Yam Marketing as a Poverty Reduction Strategy in Ukum LGA of Benue State

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Abstract

This study examines the marketing of yam and poverty reduction in Ukum Local Government Area of Benue state. The study employs a survey design to obtain a cross-sectional data through questionnaire, focused group discussions (FGDs) and oral interviews. Multi-stage and purposive random sampling techniques were used and a sample size of 340 respondents which corresponded with 30.2% of the population of 1,125 yam marketers were selected from seven major yam markets. Only 309 (90.9%) of the questionnaire administered were retrieved. Descriptive statistical tools, Foster-Greer-Thorbecke (FGT) Index and Logistic Regression were used to analyze the data for this work. Result showed that apart from providing employment opportunities, yam marketing activity had more than tripped the income oi sampled respondents, which translated into massive reduction in the poverty level of respondents. The study rejected the null hypothesis and concluded that yam marketing has reduced the probability of being poor among the market participants in the study area. Inadequate capital, poor road network, lack of conducive storage facilities, perishable nature of yam product, insecurity, high transportation cost of yam tubers are the major constraints discovered. The study therefore recommended the establishment of a yam processing factory in the study area; formation of cooperatives by yam marketers to access soft loans from the bank and the provision of modern storage facilities by the Benue State Ministry of Agriculture, Makurdi.

Keywords: Yam, Marketing, Poverty, Poverty Status, Marketing Margin

Introduction

It is a regrettable fact that over one billion people in the world are living in extreme poverty today, who depend on less than $1 per

day to survive on. This is a chronic and pathetic problem facing mankind ever since humanity (Etim, 2009). Poverty is a multi-dimensional, socio-economic and cultural situation that transcends economic description and analysis (Okunmadewa, 2001). Nigeria is one of the most resource-endowed nations in the world. But unfortunately socio-economically, Nigerians are also among the poorest in the world (Etim, 2009). The National Bureau of Statistics (NBS, 2008) report shows that the national poverty rate in Nigeria increased from 28.1 % in 1980 to 46.3% in 1996 and 54.5% in 2004 to 67.2% in 2005 and rose from 69.8% in 2006 to 70.6% in 2007. It is both a rural and an urban phenomenon in Nigeria, just like any other developing nation. Significantly, the first United Nations Millennium Development Goal focused on the eradication of extreme poverty and hunger by the year 2015 especially in the developing countries. This is because the umbrella body viewed poverty anywhere as a threat to security and prosperity everywhere (UNDP, 2008).

Given the above scenario, the Federal Government of Nigeria has since independence established several measures, schemes, strategies and programmes, or agencies aimed at combating and reducing the problem of poverty in the country, by shifting public expenditure towards poverty alleviation. These programmes include Development Programmes such as the Rural Electrification Schemes; Rural Banking Schemes; and Operation Feed the Nation (OFN), later known as the Green Revolution. Others include palliative measures such as the Directorate of Food, Roads and Rural Infrastructure (DFRRI), the National Directorate of Employment (NDE) and Family Support Programme (FSP). It also adopted the sector-specific poverty alleviation programmes such as the National Agricultural Land Development Authority (NALDA), Micro Credit Schemes, the People's Bank of Nigeria (PBN) and Community Banks (llori, 1999). However, as observed by Garba (2006), all these elegantly designed measures have woefully failed to achieve their intended goals. The rising trend of

poverty rate in Nigeria clearly shows that there has been poor formulation and implementation of these poverty reduction programes.

Benue State is very poor, with a high absolute poverty level of 67.1 % (NBS, 2010). Nigeria is said to be the largest producer of yam in the world, accounting for over 70-76% of the world production (Punch, 2013). In Nigeria, Benue State and Ukum Local Government Area in particular is in turn said to be one of the largest producers of yam. Yam, a tropical crop, has about 600 species out of which 6 are economically staple food. It is rich in carbohydrate especially starch and consequently has a multiplicity of end uses. Also it is available all year round, making it preferable to other seasonal crops. The above characteristics imply that yam has the potential to generate income, provide greater employment and provide for dietary needs for the yam marketers, which can be utilized for the improvement of their standard of living (Awoniyi and Omonona, 2007).

It is quite worrisome to clearly ascertain whether the United Nations' Millennium target of eradicating extreme poverty among the developing countries by the year 2015 was feasible. The problem of poverty in Nigeria is quite intractable and alarming. It is not only pervasive but also increasing. Several studies on poverty in Nigeria and Benue State particularly reveal that even though it is mostly a rural phenomenon, urban poverty is also on the increase (Okunmadewa, 2001). These statistics indicate that the measures and strategies devised and implemented by successive administrations in Nigeria have not been significantly successful (CBN, 2010). The apparent failure of successive government efforts to combat poverty and improve the quality of life among Nigerians is one of the most difficult challenges facing Nigeria and its people, and, hence the greatest obstacle to the achievement of sustainable socio-economic development.

