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Effects of Socioeconomic Constraint on Income of Sweet Potato Processors in Kwara State, Nigeria

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ABSTRACT

The study investigated the effects of socioeconomic constraint on the income of sweet potato processors in Kwara State, Nigeria. Multistage sampling techniques was used to select 64 sweet potato processors for the study. Data were collected using structured questionnaires and analyzed using descriptive statistics and inferential statistics (Ordinary least square regression). The results revealed that (68.75%) were male processors. The age of respondents was within the range (30-50) with a mean of 42.13 years. Majority (51.56%) were literate and majority (50%) were married with high family sizes that ranges between 5-10 with mean household size of 5.2. While factors influencing income include sex (-0.6614), occupation (-0.2399) and education (0.5893). The constraints to the income of processors were, bad road, processing cost, inadequate root/tuber and high transportation cost among others. This study concludes that processing activities of sweet potato was gender sensitive as both male and female are key players in processing, labour supply was abundant, basic education of the processors is also a key to increased income. The study recommend that Government and relevant stakeholders should encourage female involvement in sweet potato processing and value-addition, should consider interventions and training of these processors in best practices as vital role, provide infrastructure and basic amenities to help improve sweet potato processing, reduce postharvest losses and enhance food security in the study area.

INTRODUCTION

Sweet potato (*Ipomoea batatas L. Lam*) is an important staple food and cash crop to many African countries, including Nigeria. It is a major source of food for many families in Nigeria, providing livelihood and income to thousands of people in both rural and urban areas. Sweet potato is also a cheap and widely available source of carbohydrate, minerals, and vitamins. It can be consumed in diverse forms and can serve as raw material in food and non-food industries. It can be processed into different forms like chips, ethanol, flour, bread, and animal feed. According to Okorie and Onyeneke,(2012), sweet potato is vital food for human and it is ensuring food security. It mood of consumption is by boiling and mashing or frying. It could be grown either as mono-cropped or intercropping in complex cropping systems with some staple crops like yam, and maize. Sweet potato is considered as second among the world's most vital food commodities due to its significant economic value. Many developing countries cultivate sweet potatoes as affirmed by (Aneneokek wa *et al.*, 2021).

Despite the important role of sweet potato to food supply, income generation, poverty alleviation, and the potentiality of the crop has not yet been fully exploited in terms of it socio-economic factors influencing income. There are many constraints and limitations to the development of the sweet potato processing in the study area. In spite of the numerous studies conducted in the aspect of sweet potato production, it marketing and processing activities limited studies have centered one on the socio-economic constraints facing the processors income. This is what preempt the drive toward the conduct of this research. In order to provide answer to the questions, this study considered the socio-economic characteristics, determining socio-economic factor influencing the income of processors, constraints facing processing and the frequency of sweet potato processing in the study area.

METHODOLOGY

This study was conducted in Kwara State in the North Central part of Nigeria which is located between latitude 8º.30 North and longitude 5º 00 East. The entire landmass of the study region is approximately 3,682,500 hectares. The National Population Census (NPC, 2006) estimated that the population of Kwara State was 2,365,353 in 2006 and projected to be about 3,476,483 in the year 2024, with growth rate of 3.0. Sweet potato processors in these areas engage in it as their main source of income. In order to gather data on socioeconomic variables (such as age, gender, education level, household and household size,), the questionnaire contained information relevant to the study. This study employed a multi-stage sampling procedure. Stage one, Oyun Local Governments, was purposefully selected out of the 16 Local Government areas of the state based on the production level of sweet potato. Stage two, 8 processing communities were stratified randomly selected, Then, 8 processors from each of the selected communities, were randomly selected, making a total of 64 respondents for the study.

