Women Participation in Cassava Processing in Ibarapa Central Local Government Area of Oyo State, Nigeria

Adeoye, A., Oyeleye, A.A., Ajibade, A.J., Daud, S.A, Alabi, A.F., and Amao S.A.

Oyo State College of Agriculture and Technology, Igboora
Telephone Number of Main Author: +2348035881241

ABSTRACT

The study examined the participation of women in cassava processing in Ibarapa Central Local Government Area of Oyo State. Multistage random sampling technique was used to select 120 women. Descriptive statistics, participation index and an econometric tool were used to analyze data. It was revealed that the women participating in the cassava processing were married, without formal education and their mean age (44) shown that they were still in their active age. The level of participation that was measured on three (3) point Likert scale in order of importance, shown that the highest number (85.0%) of the women participated in processing cassava into flour (Elubo,) while the starch has the lowest participation. Participating indexes for each of the cassava products were flour (3.93), gari (3.61) and fufu (3.23) etc. The grand mean that was used as participation index was found to be 3.01, this is an indication that women in the state always participate in cassava processing activities. Furthermore, Household size, number of visits by extension agents, processing experience, access to credit, monthly income, and cooperative membership were the statistically significant factors that affect the level of participation of respondents in the study area. The major constraints faced by the respondents were inadequate land (processing space), cost of transportation, high cost of labour, inadequate capital and high cost of processing materials. This suggests that policies should be focus on creating suitable technologies for cassava women processors and government should ensure its availability. There is need also to review the existing system of land acquisition and ownership in the area in order to give women greater access to and control of productive resources.

INTRODUCTION

Agriculture plays a crucial role in the development of a nation. It is even the most important sector in reducing poverty and economic hardship in most developing nations. It has several components which include production, processing and marketing of crops and livestock.

According to Kehinde and Subuola (2015), Cassava plays a particularly important role in the agriculture of developing countries; especially in sub-Saharan Africa. It survives in poor soils, has a high yield of carbohydrates and good resistance to pest infestations, diseases and drought (Oyewole, 2002). The Food and Agriculture Organization (FAO) estimated as at year 2000 that cassava production was approximately 34 million (FAO, 2004), and as affirmed by Kehinde and Subuola, 2015, Nigeria is the largest producer of cassava in the world.

In Nigeria, cassava still remains one of the most important crops. It is a staple food known to be consumed both locally and internationally. It is grown by every household especially because of it cheapest source of calories for both human and animal consumption which contributes to poverty reduction (Onyemauwa, 2012). It is cultivated as an annual crop for its edible starchy tuberous root. According to Nyerhovwo (2004), 80 percent of Nigerians reside in the rural areas and they eat cassava meal at least once a day. It has a carbohydrate content which is about 40% higher than rice and 25% more than maize. Cassava roots are processed and eaten by 500 million people a day in Africa where it is a staple for 40% of the population (Net Gen Cassava, 2013). Women are very much involved in agricultural practices especially in the area of cassava production, about one of third to one half of the total labour contribution to agriculture is made by women (Saeed and Yousefi,(2012).

Women play a vital role in food production and carry out agricultural activities beyond crop production (Onuebunwa and Adesope (2006), they also take active part in livestock, processing and marketing, this makes them to be responsible for virtually all activities in farming (Lawanson, 2008). It is said that out of ten agricultural workers in the world, four are women (Technical Centre of Agriculture and Rural Cooperation CTA, 1993). Therefore, the role women play in agriculture and rural society cannot be over emphasized and is also the fundamental to Agricultural and Rural Development in Nigeria and Sub-Saharan Africa.

In Nigeria, women make a large proportion of the agricultural labour force (Dim *et al*., 2014). Women make a significant contribution to food production. They provide 60-80% of agricultural labour and are responsible for 80% of food production (Mgbada, 2002). Women play a vital role in cassava production; harvesting, processing, distribution and marketing, Cassava processing operations include peeling, grating, fermentation, pressing, roasting, cooking

and milling. Many of these activities are usually done manually or traditionally due to lack of modern technology equipment especially in the rural areas of Nigeria. This resulted in increased losses, time consuming and tediousness, lack of storage facilities, high processing cost and thus low income (Akosua and Bani, 2007).

.   Cassava processing is a complex process mostly done by women who engage in the difficult aspect of the work due to limited access to technology ((Onyemauwa, 2012,).). The demand for cassava and its products have increased in both the national and international markets. This is as a result of the increased use of the crop for food by human and livestock as well as industrial raw material. Despite women's pronouncement participation in agricultural activities the outcome is usually small especially in the area of processing. Access to critical resources, technology and services is still a problem. This study therefore aimed at assessing women participation in cassava processing in Ibarapa Local Government Area of Oyo State, Nigeria. The specific objectives are:

(i)   describe the socio-economic characteristics of cassava processors.

