

Cassava Processor's Awareness of Improved Processing Technologies in Oyo State

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Abstract— The cassava production is most carried out by smallholder farmers in the rural areas using low-level production techniques which have left them with production of cassava tubers without much value addition. Therefore cassava processors' awareness of improved processing technologies in Oyo State was investigated.

Simple random approach was employed through questionnaire and interviews to collect information from 176 Cassava processors. Descriptive and inferential statistics such as frequency counts, percentages, mean, Chi-square were used in data analysis at 0.05 level of significance.

Results of analysis revealed that majority (77.2%) of the respondents fell within the age range of 21 years to 50 years with mean age of 41.23 and greater population of females (75.6%) than the males (24.4%). Over 45.5% had secondary and below as their educational qualification with most (75.6%) married, with fairly large household size 4-6 persons.

The respondents' level of awareness of improved processing technologies among most need respondents low (54.5%) and this may accounted for low level of utilization of improved processing technologies among majority (56.8%) of the respondents. Chi-square analysis revealed that, among socio-economic characteristics of the respondents, religion ($\chi^2 = 6.805, p = 0.033$), educational qualification ($\chi^2 = 10.572, p = 0.032$), mode of processing ($\chi^2 = 14.015, p = 0.001$) and mode of Labour ($\chi^2 = 11.960, p = 0.003$) were significantly related to respondents' awareness of improved processing technologies. The result revealed clearly that respondents' awareness of improved processing technologies does not depend on marital status, sex, household size and experience.

It is therefore recommended that Government and NGO's should encourage extension agents by giving them motivation as at when due to improve their services of dissemination of information to the cassava processors on

awareness of improved processing technologies toward enhancing higher productivity, income and better standard of living of the respondents in the study area.

Keywords— Cassava processors, awareness, Improved processing technologies.

I. INTRODUCTION

In the area of cassava production, the recent Agricultural Transformation Programme of the Federal Government which has facilitated the establishment of Cassava processing plants, exportation of Cassava chips to countries like China has led to increase in the interest of the rural famers including women to increase their level of Cassava production and processing. In the domestic parlance the rural women processing cassava into various products such as cassava flour, chips, and starch among other products.

In Nigeria, women cassava utilizers constitute more than 60% of the adult population resident in the rural areas (Odebode, 1997). However, their traditional contribution to agricultural production has been rendered inefficient by the crude and inappropriate form of agricultural technologies frequently used (Olawoye, 1988), the result is a relatively low agricultural productivity, which is inversely proportional to the enormous labour intensive input. It is against this backdrop that this research investigated the extent of the cassava processors' awareness of improved processing technologies in Oyo State.

Specific objectives

The specific objectives of this study include to:

- i. Identify socio-economic characteristics of the cassava processors in Oyo state.
- ii. Determine the level of awareness of improved processing technology by cassava processors in Oyo State.
- iii. Find out attitude of respondents towards utilization of improved processing technology in the study area.

Hypothesis of the study

The hypothesis stated in the null form is tested:

H₀₁ – There is no significant relationship between awareness of the respondents and their utilization of improved processing technology in the study area.

II. MATERIALS AND METHODS

The study was carried out in Oyo state, which is one of the six states in south west Nigeria. The economy of the state is based on the agriculture and the major occupation of the rural people is farming. The climate in the state favour the cultivation of crops like maize, yam, cassava, millet, rice, plantains, cocoa, oil-palm, cashew etc. They engage in other activities such as transport operation, blacksmithing, tailoring, and carpentry and so on. The state is homogenous and comprises the Oyos, the Ibadans and the Ibarapas, all belonging to the Yoruba family and speaking the same Yoruba language. People within and outside the country trade and settle in the urban areas. The capital, Ibadan is reputed to be the largest city in African, south of the sahara.

Sampling Procedure and Sample size

A Multi-stage sampling procedure was used to select respondents for the study. Random selection of 50% of the two ADP zones (Ogbomoso and Ibadan/Ibarapa), Purposive sampling Technique was used to select Local Government and Communities that are predominantly noted for cassava production and processing from the selected two zones: Ogbomoso South Local government (Ogbomoso zone) and Ibarapa East Local government (Ibadan/Ibarapa zone). List of registered cassava processors in selected communities was collected from the Department of Agric. and Health at the Local Government Headquarters in Arowomole and Eruwa respectively. 50% of registered Cassava Processors in selected communities was randomly selected and this gives a total of one hundred and seventy six (176) respondents that was used for the study.

