

SOCIO-ECONOMIC FACTORS AFFECTING RURAL WOMEN IN GENERATING INCOME THROUGH CASSAVA PRODUCTION AND PROCESSING IN ABIA STATE, NIGERIA

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ABSTRACT

The study investigated the socio-economic factors affecting rural women in generating income through cassava production and processing in Abia State, Nigeria. Using structured questionnaire, data were collected from 120 randomly selected rural women in two out of the three agricultural zones of Abia State. Data were analyzed using descriptive statistics (frequency distribution, percentage and Likert-type rating scale) and inferential statistics (multiple regressions). The results of the descriptive statistics revealed that 50.0% of the rural women fall within the age bracket of 45 years and above years, 70% of the respondents were married with mean household size of 5 persons, and mean farm size of 2 hectares. Results also shows that they generate more income from cassava stems ($\bar{x}=3.2$), cassava roots ($\bar{x}=3.1$), frying and selling of garri ($\bar{x}=3.5$) and fufu ($\bar{x}=3.1$). The major constraints faced by the women were inadequate capital, poor market, high cost and unavailability of cassava flour processing machine. The results further indicated that significant relationship exists between socio-economic factors and cassava income generation of the rural women in the study area at 1%, 5% and 10%. Sequel to these finding, it is concluded that education, marital status, farm income and access to credit positively influenced women in their generation of income through cassava in the study area. This study therefore recommends higher educational pursuits and provision of interest-free facility for the women to boost their income generation from cassava production and processing. This is because women's advancement is predicated upon their educational and financial development.

Keywords: Income Generating, Cassava, Rural Women, Socio-Economic Factors, Production and Processing.

Introduction

Income generation simply means gaining or increasing income or money that an individual or business receives in exchange for providing a good or service after investing capital (Amadi *et al*; 2019). It can also be defined as small scale projects that create an income source to individual beneficiaries or beneficiary group whilst promoting; the principal right of self-determination and the objectives of integration, reputation and re- integration (FAO, 2011). An understanding of women generating income through cassava production and processing in rural households in Nigeria is necessary. This will ensure effective allocation of production resources within the rural households. Cassava (*Manihot esculenta* Crantz) is a staple food for over 700 million people in western and central Africa with an average consumption of approximately 500 calorie per day (Ogbuokiri, 2015). Cassava has a big potential to be a profitable cash crop in Africa (NRCRI, 2014). It plays a major role in the livelihood of women in South- Eastern Nigeria. About 70% of cassava farmers in the region are women, who are also entirely responsible for the processing and

marketing of cassava and its products to generate income (Anyanwu *et al*, 2016). Cassava has some inherent characteristics which makes it attractive, especially to the smallholder farm in Africa. Some of these are: richness in carbohydrates, richness in vitamin A, available all year round and resistant to drought. Furthermore cassava is more tolerant of low soil fertility and more resistant to pests and diseases than grains (Nwakor, 2014). Cassava products include garri, fufu, high quality flour, starch and its derivatives, sweeteners and ethanol of bio fuel grade, value added products such as cake, meat pie, boons, bread, among others. The starch of cassava can be used to make a 1000 products once well modified chemically into glue and adhesives, cold water starch for clothes, starch for paper, and for pharmaceutical inclusion as bulking agent in tablets, powder of cosmetics and as sweetener in many drinks and fruit juices preparations, syrup and confectioneries also benefit from these secondary products (Nwakor, 2014). Cassava is important, not only as a food crop but even more so as a major source of income for rural households (Anyanwu *et al*, 2016). As a cash crop, cassava generates cash income for the

largest number of households in comparison with other staples.

However, this research is necessitated by the low standard of living of these women and their families despite their involvement in cassava production and processing in the study area. Also income generation of rural women through cassava production and processing to improve their standard of living in the study area has not been documented or is not known. Intensifying efforts to improve income generation through production and processing of cassava will improve the lives of many rural women in Abia state, Nigeria. In view of the above, the need to analyze the involvement of women in cassava production and processing in their income generation in Abia State becomes imperative. This study therefore, sought to assess the income generation of rural women through cassava in Abia state; describe the socio-economic characteristics of the rural women; identify the cassava production and processing activities that generate more income for them; analyze factors that affect rural women income generation through cassava production and processing and examine the constraints faced by rural women.