The main objective of this study is therefore to investigate the contribution of yam marketing to poverty reduction among yam

marketers in Ukum Local Government Area of Benue State. This paper is structured into six sections. Immediately following the introduction section is the theoretical framework in section two. Section three focuses on empirical review, while section four deals with the methodology. Section five treats data analysis and discussions, while section six relates with conclusion and policy recommendations.

Research Hypothesis

The hypothesis for this study is stated in null form as follows:

h_o: Yam marketing has no effect on poverty reduction among yam marketers in Ukum Local Government Area of Benue State.

This stated hypothesis is tested under the section of data analysis and discussion.

Theoretical Framework and Literature Review

This study is anchored on three relevant theories. These include the vicious circle of poverty theory, the basic needs" theory and the risk bearing theory of profit. The vicious circle of poverty theory was propounded by Ragnar Nurske (1953) as contained in Jinghan, (2007). The theory states that there is a circular constellation of forces tending to act and react upon one another in such a way as to keep a poor person, society or country in a state of poverty. The theory explains that a poor man may be weak, and being physically weak, his working capacity will be low, which will not make him have enough to eat and hence the circle continues. On the other hand, the risk bearing theory was propounded by F.B. Hawley in 1983. It presupposes that profit is the reward for risk bearing which is the most important function of an entrepreneur. He believes that risks are unpleasant and therefore no one likes to bear them, until, and unless some reward is insured. Profit is a reward for bearing these risks. Profit is therefore considered to be the paramount motivating force behind every business engagement, including yam marketing in this case.

In his paper, 'A Theory of Human Motivation' in 1943, Abraham Maslow put up a psychological hierarchy of needs analysis. He used a pyramid to represent the needs with the most basic needs at the bottom. He identified five levels of hierarchy of needs to include physiological needs (or basic needs), security needs, social needs, esteem needs and self-actualizing needs. Interest is placed on the basic needs because they are the most important human needs that are adjudged to anchor the very existence of life. To Maslow, basic needs are vital to survival, such as the need for water, air, food, and sleep. He believes that, these needs are the most basic and instinctive needs in the hierarchy because all needs become secondary until these physiological needs are met. The relevance of this theory is informed by the fact that it is in the quest to satisfy the very pressing human needs that prompted the yam marketers to venture into the business of yam marketing.

The nature of socio-cultural ties, coupled with very low level of income and standard of the people in the study area and the developing countries at large, have provided good ground for chronic and persistent poverty to thrive. Given that poverty is *a* curse, it must be eradicated. This explains why the youth in Ukum Local Government Area have taken to yam marketing occupation so as to work hard, obtain income and break out of the vicious circle of poverty. It further implies satisfying their fundamental human needs as specified by the basic needs theory. This may not be unconnected with the inability of the government to adequately satisfy the huge demand of the masses, and hence the relevance of these theories in explaining the phenomenon and efforts of the yam marketers in order to reduce or eradicate the choric poverty. Also, Yam marketing is a very risky business, especially considering its perishable nature. But profit is a function of risk. Profit is the over-riding motive for business transaction (yam marketing in this case) and is the reward for bearing the risk of uncertainty. In order to break out of the vicious circle of poverty, yam marketers have

boldly decided to bear the risk of uncertainty in order to work hard, earn a living. This theory emphasises the inherent psychological and economic drive of the business agents in the study area to actually participate in the yam marketing venture. Thus all the three theories have been simultaneously adopted due to their relevance to the study.

Most studies on yam marketing business have established a positive relationship between investment in the business and returns from it. For example, Okuokeneye and Onomolease (2006) found out that the average weekly marketing cost, revenue and gross margin of wholesale yam marketing in Delta State were N-23,628.75, N78,500.00 and N54,871.25 respectively, showing the profitability of the business. On the sex composition of market participants, Asumugha (2007) found out that 55% of males and 45 % of females were proportionately engaged in yam marketing business. Khirim, Onyemauwa, Ikheloa and Umezurumba (2007) who examined the economics of yam marketing in Umuahia, Abia State of Nigeria estimated a marketing efficiency of 1.25. Ghaundhry (2009), in analyzing the impact of socio-economic and demographic variables on poverty in Pakistan, carried out a village study- Results showed that household size, dependency on household, participation, land holdings and a number of livestock had a significant impact on poverty incidence.