(ii)   determine the level of rural women participation in cassava processing.

(iii)   examine factors affecting the level of participation of women in cassava processing.

(iv)   identify constraints militating against processors in processing cassava

MATERIALS AND METHODS

The study was carried out in Ibarapa Central Local Government Area of Oyo State. In carrying out the study, primary data derived from the administration of a structured questionnaire using a multistage sampling technique was used. The two towns (Idere and Igbora) in Ibarapa Central Local Government Area were purposively selected. The first stage involves a simple random selection of 3wards in Igboora and 3 in Idere. The second stage involves selection of 20 cassava processors from 3 accessible villages each in Igboora and Idere respectively. This selection is proportionate to size of the towns. This gives a total number of 120 women that are participating in the processing of cassava products such as Gari, starch, fufu, Tapioca and Cassava flour. The data were analysed using frequency distribution and Inferential Statistics. A descriptive statistical tool such as frequency distribution and percentages was used to analyze objective 1 and 4, while participation index was used to achieve objective 2. Using a 3 point Likert scale after Ayoade *et al.,* (2009). Participation was measured on scale 1-3 in order of importance from;

never involved=1-1.99, rarely involved=2-2.99, always involved=3-3.99. The level of participation of respondents was indicated in 6 common practices involved in cassava processing in the study area. Multiple regression analysis was used to achieve objective 3. The model was specified thus:

$Y = b_0 + b_1X_1 + b_2 X2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + b_6 X_6 + b_7 X_7 + U$

Where,

Y = Participation index of the respondents

X_1 = Age of the respondents (years)

X_2 = Processing experience in cassava (years)

X_3= Level of education

X_4 = Access to credit (Dummy: 1=yes; 0=otherwise)

X_5= Monthly income (naira)

X_6= Membership of a Cooperative (Dummy: 1=yes; 0=otherwise)

X_7 = Extension contact

X_8 = Household size

X_9 = Marital status

X_{10} = Primary Occupation

X_{11}= Secondary Occupation

$b_1 - b_{11}$ = Regression coefficients

U = error term

RESULTS AND DISCUSSION

Socio-economic characteristics of respondents

The socio economic characteristics considered in the study area includes: age, marital status, year of experience, household size and educational level among others.

The age of the respondents shows that mean age of women participating in cassava processing is 44years, this shows that they are still within their active working age. 50.0 percent falls within the age range of 21-40 years, which indicate that cassava processing in the study area has active work force that are relatively young. The mean age is 44± 10.97, this shows that the processing involves much energy and therefore requires middle-aged women to do the job. This findings is similar to the work of Dugie *et al.,* (2009) and Amao *et al.,* (2008) who noted that most garri processors are within the age of 45 years and below.

Household size shows that 15percent had household size of less than three, 62.5percent had 4-6 persons, and 22.5percent had between 7 persons and above with mean household size of 5 persons. Majority of respondents (68.3percent) were married, 13.3percent were widowed, 8.3percent were single and 10.0% were divorced. Farming experience shows that 60percent of cassava women had 6-10years of processing experience. 24.2percent of the respondent has experience of less than 5years, while 15.8percent of the respondent has 10 years and above. Educational status shows that 55.0 percent of the women processing cassava has no formal education, 20.8percent had primary school education while 16.7percent had secondary school education and 6.7% had tertiary education. This could imply that cassava processors in the study area have low level of education.

Table 1:   Distribution of Socio Economic Characteristics of Respondents

Variable	Frequency	Percentage	Mean	Standard Deviation
Age				
≤20		13	10.8	
21-40		60	50.0	
41-60	35	29.2	45	10.97
60 and above		12	10.0	
Total		120	100	
Household size				
≤3		18	15.0	
4-6		75	62.5	
>6	27	22.5	5	1.47
Total		120	100	
Marital status				
Single		12	10.0	
Maried		82	68.3	
Widow		10	8.3	
Divoiced		16	13.3	
Total		120	100	
Year of Processing Experience				
≤5		29	24.2	
6-10	72	60.0	10.28	7.26
>15		19	15.8	
Total		120	100	
Educational level				
No formal		67	55.80	
Primary		25	20.83	
Secondary		20	16.70	
Tertiary		8	6.70	

Total	120	100
Cooperative		
Yes	98	81.67
No	22	18.33
Total	120	100
Access to credit		
Yes	114	95.00
No	06	5.00
Total	120	100
Occupation		
Civil servant	9	7.5
Farming	66	55.0
Trader	45	37.5
Total	120	100.00

Source: field survey 2017

Level of participation of women in cassava processing

Table 2 present the level of participation of cassava women in the processing. Findings shows that majority (85.0%) of the respondents are always involved in processing cassava into flour (elubo,) followed by gari 76.7% and fufu 58.3%. These indicate that cassava flour is easy to process and cost effective because it does not involve processing like frying and cooking like others. Tapioca and starch have the least percentage in participation level i.e. 19.83% and 16.7% respectively. The short fall (16.7%) in starch may be attributed to the unavailability of processing technologies in the study area.

