



**SOCIO-ECONOMIC FACTORS INFLUENCING POSTHARVEST LOSSES OF  
CASSAVA IN SAKI WEST LOCAL GOVERNMENT AREA OF OYO STATE, NIGERIA**

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**ABSTRACT**

The study examined the socio-economic factors influencing post-harvest losses of cassava in Saki West Local Government Area of Oyo State, Nigeria. A multi-stage sampling technique was employed to select 120 cassava farmers, and primary data were collected using structured questionnaires. The data were analyzed using descriptive statistics and multiple regression analysis. Results revealed that the majority (75%) of respondents were male with an average age of 42 years, small farm sizes (less than 5ha), and limited access to extension services (87.67%). The results of the regression analysis indicated that marital status ( $p \leq 0.001$ ), household size ( $p \leq 0.010$ ), significantly influenced post-harvest losses of cassava. The major constraints faced by cassava processors included inadequate capital (90%), deterioration of tubers (70%), and low demand (74%), The study concludes that both socio-economic and biological factors play critical roles in post-harvest losses. It recommends improved access to credit, provision of modern storage and processing facilities, farmer education on post-harvest handling practices, and enhanced market linkages to reduce losses and improve the cassava value chain.

**Keywords:** Data, Post-harvest, Practices, Cassava, Farmers, Factors.

**INTRODUCTION**

Agriculture plays a vital role in the development of countries (Ajayi *et al* 2019). A country that is self-sufficient in food production would be able to fight food security and reduce poverty among its citizens, which makes agriculture an important tool used to describe the most powerful nation of the world. Agriculture provide employment for about 60% Nigerians, including those in the rural communities. Nigeria is in many ways still an agricultural society. Nigeria's agricultural sector employs 37 percent of the labour force, but generates only 21 percent of the country's GDP (World Bank, 2018). In spite of agriculture contribution to the economy it is faced with many challenges which include postharvest losses, poor infrastructure, poor access to markets, high production cost, lack of finance, farmers and herders 'problem and lack of access to technology. These challenges have affected agricultural sector contribution to the country's GDP. The diversification of climate in Nigeria, from the tropical areas of the coast to the arid zone of the north make it possible to produce almost all agricultural produce. (Omoaka and Owolabi, 2020). One of the most significant food crops in Nigeria is cassava, particularly in the Western and Eastern regions of Nigeria, where between 30 and 40 percent of the population rely on it as a staple diet (Alane *et al.*, 2013). The white and milky pulp of the tuberous root plays a significant role in the diets of many Africans, particularly those in Central Africa, after rice and maize, cassava (*Manihotesculenta Crantz*) is the third-most significant calorie source in the tropics (Nduwumuremyi, 2016). Nigeria's cassava production has significantly increased over the years as a result of increased cassava cultivation area, better institutional support (such as research into the development of high yielding varieties), increased dependence on cassava for food security and as a source of additional income, and improved management techniques (Kanyamuka *et al*, 2018). Because of the growing support for cassava production from a variety of actors and the fact that more and more farmers are realizing the value of crop diversity as a way of sustainable agricultural output and food security, it is anticipated that production will continue to expand. Agricultural postharvest loss can be defined as the reduction in both quantity and quality of any food production from the time of harvesting to the time when it is been consumed. Quality losses are those losses that affect or reduce the nutrient and caloric composition, and the edibility of a given product. These losses are mostly common in developed countries (Kader, 2015). This system comprises related activities from crop processing,



marketing and food preparation, to the final decision by the consumer to eat or discard the food. (Abraha *et al.*, 2018). The study aims to examine the socio-economic factors influencing cassava value in Saki West LGA of Oyo State. The specific objectives were to: describe the socio-economic characteristics of farmers in the study area, determine the factors influencing post-harvest loss and management of cassava adopted by farmers in the study area and identify constraint faced by processors in processing cassava and cassava products.

## RESEARCH METHODOLOGY

### The Study Area

The study was conducted in Saki-West Local Government Area (LGA) of Oyo State, Nigeria. It is located between latitude: 8° 40' 3" N and longitude: 3° 23' 38" E. It covers a total area of 2,014 square kilometres and has an average temperature of 28 degrees Celsius. Saki is located in Oyo state, the state has a population of about 6.6 million people, and it is one of the most populous states in Nigeria. The Local Government Area has two distinct seasons: dry and wet. Additionally, the area has extensive forests. Saki-west experiences a hot season lasting for 2-8 months, with daily highest temperatures above 91°F on average. The people's economic enterprises include farming, hunting, commerce, wood carving, and craft production (Ogunjinmi *et al.*, 2024). Oyo state is predominantly an agrarian state, and agriculture is the main source of livelihood for the majority of the people in the state. The state is known for the production of crops such as cassava, maize, yam, plantain, and vegetables. Oyo State also has a thriving livestock industry, with a significant number of people engaged in poultry and animal husbandry.