Izekor and Olumese (2010) found out from their investigation on the production and profitability of yam in lido State that yam production and marketing was profitable in the study area with an average gross margin of N58,400. This suggests that the business venture is capable of reducing poverty in the study area. This was also confirmed by Adeniji (2012) in Niger State, whose finding particularly from Gwada, Kataeregi, Tungan Magajiya and Salka indicated that the total marketing margin wasN38, 239.81 per tonne. This was considered to be a high margin. The same finding was obtained by Adinya and Awoke (2011) in Obubra Local Government Area of Cross Rivers State of Nigeria, where an

average marketing margin of: 5,486.23 was estimated. The concentration of sellers was high and entry was free. The markets were thus competitive. Nwibo (2012) also reported a positive profit for the business in Anambra State with a unitary and elastic demand function. None of the reviewed works has related yam marketing with poverty reduction. This work has therefore filled this gap by investigating the contribution of the enterprise to poverty reduction in Ukum Local Government Area of Benue State.

Methodology

This study covered Ukum Local Government Area. It is located in the North-East Senatorial District of Benue State. Cross-sectional designs that involved both field and sample surveys were used. The survey relied strictly on information from the sampled respondents (members of the Yam Marketers Association from the seven selected biggest yam markets only) in Ukum Local Government Area. The research was conducted as a point analysis such that variables of interest were measured at a point in time. Thus, the design adopted multi-stage and purposive random sampling techniques. The population for this study comprised the total number of all the members of Yam Marketers Association only (The Yam Dealers Association) in the seven selected biggest yam markets of Zaki-Biam, Jootar, Gbeji, Kyado, Vaase, Ayati and Afia in Ukum Local Government Area. A pre-survey of the study area showed that there was a total number of 1,125 registered members of the Yam Dealers Association in these selected markets as at the time of this research. This was strictly based on the information obtained from the Official Register of the Association in the various markets. This number was made up of 484 from Zaki-Biam, 103 from Jootar, 115 from Gbeji, 179 from Kyado, 123 from Vaase, 69 from Ayati and 52 from Afia market. This study only made use of primary data.

The data required for this study was collected through a well-structured questionnaire, focused group discussions (FGDs) and oral interviews. Focused group discussions (FGDs) and interviews were used basically to supplement the use of questionnaire. Thus, 146 respondents were chosen from Zaki Biam market, 31 from Jootar, 35 from Gbeji, 54 from Kyado, 37 from Vaase, 21 from Ayati and *16* from Ayati market. Both descriptive and inferential statistics were used for data analysis and testing of hypothesis. The descriptive tools used include frequency tables, charts, percentages and means basically for analyzing the socio-economic characteristics of the respondents. To further test the hypothesis, the multivariate logit regression model was used, based on maximum likelihood estimation procedure. Furthermore, the headcount index and poverty gap index and severity of poverty were used to measure the poverty status of the respondents. This study made use of the binary logit regression model. The logit model as a probability function is a model in which a dichotomous variable representing whether or not a household is poor and is regressed on a set of supposedly exogenous explanatory variables (Yusuf, 2008; Chaudhry, 2009; Gujarati and Porter, 2009). In a logit model, the endogenous variable is a dichotomous or dummy variable with (1) if the household is poor and (0) if the household is non- poor. A multivariate logit regression is used when the dependent variable in question is nominal (a set of categories which cannot be ordered in any meaningful way also known as categorical). Thus, the parameters were estimated by maximum likelihood, with the likelihood function formed by assuming independence over the observations. This study therefore adopted the logit model which was in line with earlier studies of Chaundhry (2009), Yusuf, Adesanoye and Awotide, (2009), Ngutsav and Akighir (2011) Fefa (2012) and Gbaka (2016). The model is stated as follows;

Given:

$$P(Y) = \quad ^2 \quad \dots\dots\dots\dots\dots\dots\dots\dots (1)$$

If P(Y) measures poverty status, where Y might be poor (1) or non-poor (0), by taking the natural logs of (4.1) and simplifying, the log likelihood transforms the structural equation to:

Where:

$\ln y_l$	=	Natural log of Y (Poverty Status)
Xk_L	=	A set of household socio-economic characteristics
pk	=	Parameters
U.	=	Random disturbance term (error term)
3_0	=	Intercept
n	=	Number of household characteristics under consideration (= 11)

From the specified model (4.2), the model for this study was explicitly specified as:

$$PVS= f(X_a, \ X_2, X_3, X_4, \ X_5, \ X_6, X_7, \ X_8, \ X_9, X_{10}, \quad X_n)\ldots\ldots(3)$$

Where, PVS = Dependent variable (poverty status), calculated as:

$$PVS = \frac{\text{Average annual lacome of a household from vam markeri}}{\text{Total number of days in a year}} = 363\ldots\ldots(4)$$

If it was less than 1.5 US Dollars, it meant the household was poor in which case we assigned (1). If it was 1.5 US Dollars and above, it meant the household was non-poor, in which case we assigned (0).