Table 2**: Distribution of Respondent According to level of Participation in Cassava Products Processing**

Identified Cassava Processing	Never Participate		Sometimes Participate		Always Participate	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Cassava flour	15	12.50	3	2.50	102	85.00
Gari	19	15.83	9	7.50	92	76.67
Tapioca	90	74.38	7	5.79	24	19.83
Starch	91	75.83	9	7.50	20	16.67
Fufu	43	35.83	7	5.83	70	58.33
Others	76	63.33	4	3.33	40	33.33
Total	120	100	120	100	120	100

Never participated=1.00-1.99; sometime participated= 2.00-2.99; always participated= 3.00-3.99

Source: field survey 2017

4.3 Participation Index of Rural Women Participation Level in Identified Cassava Processing

 Table 3 shows the participation index result of women in cassava processing. The result shows the levels of rural women participation in cassava flour, gari and fufu has a mean of 3.93, 3.61 and 3.23 respectively. The result shows that most of the rural women never involve themselves in starch processing (1.95), findings also shows that many women rarely participated in tapioca processing (2.95). The grand mean that was used as participation index was found to be 3.01, this is an indication that women in the state always participate in cassava processing activities. This agrees with the findings of Onyemauwa (2012) that cassava is women's crop.

Table 3**: Participation Index Result of Rural Women in Cassava Processing**

Identified Cassava Processing	Mean Score	Standard Deviation
Cassava flour	3.93	0. 67
Gari	3.61	0 .75
Tapioca	2.65	0. 81
Starch	1.95	0.83
Fufu	3.23	0.95
Others	2.70	0.94
Grand Mean Score	**3.01**	

Never participated= 1.00-1.99; sometime participated= 2.00-2.99; always participated= 3.00-3.99
Source: field survey 2017

Factors Affecting Participation Level of Rural Women in Cassava Processing

Regression Analysis was used to determine the factors affecting the participation level of rural women in cassava processing. The variable used were age, marital status, household size, educational level, primary occupation, secondary occupation, processing experience, monthly income, cooperative, access to credit and extension contact.

Table 4 shows the regression results. From the table, the exponential functional form provided the lead equation of the factors that affect women participation in cassava processing in the study area. It was chosen because it h98uuuas the least standard error as well as one of the highest numbers of statistically significant exogenous variables even though the R^2 is not as high as

those of the linear and the semi-log forms. It also satisfied the a priori expectations. The exponential result shows that there was significant ($p<0.05$) and positive relationship between women involvement in cassava processing in the study area and household size, monthly income and extension contact. Processing experience and being a member of any cooperative were positively significant ($p<0.001$), while rural women access to credit was also positively significant ($p<0.01$). Therefore, increase in household size by one adult equivalent would increase the number of family labour available for cassava processing i.e increase in household size will lead to 6% increase in participation level.

Similarly, as women get more contact with extension agents they are likely to learn modern techniques of cassava processing and thus their involvement in them will increase and improve. In addition, processing experience is significant at 1%, this implies that the more experience rural women acquire in processing cassava will lead to increases in knowledge, confidence and perfection which will invariably increase their participation level. Increased monthly income will increase the tendency of the rural women to be more involved in the activities. Also being a member of cooperative society enables the farmers to have their inputs at reduced price due to bulk purchase and subsidy given by various institutional bodies from time to time. Access to credit was significant at 1%, this implies that the more credit available to the women the more they get involve in cassava processing in the study area.

Table 4: Factors Affecting Participation Level of Rural Women in Cassava Processing

Explanatory Variables	Linear function	Exponential function	Double-Log function	Semi-Log function
Age	0.17 (2.29) **	0 .05 (1.54)	0.17 (0.76)	0.46 (1.00)
Marital status	0 .01 (0.36)	0.01 (0.59)	-0.08 (-0.99)	-0.16 (-0.98)
Household size	0.16 (2.66) ***	0.06 (2.17)**	0.013 (0.07)	0.03 (0.07)
Educational level	0.04 (0.53)	0.01 (0.43)	0.03 (-0.29)	-0.06 (-0.23)
Primary Occupation	0.03 (0.46)	0 .01 (0.29)		
Secondary Occupation	0.27 (1.52)	0. 06 (0.74)	-0.02 (-0.29)	-0.01 (-0.12)
Processing experience	0.06 (-1.09)	0.04(1.26)***	-0.06 (-0.51) *	-0.14 (-0.62)