METHODOLOGY

The study was conducted in Abia State. Abia State lies between longitudes $04^{\circ} 45'$ and $06^{\circ} 07'$ East of the Greenwich Meridian and Latitudes $07^{\circ} 00'$ and $08^{\circ} 10'$ North of the Equator. The state occupies an area of about 5,243.7 square kilometer. It has a total population of 2,833,999, consisting of 1,434,193 males and 1,399,806 females with a relatively high density of 580 persons per square kilometer (NPC 2006). The State is made up of three agricultural zones namely, Aba, Ohafia and Umuahia. A multistage sampling procedure was used in selecting the sample for this study. Ohafia and Umuahia agricultural zones were purposively selected based on the fact that improved cassava varieties have been densely introduced to women cassava farmers through the extension agents of National Root Crops Research Institute, Umudike in the zones. Secondly, two blocks were randomly selected from the zones. A random selection of three

circles in each of the block was done, and in each of the circles, twenty cassava women producers and processors were randomly selected, making it a total number of 120 women for the study. Data for the study were collected using well-structured questionnaire to elicit information from the selected respondents. Objective 1 was analyzed using percentages and frequency counts. Objective 2 was analyzed using mean score, a 5 point likert scale of strongly agree =5, agree =4, undecided =3, disagree =2 and strongly disagree to measure their mean response to cassava production and processing activities through which they generate income. In using the 5 point likert scale, a mid-point was obtained by adding 5, 4, 3, 2 and 1 which gave 15 and when divided by 5 gave a mean score of 3.0. Any mean score response equal or above 3.0 signifies high cassava activities that generate more income. Objective 3 was also analyzed using a 3 point rating scale of very serious constraints =3, serious constraints =2 and unserious constraint= 1 to measure their mean response to constraints in generating income through cassava. In using the 3 point rating scale, a mid-point was obtained by adding 3, 2 and 1 which gave 6 and when divided by 3 gave a mean score of 2.0. Any mean score response equal or above 2.0 signifies serious constraints to generating income from cassava. Objective 4 was realized using multiple regression model. The explicit form is stated below:

$$Y = F(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, X_{10} + e)$$

Y = Cassava income generating activities

X_1 = Age (in years)

X_2 = Marital status (single 1, married 2)

X_3 = Household size (number of people eating from same pot)

X_4 = Education (in years)

X_5 = Labour cost (in naira)

X_6 = Farm income (in naira)

X_7 = Farm size (in hectare)

X_8 = Member of cooperative society (Yes 1, no 0)

X_9 = Access to farm credit (Access =1, non=0)

X_{10} = Price of garri (in naira)

e = Error term.

RESULT AND DISCUSSION

Table 1: Distribution of respondents by some selected socio-economic characteristics (N=120)

Variables	Frequency	Percentage
Age		
20 - 34	2	1.7
35 – 44	58	48.3
45 and above	60	50.0
Marital status		
Single	84	70.0
Married	36	30.0
Household size		
1 – 5	84	70.0
6 – 10	28	23.3
11 and above	8	6.7
Farm size		
0.1 – 0.9 ha	22	18.3
1.0 – 1.9 ha	20	16.7
2.0 – 2.9 ha	48	40.0
Above 3 ha	30	25.0
Educational level		
No formal education	4	3.3
Primary school	30	25.0
Secondary school	50	41.7
Tertiary	36	30.0

Source: Field Survey Data, 2017.

Socio-economic characteristics of the women

Table 1 reveals that (1.7%) of the respondents were in the age category of 20-34, (48.3%) were within the age category of 35-44, while majority (50.0%) of the respondents were within the age range of 45 years and above. This age range is regarded as the economically productive section of the population, which implies that the women were able-bodied and could actively engage in cassava income generating activities. Also, majority (70%) of the women were married. This implies that most of the respondents involved in cassava production and processing in order to generate and boost their income and meet up with family responsibilities. This result is consistent with the findings of Anyanwu *et al* (2016) who reported that most food crop farmers, cassava producers and processors and marketers in Abia State were married. Majority of the women (70%) had average mean of 3-4 persons as household members. The size of the household is attributable to the need for cheap and dependable labour derivable for involvement in generating income from cassava production and

processing. This finding is in agreement with the finding from study conducted by Ayanwuyi *et al*; (2011) who reported that the size of the household of the respondents may contribute positively to their involvement in the various farm income generating activities. Also, about (40%) of the respondents had farm sizes of about 2 and half hectares. The small farm size is attributable to land tenure system and the use of land for construction purposes in the study area. This result supported the findings of Farinde *et al*, (2007); Omoare *et al*, (2014) and Anyanwu *et al* (2014) who found that majority of farmers in Nigeria cultivate farm sizes of 2 to 3 hectares. In terms of educational attainment, (25.0%), (41.7%) and (30.0%) of the women attended one form of formal education or the other, while only (3.3%) had no form of formal education. This implies that most of them are enlightened and thus receptive to change. This result is in line with the findings of Bolaji (2015) who posited that high level of literacy among women farmers may increase their farm productivity and production efficiency.

