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## Analytical Assessment of Factors Affecting Cassava Production in Selected Local Government Areas of Oyo State

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<sup>1</sup>Oni, J. O. and <sup>2</sup>Adeniji, P. O.

<sup>1</sup>Department of Counseling Psychology and Educational Foundations, Tai Solarin University of Education, Ijagun, Ogun State

<sup>2</sup>Institute of Education, Faculty of Education/ Ekiti State University, Ado Ekiti, Ekiti State  
Email: oniogunmola@gmail.com

### ABSTRACT

This study examined the factors affecting the production of cassava in Oyo state. Data for the study was collected using stratified random sampling technique with the aid of structured questionnaires. Six (6) local governments were selected from thirty-three (33) local government areas in the state with one hundred and twenty (120) participants selected through the use of stratified random technique because of the zoning nature of the research. Pearson Product Moment Correlation (PPMC) and multiple regression analysis were used to examine the factors affecting cassava production in the study area. The results indicated that there was significant relationship between cassava production and factors such as financing of farms, monitoring of farmers'. It was recommended that cassava farmers in the study area should explore various means of financing cassava cultivation. They should strictly follow the instructions of the agricultural extension officers and that extension officers should regularly visit the cassava farmers on their farms. Moreover, government should provide credit facilities to cassava farmers in order to enhance cassava productivity.

**Keywords:** Assessment, Cassava, Production, Financing, Oyo State, Processing

### INTRODUCTION

Agricultural sector in the country remains the most relevant sector to cater for food nutrition and food security related problems. Agricultural sector comprises of four sub-sectors which includes: Crop, Livestock, Forestry and Fishing. Crop production formed the largest activity in the agricultural sector. It is also the key driver of growth of the agricultural sector in the country, contributing 85.39%, 85.91% and 90.13% to growth in the first, second and third quarters respectively in 2014 (National Bureau of Statistics, 2014). This by implication reveals how food is a basic necessity of life. Owing to its importance, food is a basic means of sustenance and its intake, in terms of quantity and

quality is vital for healthy and productive life.

Cassava is a major food crop produce in Nigeria, its combined abilities to thrive on less fertile soil, produce high yield under poor conditions and store harvestable portion underground makes cassava a classic food security crop. Cassava provides about 40% of daily food requirement for rural households in Sub Saharan Africa (SSA) and 70% of the daily calorie intake for over 50million Nigerians (FAO, 2003). Nigeria is the leading producer of cassava in the world, harvesting from 3.81 million hectares to produce 45.72 million tonnes in 2006 (FAOSTAT, 2008).

A lot of product are derived from cassava right from it leaves stem and tuber. Its leaves are used to prepare delicious local soup, stem are highly demanded for planting this day, while it tuber are processed into starch, ethanol, tapiocal, fufu, gari etc. According to Adebayo(2015), thirty percent (30%) of cassava production were for industrial uses. This is however in variation to Omotayo and Oladejo (2016) who reported that ninety percent (90%) of the produce were consumed locally and the ten percent (10%) were used for industrial product. The theory of population propounded by Reverend Thomas Malthus in 1798 revealed that food production was growing at arithmetic progression while population rate was at geometric progression and that famine and social vices were looming except some measures were considered (Anyanwuocha, 2013). He stressed further that transition population theory disproved the Malthusian theory on the bases of agricultural mechanization, innovation of chemical, agricultural input etc. and that billions of the world populace were eating different kinds of food on daily basis.

Adeyemo, *et al.* (2019) stated that cassava is a crop that survives in low nutrient soils and produce calories and the cultivation of it in large quality would be a benefit to humanity. By improving cassava production, it will definitely raise farmers' incomes, encourage it processors, expand its market, reduce rural-urban drift, lead to rural

infrastructural development etc. International Institute of Tropical Agriculture's (IITA) efforts to boost cassava production cannot be over emphasized. Series of training and retraining had been done for various cassava farmers on several occasion particularly on planting methods and spacing. varieties to plant weed management etc. (<http://www.iita.org/cropsnew/cassava>). According to FAO (2015) Nigerian was one of the major producers of cassava in the world, as about 50 million metric tons were produced annually. Notwithstanding, cassava production is hampered by a lot of factors.

Different governments in Nigeria have spent huge amount on supporting agriculture with nothing to show forth. Different organization, NGOS and research institutions had one way or the other contributed to production of cassava in areas of finance, weed management, supplied of inputs, training, Seminars, workshops etc. All these yielded insignificant effect to be candid. This now be a thing of concern for this research to assess some of these factors affecting the cassava production in Oyo State. This study therefore examined the factors affecting cassava production in Oyo State, Nigeria.

### Research Hypotheses

Four hypotheses were raised and tested in the study and they were presented in the null form. The hypotheses are as presented below:

H<sub>01</sub>: There is no significant relationship between farm financing and cassava production

H<sub>02</sub>: There is no significant relationship between monitoring of farmers and cassava production.

