RURAL PLANNING JOURNAL
Website: https://journals.irdp.ac.tz/index.php/rpj

DOI: https://doi.org/10.59557/rpj.25.2.2025.199

Initiation Ceremonies and Household Food Security in Naipingo Ward, Nachingwea District, Lindi, Tanzania

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ARTICLE INFO

Keywords
Initiation ceremonies
Food security
Food availability
Food access
Food utilization

ABSTRACT

The paper is based on a study on the initiation ceremonies and household food security that was conducted in Nachingwea District, Tanzania. It examined the association between initiation ceremonies and household food availability, involving 94 households. The study employed surveys and structured interviews to collect primary data, which were processed and analyzed through descriptive statistics, logistic regression, and cross-tabulation. It was observed that a substantial amount of food was used for initiation ceremonies, leading to food shortages. However, the association between initiation ceremonies and household food security was not statistically significant as household food security is influenced by several other factors. It is recommended that community members should understand that initiation ceremonies may affect food security in their households and therefore they need to increase food production while using their food resources wisely. On the other hand, policymakers should integrate cultural issues into food security intervention measures to develop more effective and equitable policies. The government, through extension officers, should educate community members on improving household food security and addressing food shortages by enhancing production through climate change adaptation strategies, agricultural diversification, irrigation farming, pest control, and reducing post-harvest losses by improving food storage facilities. The Ministry of Agriculture should strengthen agricultural financing strategies to end hunger, enhance food availability, and reduce malnutrition in all its forms.

1. Introduction

The World Food Programme (WFP) (2013) and Food and Agriculture Organization (FAO) (2025a & b) define food security as 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. According to FAO (2025b), this definition is built on four pillars: availability, access, utilization, and stability, focusing on how people get food, use it, and maintain access over time despite shocks like conflict or climate events, to prevent hunger and malnutrition. Food security exists when people have access to enough safe and nutritious food for normal growth and development and an active and healthy life. In contrast, food insecurity refers to the situation when food security does not exist. And chronic food insecurity is when a person is unable to consume enough food over an extended period to maintain an everyday, active and healthy life. Acute food insecurity is any type that threatens people's lives or livelihoods.

FAO (2011) and Erokhin and Gao (2020) define household food availability as the supply of sufficient quantities of food of appropriate quality through domestic agricultural production, existing stocks, importation, and food aid. It is a situation in which food is made available locally, allowing individuals or households to access the food they need with little effort. It depicts the production and supply of varieties of foods (Galanakis, 2021). Most communities in Africa have failed to achieve food self-sufficiency for several reasons, including low production and overuse or misuse of available food resources among households. Food inaccessibility may lead to malnutrition, illness, reduced work, and, eventually, low productivity, school withdrawal, and migration in search of food. The major factors contributing to increased food inaccessibility are low food production, high prices, lack of land ownership, and poor initial government policies (FAO, 2018). The World Bank (2017) reports that various factors, including poverty, environmental degradation, conflict, and climate change, contribute to food insecurity and inaccessibility.

Food security has been a fundamental global problem, as many people in poverty need concrete alternatives to secure food supplies. According to

the UN (2023), Sustainable Development Goal (SDG) 2 aims to end hunger by 2030. The global issue of hunger and food insecurity has shown an alarming increase since 2015, a trend exacerbated by a combination of factors, including the pandemic, conflict, climate change, and deepening inequalities. By 2022, around 9.2% of the world's population was in a state of chronic hunger, an astounding rise compared to 2019, a situation that reveals a growing crisis. About 2.4 billion people also faced moderate to severe food insecurity in 2022, indicating a lack of access to adequate food. A sustained rise in hunger and food insecurity, rooted in complex, overlapping factors, demands swift attention and collective global action to mitigate this urgent humanitarian challenge. Extreme hunger and malnutrition remain a barrier to sustainable development and create a trap from which people cannot easily escape. Hunger and underfeeding mean less productive individuals, who are more prone to disease and thus often unable to earn more and improve their livelihoods.