Table 2: Distribution of respondents according to cassava production and processing through which rural women generate income

Variables	SD	D	U	A	SA	Total	Mean
Cassava stem	18(18)	20(40)	22(66)	40(160)	20(100)	384	3.2*
Cassava Root	12(12)	20(40)	40(120)	30(120)	18(90)	382	3.1*
Garri	10(10)	18(36)	16(48)	52(208)	24(120)	422	3.5**
Fufu	18(18)	22(44)	24(72)	38(152)	18(90)	376	3.1*
Cassava starch	36(36)	42(84)	24(72)	14(56)	4(20)	268	2.2
Cassava flour	28(28)	30(60)	30(90)	20(80)	12(60)	318	2.6
Cassava value product: cake, etc	22(22)	36(72)	30(90)	20(80)	12(60)	324	2.7
Tapioca	20(20)	34(68)	34(102)	22(88)	10(50)	328	2.7
Grand Mean							2.9

Source: Field Survey Data, 2017. Bench mark: 3.0

Cassava production and processing activities through which the rural women generate income

Table 2 revealed the cassava production and processing through which the rural women generate income. They generate more income from Garri ($\bar{x} = 3.5$), Cassava stem ($\bar{x} = 3.2$), Fufu ($\bar{x} = 3.1$) and Cassava flesh root ($\bar{x} = 3.1$). This result agrees with the findings of Onyebu

(2016) and Bolaji (2015) who reported that rural women (farmers) generate more income from garri, cassava stem and fufu respectively. The grand mean score of 2.9 which was slightly lower than the bench mark score of 3.0 suggested a slightly low level of income generation through cassava production and processing among the rural women.

Constraints to generating income through cassava production and processing by rural women

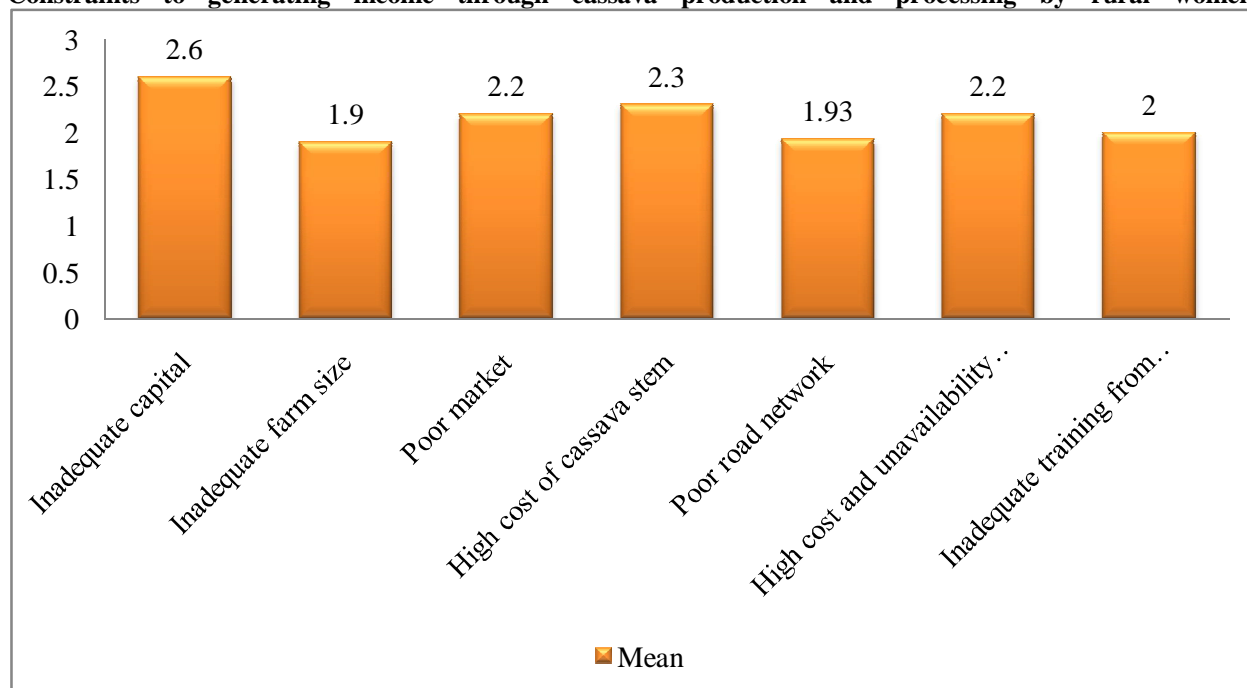


Fig. 3

Constraints to generating income through cassava production and processing by rural women