H<sub>03</sub>: There is no significant effect of farm financing of farms and monitoring of cassava farms

H<sub>04</sub>: There is no significant relative contribution financing of farm and monitoring of farm on cassava production

## METHODOLOGY

### Study Area

The study was carried out in Oyo -West, Atibo, Afijo, Itesiwaju, Iwajowa and Atisbo local government areas of Oyo State. The local governments are strategically sited in the Savannah belt in the northern part of Oyo State. The people in this local government are predominantly farmers who engaged in subsistence farming, cultivating crops like yam, cassava, maize, guinea corn etc. Apart from these, the indigenes also practice animal husbandry and plays significant roles in the area of commerce and industry. A larger percentage of the population owns and works in microenterprise industries.

The population of the study was all cassava farmers in Oyo State of Nigeria, which engaged in Cassava production. A simple random sampling technique was used to select six (6) local governments from the thirty three (33) local governments in Oyo State. The researcher selected one hundred and twenty (120) respondents through a stratified random sampling technique because of zoning nature of the research. Self-developed questionnaire was the instrument used for collection of data from the respondents. The instrument was validated by the experts in the field of educational evaluation by relating the items with the stated objectives, while pilot study was conducted by independent respondents to determine the reliability of the instrument using Cronbach alpha. The reliability coefficient of 0.78 index was obtained. The instrument was administered personally by the researcher on one hundred and twenty (120) farmers, but during sorting one instrument was found missing.

### Analytical Techniques

The data were computed and analysed using inferential statistics such as Pearson Product Moment Correlation (PPMC) and multiple regression.

### Pearson product-moment correlation coefficient

It measures the linear relationship between X and Y, X and Y should be *continuous variables: interval or ratio variables*.

$$\text{Correlation}(X, Y) = r = \frac{\text{Cov}_{XY}}{s_X s_Y} = \frac{\frac{\sum (X - \bar{X})(Y - \bar{Y})}{(N-1)}}{\frac{\sum (X - \bar{X})(X - \bar{X})}{(N-1)} \frac{\sum (Y - \bar{Y})(Y - \bar{Y})}{(N-1)}} = \frac{\sum (X - \bar{X})(Y - \bar{Y})}{\sqrt{\sum (X - \bar{X})(X - \bar{X}) \sum (Y - \bar{Y})(Y - \bar{Y})}}$$

$\text{Cov}_{XY}$  is called covariance, equal to  $\frac{\sum (X - \bar{X})(Y - \bar{Y})}{(N-1)}$ . Its format is very similar to variance  $\frac{\sum (X - \bar{X})(X - \bar{X})}{(N-1)}$ .

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$\frac{\sum (X - \bar{X})(X - \bar{X})}{(N-1)}$ . It measures how two variables go together, or co-

The relationship between selected variables were tested using the PMCC as indicated above.

### Regression Analysis

Ordinary Least Squares regression was used in this study. This methodology is described below:

$$Y_i = \beta_0 + \beta_1 X_i + \beta_j$$

- $Y_i$  - Cassava Output
- $X_1$  - Farm Financing
- $X_2$  - Farmer Monitoring
- $\beta_j$  - Random error term

Note that  $\beta_0$ ,  $\beta_1$  and  $\beta_2$  are unknown parameters. We estimated the equation above for our study by the least squares method.

The goodness of the model fitted is judged on the basis of the significance of the variables and their conformity to a priori expectation, the coefficient of determination and the F-ratio

## RESULTS AND DISCUSSIONS

### Results from Pearson product-moment correlation coefficient

**Hypothesis One:** There is no significant relationship between financing of farms and cassava production

**Table 1: Pearson Product Moment Correlation (PPMC) showing relationship between financing of farms and cassava production**

Variables	n	r	P. value	Remarks
Cassava Production				
	119	0.324*	.001	Sig
Financing of Farm				

*Source: Data Analysis, 2022*

*\*Sig.at 0.05 level.*

Table 1: Showed that there is a significant relationship between farm financing and cassava production. Hence, finance enhanced the production of cassava production in the study. Agricultural finance is a major determinant of food production in Nigeria. It increases the capacity of farmers to access factors of production needed to boost production. The null hypothesis is rejected while the alternative is accepted. .

**Hypothesis two:** There is no significant relationship between monitoring of farmers and cassava production.

**Table 2: Person Product Moment Correlation (PPMC) showing relationship between monitoring of farmers and cassava production**

Variables	n	r	P. value	Remarks
Cassava Production				
	119	.334*	.001	Sig
Monitoring of farmer				

*Source: Data Analysis, 2022* \* indicates Sig.at 0.05 level.