Sub-Saharan Africa faces an enormous food-related challenge never experienced in human history, with over 210 million people lacking access to food (FAO, 2024). Researchers and development workers in Africa note that food security is a problem that can only be addressed effectively through a combination of interdisciplinary, community-participatory on-farm research, effective extension systems, and access to markets and better infrastructure (Mukhwana, 2016). The biggest challenge facing development workers in Sub-Saharan Africa is how to increase food production without compromising environmental quality, given the declining food prices and quickly disappearing markets. Over the past 50 years, agricultural development has emphasized the heavy use of external inputs such as fertilizers, improved seeds, and improved livestock breeds, which, in some cases, are unsuitable or unaffordable for African conditions, especially in rural areas.

In Tanzania, about 27% of the population lives in households with insufficient expenditure to obtain enough food to meet their nutritional requirements (URT, 2012). Tanzania is largely self-sufficient in food production, as the national food balance has been favourable in most years, with output exceeding overall food requirements. However, when disaggregated, nutritional energy needs are still not fully met. In pursuit of Sustainable Development Goal 2, Tanzania aims to achieve food security, improve nutrition, and promote sustainable agriculture by 2030. To do so, it is undertaking reforms that recognize the interlinkages among supporting sustainable agriculture, empowering smallholder farmers, promoting gender equality, ending rural poverty, ensuring healthy lifestyles, addressing climate change, and advancing the broader objectives outlined across the 17 Sustainable Development Goals of the post-2015 Development Agenda. The government of Tanzania has been trying hard to assist people during the food shortage by purchasing sufficient food from regions with surplus and storing it in its national food reserve (URT, 2016; UNFPA, 2020). The food is then sold to affected people at a subsidized price, and to those with no money, it is given for free.

In the Lindi Region, some households frequently experience seasonal food unavailability, with about 21.4% of households vulnerable to food access in some seasons (Saria, 2015). In the Nachingwea District, some households, especially in rural areas, also experience food unavailability, especially from February to June every year, the main causes according to the literature being socio-economic factors such as high price of farm inputs, low productivity, selling food to meet other needs, unreliable rainfall, and the incidence of crop pests and diseases that affect production (Saria, 2015). In Naipingo Ward, many households face food shortages from February to June every year. Initiation ceremonies, conducted in three phases per year, involve a large amount of food. The extent to which initiation ceremonies are linked to household food insecurity in Naipingo Ward was the focus of this study.

This study examined the influence of initiation ceremonies on household food availability. In Naipingo Ward, initiation ceremonies known as 'Jando' for boys and '*Unyago*' for girls are conducted in June, September, or December. The practice involves pre-initiation, initiation, and post-initiation ceremonies, each phase involving the use of huge amounts of food. The ceremonies are accompanied by excessive food, especially for the preparation of traditional drinks like 'Togwa' and other alcoholic drinks made from maize, cassava, and millet. While children undergo initiation and receive instruction in traditional practices, relatives and neighbours staying at home utilize food resources as they await and participate in associated ceremonies. Traditional activities continue at home until the initiates' return. Post-initiation ceremonies heavily feature the consumption of staple foods such as rice, maize, and millet, particularly on the day the initiates complete their training and return home. Notably, initiation rites persist even in years when harvests are insufficient.

In 2024, Naipingo Ward was estimated to produce 2757 tons of food for household members' utilization; however, according to the Naipingo Ward Executive Officer and Ward Agricultural

Officer, a large amount of food is used for initiation ceremonies. As a result, many households in Naipingo Ward become food insecure from February to June every year. However, there is no specific estimate or standardized data on the total quantity of food used for initiation ceremonies across the entire Naipingo Ward and the Lindi Region as a whole. The amount of food consumed is highly variable and depends on individual families' resources, the scale of the specific ceremony, and the number of guests. Research indicates that the ceremonies, known as *jando* for boys and *unyago* for girls, require families to have significant amounts of cash and food supplies to feed attendees. Still, they do not specify concrete regional statistics or quantities. The cost and amount of food are major financial considerations for families, sometimes posing a challenge during periods of food scarcity.

