Determinants of Income from Small Scale Cassava Processing Activities in Ogo Oluwa Local Government Area, Ogbomoso of Oyo State

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Abstract: *The focus of this project is on determinants of income from small scale cassava processing activities in Ogo Oluwa local government area Ogbomoso Oyo, State. Multistage random sampling was used to select respondents for the study. Primary data were obtained from 100 cassava processors. Data were analyzed using descriptive statistics and regression analysis. The mean age of the respondents was 53.7 years, 98% were married while 2% were single. The regression results reveal that the coefficient of the multiple determinations (R^2) is 73%. In all this study reveals that initial capital, labour cost literacy levels are the major factors determining income from the small scale cassava processor. On the contrary the older a processor are the less productive they become.*

Keywords: Income, Small scale, cassava processor and OLS.

1.Introduction

Cassava is an important root crop in Nigeria. It was introduced into central Africa from south. It is most widely cultivated crop in the southern part of the country in terms of area devoted to it and number of farmers growing it. Indeed it is grown by almost every household (Osunkile, 2004). Cassava is important not only as food crop but more as a major source of income for rural households. Nigeria is currently the largest producer of cassava in the world with annual production of over 34million tons of tuberous roots. Both rich and the poor farmers often sell a high proportion of cassava than other crops. Cassava has some inherent characteristics, which makes it attractive especially to the smallholder farmer in Nigeria. Firstly, it is rich in carbohydrates, which makes it useful in some industries and consequently has a multiplicity of end users. Secondly, it is available all year round compare to other crops as it is more tolerant to low soil fertility and resistant to drought, pests and diseases. These attributes combine with other socio-economic considerations are therefore what IFAD has recognized in the crop as lending itself to a commodity – based approach to poverty alleviation (FAO/IC, 1995).

Nigeria is yet to fully harness the socio-economic potentials of cassava that would translate to higher ranking of cassava next to petroleum as major contributor to the gross domestic product (GDP). For this to be achieve, cassava farmer's production efficiency and profit margins needs to be established. In Nigeria, as in most developing countries cassava is one of the most important carbohydrate sources. The large population of Nigeria depend on cassava daily as their main dish such as gari, fufu, pupuru and starch, the leaves are consumed as vegetable and it serves as raw material to industries as well as been a means of alleviating poverty. In spite of the various uses cassava is known for, as an agent of self-sufficiency in food production, the gain derive from its production by rural farmers is still not sufficient to keep the resource of poor farmers above the poverty line. In the sub-tropical region where Nigeria is located, the availability of rain is thus critical to farming

operations, continued employment and income generation among farm families. Consequently, farmers tend to be unemployed during the dry season when there is generally no rainfall. The off season period varies from three to nine months as one moves from the Southern humid tropics to the Semi-arid North. This period tend to be very critical in the lives of most agricultural households since little or no income is earned and the farm-family of need has to call on their reserved food and savings for family upkeep. This has the implications of reinforcing underemployment and poverty among farm-families and has thus resulted in farmers been the poorest economic group in the country (Aigbokhan, 2000).

It is thus, crucial to make deliberate attempt to develop strategies that will add value to the farm products to increase their shelve lives, reduce post-harvest losses and shore up the national capacity to meet the food needs of the Nigerian people. In addition, such strategies should be able to access farm families to alternative and / or complementary employment opportunities especially during the off-season period. The promotion of enterprises that can process food products at the farm-gate is thus a crucial policy instrument for solving the problems of rural unemployment / underemployment, income poverty among farm families as well as reducing food shortages in the Nation.

2.Why Processing Cassava?

Fresh cassava roots cannot be stored for long because they rot within 3-4 days of harvest. They are bulky with about 70% moisture content, and therefore transportation of the tubers to urban market is difficult and expensive. The roots and leaves contain varying amounts of cyanide which is toxic to humans and animals, while the raw cassava roots and uncooked leaves are not palatable. Therefore, cassava must be processed into various forms in order to increase the shelf life of the products. The nutritional status of cassava can also be improved through fortification with other protein rich crops. Processing reduces food losses and stabilizes seasonal fluctuations in the supply of the crop. Cassava can

be processed into gari, fufu, cassava flour, cassava flakes, pupuru etc. Income can be generated from all cassava processed product. Also after cassava has been processed into various products as listed above, its waste can also be sold. For instance cassava peel can be sundry and then be sold to people who will utilize it as livestock feeds and this can also serve as a source of income (Manyong et al, 2005).

It is thus, crucial to make deliberate attempt to develop strategies that will add value to the farm products to increase their shelve lives, reduce post-harvest losses and shore up the national capacity to meet the food needs of the Nigerian people. The main objective of the study is to evaluate the determinant of the /income from small scale cassava processing activities in Ogo Oluwa Local government area of Oyo State. Specifically, the study examined the socio-economic characteristic of cassava processors and the determinant of income from cassava processing activities in the study area.

3.Hypothesis of the study

Socio-economic characteristics of the respondents do not have any significant effects on income from small scale cassava processing

4.Methodology: Study Area

The area to be covered by this study is Ogo-oluwa local government in Oyo state. Ogo-oluwa local government comprise of many village and settlement which include Ajaawa, Otamokun, Odo-oba, Ile-abu and many others (NPC, 2006). The area has derived savannah type of vegetation which usually witness annual bush burning at the peak of the dry season around the month of December through February. The rainfall is enough to support the cultivation of tree crops like cocoa, rubber, oil palm etc which makes the area very good location to site tree crop production, although there are some scanty location in Ile-abu and some other small villages. So tree crops are widely cultivated in this location. There is usually rainfall during the first quarter of the year in the most part of the area. The rainfall normally abrupt in October causing water stress on most of the crops examples are maize, tomatoes and others. The data used were mainly primary. These were obtained through the use of a well structured questionnaire and interview scheduled to the respondents. (Oyo, 2012).

