-based strategies to combat hunger and malnutrition in the region.

2. Research Methods

2.1 Study area and population

The study was conducted in Sidama regional state. Sidama Regional State is a federal state in Ethiopia located in the southern part of the country. It was established in June 2020 after the Sidama people voted in a referendum to form their regional state. The region is located south of the Oromia Region (except for a brief section in the middle where it shares a border with the Gedeo zone), the Bilate River on the West, which divides it from the Wolayita zone, and the Oromia Region on the North and East. Sidama Regional State is governed by a regional council responsible for the region's administration. The capital of the region is Hawassa, which is also the biggest city in the region. The region is divided into 19 districts (woredas) and one town administration, with each district being further divided into kebeles(Ethiopian Mapping Authority, 2020).

The Sidama people are one of the largestnumber ethnic groups in Ethiopia and are known for their rich cultural heritage, including their music, dance, and traditional dress. In 2017, about 3.2 million people were living in Sidama. With 879 km of all-weather roads and 213 km of dry-weather highways, Sidama has an average road density of 161 km per 1,000 km^2. Agriculture is the leading economic activity in the region, with coffee being the most important crop. The region also has significant potential for tourism due to its natural beauty, including its highlands, lakes, and waterfalls (FAO, 2021).
Also abundant and underdeveloped in the area are water resources. The absence of access to safe drinking water, poor sanitation, and general knowledge about personal hygiene and environmental health are the leading causes of sickness and mortality in the SNNP region. The Sidama place a high

importance on livestock, and those without cattle are not seen as fully-grown members of society but as outcasts. Cattle numbers are a solid indicator of prosperity and provide the farmer with the most livestock in more significant popularity. The population of this study includes households, Kebele administrators, Development Agents (DAs), health extension workers, Woreda administrators, and heads of relevant Woreda offices in Sidama Woredas.

2.2 Operational definition

***Food insecurity status*:** Household food insecurity status was measured using Household Food Insecurity Access Scale (HFIAS) developed primarily for use in poor countries by Food and Nutrition Technical Assistance (FANTA). The tool included nine items that represented the general growing severity of food insecurity, as well as four frequencies of recurrence questions. The nine generic incidence questions are organized into three categories of food insecurity (Cohen et al., 2012).

2.3 Sample selection

Households, particularly Woredas of the Sidama regional state, participated in the survey. In total, 620 respondents were included in the study. Using the formula proposed by the UN Economic Division (2005), the sample size was established as follows:

$$n = (z^2)(r)(1-r)(f)(k)/(p)(n_h)(e^2)$$

Where, n = is number of sample, Z^2 = is the upper points of standard normal distribution at α = 0.05, *ri*s anticipated prevalence, *f* is the sample design effect (deff), the study design effect is assumed to be (1.5), *k* is a multiplier to account for the anticipated rate of non-response. It is taken as 1.1 which is the recommended value for household survey, p is the proportion of the target population over total population which is 0.15, nh is the average household size (5). The margin of error (e) is 5%, the maximum recommended value.

Multi-stage sampling was employed to ensure representative sampling. In the first stage, due to the local staple diet, six enset-producing and non-enset-producing Woredas were selected using purposive sampling technique. Wondogenet, Shebedino, Hawassa zuria, Malga, Goricha, and Boricha were

the selected Woredas. In the second stage, one representative Kebele from each Woreda was selected using simple random sampling. Thirdly, Kebele households were proportionally selected. Finally, using systematic sampling technique, 620 respondents were randomly picked from the relevant list of respondents, a complete list of households in each Kebeles obtained from the Woredas Administration, and Kebeles offices in the selected Kebeles.

2.4 Data collection and measurements

The data was gathered through the use of a survey questionnaire. To collect the necessary data, both closed and open-ended questions were constructed. Following the development of all questions for the household survey, a pre-test with 30 respondents was conducted prior to the survey to refine the questions in terms of language usage and topic clarity to capture adequate data during the survey.