To address the situation of food security at the household level, the government has been providing food aid to vulnerable households. This study therefore focused on how initiation ceremonies influence household-level food security (access). It is also true that household food shortages could be caused by many other factors, such as the sale of food crops, unfavourable climatic conditions, reduced food production, and increased production of cash crops like cashew nut and sesame, depending on rain-fed agriculture, as well as poor infrastructure. The study was conducted in the Lindi Region, Nachingwea District, in Naipingo Ward, which comprises three (3) villages: Naipingo, Kihuwe, and Mapochelo.

The study assumed that household food security is a function of an interplay of many interrelated variables. That household food security is influenced directly by the independent variables like the amount of food used during the initiation ceremony, the amount of food produced at the household, the amount of food donated for the initiation ceremony, the amount of food bought for the initiation ceremony, and the amount of food used in making local drinks. Indirectly being influenced by the agricultural policy implementation, the education level of the head of households, and the perception of the head of households on the initiation ceremony.

2. Materials and Methods

2.1. Study area

The study was conducted in Naipingo Ward, one of the 36 wards in the Nachingwea District, Lindi Region. According to NBS (2023), the ward had 1686 households and 4713 people. The main ethnic groups found in Naipingo Ward are Mwera, Ngindo, Yao, Makonde, and Makua. Major economic activities include agriculture, focusing on the production of cash and food crops. The food crops produced include maize, rice, groundnuts, cassava and millet, while the cash crops are cashew nut, sunflower and sesame.

2.2. Data collection

The study involved household heads from three selected villages (Naipingo, Kihuwe, and Mapochelo), comprising 1686 households, from which a sample of 94 respondents was drawn. The sample size was estimated using Yamane's (1967) formula for sample size estimation, given as:

$$n = \frac{N}{1+ N(e)^2} \quad \text{.....(i)}$$

Where;

n= sample size estimate, N= sampling frame/number of households, and e = error of the sample size estimate (0.1).

Thus, n = 1686/ $[1+1686(0.1)^2]$, n=1686/ [1+1686(0.01), n=1686/ [1+16.86], n=1686/17.86, n=94. Therefore, the sample size was 94 household heads. The study used both probability and non-probability sampling procedures. Under probability sampling procedures, systematic sampling was used to select household heads. In non-probability sampling (purposive sampling), key informants, including the Ward Executive Officer (WEO), the Ward Agricultural Extension Officer (WAEO), and the leader of initiation ceremonies (Ngariba), were selected.

2.3. Data analysis

The study used a cross-sectional research design, collecting data from respondents through surveys, structured interviews, and key informant interviews. The unit of analysis was the household because food security status (access to food or food availability) was measured at that level. The primary data collected using a questionnaire were processed, cleaned, verified, and using IBM SPSS Statistics Version 27. The analysis was mainly descriptive, using frequency and percentage counts, mean, minimum, maximum, range, and standard deviation. Bivariate cross-tabulation was used to examine the influence of the initiation ceremony on household food availability. A multivariate analysis using a binary logistic regression model was also performed. The model was specified as:

$(Y_0) = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6$ .....(ii)

Where:

Y_0 = Binary dependent variable defined as 1= If food is available, 0= Otherwise

β_0 = constant term

β_1-β_6 = Regression coefficients for each independent variable

$X_{1=}$ Amount of food in kg produced last season

$X_{2=}$ Amount of food in kg donated for initiation ceremony

$X_{2=}$ Amount of food in kg purchased for initiation ceremony
$X_{4=}$ Amount of food in kg use for preparation of local drinks
$X_{5=}$ Amount of food in kg consumed during initiation ceremony
$X_{6=}$ Amount of food in kg left after initiation ceremony
$X_{7=}$ Amount of food in kg budgeted for initiation ceremony
$X_{8=}$ Amount of food in kg stored for use after initiation ceremony

The use of the logistic regression model in this study was critical for analyzing categorical (binary, 1/0) outcomes/dependent variables, predicting probabilities (food secured/food unsecured after initiation ceremonies, yes/no), handling non-linear relationships with an S-curve, avoiding linear regression's assumptions (normality, homoscedasticity), controlling for confounders, and providing interpretable odds ratios to assess household food security determining variables in relation to initiation ceremonies.

