

Research Article

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Adoption of Cassava Processing Technologies among Rural Women in Shabu, Lafia Iga, Nasarawa state, Nigeria

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ABSTRACT

The study examined the adoption of improved cassava processing technologies among rural women in Shabu, Lafia North development area of Nasarawa state. This project attempts to examine the extent to which cassava processed by rural women through improved cassava processing technologies will attract large market as well as exploration of potential constraints. To achieve the research objectives rural women (processors) in the three (3) district of Shabu Lafia North Development area of Nasarawa state through administration of structured questionnaire which was randomly selected throughout the three (3) district to give ninety (90) respondents for the study. Primary data were used for this study. The primary data collected from the respondents were analyzed using the statistical package for social sciences (SPSS). All the objectives for the study were achieved using simple descriptive statistics such as frequency and percentage while the null hypothesis was tested using logical regression model. The analysis indicated that most of the cassava processor are illiterate and result of the study also revealed that adoption of improved cassava processing technologies makes work easy. Furthermore, age and extension visit were significant to adoption at 1%. The major constraints identified include high cost of purchase (34.5%), lack of credit facility (41.1%), and maintenance (24.4%). Following recommendations, it is imperative for any policy aimed at improving cassava processing technologies as an income generating activity that can reduce poverty and unemployment among rural women should be formulated and adopted, it will enhance technology adoption.

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Introduction

It is extremely important for technology derives from its ability to serve the users and consumers of its output.

Proven technology continues to be driven by several forces, including favorable market, success in the processing of cassava by rural women can after all not be divulged from market forces, especially in the area of habits, consumers, tastes, receptivity and disposal income, Report from different parts of the country has shown that Nigeria women adopt processing tremendously in agriculture. Recent studies of the northern parts of Nigeria showed that rural women are involved in adopting least processing technologies in order to improve their agricultural product for maximization or for profit purpose. Adoption of innovation refers to the decision to apply an innovation and to continue to use It opined that many of the new technologies for cassava processing that can lead to increase yield have not been adopted to any appreciable extent by the rural women in Shabu [1].

A new technology is generally defined as an idea or practice perceived in new by an individual. Socio-economic factor can also affect the adoptions behavior of the rural women. Socio-Economic factors refer to environment economic, social and institutional pattern, and their linkages that compass the context of development [2].

For adoption to occur, relevant improved technologies have to be available. When improved technology is available programs which bring about agricultural development should be designed to convince and encourage the rural women to change in order to change the knowledge, skills and attitudes of these rural women concern, they should be assisted to develop a frame work of mind and attitude conducive for acceptance of new Innovation. They should be educated on the necessary processing technology of cassava production.

However, Agricultural Extension should not be seen only within the context of increasing Agricultural output. It is also concern with the part of effective development of rural areas. This has become necessary in order to maintain and increase the rate of adopting cassava processing technology among rural women and increase in production capacity.

Atala stated that, in an effort to increase agricultural production and income of farmers in the country, government and the institutions of higher learning have been working tirelessly on the problems of planed agricultural development which aim at revolutionizing agricultural practices and production through the introduction of different types of the technical innovations [3]. Efforts have to be directed toward raising fanners' awareness of the recommended agricultural inputs and new practices that are accessible to processors (rural women) and persuading them to adopt the new inputs with the recommended practices.

The attempt to introduce technical change to improve and adopt processing technology in agriculture in the country the above mentioned programs have made little success only as processors (rural women) still stick to their traditional believes. Others claimed that lack of education and skills and education at the farmer's levels of understanding and failure in communication of improved agricultural practices to rural women as a result of incompetence of extension agents which leads to low adaption of improved technology or practices by rural women Rogger, E.M, Vanzetti opined that, an important contribution could be made through the process of adoption of improved practices [4,5]. The general conclusion from various investigations revealed that, in the non-adoption of improved agricultural practices in farming contributes to low production.

This study therefore examines the importance of technologies available to rural women, cassava processors and the resulting consequences.

Most importantly, the livelihood of the rural women in Shabu are house wives and processors, they constitute sixty percent adult in Shabu, Lafia development area in Lafia North local Government area of Lafia Nasarawa State, major activity is processing of cassava.

Materials and Methods

The target population of the study was women cassava processor in Shabu Lafia North development area of Nasarawa state. The town comprises of three (3) wards namely Shabu, Kwandere and Akruba while Angwan Madaki, Angwan Banbari and Angwan Waje were purposely selected because of their cassava processing activities.

