FACTORS ASSOCIATED WITH WOMEN INVOLVEMENT IN YAM PROCESSING IN BENUE STATE. NIGERIA

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ABSTRACT

The study examined factors associated with women involvement in yam processing in Benue State. Questionnaires were administered to 80 yam processors. Data was analyzed using simple percentages and multiple regression analysis. The result revealed that 31.25% of the respondents had household size of 13 people and above, majority (73.75%) are married and about 38% are in their active years. The study also revealed that majority (95%) had one form of education or the other; only about 30% of the respondents are highly involved in yam processing. The major constraints that hindered respondents in processing of yam were loan acquisition, increased in price of petrol as a result of epileptic electric power supply. Regression analysis revealed that household size, personal income, storage cost and quantity of yam processed had estimated regression coefficients of 5428.49, 4437.363, 2935.31 and 1147.680 respectively and had significant effect on yam processing. The study among other things recommended the provision of credit through organized association or cooperative, provision of soft loan to the processors and addresses the problem of epileptic power shortage.

Key Words: Factors, Women, Involvement, Yam, Processing.

INTRODUCTION

Nigeria Women produce over 70% of the nations food supply. They solely handle the food processing sector, including yam processing. Women are generally looked upon as the provider of food, i.e., source of food security to the families (UN, 1995; Khan, 2002). Majority of women in the rural areas engage in agricultural production including processing of farm produce. The gender division of rural farm labour assigns women more work in production, processing and marketing and women still made use of traditional methods (Okogie, 1998). Traditionally, women are the invisible backbone of the family and the national economy (Tadesse, 1986). Women participate actively in different agricultural activities, yam processing inclusive (Ani, 2004). Similarly, Kau (1994) established that women spend a lot of time in many activities which cover work on farm in addition to domestic chores, and also recognized that for a long period to come the tasks traditionally performed by women will continue to be done by them and that the only way to reduce their work hours and drudgery is to introduce better tools and technologies for various tasks performed by women. Local yam processing is done by women in Nigeria and many part of the world. Most of the women involved in processing of yam operate at small scale level using traditional technologies (Maigida and Ahmed, 2003).

According to IITA (2005) yam is mainly processed for consumption and can be processed into various types of food; fried yam, slices yam balls, yam chip and flakes. Traditionally pounded yam is prepared by boiling peeled yam pieces and pounded by wooden mortar and pestle until a somewhat glutinous is obtained, instant yam flour can also be produced by drum drying cooked, mashed yam and milling the resultant flakes in to powder using a process similar to the one used for production of hydrated mashed potato (Olorunda et al., 1997; and Onayeme, 1994). Fresh yam are also peeled, chipped, dried and milled into

collected were subjected to both descriptive and inferential statistics. Descriptive statistics include frequencies, percentage. The multiple regression models were used to determine the degree to which the women socio-economic characteristics affect their level of yam processing in the study area.

The multiple regression model is the measurement of casual relationship between a dependent variable and two or more independent variables. According to Olayemi and Olayemisolayede (1981) multiple regression analysis is applied when two or more explanatory variable are involved. This help to determine the individual contribution of the independent variables. An economic model was formulated in attempting to identify factors affecting yam processining in the study area.

The implicit form of the model is specified as:

$$Y = F (x1, x2, x3, x4, x5, e)\dots\dots\dots\dots\dots\dots\dots(i)$$

Where y = Gross returns from yam processing activities (₦)

X1 = Age (yrs)
X2 = Household size (No)
X3 = Level of education (N0. Of yrs spent in School)
X4 = Level of personal income (₦)
X5 = Transportation costs (₦)
X6 = Storage costs (₦)
X7 = Quantity of yam tubers processed (kg)
X8 = Depreciated value of fixed assets (knives, pestle & mortal etc.)
E = Error Term

RESULTS AND DISCUSSION

Table 1: Distribution of Respondents According to Socio-Economics Characteristics (n=80)