The validity, reliability, and justification of the methods and tools were ensured through a pilot study and the use of Cronbach's alpha, which measures the internal consistency of the instruments. This statistical test confirmed that the questionnaire items were consistently measuring the studied variables. Standardized interview protocols were developed and consistently followed across all respondents.

The ethical issues observed in this study include obtaining a permit for data collection and informed consent from respondents. Informed consent ensured that respondents were fully aware of the study's purpose, procedures, risks, and benefits before deciding to participate. Another ethical consideration was maintaining the confidentiality and privacy of participants' personal information. Appropriate measures were taken during data collection to protect respondents' identities and sensitive information. The principles of beneficence (acting in the best interest of participants) and non-maleficence (not harm) guided the data collection exercise.

3. Results and Discussion

3.1. Characteristics of respondents

The respondents' socioeconomic characteristics were of particular concern in this study. Data on these variables were collected using an interviewer-administered questionnaire administered to eligible household heads aged 18 years and above, both men and women. The studied characteristics included sex, age, marital status, education level and household size, as shown in Table 1. Findings in Table 1 show a wide age range, ranging from 20 years to 88 years. Regarding respondents' age data in Table 1, the youngest respondents were 20 years old, the oldest were 88 years old, the mean age was 45 years, and the range was 68 years. This distribution highlights the intergenerational nature of community members in the villages, with individuals from different age groups actively engaged in different income earning activities. The findings also imply the need for targeted policies and support systems that address the specific needs and challenges of different age groups in rural communities, including food production, appropriation, and consumption. Out of 94 respondents, 52.1% were males, and the remaining 47.9% were females. The gender distribution highlights the importance of considering gender dynamics in smallholder farming communities and the need for gender-responsive policies and interventions. The findings revealed that most of the households in Naipingo Ward were headed by males.

Findings in Table 1 show that a large proportion of respondents (48%) had primary education, followed by 40% of respondents who had attained secondary education. The variation in education among household heads revealed that most in Naipingo Ward had low levels of education, possibly lacking some college- and university-level knowledge and skills useful in their day-to-day lives. According to Darling-Hammond *et al.* (2020), education fosters a positive mental attitude towards new practices by building confidence, promoting critical thinking, and encouraging a growth mindset. It provides knowledge, skills, and a supportive learning environment, empowering individuals to embrace change, tackle challenges, and adapt to new situations effectively.

Analysis of the respondents' marital status (Table 1) revealed that most of the respondents (60.6%) were married. This indicates the influence of family dynamics and responsibilities on economic, social, cultural, and resource management issues. This also implies that the respondents were mature enough to provide realistic information regarding food security and initiation ceremonies. On the other hand, a small proportion of respondents were single, suggesting that marital status is a crucial factor in the initiation of activities that shape food production, utilisation practices, and strategies among rural farming communities.

Table 1: Distribution of Respondents by Sex, Education level, marital status, Age, and Household size

Characteristics		Frequency	Percent (%)
Sex	Female	45	47.9
	Male	49	52.1
	Total	94	100.0
Educational level	Primary	48	51.1
	Secondary	40	42.6
	Collage	2	2.1
	University	4	4.3
	Total	**94**	**100.0**
Marital status	Married	57	60.6
	Single	11	11.7
	Widowed	14	14.9
	Separated/divorced	12	12.8
	Total	**94**	**100.0**

	Range	Minimum	Maximum	Mean	Std. Deviation
Age of respondents	68	20	88	45.28	15.101
Household Size	7	1	8	3.97	1.760

Data in Table 1 reveal an average household size of 3.97 people, with a range of one to eight people. The observed household size in Naipingo Ward indicates that residents have sufficient knowledge of birth control to maintain an average household size, compared to the national average of 4.3 and the regional average of 3.4 (URT, 2023a, URT, 2023b). Grusky and Kanbur (2006), Haughton and Khandker (2009), and Yang (2017) argue that large family size can create economic problems and hinder educational opportunities. In contrast, smaller family size can increase economic productivity and promote community development. This information underscores the importance of understanding the dynamics of household composition and size in rural farming communities.