Analysis of data

Data Collected were subjected to descriptive and inferential Statistical analysis using Statistical Package for the Social Sciences (SPSS). Descriptive statistical tools used included frequency counts, mean and percentage while inferential statistical used is Chi-square.

III. RESULTS AND DISCUSSION**Socio-economic characteristics of respondents**

The mean age of all the respondents was 41.23. This implies that most of the respondents are in their active ages and this may urge them favourably to utilize improved processing technologies for their cassava processing.

This finding is in line with that of Akinbile (2007) and Adedeji et al (2013) who reported a mean age of 41.42 with age-range (20-50years) that constitutes the active workforce of the population.

Results of analysis on respondents' sex in Table 1 revealed that 24.4% are males while 75.6% were females in the study area. This implies that females are more predominant in cassava processing than males in the study area. Results further showed that most 60.8% of the respondents were Christians, 36.4% were Muslim and few ones 2.8% were traditional believer. Religion believe is one of the major identities of Nigerians. Oyesola and Ademola (2011) asserted that religion institution can assist in making information available most especially in rural areas on awareness and utilization of improved processing technologies among cassava processors. This finding is in agreement with the work of Torimiro *et al.*, (2006) that majority (70.9%) of the rural dwellers are Christians.

Results in Table 1 also revealed that most respondents (75.6%) were married. This implies that marriage institution is still highly esteemed in our society because it is evidence of being responsible. This result is also in tandem with report of Ewebiyi and Arimi (2013) who submitted that marriage institution plays a key role in the livelihood of rural dwellers. The results further showed that most (58.0%) of the respondents had four to six persons household size. This implies that the household size among the rural dwellers is fairly large because most of the respondents rely on family labor. This result collaborates with findings of Oluwatayo and Aliyu (2007) that the household size among rural farm families is usually large. The results also revealed that majority of the respondents (33.0 %) had six to ten years of experience in processing while (2.3%) of the respondents still stay till twenty-one to twenty-five in the study area. Results indicated that (54.0%) of the respondents using improved processing technologies (modern) in the study area. Also, the monthly income earned by the respondents in the study area range between #20,100- #40,000 per month, (34.1%) had less than #20,000 per month, (13.1%) had income range between #40,100-#60,000 while 1.7% had between #60,100-#80,000 and only (0.6%) of the respondents did not state their income per month. The implication is that respondents need to engage themselves in another income generating activities in order to increase their economic status, so as to acquire more improved processing technologies. This agreed with the finding of FAO (2001) that rural dwellers characterized with meager income.

Table.1: Socio-economic characteristics of the respondents

Variable	Frequency	Percentage	Mean
Age (years)			
11-20	3	1.7	41.23
21-30	27	15.3	
31-40	65	36.9	
41-50	44	25.0	
51-60	28	15.9	
Above 60	9	5.1	
Sex			
Male	43	24.4	
Female	133	75.6	
Religion			
Christian	107	60.8	
Muslim	64	36.4	
Tradition	5	2.8	
Marital status			
Single	16	9.1	
Married	133	75.6	
Divorce	4	2.3	
Separated	7	4.0	
Widowed	16	9.1	
Educational background			
No formal	20	11.4	
Vocational education	2	1.1	
Primary school	62	35.2	
Secondary school	80	45.5	
Tertiary school	12	6.8	
Household size			
1-3	41	23.3	
4-6	102	58.0	
7-9	28	15.9	
10-12	1	0.6	
No states	4	2.3	
Year of experience			
1-5	52	29.5	
6-10	58	33.0	
11-15	31	17.6	
16-20	31	17.6	
21-25	4	2.3	
Method of processing			
Traditional	37	21.0	
Modern	95	54.0	
Traditional & modern	44	25.0	
Income earn (#)			
<20,000	60	34.1	
20,100-40,000	89	50.6	
40,100-60,000	23	13.1	
60,100-80,000	3	1.7	

Not stated	1	0.6
Total	176	100.0

Source: Field survey, 2017.

Respondents’ awareness on improved processing technologies

By categorization of level of awareness in table 2b showed that the level of awareness of improved processing technologies is low (54.5%) and high (45.5%) in the study area. The implication of this is that those who claimed to be

aware got the information through educational background or exposure to social network. This is in line with Bamikole et al (2016) that reported that apart from grater, presser, fryer machines that have their awareness rate above 50% awareness rates of processing is low.