VARIABLE	FREQUENCY	PERCENTAGE (%)
Age (Years)		
20-29	25	31.25
30-49	30	37.50
50-59	18	33.50
60-69	7	8.75
Education		
No Formal Education	4	5.00
Primary Education	29	36.25
Secondary Education	37	46.25
Tertiary Education	10	12.50
Household Size		
1-5	23	28.75
6-10	25	31.25
11-15	17	21.25
16-20	15	18.75
Processing Experience		
1-10	4	5.00
11-20	16	20.99
21-30	36	45.00
31-40	23	28.75
>40	1	1.25

Marital Status		
Single	9	11.25
Married	59	73.75
Divorced	4	5.00
Widowed	8	10.00
Major Occupation		
Full Time Processor	50	62.5
Part Time Processor	30	37.5
Other Occupations		
Trading	36	45.00
Farming	23	28.75
Livestock	56	62.00
Farming/Livestock	16	20

Source: Field Survey, 2010.

The age distribution of the women processors shows that about 31.25% of the respondents were within the age range of 20-29 years, 37.50% within30-40 years while 22.50% and 8.75% were within 50-59 and 60-69 years respectively. Majority (95.5%) of the respondents had one form of education or the other, this inversely implies that extension activities in the study will be highly appreciated, because according to Tologbonse (2004) the level of Education has a significant relationship with the level of participation of small scale farmers in extension activities. Majority of the respondents (52.50%) had 6-15 persons per household while only 28.75% had small household size of between 1-5 persons. Details in Table 1 also reveals that majority (65%) of the respondents had being processing yam for over 20 years and only 5.00% had between 1-10 years of experience in yam processing most of the respondents 73.75%) were married.

The entries in Table 1 also reveal that 62.5% of the respondents were full time yam processors, while 37.5% were part time processors. The table also indicated that respondents engaged in other occupations in addition to yam processing for the purpose of supplementing the income from their major occupation. The secondary occupation ranged from trading, farming and; livestock husbandry. Among the respondents those that had trading as their secondary occupation were 45.0%, 28.75% were into farming, while 6% were into livestock production mainly and about 20% of them combined farming and livestock keeping. The scenario above is a way of minimizing risk and uncertainty, because when here is failure in one occupation they can depend on the income of the others for sustenance, this is in agreement with the earlier finding of (Yahaya, 2002) who noted that "the ever increasing socio-economic crises have forced women to diversify their sources of livelihood in support of the family. Those with secondary occupations might have advantages over those who were mainly involved in yam processing".

Table 2: Regression Estimate of Factors Affecting Yam Processing Activities of Women

VARIABLE	LINEAR	COB-D	SEMI-LOG	EXPONENTIAL
Constant	17417.600	7.270	-73167.422	9.878
	(2.957)***	(8.697)***	(-2.567)**	(51.255)***
Age	84.932	-0174	-4916.005	0.003
(x1)	(0.696)	(-1.286)	(-1.064)	(0.678)
HH/Size	140.870	0.171	5428.490	0.003
(x2)	(0.653)	(2.708)***	(2.520)**	(0.418)
Level of Education	-102.227	-0.005	25.019	-0.003

	(-0558)	(-0134)	(0.020)	(-0.560)
Personal Income (x4)	0.070	0.161	4437.363	2.47E-006
	(2.071)**	(2.484)**	(2.009)***	(2.224)**
Transportation (x5)	0.147	0.047	1299.221	3.32E-006
	(0.163)	(0.918)	(0.752)	(Q.113)
Storage Cost (x6)	3.713	0.049	2935.931	562E-005
	(1.579)	(1.397)	(2.449)**	(0.733)
Qty of yam Processing (x7)	17.452	0.307	11473	0.000
	(9.593)***	(8.260)**	(9.056)***	(7.601)***
Capital Inputs (x8)	-20.424	-0.171	-5790.560	-0.001
	(-3.175)***	(-4.316)***	(-4.276)***	(-2.740)***
R^2	0.650	0.672	0.705	0.541
R^2 Adjusted	0.610	0.635	0.671	0.489
F-Value	16.458***	17.932***	20.914***	10.446***