Model Specification

The study employed descriptive statistics, ordinary least square regression and likert scale to achieve the specific objectives of the study. Ordinary Least Square regression model is expressed a thus

Model in explicit form is expressed in equation 1.

$$Y_i = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4\ldots\ldots\ldots\ldots\ldots\ldots + \beta_7X_7 + \varepsilon_i \quad (1)$$

Where,

Y_i = Income of processors (Naira)

X_1 = Sex (Dummy)

X_2 = Membership Association (Dummy)

X_3 = Labour employed (1=Family, 0=otherwise)

X_4 = Sweet potato processing as major occupation (Processor =1, 0= otherwise)

X_5 = Years in schooling (Years)

X_6 = Age of consumer (Years)

X_7 = Household size (Number)

β_0 = constant term

$\beta_1 = \beta_{10}$ = coefficients to be estimated

ε_i = error term

Likert scale- A 3-point likert scale rating was used to examine the socio-econometric constraints affecting income of sweet potato processors in the study area. The likert scaling was as follows Very severe = 3, Moderately Severe = 2, Rarely Severe =1.

RESULTS AND DISCUSSIONS

The result in Table 1 represents the socio-economic characteristics of sweet potato farmers in the study. The Socio-economic distribution of sweet potato processors in Kwara State. The results showed that majority (68.75%) of the respondents were male processors in Kwara State. This indicate that male processors were dominant in the sweet potato processing activities in the study areas. The age of respondents was within the range (30-50) with a mean age of 42.13. This implies that processors are within active age for labour supply. The result further showed that majority (51.56%) of the respondents in the study area were educated with at least basic formal education. This is similar to the findings of Egwuonwu and Ozor (2020) who reported that majority of the sweet potato processors had basic education. More so, the result reveals that most (50%) of processors were married with high family sizes that ranges between 5-10 and has the mean household size of 5.2. The predominance of married processors is most likely due to availability of labour and the necessity to secure their household. This corroborates the findings of Mbanaso *et al.* (2011) who reported that 72.59% of the processors were married in south eastern Nigeria. Majority (54.69%) shows their proximity distance the market to be about 50-100km. This implies that the product from sweet potato need to be brought to lime light in easier way in order to increase the commercialization level.

The result in Table 2 is the determinant of socioeconomic factors influencing the income of sweet potato processors. The result shows that R square was 0.6384 which implies that 64% of the dependent variable was explained by the explanatory variables, leaving the other 46% to error term and uncountable noise in the data set. The F-value was significant at 1% level of probability. This shows the overall fitness of the model. Sex was negatively significant at 1% level of probability with coefficient of (-0.6614). This implies that a unit increase in activity rendered by male counterpart will lead to proportionate decrease in the income generated. Sweet potato processing as major occupation of respondent was negatively significant at 1% level of probability with coefficient of (-0.2399). this imply that a unit increase in involvement in sweet potato processing as a main occupation will lead to decrease in the income level of the respondents, this could be attribute to the low level of commercialization or patronage of sweet potato products in study area, while the educational level of the respondent was reported to be positively significant at 1% probability, level with coefficient of (0.5893). this imply that a unit increase in formal education have positive push in the income generated by the respondents, this can be attributed to application of basic knowledge and skills to the processing activity which certainly improve product quality and hence, increases income level generated.

Table 2 is the determinant of socioeconomic factors influencing the income of sweet potato processors

Parameter	Coefficient	Standard Error	P>/t/
Sex	-0.6614***	0.1555	0.000
Membership Association	0.0267	0.0238	0.234
Labour	0.0558	0.1402	0.180
Major occupation as processor	-0.2399***	0.0728	0.001
Educational Status	0.5893***	0.2119	0.000
Age of Respondents	-0.0042	0.1318	0.213
Household size	-0.1819	0.1150	0.172
Constants	7.8593***	1.0274	0.000
F-value	0.0000		
R^2	0.6384		
Adjusted R^2	0.5932		