Variation in household size underscores the need for policies and interventions that address the specific challenges faced by larger households, including access to resources, land fragmentation, and intra-household decision-making. The descriptive characteristics of the respondents provide valuable insights into the diverse demographics and socio-economic backgrounds of smallholder farming communities. Understanding these characteristics is essential for designing targeted interventions and policies that promote sustainable and inclusive social and economic development.

3.2. Food Utilization for the Initiation Ceremony

The findings in Table 2 indicate that the amount of food produced, the amount of food donated for initiation ceremony, the amount of food used to prepare local drinks, the amount of food left after the initiation ceremonies, amount of food budgeted for the initiation ceremony, and the amount of food stored for household consumption varied significantly from one household to another. The difference ranges from 5 kgs to 1000 kgs.

The findings in Table 2 also show the respondents' descriptive data on the amount of food produced, ranging from 7 kgs to 1000 kgs, which is basically low, while consumption in the initiation ceremony ranged from 20 kgs to 508 kgs. However, a large proportion of it was donated by relatives (5 kg to 521 kg). The findings in Table 2 also reveal that food production is very low, and a large share is used for initiation ceremonies, leading to household food shortages because the food that remains after the ceremonies is insufficient to ensure food security in the households. Thus, FAO (2022), FAO (2023), and FAO (2024) recommend promoting alternative strategies that do not involve excessive resource consumption and encourage sustainable food production and consumption practices.

Table 2: Food Produced and Utilized (in Kgs) for the Initiation Ceremony

Food used in the initiation ceremony	Range	Minimum	Maximum	Mean	Std. deviation
Amount of food produced at the household last season	993	7	1000	470.61	229.786
Amount of food purchased for initiation ceremony	500	9	500	60.68	60.917
Amount of food consumed during the initiation ceremony	488	20	508	140.73	77.943
Amount of food donated for initiation ceremony	521	5	521	104.02	72.914
Amount of food used to prepare local drinks	20	10	30	18.49	5.651
Amount of food left after initiation ceremony	565	10	575	219.26	142.532
Amount of food in kg budgeted for the initiation ceremony	3.4	1.0	4.4	2.836	0.7335
Amount of food in kg stored for use after the initiation ceremony	3.00	1.00	4.00	2.3165	0.71554

Key informants reported that smallholder farmers frequently experience low food production. Key informants typically identified a range of interconnected factors contributing to low food production in Naipingo Ward. In relation to the environment, farmers experience recurrent droughts, extreme weather events, declining land productivity, soil degradation, and pests and diseases, which are frequently cited as primary constraints. The economic and input constraints highlighted by key informants include access to affordable, modern, quality seeds and fertilisers, high input costs, and limited access to credit. The technical knowledge gap mentioned includes insufficient agricultural knowledge, limited access to extension services, and the continual use of traditional farming tools and practices. Hindrances to yield improvements being also due to the youth's lack of interest in agriculture, driven by perceived low income and hard labour, leading to an ageing farm population and potential labour shortages. Furthermore, inadequate implementation of agricultural policies, lack of irrigation infrastructure, and limited support from government or non-governmental organizations also contribute to persistent low production levels in the ward.

While it is also true that the use of food for initiation ceremonies is seen as a significant socio-cultural factor influencing consumption patterns and potentially exacerbating food insecurity. The key informants viewed food consumption during initiation ceremonies through a cultural lens, recognizing its importance for social cohesion and identity, while also acknowledging its potential strain on limited food resources. The key informants emphasized that these events often have strong social expectations regarding the quantity and type of food served, which must be respected to maintain social standing. The substantial food demands of these ceremonies, which often require large quantities, can put significant pressure on household and village food stores, especially after poor harvests. The key informants commented that, despite low food production, families prioritize spending on these ceremonies over other needs because of their immense social value, sometimes contributing to a cycle of food insecurity.