Descriptive statistics and regression analyses were employed. Descriptive statistics was used to determine the socio- economic characteristics of the respondents in the study area. The ordinary least square (OLS) regression analysis, which helps to determine the effect of changes in the explanatory variables on the dependent variable was used to estimates the determinant of income among cassava processor in the study area. It is stated thus:

$$Y_i = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, \mu,)$$

Where
Y_1 = Net income (₦), X_1 =Age of respondent (in years), X_2 =Marital status, X_3 =Education background, X_4 =Source of raw material, X_5 =Initial capital, X_6 =Transportation cost, X_7 = Labour cost, X_8 = Maintenance cost, μ = Error term

5.Results and Discussion

5.1 Socio-Economic characteristics of Respondents

Table 1 revealed that the mean age was 53.7 years. This shows that they can still contribute immensely to the business. Majority of the processors are married (96.1%) with an average family size of 5 individuals in the family. The result shows that the marital statuses of the respondents do affect their selling price and that most of the married processors require assistance from their spouses. The table also showed that about 61.8% of the processors with frequency of 63 have no formal educational level while about 17.6% of the processors with frequency of 18 have secondary school level of education and about 4.9% of processor with frequency of 5 has tertiary school level of education. The low literacy level could be a challenge to acceptability of innovation that could help in betterment of their living standard. The average farming experience is 29 years. The sources of raw material determine the selling price of the product which in turn will affect their net income positively or negatively. The tables further revealed that majority of the respondents source their raw material from the market (77%). While 23% of the source their raw materials from the farm. The processing methods the processors uses are only two methods of processing; traditional method and modern method. The result shows that about 99% of the respondents use traditional method while about 1% of them use modern method.

Table 1: Descriptive Statistics

Age range	Frequency	Percentage	Cumulative percentage
21-30	3	3.0	3.0
31-40	7	7.0	10.0
41-50	26	26.0	36.0
51-60	37	37.0	74.0
61-70	17	17.0	90.0
71-80	9	9.0	99.0
81-90	1	1.0	100.0
Marital Status			
Married	98	98.0	98.0
Single	2	2.0	100.0
School attended			
No formal education	63	61.8	63.0
Primary	14	13.7	77.0
Secondary	18	17.6	95.0
Tertiary	5	4.9	100.0
Experience			
0-15	15	15.0	15.0
16-25	31	31.0	46.0
26-35	27	27.0	73.0
36-45	18	18.0	91.0
46-55	7	7.0	98.0
56-65	2	2.0	100.0
Source of Raw materials			
Market	77	77.0	77.0
Farm	23	23.0	100.0
Methods of Processing			
Modern	1	1.0	1.0
Traditional	99.0	99.0	100.0
Transportation to processing unit			
Head load	77	77.0	77.0

Family assistance	1	1.0	78.0
Vehicles	2	2.0	80.0
Wheel borrow	20	20.0	100.0

Source: field survey 2013

5.2 Regression Analysis

Relationships between socio-economic characteristics of the respondents and their selling price. The determinants of income were estimated (Table 2). Data were fitted to four functional forms using ordinary least square techniques (OLS). Having tested the effects of all the regressors on the regressand, the Cobb Douglas production function was chosen as the lead equation

Table 2: Regression Results

Variables	Coef	P	Marginal effect	Elasticity
AGE	-0.035494	0.010*	0.006*	0.006*
MS	-0.0244635	0.447	0.441	0.441
EDU	0.0205957	0.004*	0.002*	0.002*
SOURCE	-0.0049002	0.699	0.696	0.696
INTIN CAP	0.0508159	0.028**	0.021*	0.021*
TRN CST	-0.0046228	0.470	0.465	0.465
LAB CST	0.0581457	0.013*	0.008*	0.008*
MINT CST	-0.0705512	0.036**	0.028**	0.028**
CONSTANT	8.810484	0.000		
NO OF OBS	39			
F (8 , 30)	10.13			
PROB >F	0.0000			
R- SQUARED	0.7298			
ADJ R- SQUARED	0.6577			
ROOT MSE	0.01968			

1% level of significant = * 5% level of significant = ** 10% level of significant = ***

The regression results reveal that the coefficient of the multiple determinations (R^2) is 73%. The adjusted R^2 of 0.6577, means that 65.8% of the variations in the dependent variable were explained by its associations with the independent variables. Initial capitals, Labour cost and years of schooling were positive and were statistically significant at 5%, 1% and 1% respectively. This implies that additional increase in invested capital will lead to 5.08% increase in income. Likewise, the more educated a processor is the better. Age, and Maintenance cost are negative and were statistically significant at 1%, and 5% respectively. This implies that the older the processor, the less productive they become.

5.3 Test of hypotheses

The hypothesis in this study stated that there is no significant relationship between socio-economic characteristics of the respondents and income from small scale cassava processing. Table 2 showed the significant levels of these explanatory variables. Therefore the hypothesis that there is no significant relationship between socio-economic characteristics of the respondents and the determinant of income from small scale cassava processing was rejected.

6.Conclusion

It was discovered that some of the socio-economic characteristics of the respondents have impart on their income. Also, it was discovered that cassava processing in the study area is profitable. Some of the problems identified by the cassava processors include high cost of processing equipment, transportation difficulties, poor infrastructural facilities, shortage of labour, poor access to market, lack of fund and poor storage facilities.

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