Table 2: Showed that there is a significant relationship between monitoring of farmers and cassava production. Hence, extension monitoring of farmers enhance the production of cassava in the study area. The null hypothesis is rejected.

**Hypothesis Three:** There is no joint effect of financing of farm and monitoring of farmers on cassava production

**Table 3: Summary of regression analysis showing the joint effect of financing of farm and monitoring of farmers on cassava production**

R	R square	Adjusted R square	Std.error of the estimate
.627	.394	.372	2.01974

ANOVA

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Model	Sum of squares	df	Mean square	F	Sig	Remark
Regression	301.879	2	75.470			
Residuals	465.045	114	4.079	18.500	.001(a)	Sig
Total	766.924	116				

Source: Data Analysis, 2022

- a) *Predictors: financing of farm, monitoring of farmers*  
 b) *Dependent Variable: cassava production*

The table 3 above (Model Summary) shows that there exist joint effect of financing of farm and monitoring of farmers on cassava production. The table also shows a coefficient of determination,  $R^2$  of 0.372. This means that 37.2% of the variation in cassava production in the study area was accounted for by the two predictor variables. The significance of the composite contribution was tested at  $\alpha=0.05$ . The table also shows that the analysis of variance for the regression yielded F-ratio of 18.500 (significant at 0.05 levels). This implies that the joint contribution of the independent variables was significant and that other variables not included in this model may have accounted for the remaining variation.

**Hypothesis Four:** There is no significant relative contribution of Financing of farm and monitoring of farmers on the production of cassava

Table 4: Summary of regression analysis showing the relative contribution of farm financing and monitoring of farmers on cassava production

Variable	Coefficient	T-ratio	Probability
Constant	15.293	13.010	
Farm Financing	0.369	3.866	0.048***
Farmers Monitoring	0.098	1.820	0.092*

Source: Data Analysis, 2022

\*\*\* indicates Significant at 1%

\* indicates Significant of 10%



Table 4: shows the relative contribution of the independent variable to the dependent variable, expressed as beta weights, viz financing of farm ( $\beta_0 = .369$ ,  $P < .05$ ) and monitoring of farmers ( $\beta_1 = 0.098$ ,  $p < .05$ ). Hence, financing of farm is significant i.e. could independently and significantly predict cassava production in the study while monitoring of farmers on also a positive potent predictor of cassava production with low index. This implies that the hypothesis has significant relative effect and fully supported cassava production. The hypothesis is therefore rejected.

## DISCUSSION

**Hypothesis One:** The result of the hypothesis showed that there is a significant relationship between adequate financing of farms and cassava production Dean *et al*/ (2012a) observed financial support given to farmers in most cases as a appetent to invest greatly on farming activities and means to manage risks associated with it. The nation of Cambodia in 2015 set aside a huge amount for agriculture activities through banks and microfinance institutions (Heng and Sarun, 2016). Auta and Dafwang (2010) affirmed that it was twenty percent (20%) of agricultural development projects well-funded and that attains excellent status. It is not only agriculture; any business adequately financed and monitored would definitely be a successful one.

**Hypothesis Two:** There is no significant relationship between monitoring of farmers and cassava production. In the study monitoring of farmers by extension officers promotes cassava production. Abdulaziz (2017) attributed low productuty of food production to inadequate extension agents' instruction and this would have adverse effect on national development. This implies that a work well monitored tends to effectively managed and yield high productivity.

**Hypothesis Three:** There is no joint effect on financing of farm and monitoring of farmerson cassava production. The result of the study signified existence of joint effect on financing of farm and monitoring of farmers on the production of cassava. Contrastingly, Asanke-pot

(2013) highlighted drought- resistance, pests and diseases resistance, improved varieties etc. as important factors which enhance cassava production. Supporting the finding, Abdulaziz (2017) stated that to boost cassava processing both small and large scale cassava processing firms were financed with a large sum of 336 dollars.

**Hypothesis Four:** There is no significant relative contribution financing of farm and monitoring of farmers on cassava production. This study affirmed the relative contribution of independent variables (finances and monitoring) of cassava production. The social group support, high demand and cassava as a choice crop make the cultivation of cassava to be so high (FAO 2018, Adebayo 2016 and Woosen, Di Fallo and Mc Clan 2016)

## CONCLUSION AND POLICY RECOMMENDATION

It is concluded from the finding of this study that finance, and monitoring had influence in the cassava production. While financing of farm and monitoring of farmers had joint effect on cassava production, it was established that relative contribution of finance and monitoring on production were significant. Based on the finding above, it is recommended that government should provide credit facilities at low interest rate to farmers. Government and other stakeholders in the field of agriculture in Nigeria should ensure that they follow the instruction of extension officers adequately. Farmers should intensify efforts in identifying challenges they are facing and seek appropriate remedies meanwhile extension officers should visit farmers on their domains regular to evaluate, monitor and assist them in necessary areas.

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