Sources: Field Survey, 2009.
*** Implies statically significant at 1
** Implies statistically significant at 5%
* Implies statistically significant at 10%

The result presented in Table 2 indicated that semi-logarithmic function is the lead equation and this therefore, was used for further analysis. It has an R^2 value of 0.705 which implies that about 70.50% of the variation in the gross returns (Y) realized from yam processing activities are explained by the explanatory variable X1-X8 included in the model the remaining 29.5% is as a result of non-inclusion of some importance explanatory variable as well as errors in estimation. The result also shows that out of the eight (8) variables in the model, only five (5) namely: Household size, personal income, storage costs and quantity of yam processed had significant affect returns on yam processing activities of respondents. Specifically, Household size has an estimated regression coefficient of 5428.490 and is statistically significant at 5% and positively affect from yam processed. The estimated regression coefficient for personal income is 4437.363 and is statistically significant at 5% level in explaining gross returns from yam processing and is positive and statistically significant at 1% in explaining gross return from yam processing. The estimated regression coefficient of storage cost is 2935.931 and statistically significant at 5% and the estimated regression coefficient of -5790.560 for capital inputs which is negative is also statistically significant at 1% level in explaining gross return from yam processing. This implies that the ones with positive and significant, they positively affected the yam processing activities of the respondents in order words if there is increase in the level of used of these variables the returns from yam processing will also increased while for capital inputs with negative significant, an increase in the level of investment in capital inputs by the respondents will lead to a decrease in the returns of yam processing.

Table 3: Percentage Distribution of Respondents According to their Level of Involvement in Yam Processing and Income Generation

VARIABLE	FREQUENCY	PERCENTAGE (%)
Level of Involvement		
Highly Involved	24	30.00
Moderately Involved	34	42.50
Rarely Involved	22	27.50
Level of Income		
10,000-49,000	13	16.25

50,000-99,000	48	60.00
100,000-139,000	12	15.00
140,000-179,000	4	5.00
180,000-199,000	2	2.50
>199,000	1	1.25

Source: Field Survey, 2009

Table 3 shows the level of respondent involvement in yam processing. More than 42% claimed they are moderately involved in yam processing. Those who claimed that they are highly involved are about 30.00% and only about 27.5% are rarely involved. This is an indication that majority of the respondents had other secondary occupations to make ends meet. Table 3 also shows the level of income generation by the respondents. Majority (60.00%) of the respondents earned an annual income between ₦50,000-99,000, while 16.25% of the respondents earned below N10,000-49,000 per annum. Only very few (2.50%) of the respondents earned about ₦199,000 and above per annum. This implies that yam processing in the study area is still on small scale bases and this will directly affect their purchasing power and indirectly their ability to acquire basic (improved) yam processing equipment.

Table 4: Analysis of the Respondents Income Variable

Variable	Mean	Standard Deviation	Variance	Mm	Max	Sum
Income	80.136.250	39,684.299	6.6×10^9	10.000	200.000	6.410.900

Source: Field Survey, 2009.

Entries in Table 4 reveal that mean (X) annual income of yam processors was ₦80.136.250 with a standard deviation of ₦39.684.299 and a variance of 1.6×10^9. The highest income earner in the group realized the sum of ₦200,000 per annum while the least income earner realized an income of 10,000 per annum. Mean while the total income realized by all the respondents was ₦6,410,900. this implies that below the recommended 7,500 minimum wage implemented by the federal government of Nigeria in 2001, which prevailed in the public sector will affect their purchasing power, also the gap between the highest income earner and the lowest is too wide, which calls for special attension to triged the wide gap, which is an evidence of capitalism.

Table 5: Percentage Distribution of the Respondents According to Methods of Processing.