3.3. Influence of Initiation Ceremony on Household Food Availability

This study examined the influence of initiation ceremonies on household food availability. Linkages between initiation ceremonies and household food security were captured by running crosstabulations between the studied variables, as shown in Table 3. Findings in Table 3 show that the majority (98.9%) of respondents conduct initiation ceremonies, and their food status after initiation ceremonies becomes questionable. Given that Tanzania, including the Lindi Region and Nachingwea District, has diverse cultural practices and food habits, initiation ceremonies are likely to influence food security in various ways. The specific impact would depend on the specific cultural group, the nature of the ceremony, and the resources available for the host and participating households.

Key informants generally reported that while initiation ceremonies serve a vital social and cultural purpose, they negatively impact household and community food security and availability in the subsequent periods due to the significant amount of food consumed during the events. Key informant views on food availability after initiation ceremonies included the depletion of household food stores; the substantial amount of food needed for initiation ceremonies means families often use large portions of their food stores or income to host guests, leading to reduced food availability in the weeks and months following the ceremony. Major

social events such as initiation ceremonies are associated with a potential increase in household food insecurity, especially in communities already vulnerable to economic shocks. While the events foster community unity and social networks through shared meals, sometimes there is surplus prepared food and food waste during the event itself, which contrasts with potential scarcity later. In the post-ceremony period, we see villagers becoming more reliant on external food relief agencies or alternative food sources (like forest resources in some contexts) to supplement their diets once personal stores are depleted. The initiation ceremonies in all their forms, while culturally are essential, create a period of heightened vulnerability regarding food availability for villagers if not managed with an understanding of the potential strain on resources. With this situation, key informants highlighted the need for food security policies that incorporate and respect cultural factors to ensure interventions are effective and equitable, rather than ignoring traditional practices and their associated challenges.

FAO (2025a), Blake *et al.* (2023), and UNFPA (2020) report that initiation ceremonies can temporarily influence household food security in several ways, including increased consumption, as they often involve feasts and communal meals, potentially leading to increased food consumption during and after the event. This might strain household resources, especially if food was not previously stockpiled to accommodate the increased demand. Initiation ceremonies can reinforce specific food-related customs, taboos, and preferences. For instance, certain foods might be prohibited or emphasized during the ceremony, influencing dietary choices long after the event. Some initiation rituals involve food taboos, in which certain foods are restricted or preferred for initiates or other participants. These restrictions can affect the production and supply of food varieties and the nutritional balance of meals, particularly if the restricted foods are staples. However, initiation ceremonies can serve as a platform for transmitting knowledge about food preparation, preservation, and storage techniques. This can have long-term implications for household food security, especially if the knowledge is effectively passed down to younger generations. Furthermore, the costs of hosting and participating in initiation ceremonies can strain household finances, potentially affecting the ability to purchase food. It is crucial to recognize the cultural significance of initiation ceremonies and their role in maintaining social cohesion and identity. However, while they may have some negative impacts on food availability, they also contribute to the cultural fabric of the society.

In rural development planning, the findings imply that initiation ceremonies impact food security by influencing social capital (labour sharing), resource allocation and cultural food practices, requiring planners to integrate these traditions for effective, culturally sensitive interventions, recognizing they build social networks vital for farm labour but also strain resources, meaning local context dictates whether rituals support or hinder food access

Table 3: Cross-tabulation Results Between Initiation Ceremonies and Household Food Security

		Household Food security status in a year		
		Available	**Not available**	**Total**
Practice initiation ceremony	Yes	8 (8.5)	85(90.4)	93(98.9) *
	No	0(0.0)	1(1.1)	1(1.1)
	Total	**8(8.5)**	**86(91.5)**	**94(100)**
	$\chi^2 = 0.094$	*df = 1*	*p = 0.915*	

Values in parentheses are percentages,

Cross-tabulation findings in Table 3 reveal no statistically significant association between initiation ceremonies and household food security since P>0.05/. This implies that, besides other factors, household food shortages and unavailability in Naipingo Ward are caused by several other factors. These findings imply that, despite households experiencing food inaccessibility in some seasons, such a situation is not associated with the initiation ceremony but caused by other factors like the selling of food crops, less food produce due to unfavourable climatic change, household members engaging more in the production of cash crops like cashew nut and sesame than producing food crops, depending on rain- fed agriculture, as well as poor infrastructure.