Monthly income	0.07 (1.10)	0.02 (3.63)**	0.07 (2.63)**	0.05 (0.00) ***
Cooperative	0 .69 (5.00)***	0.27 (4.18)***	0.40 (1.54)	0.89 (1.67)
Access to Credit	0.24 (2.32)**	0.08 (1.71)*	0.15 (0.73)	0.34 (0.80)
Extension contact	0.20 (2.62)***	0.09 (2.41)**		
Adj R-squared	**0.9671**	**0.78392**	**0.8288**	**0.9618**
Root MSE	**0.37215**	**0.17558**	**0.2056**	**0.42667**

*, ** ,*** represent 1%, 5% and 10% respectively
Source: field survey 2017

Constraints militating against processors in cassava processing

A number of constraints are faced by women in cassava processing in the study area. Some of these constraints are: inadequate land area (processing space), inadequate capital, household activities, high cost of processing material , high cost of labour, spoilage during processing, inadequate storage facilities, transportation cost, lack of improve processing techniques and problems of marketing.

Table 5 shows the various constraints being faced by cassava women. From the table, 31.67% of the cassava processors have inadequate land constraints at all times. 30.8% of the respondents sometimes have the problem; while 30.0% have the constraints rarely with only 7.5% who never have constraints of inadequate land for cassava processing.

In addition, more than half (58%) of cassava processors have inadequate capital constraints of all the time. 25% of the respondents sometimes have the problem, while 10.0% have the constraints rarely with only 6.67% never have constraints of inadequate capital for cassava processing, also it shows that 25.8% of cassava processors have pre-occupation constraints of all the time. 38.33% of the respondents sometimes have the problem, while 19.2% have the constraints rarely with only 16.67% never have constraints of pre occupation for cassava processing.

The table also shows that 66.67 percent have this problem all the time, 15 percent of the respondents sometimes have problems of transportation, while 14.12 percent rarely have the problems and 5 of the respondents representing 4.17 never have this problem. This implies

majority of the respondent faced transportation problems which usually caused by poor road networks and the persistent problems of fuel scarcity. Furthermore, 20.83percent have this problems all the time, 31.67 percent of the respondents sometimes have problems of transportation, while 33.33percent rarely have the problems and 17 of the respondents representing 14.17 never have this problem.

It also shows that 75.00 percent have this problem all the time, 15 percent of the respondents sometimes have this problem, while 5.83 percent rarely have the problems and 5 of the respondents representing 4.17 never have this problem. This implies that high cost of processing material is a major problem in the study area. 58.33% of cassava processors have the problem of high cost of labour all the time. 25 percent of the respondents sometime have the problem, while 10.0 percent have the constraints rarely with only 6.67 percent never have this constraint for cassava processing.

Table 5: **Distribution of the Respondent According to the Constraints faced**

Constraints	Frequency	Percentage
Inadequate land		
All the time	90	75.00
Sometimes	18	15.00
Rarely	7	5.83
Never	5	4.17
Total	120	100.0
Inadequate Capital		
All the time	70	58.33
Sometimes	30	25.00
Rarely	12	10.0
Never	8	6.67
Total	120	100.00
Pre-Occupation		
All the time	31	25.8
Sometimes	46	38.33
Rarely	23	19.2
Never	20	16.67
Total	120	100.00
Cost of Transportation		
All the time	80	66.67
Sometimes	18	15.00
Rarely	17	14.12
Never	5	4.17
Total	120	100.00
Inadequate storage		
All the time	25	20.83
Sometimes	38	31.67
Rarely	40	33.33
Never	17	14.17
Total	120	100.00
High cost materials		
All the time	90	75.00
Sometimes	18	15.00
Rarely	7	5.83
Never	5	4.17

Total	120	100.00
High cost of labour		
All the time	70	58.33
Sometimes	30	25.00
Rarely	12	10.0
Neve	8	6.67

CONCLUSION

Based on the findings of this study, it is evident that majority of the rural women in Ibarapa Central LGAs always participate in cassava processing. Household size, number of visits by agricultural extension agents, monthly income, participation in cooperative activities, as well as access to farm credit were the major factors that significantly influence women participation in cassava processing in the study area. The major constraints faced by the respondents were inadequate land (processing space), cost of transportation, high cost of labour, inadequate Capital and high cost of processing materials. This study therefore suggests that policy makers on cassava processing should be focus on creating suitable technologies for cassava women processors and government should ensure its availability. There is need also to review the existing system of land acquisition and ownership in the area in order to give women greater access to and control of productive resources.

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