### Sampling Procedure and Sample Size

A three-stage sampling technique was adopted for the study. The first stage involved a purposive selection of Saki West Local Government Areas with 11 Ward s of the LGA's in the State based on intensity, predominant and prevailing levels of cassava production in the areas. In the second stage, 6 wards were randomly selected from the 11 wards. In the third stage, 20 cassava farmers who constituted the sample for this study was drawn from each ward proportionate to its size. A total of 120 respondents were selected.

### Methods of Data Collection

Primary data were collected through formal interviews using structured questionnaires to solicit individual views on the different issues. Secondary information were sourced from existing literatures in the subject including journals, textbooks.

### Methods of Data Analysis

This study made use of analytical tools based on the stated research objectives. The analytical tools used were descriptive statistics such as mean, frequency and percentages and inferential statistics such as multiple regressions. The specified model in the linear form is presented as followed:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \dots \beta_n X_n + \mu$$

Where: Y = Post harvest loss

X<sub>1</sub> = Age of respondents (years)

X<sub>2</sub> = Gender (male=1, female =0)

X<sub>3</sub> = Marital status (married =1, Single = 0)

X<sub>4</sub> = Educational status (no of years of successful schooling)

X<sub>5</sub> = Years of experience (months)

X<sub>6</sub> = Farm size (hectares)

X<sub>7</sub> = Total Household size

X<sub>8</sub> = Income X<sub>9</sub> =

Access to credit

U = Error term.



**RESULTS AND DISCUSSION**

**Socioeconomic Characteristic of Cassava Farmers**

Details of the socioeconomics characteristics of cassava farmers in the study area are presented in the Tables 1 and 2. Out of the total respondents, 75% (90 individuals) are male, while the remaining 25% (30 individuals) are female. This demonstrates a significant gender imbalance within the cassava farming community, with a majority of farmers being male. This gender distribution could reflect cultural norms or historical patterns of involvement in agriculture. Gender plays a pivotal role within the context of cassava farming and agriculture, influencing aspects such as property ownership, including fixed assets like land and machinery (Forsythe *et al.*, 2013).

The table further shows the distribution of ages among the cassava farmers having a 38.33% of the farmers are aged 30 years or younger, 13.33% fall within the age range of 31 to 40, 11.67% are between 41 and 50 years old. 14.17% fall within the age range of 51 to 60, 22.50% are 61 years old or above. This suggests that individuals engaged in fish farming in the study region comprise both men and women who possess physical and mental strength to confront the diverse challenges that can arise within the fish farming industry, especially in a developing nation like Nigeria (Hundeyin-Agoro, 2011).

The mean age of the cassava farmers is approximately 42.02 years, with a standard deviation of 15.595. The mean age provides an average representation of the age distribution, and the standard deviation indicates the degree of variability in ages around this average. A higher standard deviation suggests more dispersion in ages, while a lower standard deviation implies a relatively clustered age distribution. Age is of immense importance in carrying out any agricultural activity with particular reference to vegetable production which seems to be labor intensive (Weerarathne *et al.*, 2017).

This breakdown offers insight into the marital diversity of the farmers. The majority being married suggests a stable family structure, which could have implications for decision-making processes and responsibilities related to cassava farming activities (Kilwinger *et al.*, 2021). Furthermore, the average annual income, the majority of farmers (27.12%) earn between 251,000 – 500,000 currency units, followed closely by those earning 501,000 – 750,000 units (22.88%). The distribution of farm sizes indicates that 50.00% of farmers have a farm size of less than 5 hectares, while 47.50% have a farm size of 5 – 10 hectares.

**Table 1:** Distribution of Respondents based on Qualitative Socioeconomic Characteristics (N=120)

<b>Variable</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Gender</b>		
Male	90	75
Female	30	25
<b>Marital Status</b>		
Single	36	30
Married	69	57.5
Divorced	6	5
Widowed	9	7.5
<b>Educational status</b> No formal education		
Primary education	18	15
Secondary education	22	18.33
Tertiary education	25	20.83
Tech Training	30	25
<b>Cooperative membership</b>		
Yes	25	20.83
No	37	30.83
<b>Access to Extension</b>		
Yes	83	69.17
No	22	18.33
	98	87.67

**Source:** Field Survey, 2025



The distribution of farming experience shows that the majority of farmers (35.83%) have experience of less than 5 years, while the least common group (5.83%) has experience of 16 to 20 years. This points to the fact that cassava farming is primarily undertaken by individuals within the educated segment of the population, particularly those equipped with higher levels of education (Olaoye *et al.*, 2013). Consequently, respondents with the longest experience are anticipated to possess strong skills and more refined approaches to the cassava farming enterprise. Additionally, those with extended years of experience are likely to possess the ability to anticipate market conditions, enabling them to sell their products at higher prices.