Table.2a: Respondents’ awareness on Improved Processing Technologies

Improved processing technologies	Aware		Not Aware	
	F	%	F	%
1. Mechanical grater	161	91.5	15	8.5
2. Screw Press hydraulic jack	160	90.9	16	9.1
3. Motorized Peeler	67	38.1	109	61.9
4. Granulator	128	72.7	48	27.3
5. Kiln Dryer/Drum Dryer	154	87.5	22	12.5
6. Improved Pulverized	66	37.5	110	62.5
7. Sifter	81	46.0	95	54.0
8. Aluminum Fermentation tank	72	40.9	104	59.1
9. Hammer mill	157	89.2	19	10.8
10. Washing Machine	81	46.0	95	54.0
11. Dewatering	123	69.9	53	30.1
12. Rotating Sieve	121	68.8	55	31.3

Source: Field survey, 2017.

Table.2b: Level of awareness

Category	f	%	Mean	SD	Minimum	Maximum
Low	96	54.5	7.76	3.62	0.00	12.00
High	80	45.5				

Source: Field survey, 2017.

Respondents’ attitude on the improved processing technologies.

Table 3b revealed that (56.8%) of the respondents had positive attitude to utilize improved processing technologies while (43.2%) had positive attitude towards utilization of improved processing technologies. Also table 3a showed that (69.9%, 66.5% and 58.0%) agreed strongly to modern

cassava processing method increase production, modern processing save time and also ready to recommend the techniques to their friends respectively. The implication is that the respondents may eager to utilize the improved processing technologies due to the benefits cum the improvement of their standard of livings.

Table.3a: Respondents Attitude on the improved Processing Technologies (N= 176)

Attitudinal Statement	SA	A	D	SD	Mean
Modern cassava processing method save time	117 (66.5)	46 (26.1)	12 (6.8)	1 (0.6)	3.52
Spare parts of improved methods are not readily available	4 (2.3)	35 (19.9)	81 (46.0)	56 (31.8)	1.77

Modern cassava processing method increase production	123 (69.9)	40 (22.7)	13 (7.4)	0	3.55
Fund is not a problem to acquire the improved techniques	14 (8.0)	7 (4.0)	19 (13.6)	131 (74.4)	2.06
In operation of modern techniques injuries are sustained	44 (25.0)	109 (69.9)	19 (10.8)	4 (2.3)	3.01
I'm not feeling comfortable using the method	8 (4.5)	10 (5.7)	73 (41.3)	85 (48.3)	1.73
Instability of electricity prevents the use of improved method	16 (9.1)	17 (9.7)	42 (23.9)	101 (57.4)	2.04
Use of modern method reduces the use of hired labour	14 (8.0)	34 (19.3)	121 (68.8)	7 (4.0)	1.67
I will recommend modern methods of cassava processing to any friend	102 (58.0)	51 (29.0)	21 (11.9)	2 (1.1)	3.33
I prefer used of hand grating as traditional method techniques	29 (16.5)	23 (13.1)	92 (52.3)	32 (18.2)	1.94
Stone pressing as traditional techniques is cheaper	125 (71.0)	38 (21.6)	11 (6.3)	2 (1.1)	3.57

Source: Field survey, 2017.

Table 3b: Categorization of respondents by their attitude

Category	F	%	Mean	SD	Minimum	Maximum
Unfavorable	76	43.2	28.20	5.03	11.00	41.00
Favorable	100	56.8				

Source: Field survey, 2017.

Hypothesis: test of relationship between awareness of the respondents and their utilization of improved processing technologies.

This hypothesis was tested with the aid of PPMC. The result of the analysis in Table 4 revealed that there is a

significant positive relationship between awareness ($r=0.524$, $P=0.000$) of the respondents and their utilization of improved processing technologies. This implies that the more the respondents aware of improved processing technologies, the more they will utilize it.

Table 4: Pearson Product Moment Correlation (PPMC) analysis between Awareness of improved processing technologies and their utilization

Variable	r	p	Decision
Awareness	0.524	0.000	Significant

** Correlation is significant at the 0.01 level (2- tailed)

IV. CONCLUSION AND RECOMMENDATIONS

More females than males that married with secondary education alternative involves in cassava processing in the study area. Awareness of the respondents of improved processing technologies was low.

The study thus, concludes that

Based on the empirical findings of this study, the following recommendations are made;

Government should create or build factory or industry where improved processing technologies would be

fabricated at low cost. Also fund Research adequately and have MOU (Partners) with private Organizations to come up with quality/ standard improved processing technologies for increased productivity. Workshops and seminars should be periodically organized through extension by the government and NGOs for cassava processors on effective use of improved processing technologies. This will go a long way in easing effective use of improved processing technologies.

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