2.5 Data processing and analysis

The data collected through the questionnaire was edited, coded, and entered into computer software using SPSS version 26. The analysis techniques were performed using descriptive statistics such as frequencies and percentages. Furthermore, inferential statistics such as independent sample t-test and *Chi*-square were used to see the difference between food-secure and food-insecure households across explanatory variables of the study. Binary logistic regression analysis was employed to identify the factors that affect the food security status of sample households in the study area.

3. Results

The following is a rundown of the findings from the investigation about the determinants of food insecurity using household food insecurity access scale.

Table 1: *Summary of Respondents' Socio-demographic Characteristics (n = 620)*

Characteristics	***n***	**%**
Educational status of a mother		
Unable to read and write	280	45.2
Able to read and write	161	26.0

Only primary education	72	11.6
Secondary education	84	13.5
College diploma and above	23	3.7
Mother occupation		
Housewife	119	19.2
Agriculture	285	45.8
Petty Trade / Informal Business	99	15.9
Daily Labor	71	11.4
Public / Private Sector Employment	48	7.7
Housing condition		
Thatch/grass	303	48.9
Corrugated iron sheet	317	51.1
Birth interval		
First birth	22	3.5
1-2 years	258	41.6
>2 years	340	54.8
Enset dominant		
Non-enset dominant	321	51.8
Enset dominant	299	48.2
Asset index		
Very poor	127	20.5
Poor	121	19.5
Middle	135	21.8
Rich	114	18.4
Very rich	123	19.8
HFIAS		
Food insecure	328	52.9
Food secured	292	47.1

***Note**:* HFIAS = *Household Food Insecurity Access Scale*

The educational status of surveyed respondents showed that 45.2% were unable to read and write, indicating that almost half had not received any formal education. 26.0% of mothers were able to read and write, 11.6% had only completed primary education, covering the first few years of formal schooling, while 13.5% had completed secondary education, covering middle

and high school years. Only 3.7% of surveyed mothers had completed tertiary education, including college diplomas and higher degrees.

Regarding maternal occupation, 80.8% of the sampled women were engaged in farming, petty trade, daily labor, or public/private sector employment, while the remaining 19.2% reported being housewives. Housing conditions were almost evenly split between thatch/grass (48.9%) and corrugated iron sheet (51.1%). Birth intervals were categorized as over two years for 54.8%, 1-2 years for 41.6%, and only 3.5% reported their first birth. Respondents were divided into enset-dominant areas (48.2%) and non-enset dominant areas (51.8%). The study assessed the asset index, categorizing 40% as poor and 38.2% as rich. Regarding food security, 52.9% of households were found to be food insecure.

Table 2: *The Descriptive Summary of Continuous Variables (n = 620)*

Variables	Minimum	Maximum	Mean	SD
Monthly household income (Birr)	693	5645	3639	670
Total household size	02	12	5.26	1.79
Land size in hectare	.00	7.00	1.32	1.01
TLU	.00	17.50	6.92	6.86

Note*:*TLU = *Tropical Livestock Unit*

The data for four variables, including monthly household income, total household size, land size in a hectare, and TLU, show the mean and standard deviation. The mean monthly household income is 3639, with a standard deviation of 670. The mean total household size is 5.26, with a standard deviation of 1.79. The mean land size in hectares is 1.32, with a standard deviation of 1.01. Finally, the mean TLU is 6.92, with a standard deviation of 6.86. These statistics provide insight into each variable's central tendency and variability, allowing for a better understanding of the overall distribution of the data.