The sample size of the processors used was ninety (90) processors selected through simple random sampling technique from the three wards each was served with thirty (30) questionnaires. For the purpose of this research primary data will be used. The primary data will be collected using interview method, with the aid of structured questionnaire. The questionnaire will be used to collect information on the socioeconomic characteristics of the respondent and the constraints to adoption of improved cassava processing technologies. Simple descriptive statistic such as frequency count and percentages was used. The hypothesis was tested using logistic regression techniques this is because it predicts the probability of a binary response of either adoption or non-adoption of improved cassava processing technologies. It is also mean to estimate the relationship of adoption level to a set of explanatory variables that are hypothesized to influence adoption. The model for the study is

$$\ln\{\pi/(1-\pi)\} = a_0 + a_1x_1 + a_2x_2 + a_3x_3 + a_4x_4 + a_5x_5 + a_6x_6 + a_7x_7 + a_8x_8 + a_9x_9 + U$$

Result and Discussion

Age (years): Majority (79%) of the respondent fall within the age 20 - 39 while 40 - 49 years falls at (10%). (2.2%) fall within age 50 - above this implies that most of the respondents fall within the active age group.

Educational Level

Majority (55.6%) of the respondents are non-literate, (26.6%) of the respondents attended primary schools while (15.6%) of the respondents completed secondary education as well diploma were (2.2%). This implied that the respondent will not be able to comprehend extension guide and can have adverse effect on technology adoption.

Marital Status

Majority (70%) of respondents were married (14%) were widowed while single and Divorced were (3%) respectively. This implied that most of the respondents that adopt cassava processing technologies were married.

Annual Income

Majority (40%) of the respondents earned between N1,000 - N50,000. (25.6%) earned between N51,000 - N100,000. while (23.3%) earned between N 101,000 - N 150,000 and the least (11.1%) earned between N151,000 - N200,000. This implies that the majority of the respondents generate good level of income from cassava processing.

Income from Other Source

Majority (83.3%) of the respondent earned between N1,000 - N50,000. (16.7%) earned between N51,000 - N100,000.

Land tenure System

Majority (81.1%) of the respondent inherited their farm land, while (4.4%) of the respondent leased their farm land, (14.5%) of the respondent acquired land by purchasing. This implied that land is secured for cassava processing in the study area.

Membership of Co-operative:

Majority (87.8%) of the respondent were member of cassava women processing group while (12.2%) were non-member. This implied that majority of the respondents were members of cassava women processing group thus, can take advantage of opportunities there in.

Experience of Processors in Years

Majority (43.2%) of the respondents were within 6-10 years, (28.9%) were within 1-5 years while (15.6%) were within 21-above and (13.3%) were within 11-20 years. This implies that most of the respondents are new entrant into processing.

Extension Visit

Majority (68.9%) of the respondents were aware about extension services monthly, while (11.1%) of respondents were aware about extension visit for both weekly and quarterly and (8.9%) yearly this implies that the level of awareness of adoption of improved cassava processing technologies were high due to the monthly visit of extension agents.

Table 1a: Distribution of the Respondents According to Their Socio-Economic Characteristics

Variables	Frequency	Percentage
Age (Years)		
20-29	79	87.8
40-49	9	10
50-above	2	2.2
Total	90	100.00
Educational Level		
Primary	24	26.6
Secondary	14	15.6
Diploma	2	2.2
Higher national diploma	-	-
Non-literate	50	55.6
Total	90	100.00

Marital Status		
Single	3	3.3
Married	70	77.8
Widowed	14	15.6
Divorced	3	3.3
Total	90	100.00
Annual Income N		
1,500-50,000	36	40
51-100,000	23	25.6
101,000-150,000	21	23.3
151,000-200,000	10	11.1
Total	90	100.00

Table 1b: Distribution of the Respondents According to Their Socio-Economic Characteristics

Variables	Frequency	Percentage
Income from Other Source (N)		
1,000- 50,000	75	83.3
51,000- 100,000	15	16.7
Total	90	100.00
Land Tenure System		
Leasing	4	4.4
Purchase	13	14.5
Inheritance	73	81.1
Total	90	100.00
Membership of Co-Operative		
Member	79	87.9
Non-members	11	12.2
Total	90	100.00
Year(S) of Experience		
1-5	26	28.6
6-10	38	43.2
11-20	12	13.3
21-above	14	15.6
Total	90	100.00
Extension Visit		
Weekly	10	11.1
Monthly	62	68.9
Quarterly	10	11.1
Yearly	8	8.9
Total	90	100.00

Source: field survey 2013

Constraints Faced by Respondent

Table 2 shows the respondents according to their constraints faced in adoption of improved cassava processing technologies.