Cooperative membership is present among 30.83% of farmers, while 69.17% are not part of a cooperative. Moreover, William *et al.* (2012) noted that a substantial proportion (80%) of farmers initiated their endeavors using personal savings. This study's results corroborate the notion that bank loans might not be a profitable source of capital for young individuals venturing into cassava farming. Furthermore, the reliance on personal savings to establish their businesses suggests that a majority of the farmers were engaged in some form of livelihood activities, enabling them to gradually accumulate funds to commence their cassava farming enterprises. This underscores the significance of a diversified income base in supporting the initiation of cassava farming businesses.

Access to extension agents is available to 18.33% of farmers, while the majority (81.67%) do not have access to extension agents. This gap in communication and knowledge exchange can hinder the potential for informed decision-making and the adoption of improved practices within the cassava farming community.

**Table 2:** Distribution of Respondents based on Quantitative Socioeconomic Variables

Variables	Frequency	Percentage %
<b>Age</b>		
≤ 30	46	38.3
31-40	16	13.3
41-50	14	11.6
51-60	17	14.1
≥ 60	27	22.5
<b>Household size (Nos.)</b>		
≤ 3	59	46.1
6 – 10	38	31.6
≥ 11	23	19.1
<b>Farming Experience (yrs.)</b>		
≤ 5	43	35.8
6 – 10	27	22.5
11 – 15	17	14.7
16 – 20	7	5.8
≥ 21	26	21.6
<b>Annual Income (N)</b>		
≤ 100,000	43	11.8
101,000 – 250,000	14	20.3
251,000 – 500,000	24	27.1
501,000 – 750 000	32	22.8
> 750,000	21	17.8
<b>Farm Size (ha)</b>		
≤ 5	60	50.0
5 – 10	57	47.5
> 10	3	0.5

**Source:** Field Survey, 2025



**Factors Influencing Post-Harvest Losses of Cassava**

Table 1 presents the results of a regression analysis conducted to explore the factors influencing the post-harvest loss of cassava. This regression analysis provides insights into the factors influencing post-harvest loss of cassava. Marital status, household size, pathogen infestation, and change of taste emerge as statistically significant variables, while others do not show significant influence in this specific analysis.

The marital status is negatively significant at 10% coefficient indicates that being married is associated with a reduction in post-harvest losses. Therefore, a unit increase in marital status leads to a decrease in post-harvest loss by coefficient value of -6.32809. The p-value of 0.001 is less than the significance level (usually 0.05), indicating that marital status is statistically significant in influencing post-harvest loss. This implies that if the farmers increase the rate of getting married it would help in reducing post-harvest loss.

The household size is negatively significant at 10%, this indicates that the bigger the household size, the lower the rate of post-harvest loss since there would be higher number of family members to help at farm and make post-harvest activities faster. Therefore, a unit increase in household size would leads to a decrease in post-harvest loss of cassava by coefficient value of -0.7142265.

**Table 3: Factors Influencing Post-harvest Loss of Cassava**

Variables	Coefficient	Std. Err.	T	P value
Gender	3.553	2.560	1.39	0.168
Marital Status	-6.328***	1.605	-3.94	0.001
Educational Level	-1.211	0.948	1.28	0.204
Household size	0-0.714***	0.259	-2.76	0.007
Farm size	0.367	0.400	0.92	0.360
Farming Experience	12682.49	54775.691	.232	0.817
Cooperative membership	3.344	3.004	1.11	0.268
Market Distance (km)	-0.041	0.0475	-0.87	0.386
Access to extension agent	5.490	3.661	-1.50	0.137
Access to credit	-0.888	3.776	-0.24	0.814
Pathogen infestation	0.030 **	0.014	2.07	0.040
Change of taste	6.106 **	2.517	2.43	0.017
_cons	-0.175	0.062	2.80	0.006

R2 = 0.5637, Adj R2 = 0.5475, F-Value = 11.92, Prob > F = 0.0003, Root MSE = 0.41309 \*\*\* = Significant @1% level of probability \*\* = Significant @5% level of probability Source: Field survey, 2025

The positive coefficient value of 0.0308502 suggests that the presence of pathogen infestations increase post-harvest losses and it is significant at 5%. Basically, this implies that the more the rate of pathogen infestation on cassava tuber, the higher the rate of post-harvest loss. The change in taste is also positively significant associated with higher post-harvest losses. As there might be change in farmers' taste of consuming or marketing cassava and its products due to probably due to other preferred alternatives or low market price of cassava respectively. The coefficient value 6.10682 showing positive statistical significance indicates that a unit increase of change in taste would definitely leads to an increase in post-harvest loss by 6.10682.