Table 3: *The Binary Logistic Regression Output*

Variables	B	S.E.	Wald	Sig.	Exp(B)	95% C.I.for EXP(B)

						Lower	Upper
Education level	0.19	0.09	4.76	0.029	1.20	1.02	1.42
Mother occupation	-0.19	0.24	0.63	0.429	0.83	0.52	1.32
Monthly income	0.10	0.08	1.78	0.182	1.11	0.95	1.29
Total household size	-0.10	0.05	3.47	0.062	0.91	0.82	1.01
Housing condition	0.19	0.22	0.74	0.389	1.21	0.79	1.85
Land size	0.44	0.10	20.55	0.000	1.55	1.28	1.88
Birth interval	0.34	0.17	4.04	0.044	1.40	1.01	1.94
TLU	0.00	0.01	0.02	0.883	1.00	0.98	1.03
Enset dominant	-1.05	0.21	25.56	0.000	0.35	0.23	0.53
Asset index	0.21	0.08	6.73	0.009	1.23	1.05	1.44
Chi-square	123.25						
Sig.	0.000						
Number of obs	620						

The results of Table 3 shows that 620 observations are in the dataset for which all of the response and predictor variables are non-missing. The *Chi*-square test ($x^2 =$ 123.25, p<0.001) is significant at less than 0.1% which indicates at least one of the independent variables is significantly related to the response variable. Overall, the results suggest that the binary logistic regression model is a good fit for the data, and that the predictor variables are helpful for predicting the response variable.

Education level has a positive and statistically significant effect on food security status (B = 0.19, p <0.05). Those with a higher education level are 1.20 times more likely to be food secure than those with a lower education level. Research demonstrated that an individual's level of education had a beneficial impact on their household's food security. In other words, as education levels rise, so does the possibility of a home having enough food to meet its needs.

Land size has a favourable and statistically significant effect on household food security (B = 0.44, p <0.001). Based on the odds ratio figures, a household has a 1.55 likelihood of being food secure if the land size in hectares increases by one unit, regardless of the other independent variables in the model. Research suggested that land size has a favourable impact on food security. Greater land areas are often connected with higher agricultural productivity, which can assist in ensuring that households have enough food to meet their needs.

The results shown in Table 3 indicate that birth interval has a favourable and statistically significant effect on food security status (B =0.34, p< 0.05). Food security is 1.40 times more likely in homes with a longer interval between children's births than in households with a shorter time between children's births. Research demonstrated that households with longer birth intervals have greater food security because they can better meet their children's requirements.

The findings presented in Table 3, which reveals that enset dominance has a negative and statistically significant effect on food security status (B =-1.05, p < 0.001). Households with enset dominant are 0.35 times less likely to be food secure than non-enset dominant households. Research found that households with enset dominance have a lower risk of being food secure than non-enset dominant families. This suggests that households that rely largely on enset (a species of plant used for food in some places) have lower levels of food security.

The results of Table 3 shows that the asset index has a positive and statistically significant effect on food security status (B = 0.21, p < 0.01). Households with more assets are 1.23 times more likely to be food secure than those with less assets. The study found that households with higher assets are more likely to be food secure than those with lower assets. As a result, households with higher levels of assets are better prepared to deal with potential food shortages or other obstacles.

Table 4: *Household Coping Strategy during Food Shortage*

Possible coping strategies to food insecurity	Rank Order	N	%
Stop choosing food and eating whatever available	1	470	75.8
Rely on less preferred and less expensive foods	2	459	74.0
Limit portion size at mealtime	3	410	66.1
Reduce number of meals eaten per day	4	366	59.0
Send household members to eat elsewhere	5	342	55.2
Receiving loans	6	332	53.5
Sell off livestock more than usual	7	322	51.9
Engagement in petty trade	8	296	47.7
Selling woods charcoal	9	295	47.6
Selling household asset	10	275	44.4
Working as a daily laborer	11	241	38.9
Sending children to labor market	12	232	37.4
Remittance and food aid	13	231	37.3
Migration to cities	14	206	33.2

Key: Multiple answers were possible; percentages calculated according to the persons interviewed; does not add up to 100 percent.