PROCESSING METHODS	FREQUENCY	PERCENTAGE (%)
Grinding Machine	10	12.50
Boiling	10	12.50
Sun Drying	38	47.50
Mortar/Pestle	22	27.50
Total	80	100.00

Source: Field Survey, 2009.

The entries in Table 5 revealed that the most important methods used by respondents in processing yam in the study area in decreasing magnitude of importance. Sun drying (47.5%), mortar/pestol 27.50% others are grinding machines and boiling 12.50% respectively. This is an indication that yam processing in the study area is not capital intensive. The prevailing yam processing technology is grossly inadequate to bring about the most needed transformation in the processing industry.

Table 6: Constraints to Adoption of Improved Yam Processing Technologies

CONSTRAINTS FACED	FREQUENCY	PERCENTAGE (%)
Loan Acquisition Constraint	22	027.5
Electricity Supply	10	12.5
Increase in Price of Petrol/Diesel	18	18.75
High Purchasing Price of Technologies	15	18.75
Price of Yam	10	12.5
Socio-Cultural Constraints	84	1.05
Weather	4	50
Total	80	100

Source: Field Survey, 2009.

Loan acquisition constraints.

Table 6 shows the problem associated with small scale yam processors. About 28% of the respondents indicated that, loan acquisition constraint were one of the major problems the women faced, these problems could be attributed to the conditions attached to the loan, collateral, interest rate charged and several trips to the bank before loan is granted. This outcome is in conformity with Saito (1994) that women faced a number of barriers to obtain credit from lending institutions because most of them have no collateral. This implies that, without loans to facilitate the adoption of improved technologies, expand land under cultivation and also to increase the number of existing processing equipment, women in the study area will continue to produce low quality yam products which will be below the expectation of the teaming consumers.

High purchasing price of the technologies

Table 6 revealed another problem experienced by the respondent which was high purchasing price of technologies (18.75%). The respondents indicated that the improved technologies are quite expensive to acquire. The fact is that women cannot individually acquire these technologies because of their financial status, which implies that women in the study area will still have to waste much time at the grinding point.

Increase in the Price of Petrol/Diesel

When there is power outage usually petrol/diesel engines are used for supply of power, and the women tend to spend more as the cost of processing (grinding) inreases which not economical for the processors. This implies that if this problem is not properly address it may affect the rate of adoption of improved yam processing methods, as some women had already start reversing to the traditional methods of using pestle and mortal. Consistent power failure was also reported to be a problem. About ten percent of the respondents stated that lack of electricity supply greatly affect their process activities and consequently their revenue generation.

Purchasing Price of Yam:-

About thirteen percent (13%) of the respondents claimed that, yam tuber which is the primary raw material for processing is very expensive to buy especially at the off season (i.e. between March-September). The implication of this is that there is high selling price of processed yam products which may be beyond the reach of the common man.

Socio-Cultural Constraints:- The entries in table 5 reveals that socio-cultural constraints (5%) is not a barrier in any way to yam processing in the study area. Socio-cultural

constraints such as Purdah system is not common in the study, which implies that women can participate freely in economic activities.

Weather-
To the respondents in the study area weather is not all that a problem to their processing activities. Only about 5% of them indicated that weather is a problem, according to them during raining season they used to have some set back in drying their product

CONCLUSION AND RECOMMENDATIONS

It could be concluded from the findings that household size, personal income, storage cost, quantity of yam processed as well as investment in capital inputs are important factors that affect the level of involvement of the respondents in yam processing. Obviously, the current processing technologies adopted by the processors which is characterized by the use of crude techniques is grossly inadequate to bring about the much advocated agricultural transformation. Modern technology has the propensity to enhance the processing activities of the women.

Based on the findings of this study the following recommendations were made:
Provision of credit through organized associations or cooperative societies for regular provision of soft loans by both government and non government organizations. To address the problem of epileptic power shortage, provision of low cost solar power electricity should be provided. Modern technologies should be put in place to boost the process activities of women and to improve the quality and quantity of yam processed.

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