**Constraints Faced in Processing**

The result in table 2 provides insights into the constraints faced by processors involved in processing cassava and cassava products. The variables are categorized based on the severity of the constraint: "Not a constraint," "Not Severe," "Mildly severe," "Severe," and "Very Severe." The numbers within each category indicate the frequency of respondents who identified that level of constraint.

The results are in consonance with research results by (Prempeh, *et al.*, 2017) who reported PPD as one of the major post-harvest constraints for cassava in Ghana. This is the case because currently, there is no effective control measure for PPD for flesh cassava roots apart from preventive



approaches aimed at delaying on-set and development of PPD. The majority of processors (75%) indicated that inadequate capital was a very severe constraint. This suggests that a significant number of processors struggle with securing sufficient funds to support their cassava processing operations. Adequate capital is crucial for acquiring necessary equipment, materials, and resources to efficiently run the processing activities.

**Table 4:** Distribution of Respondents by Constraints Faced in Processing (N = 120)

Variables	Not a constraint	Not Severe	Mildly Severe	Severe	Very Severe
Inadequate capital	2 (1.67)	10 (8.33)	4 (3.33)	14 (11.67)	90 (75.0)
Deterioration of tubers	2 (1.67)	11 (9.17)	18 (15.00)	19 (15.8)	70 (58.3)
Labor cost	3 (2.50)	8 (6.67)	24 (20.00)	27 (22.5)	58 (48.3)
Pest and Diseases	7 (5.83)	18 (15.00)	16 (13.33)	26 (21.6)	53 (44.1)
Animal damage	2 (1.67)	19 (15.83)	17 (14.17)	25 (20.8)	57 (47.5)
Availability of Processing Machine	2 (1.67)	8 (6.67)	17 (14.17)	33 (27.5)	60 (50.0)
Theft	2 (1.67)	17 (14.17)	14 (11.67)	29 (24.1)	58 (48.3)
Low Demand	4 (3.33)	10 (8.33)	10 (8.33)	22 (18.3)	74 (61.6)

**Source:** Field Survey, 2025

The deterioration of tubers was a significant concern for processors, with a majority (58.33%) indicating it as a very severe constraint. This likely points to challenges in preserving the quality of cassava tubers during storage and transportation, which can impact the final product's quality. The high proportion of processors (48.33%) indicating very severe constraint in labor cost suggests that labor expenses were a significant burden for these operations. Managing and affording labor costs can impact the overall profitability of the processing activities. The presence of pests and diseases is perceived as a substantial concern, with 44.17% of processors indicated as a very severe constraint. Pest and disease management is essential to maintain the quality and quantity of the cassava produce.

Animal damage was considered a notable issue, with almost half of the processors (47.50%) identifying it as a very severe constraint. Protecting cassava crops from animals is crucial to ensure a successful yield. The availability of processing machines is a significant concern for processors, with half of them (50.00%) indicating it as a very severe constraint. Access to modern and efficient processing equipment can enhance the quality and efficiency of cassava processing. Theft is perceived as a considerable issue, with almost half of the processors (48.33%) marking it as a very severe constraint. Protecting cassava products from theft is crucial to preserving profitability (Voong, 2012).

## CONCLUSION AND RECOMMENDATION

The study concluded that marital status, household size, pathogen infestation and change of taste have significant effect on post-harvest losses of cassava. Inadequate capital, deterioration of tubers and low capital were the major constraint affecting cassava processors in the study area. Based on the findings of this study, the followings recommendations were suggested;

1. Packaging houses for adequate sorting and pre-treatment should be provided at the major collection centers to minimize adverse effect of the environment.



2. Provide training and educational programs to farmers, especially wholesalers, on proper postharvest handling techniques. This includes guidance on handling, packaging, and storage to minimize losses.
3. Encourage the construction of better storage facilities such as warehouses, cold storage, and drying sheds to protect cassava from spoilage and pests. These facilities should be accessible to both small-scale and large-scale farmers.
4. Invest in better transportation infrastructure to reduce transit time from farms to markets. Faster and more efficient transportation can minimize spoilage during transit.
5. Government should establish stronger market linkages between cassava farmers, wholesalers, and retailers. This can help reduce the time cassava spends in storage, ensuring that it reaches consumers quickly.

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