Based on the order of prevalence, the most commonly used coping strategy, adopted by 75.8% of the respondents, is "Stop choosing food and eating whatever available." Following closely, "Relying on less preferred and less expensive foods" is another widely used approach, with 74.0% of respondents utilizing this strategy. "Limiting portion size at mealtime" is the third most common strategy, employed by 66.1% of individuals. As the rankings progress, the prevalence of these strategies gradually decreases, with strategies such as "Reduce number of meals eaten per day" (59.0%) and "Send household members to eat elsewhere" (55.2%) being employed by slightly fewer respondents. Other strategies include "Receiving loans" (53.5%), "Selling off livestock more than usual" (51.9%), and "Engagement in petty trade" (47.7%). These findings provide valuable insights into the adaptive

mechanisms employed by individuals facing food insecurity, which can inform targeted interventions and policies aimed at alleviating this issue.

4.Discussion

The study found that education level positively affects the food security status of their households. In line with this finding, Garbero and Jackering (2021) found that education, particularly women's education, was positively associated with food security outcomes such as dietary diversity and reduced risk of malnutrition. The authors suggest that education can improve food security by increasing knowledge and skills related to agriculture, nutrition, and health and increasing income and economic opportunities. The study by Zhou et al. (2019) indicated that as the household head's education level increased, the probability of having food security increased. This is because educated households can use any technological innovation faster than their uneducated counterparts. Educated farmers can take a note and read and understand any important information about their farm and their farm sales; they can listen to media in non-local languages. They can easily accept and are more optimistic about future government developmental plans.

Education plays a pivotal role in bolstering household food security by enhancing knowledge, skills, and economic opportunities (Utama et al., 2023). Not only does it empower individuals to make informed decisions about agriculture, nutrition, and health, but it also leads to better food security outcomes. Crucially, women's education has a particularly strong impact, correlating with improved dietary diversity and reduced malnutrition (Drammeh et al., 2019). Furthermore, higher education levels enable individuals to adopt advanced agricultural technologies, boosting productivity and food availability (Maziya et al., 2017), while also improving their ability to interpret market trends and farming information for smarter livelihood decisions (Adeyanju &Fadupin, 2024). Consequently, increased education attainment directly reduces food insecurity rates (Ogunniyi et al., 2021). Beyond economic benefits, education encourages openness to sustainable farming practices and government initiatives, strengthening long-term food security. This is especially true for women, as educating female farmers significantly enhances household food security by promoting modern

techniques, efficient resource management, and better family nutrition (Asitik& Abu, 2020; Adeyanju &Fadupin, 2024). Thus, investing in education, particularly for women, proves essential for achieving sustainable food security and overall well-being.

Land size has a positive effect on the food security status of households. Nkomoki et al. (2019) indicated that households with large cultivated land areas were more likely to be food secured than those with smaller ones. They also added that in addition to increased production, larger land sizes could also help to reduce food insecurity by providing farmers with the opportunity to sell their excess produce. This can provide an additional income source, helping to reduce poverty and increase access to food. Likewise, Rufino et al. (2013) indicated that larger land size usually results in greater agricultural production. Access to more land allows farmers to diversify their production and increase crop yields, leading to better food security. That means households with larger land sizes had access to a greater variety of crops, which allowed for more dietary diversity and better nutrition. Furthermore, larger land sizes are associated with better access to external inputs, such as credit and other resources, which can help increase farmers' productivity and food access.

Land size plays a crucial role in household food security, as larger holdings generally enhance food availability, income stability, and resilience. Households with more cultivable land can produce diverse crops, ensuring a stable and varied food supply while generating surplus for market sales—boosting income for purchasing additional necessities. Larger plots also enable farmers to adopt efficient practices, diversify production, and experiment with innovative technologies, improving yields and adaptability to environmental changes (Gassner et al., 2019; Galeana-Pizaña et al., 2021). For instance, agroecological systems like Mexico's milpa demonstrate how land-dependent practices can significantly bolster food security. However, land size alone is insufficient; access to inputs, markets, and complementary income sources remains critical (Yusriadi et al., 2024). Moreover, in land-scarce regions, strategies such as off-farm employment and optimized crop combinations can mitigate constraints. Empirical evidence consistently

confirms that households with larger landholdings achieve greater food security through higher production for both consumption and sale (Molen, 2016; Assefa & Abide, 2022; Diramo et al., 2018; Gazuma, 2018). Yet, without addressing systemic barriers like poverty and resource inequities, smallholders may remain trapped below the poverty line despite their agricultural efforts (Gassner et al., 2019).