Therefore, the main causes of food insecurity seem to be socio-economic factors such as high input prices, low productivity, selling food to meet other needs, unreliable rainfall, and the incidence of crop pests and diseases that affect production (Saria, 2015). These findings concur with Lebese *et al.* (2022), who observed that initiation ceremonies among the *Batswana* and *Bakalanga* are typically planned and budgeted in advance and do not significantly affect household food consumption, as traditional knowledge and practices can play a positive role in ensuring food security among

indigenous communities. Among the *Batswana*, these ceremonies are known as *Bogwera* for boys and *Bojale* for girls, marking the transition to adulthood, and are crucial for imparting cultural knowledge, social responsibilities, and preparing young people for adult roles within their communities (Lebese *et al.,* 2022).

Table 4: Binary Logistic Regression Results

Independent variables	B	S.E.	Wald	df	Sig.	Exp(B)
Amount of food in kg produced last season	-0.053	0.042	1.640	1	0.200	0.948
Amount of food in kg donated for the initiation ceremony	-0.004	0.021	0.041	1	0.840	0.996
Amount of food in kg purchased for the initiation ceremony	-0.059	0.040	2.106	1	0.147	0.943
Amount of food in kg used for the preparation of local drinks	-0.153	0.152	1.017	1	0.313	0.858
Amount of food in kg consumed during the initiation ceremony	-0.058	0.042	1.909	1	0.167	0.943
Amount of food in kg left after the initiation ceremony	0.124	0.086	2.085	1	0.149	1.132
Amount of food in kg budgeted for the initiation ceremony	-6.889	4.867	2.003	1	0.157	0.001
Amount of food in kg stored for use after the initiation ceremony	-7.264	5.426	1.792	1	0.181	0.001
Constant	69.185	46.153	2.247	1	0.134	111339737 855938500 00.0

-2 Log likelihood =14.207, Cox & Snell R Square= 0.182, Cox & Snell R Square=0.613
***Dependent variable**: Household Food security in a year (1=Secured 0 = Unsecured)*

The influence of independent variables on the dependent variable (food security/food access) was examined using binary logistic regression, as shown in Table 4. The amount of food produced last season, the amount of food donated for the initiation ceremony, the amount of food purchased for the initiation ceremony, the amount of food use for preparation of local drinks, the amount of food consumed during initiation ceremony, the amount of food budgeted for the initiation ceremony, and amount of food stored for household consumption with the odds ratios Exp(B) ranging from 0.001 to 0.996, significance levels ranging from 0.147 to 0.840, and regression coefficients (B) ranging from - 0.004 to -7.264 reveal the existence of a negative and statistically insignificant effect on the household food availability. The odd ratios ranging from 0.001 to 0.996 indicate that for every one unit increase in the amount of food produced last season, the amount of food donated for the initiation ceremony, the amount of food purchased for the initiation ceremony, the amount of food used for preparation of local drinks, the amount of food consumed during initiation ceremony, the amount of food budgeted for the initiation ceremony, and the amount of food stored for household consumption, there is a decrease in food security by 0.1% to 99.6%.

A significant constant value in the regression results indicates that the baseline log-odds of the dependent variable (event=1) is very high when all predictor variables are zero. The (β_0) is the log (odds) of the event (y=1) occurring when all independent variables X_1 -X_8 are zero. This means that the baseline odds of the event are very high, almost certain when predictors are absent. This implies that the food security status in Naipingo Ward is more explained by other factors than initiation ceremony-related variables.