Most (37%) of the respondent lack credit facility while (31%) of the respondent is high cost of purchase, and (22%) of respondent in maintenance.

This implies that most of the technologies which were not adopted were because of the constraints.

Table 2: Distribution of Respondents According to Constraints Face in Adopting Improved Cassava Processing Technologies

Constraints	Frequency	Percentage	Ranks
High cost of purchase	31	34.5	2 nd
Lack of credit facility	37	41.1	1 st
Maintenance	22	24.4	3 rd
Total	90	100.00	

Source: field survey 2013

Method of Processing Cassava by Respondents

Table 3: Distribution of Respondents According to their Method of Processing of Cassava

Most (54%) of the respondent uses both method (Manual and mechanical) in processing their cassava and (36%) of the respondent uses the manual method in processing their cassava and non uses mechanical method. This implies that most of the respondent uses both methods in processing cassava

Method	Frequency	Percentage (%)	Ranks
Manual	36	40	2 nd
Mechanical	-	-	3 rd
Both	54	60	1 st
Total	90	100.00	

Source: field survey 2013

Source of Information on Improved Technologies

Table 4 show the distribution of respondents according to their source of information on improved cassava processing technologies most (67%) of the respondents depends on extension agents for information, while (27.8%) of the respondent depends on Radio and Newspaper for information respectively.

Table 4: Distribution of Respondents According to Their Source of Information on Improved Cassava Processing Technologies

Sources	Frequency	Percentage	Ranks
Extension Agents	61	67.8	1 st
Radio	2	2.2	3 rd
Television	-	-	-
News paper	2	2.2	3 rd
Others processor	25	27.8	2 nd
Input dealer	-	-	-
Internet	-	-	-
Total	90	100	

Sources: field survey 2013

Table 5 shows that the factor of socio-economic characteristics of the hypothesizes that influence the adoption of improved cassava processing technologies in a regression analysis. Two characteristics namely Age and Extension visit were positive and significant at 1%. This influences the type of adoption of improved cassava processing technologies while Educational level, marital status, Annual income, from other source, land tenure system, membership of co-operative and Experience of processors were not significant. R² of 0.201 and standard error of estimate of 0.387 on the improved cassava processing technologies (Y) explained about 28.0% of changes in type of improved technologies at 1% significant level. F-value of 2.232 and significant at 1% level of profitability indicated that the adoption of socio-economic characteristics included in the regression model on cassava processing technologies were significant. The result implies that Age and Extension affects the adoption of improved cassava processing technologies in the study area.

Table 5: Coefficient in The Regression Analysis

Model	Standard	T.value	Significance
Constant level	0.346	0.622	0.53
Age	0.007	2.484	0.015**
Educational level	0.025	-0.820	0.397 Ns
Marital status	0.094	0.820	0.415 Ns
Annual income	0.000	1.110	0.270 Ns
Income from other sources	0.000	-0.942	0.349 Ns
Land tenure system	0.081	-0.552	0.582 Ns
Membership of co-operative	0.039	-0.035	0.972 Ns
Experience of processors	0.046	0.210	0.834 Ns
Extension visit	0.065	2.780	0.007**

R² = 0.201 R=0.448

**= significance at 1% level

Ns = Not significant

Source = field survey, 2013

Regression of socio-economic characteristics of the hypothesize that influence the adoption of improved cassava processing technologies.

Conclusion

The level of adoption of improved cassava processing technologies is high in the study area more so, the major socio-economic factor Influencing adoption of improved cassava processing technologies in the study area are age and extension visit obtained by the respondents. Based on the result of this study, we could say that improving and adaption of cassava processing technologies in Shabu, Lafia North Development area is profitable and efficient. The following recommendation is made at the end of the study: There is a need for government to pay attention on agricultural extension programs hence providing adequate extension agents to meet the demand of the respondents. Credit facilities should be made available to cassava processors, this can be made possible by encourage them to form multipurpose co-operative group so that they can access credit from bank. Cassava processors should take advantage of government literacy opportunities in order to help them become illiteracy. This will help them to know

modern processing equipment which will be of benefit to them in processing.

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