Birth spacing is another critical factor influencing household food security. Research by Kiani et al. (2021) in rural Iran found that longer birth intervals correlate with higher food security, as they allow women time to recover from childbirth and provide better care for their children. This practice also reduces child mortality, easing the demand on household resources. Similarly, studies in Ethiopia (Sosina et al., 2012; Adenike, 2016; Getayeneh et al., 2021) reinforce this link, with Sosina et al. (2012) noting that extended birth spacing boosts household income by freeing up resources for productive investments like farming or livestock. Beyond economic benefits, adequate intervals improve maternal and child health by preventing nutrient depletion from short successive pregnancies. Critically, smaller family sizes resulting from spaced births reduce pressure on food and financial resources, enhancing long-term food security. This aligns with Bangladesh's experience, where family planning programs promoting longer intervals have been leveraged as a strategy to combat poverty and food insecurity (Gazuma, 2018). Ultimately, well-timed births enable households to allocate time and resources more effectively, whether to agriculture, income generation, or childcare, strengthening their path to food security.

Birth spacing significantly enhances household food security by improving both food availability and child health outcomes. In rural Ethiopia, Adenike (2016) found that longer birth intervals increased food access and production, as mothers had more time to recover from childbirth and breastfeeding, allowing them to dedicate greater energy to income-generating activities and agricultural work. Similarly, Getayeneh (2021) demonstrated that extended birth spacing reduces child malnutrition risk, a critical factor in breaking cycles of long-term food insecurity, as malnourished children face diminished health and future productivity. By enabling mothers to replenish their

nutritional reserves and provide better care, spaced births help ensure that households can meet the food needs of all members. This is particularly vital in Sub-Saharan Africa, where expanding access to family planning and maternal healthcare is essential for food security. Furthermore, when coupled with women's empowerment and education, key determinants in family size and resource allocation decisions, birth spacing becomes a powerful tool for households to optimize food production, economic stability, and intergenerational well-being (Drammeh et al., 2019).

The findings of the study indicate that the dominance of enset contributes to household food insecurity. In contrast to this finding, Borrell et al. (2020) and Morrow et al. (2023) argue that Enset (Enseteventricosum), often referred to as "the tree against hunger," is a vital perennial crop that sustains millions in the southern Ethiopian highlands. This perennial crop sustains millions in Ethiopia's highlands through its year-round availability, environmental resilience, and multifunctional uses as both staple food and source of animal feed, fiber, and traditional medicine (Abate et al., 2022). Enset significantly enhances nutrition and food security (Serka et al., 2019) while providing ecological benefits like carbon sequestration and soil conservation, making it indispensable for climate change adaptation due to its exceptional drought tolerance. Its cultivation supports sustainable livelihoods by offering reliable carbohydrate sources, emergency food reserves, additional income streams, and ecosystem services. The crop's demonstrated contributions to community well-being, environmental sustainability, and climate resilience underscore its fundamental importance in southern Ethiopia.

However, an over-reliance on enset farming presents several challenges. One major concern is dietary monotony, as enset is carbohydrate-rich but relatively low in protein, which can lead to nutritional deficiencies if not complemented with other foods (Getahun, 2020). Additionally, the crop is highly susceptible to Enset bacterial wilt (EBW), a devastating disease caused by Xanthomonas campestris pv. musacearum, which threatens food security in regions where Enset dominates (Ambachew, 2018). Land use competition further compounds the issue, as prioritizing Enset over diverse crop production can reduce agro-ecosystem sustainability and limit the availability

of other essential food sources (Feleke, 2016). Furthermore, while Enset ensures subsistence, it does not always provide substantial market opportunities, restricting income diversification for farming households (Engida et al, 2022). Lastly, climate change poses an emerging threat, with shifting rainfall patterns and extreme weather conditions potentially undermining Enset production, necessitating disease prevention strategies and technological improvements in processing to sustain its viability (Senbeta, 2022). Addressing these challenges requires a balanced approach that maintains Enset's critical role while integrating crop diversification, disease management, and market access initiatives to enhance long-term food security and resilience.