Source: Field Survey, 2024

The result in Table 3 represents the socioeconomic constraint facing sweet potato Processors in the study area. The constraint and difficulties that face sweet potato processors in the research region experience are indicated in Table 3. Bad road was ranked 1st (64.6%) followed by cost of processing ranked 2nd (62.50%) according to Udemezue, *et al.,* (2018) who also reported that high cost of processing is a major constraint. Inadequate roots/tubers ranked 3rd with (59.38%) and transportation cost ranked 4th with (54.69) all having the condition considered to be moderately severe respectively Similar finding reported in Ayinde, *et al.,* (2013) where high transportation cost is a problem to processing of sweet potato. While Land conflict was ranked 5th with (54.69%) which was considered highly severe on the other hand insect infestation (53.13%), Credit facility (48.44), and spoilage (48.44), were ranked 6th, 7th and 8th respectively and considered to be moderately severe constraints to sweet potato processing. Lastly low income, inadequate labour, low patronage and storage facility were ranked 9th, 10th 11th and 12th respectively as constraints not too severe in the study area. Udemezue, *et al.,* (2018) reported that inadequate storage facilities can decrease the expected quality and return from sweet potato processing.

Table 3 Constraints of sweet potato processing in Kwara State

Variable	Highly severe	Moderately severe	Lowly severe	Rank
Bad Road	17(26.56)	41(64.6)	6(9.38)	1st
Cost of processing	14(21.88)	40(62.50)	10(15.63)	2nd
Inadequate roots/tubers	22(34.38)	38(59.38)	4(6.25)	3rd
Transportation Cost	18(28.13)	35(54.69)	11(17.19)	4th
Land conflict	35(54.69)	26(40.63)	3(4.69)	5th
Insect infestation	28(43.75)	34(53.13)	2(3.13)	6th
Credit facility	20(31.25)	31(48.44)	13(20.31)	7th
Spoilage	25(39.06)	31(48.44)	8(12.50)	8th
Low Income	9(14.06)	24(37.50)	31(48.444)	9th
Inadequate Labour	27(42.19)	29(45.31	8(12.50)	10th
Low Patronage	13(20.31)	25(39.06)	26(40.63)	11th
Storage Facility	23(35.94)	23(35.94)	18(28.13)	12th

Source: Field Survey 2024

The result in figure 1 represents the frequency of sweet potato processing in the study area. The result reveals that processing was done on a weekly basis with percentage frequency of 62.5%, although about 25% reported that processing was done on a quarterly basis. This implies that processing of sweet potato in various products takes place regularly in the study area.

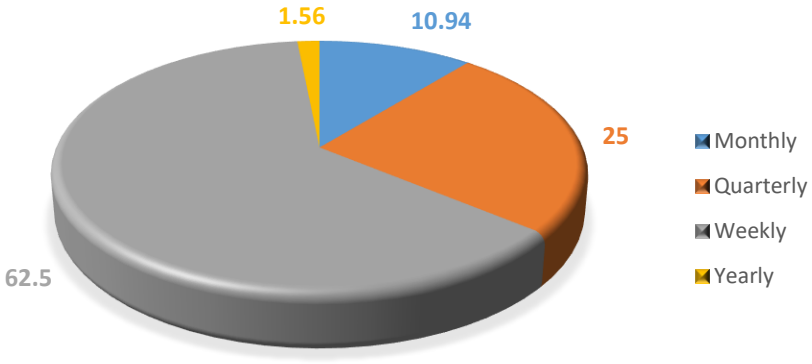


Figure 1: Frequency Of Sweet Potato Processing

CONCLUSION AND RECOMMENDATIONS

The study concludes that processing activities of sweet potato was gender sensitive as both male and female are key players in processing although the male are mostly involved in processing. The age of the respondents was within active labour supply phase, owing that majority were married and educated which played vital roles in the income level generated by the respondents. The respondents faced with some constraints which has negative effects on their income level. The study therefore, recommends that female most especially the Youth among them should be encouraged to participate in processing of sweet potato. Government and relevant stakeholders should give priority to interventions and training capacity to the processors of agricultural crops, Government should provide infrastructure in the community and all necessary basic amenities to help improve their standard of living and enhance food security in the area.

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