The constraints to income generation through cassava production and processing by rural women were presented above. The results reveal that the seven possible constraints investigated in the study were serious constraints to generating income through cassava by rural women. Inadequate capital ($\bar{x}=2.6$), High cost of cassava stem ($\bar{x}=2.3$), Poor market ($\bar{x}=2.2$), High cost and unavailability of processing

machines ($\bar{x}=2.2$) and inadequate training from NRCRI ($\bar{x}=2.0$) were the most serious constraints to generating income through cassava production and processing by rural women. The finding is in agreement with the work of Bolaji (2015) who observed the following as the developmental challenges facing women empowerment in cassava production and processing in Nigeria: inadequate capital, inadequate training, poor market and high cost of modern processing machines.

Table 4: Regression analysis on socio-economic factors affecting the rural women in income generation through cassava production and processing

Variables	Std. Error	B	T	Sig
Constant	.332		14.678	.000***
Age	.003	-.057	-.733	.467
Education	.041	.167	2.364	.022**
Household Size	.007	.014	.207	.837
Labour cost	.012	.074	1.208	.233
Marital status	.048	.252	2.875	.066*
Farm size	.041	-.070	-1.115	.270
Farm income	.000	.656	7.928	.000***
Farm Credit	.044	.141	1.935	.059*
Price of garri (kg)	.001	.018	.288	.774
Member cooperative	.000	-.019	-1.495	.141
R Square=0.8242				
F ratio=25.043, sig 1%				

Source: Field Survey Data, 2017

Note: Significant at 1% ***, 5% ** & 10% * levels.

Factors affecting rural women in income generation from cassava production and processing

The findings of the regression analysis are presented in Table 4. The R^2 value of 0.82 indicates that about 82% of variations in factors can be explained by the explanatory variables while the remaining 18% was due to other factors not specified in the model. F-value ratio of 25.043 in the regression result implies that variables were statistically significant at 1% level of probability. The result indicated that four out of the ten explanatory variables had positive relationship and were significant at 1%, 5% and 10% alpha levels. The estimate showed that educational level had a positive and significant relationship at 5% level with the income generation through cassava by rural women. This means that as the women acquired more formal education, income generation from cassava increased.

This agrees with *a priori expectation* and results of Onyebu (2016) that education enhances the potential of women and makes them take advantage of available opportunities that could enhance their income generating activities. Marital status had a positive and significant relationship at 10% level with the income generation through cassava by rural women. It means that marital status increased the respondents' income generation from cassava. Furthermore, the analysis showed a positive and significant relationship at 1% level between levels of farm income and rural women income generating activities from cassava production and processing. This means as their level of income increased, their income generating activities from cassava increased. Access to farm credit also had a positive and significant at 10% level with the income generation through cassava by rural women. This

means that the more they have access to farm credit, increased in cassava production and processing become possible which result in higher income generation. It is expected that access to credit will help women to refinance their activities for better profit. This is in agreement with *a priori expectation* and also in line

with the findings of Okoro (1999) and Ironkwe (2010) who said that access to credit increased agricultural productivity. The findings on the other hand disagrees with Nwakor (2014) who reported that the more access to farm credit, the less productivity.

Table 3: Regression Analysis on factors affecting the rural women in income generation through cassava production and processing

Variables	Std. Error	B	T	Sig
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R Square=0.8242				
F ratio=25.043, sig 1%				

Source: Field Survey Data, 2017

Note: Significant at 1% ***,5% **& 10%* levels.

CONCLUSION

The study concluded that most of the rural women generate more income from garri, cassava stem, fufu and cassava fresh root. There were positive relationships between level of education, farm income, marital status, access to farm credit and income generation from cassava production and processing by the rural women. The study further showed that inadequate capital, poor market, high cost of cassava stem for planting, high cost and unavailability of processing machines and inadequate training from NRCRI were the constraints face by the rural women in generating income from cassava production and processing. This study therefore recommends higher educational pursuits and provision of interest-free facility for the women to boost their income generation from cassava production and processing. This is because women's advancement is predicated upon their educational and financial development. Also, National Root Crops Research Institute (NRCRI), Umudike should intensify training for Abia cassava women

farmers to accomplish her cassava mandate and transformation agenda in the study area.

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