The significance levels range from 0.147 to 0.840, which are greater than the 0.05 threshold, suggesting that this relationship is statistically insignificant. These results imply that except for the amount of food left after the initiation ceremony, household food security is negatively influenced by the amount of food produced last season, the amount of food donated for initiation ceremony, the amount of food purchased for initiation ceremony, the amount of food used for preparation of local drinks, the amount of food consumed during initiation ceremony, the amount of food budgeted for initiation ceremony, and the amount of food stored for use after the initiation ceremonies but their influence is not statistically significant. These findings align with those of Tembo *et al.* (2024), who assert that high food consumption during initiation ceremonies can reduce household food availability, potentially leading to food insecurity. Studies have proven that social activities, such as weddings, initiation ceremonies, and funerals, can significantly affect household food status. This is because the resources spent on the ceremony, including food, may strain household resources and reduce the amount of food available for daily consumption (Madigele and Chitando, 2024). Therefore, policymakers need to integrate cultural issues into food security interventions to prepare more effective and equitable policies. However, studies report that initiation ceremonies influence household food security through various mechanisms, including changes in labour allocation, shifts in consumption patterns, and the transmission of food-related knowledge and practices (Akwango *et al.,* 2017).

These ceremonies, being culturally significant, often involve periods of seclusion, feasting, and the sharing of resources, which can temporarily impact household food stocks and dietary habits. Initiation ceremonies can contribute to household food insecurity due to the significant expenses and resource allocation required, potentially leading to a temporary strain on household finances and food security (Munthali *et al.,* 2018; Tembo *et al.,* 2024). While the impact may be short-term, it can be substantial, particularly for families with limited resources. It has been shown that social activities such as weddings, initiation ceremonies, and funerals can significantly affect a household's food security (Pasha *et al.,* 2020; Madigele and Chitando, 2024). Furthermore, Nkambule (2017) argues that traditional ceremonies can contribute to social cohesion and cultural resilience, thereby promoting food security in communities.

Patenaude *et al.* (2018) report that initiation ceremonies influence household food security in many ways, including financial strain, as they often involve substantial costs for clothing, food, gifts, and other related expenses. Families, especially those with limited income, may need to take out loans or divert funds from other essential needs, such as food, to cover these costs. Food consumption: large amounts are often consumed during initiation ceremonies, potentially depleting household food stocks and reducing the amount available for daily consumption. Resource allocation: household members' focus on the initiation ceremony can lead to a temporary shift in household priorities, potentially diverting resources from other crucial areas such as agricultural production or income-generating activities, with long-term consequences for food accessibility. However, while the immediate impact of initiation ceremonies on food security may be significant, it is often temporary, as the negative effects may diminish within a few years as household resources recover. Therefore, policies to mitigate the negative impacts of cultural practices, such as initiation ceremonies and weddings, on household food security are of great importance.

4. Conclusions and Recommendations

Rural planning and food shortages are inherently related, with effective spatial and development planning vital for ensuring food security and building resilient food systems. Rural planning strategies directly influence food availability, access, and stability by shaping agricultural productivity, infrastructure, and rural-urban linkage. Most households practising initiation ceremonies experience food shortages afterwards because they use a large amount of food during the ceremonies. However, there is no significant association between the initiation ceremony and household food security in Naipingo Ward. Household food security status could be determined by several other factors, rather than initiation ceremonies alone, such as the sale of food crops, unfavourable climatic conditions, reduced food production, and increased production of cash crops like cashew nut and sesame, depending on rain-fed agriculture, as well as poor infrastructure. The main causes of food shortages in Naipingo Ward are socio-economic factors such as high farm input prices, low productivity, selling little of the food produced to meet other needs, high prices, low income, prolonged dry spells and erratic rainfall, and the incidence of crop pests and diseases that affect production.

In view of these, policymakers must integrate cultural issues into food security interventions to prepare more effective and equitable policies. The government, through agricultural extension officers, should educate community members on how to improve household food security and curb household food shortages by increasing production through climate change coping strategies, diversifying agriculture, adopting irrigation farming, controlling crop pests, and reducing harvest losses by improving food storage facilities. The Ministry of Agriculture should initiate agricultural financing strategies to end hunger, increase food availability, and reduce all forms of malnutrition.

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