Household assets play a fundamental role in achieving and maintaining food security by providing multiple pathways to economic stability and nutritional well-being. Empirical evidence from diverse contexts demonstrates that asset ownership serves as both a protective buffer against food insecurity and a foundation for sustainable livelihoods. In developed nations like the United States, Guo's (2011) analysis of low-income households revealed that assets including savings accounts, vehicles, and home equity significantly improved food security outcomes. The study found this relationship was particularly strong among vulnerable groups such as female-headed households, families with children, and rural residents. Importantly, assets provided stability during income fluctuations, suggesting they serve as a crucial safety net beyond regular earnings. The protective function of assets becomes even more critical in developing economies. Multiple Ethiopian studies (Dunga, 2020; Abafita& Kim, 2014; Szabo et al., 2016) consistently demonstrated that productive assets - particularly land and livestock - substantially reduced household vulnerability to food insecurity. These assets enable three key benefits: (1) direct food production for household consumption, (2) income generation through surplus sales, and (3) risk mitigation during economic or environmental shocks. For instance, livestock can be sold during droughts to maintain food purchases, while land ownership allows for crop diversification to withstand climate variability.

Beyond immediate food access, asset ownership generates important secondary benefits. Women's control over assets (Joshi et al., 2019) leads to improved child nutrition and education outcomes, creating intergenerational benefits. Productive assets enhance agricultural productivity (Aragie&Genanu, 2017), while financial assets enable dietary diversification (Prayitno et al., 2019). Assets also provide critical resilience against various shocks - whether climatic (droughts, floods) or economic (price volatility, job loss) - as households can liquidate or leverage assets in crises (Nega & Shitaye, 2020). The cumulative evidence underscores that asset accumulation represents a strategic approach to food security that addresses both immediate needs and long-term stability. Policies promoting asset building - particularly for vulnerable groups and women - can create durable solutions to food insecurity by enhancing households' productive capacity, economic resilience, and nutritional outcomes across diverse contexts.

5.Conclusion

The study area exhibits a notable prevalence of food insecurity, with several key determinants identified. Factors such as low educational attainment, limited land size, short birth intervals, reliance on enset production, and a deficit in assets were found to significantly influence food security status. Higher levels of education positively correlated with improved food security, potentially attributable to enhanced knowledge, skillsets, income levels, and broader economic opportunities. Additionally, greater land holdings were associated with heightened food security, affording farmers increased production capacity, crop diversity, and improved access to external resources. Birth interval emerged as a critical factor, as longer intervals not only reduce child mortality but also enable households to invest in productive pursuits like agriculture and other income-generating activities. Nevertheless, a dominant reliance on Enset cultivation led to diminished yields and limited diversity in food sources, consequently exacerbating household food insecurity. Addressing this issue is of paramount importance and may necessitate initiatives such as the promotion of crop diversification and the provision of training and support for enhanced Enset cultivation practices. Furthermore, the overall asset base of a household demonstrated a positive correlation with food security, likely due to the heightened capacity to procure

and access essential food items. These findings underscore the importance of tailoring policies and interventions to the specific contextual factors influencing household food security, to effectively address the underlying causes of food insecurity.

However, this study is not without limitations. The reliance on cross-sectional data limits the ability to draw causal inferences about the relationships observed. In addition, the study focused on a specific geographic and socio-economic context, which may constrain the generalizability of the findings to other regions. Future research could benefit from longitudinal data to better capture changes over time and explore causal pathways. Moreover, incorporating qualitative approaches could offer deeper insights into household decision-making processes and socio-cultural influences on food security. Expanding the scope to include climate-related variables and market access dynamics could also enhance the understanding of the multifaceted nature of food insecurity.

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