$X_:$ = Annual income from yam marketing

X_2 ^Quantity of yam marketed per market day (in bundles of 100 tubers of yam)

X_3 = Number of square meals taken per day (1 if three square meals a day, 0 if otherwise)

X_4 =House type (1 if zinc roof and cemented completely, 0 if otherwise)

X_5 =Access to 'improved' medical services (1 if respondent visited dispensary, specialist and general hospital, 0 if otherwise)

X_6 =Access to clothing (1 if at least 1 new cloth is purchased in a year as a result of yam marketing, 0 if otherwise)

X_7 =Level of education of the respondents (1 if the respondent attains secondary education and above, 0 if otherwise).

X_8 =Storage facility of yam (1 if silos and barns are used, 0 if otherwise).

X_9 = Household size (1 if household size is less than or equal to 6, 0 if greater than 6)

A'_{1C} = Cost of transportation of yam X_{rl} = Means of transportation (1 if at least a vehicle is owned, 0 if otherwise).

Thus, the specific form of the model becomes:

$$PVS = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_{6+} b_7X_7 + b_8X_8 +$$

$$VW_{1(,}{}^+ b_nXn + Ui: \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(5)$$

Where:

b_n =Intercept of the model

$bj-bj^\wedge$Parametcrs to be estimated

m.   = A random disturbance term

In this study, $b_{\daleth r}$ b,, b_y $b_{t/}$ b_, b_{ft}, b_, $a_s$and a_u were expected to have negative signs implying an inverse relationship with the dependent variable PVS, while b and $a_{,0}$ were expected to be positive. Poverty status was measured using the headcount ratio and poverty gap measures and severity of poverty, using the Foster-Greer-I'horbecke (1·GT) metric, which is a generalized measure of poverty within an economy (Foster, Greer and Thorbecke, 1984). The formula for the FG'I.' was given as:

$$FGT = {}^\wedge!.!{}^*{}_{=1}-{}^\wedge;{}^* \quad \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(7)$$

Where:

$'/=$ *An* agreed upon poverty line ($1.5 in this case).

N =Number of people in an economy

1 I = The number of poor (those with income at or below 7,).

V;   individual incomes

a   = "Sensitivity" parameter (FGT index and takes the Values 0.

    1   and 2. Thus, FGT_0 was used for headcount ratio; $FCT^\wedge$ for poverty gap index and $FGT_2$for severity of poverty)

Data Analysis and Discussion

Out of the questionnaires distributed, 309 (90.9%) of it were retrieved whereas 31 (9.1 %) were not retrieved due to various crrcumstances beyond the control of the researcher. This provided good, ground for further analysis and reliable conclusions to be made based on the findings obtained. This research specifically found that majority o: the yam marketers in Ukum Local Government Area (52.4%) were males and that most of them (82.4%) were within the active age bracket of 18-45 years. The average age of yam -marketers in the study area was 41 years, with a mean marketing experience of 14 years. Most of the yam marketers (67.3%) were married with a mean household size of 6. Also, about 65% of the respondents had attained formal education. Nwibo (2012) also reports a mean age of 41 years and a mean household size of 8 persons for yam marketers in Anambra State. Similarly, Adeniji (2012) reports that most of the yam traders (76.1 %) in Niger State were aged between 31-50 years, and about 55% had formal education. It was also discovered that 62.5% of the respondents lived in houses with cemented walls and floor with zinc roof which they were able to build on rent using income derived from the yam marketing activity.

Findings also showed that 91.6% of the respondents sleep on bed with foam mattress which was made possible clue to incomes obtained from yam marketing. Similarly, 54% of the respondents afforded to purchase new clothes more than three times in *a* year due to increased income obtained from yam marketing. The study further revealed that after joining yam marketing a vast majority of respondents (98.7%) could afford medical bills; they were able to patronize Clinics, Dispensaries, General Hospitals and Specialist Hospitals. The mean annual quantity of yam marketed per dealer was 2,080,400 tubers, which corresponds with 5,700 tubers of yam per day. Also, 67.3% of respondents used motor vehicles (precisely Pick-up Vans and 504 Station Wagon Cars) to convey their yam to the market. The peak period for yam market in the study area was

generally identified to be November-February (in terms of supply) and June-July (in terms of profit).

Table 1: Average Annual Income of Respondents Before and During Yam Marketing

Increased Annual Income (N}^	Before Joining Yarn Marketing		After Joining Yarn Marketing	
	Frequency	Percentage	Frequency	Percentage
0-50,000	224	72.5	11	3.6
50,001-100,000	27	8.7	10	3.2
100,001-150,000	17	5.5	39	12.6
150,001-200,000	10	3.2	18	
200001-250000	37	1.0	36	
250001-300,000		2.3	170	55.0

Source: Field Survey, 2014

Table 1 above shows that majority of the sampled respondents (72.5%) earned on average annual income of N50,000 and below before they joined yarn marketing while only 3.6% earned less than or equal to N50,000, after they had joined yam marketing business. These data indicate that the category of respondents who earned less than or equal to N50, 000, earned less than US $1.5 (N225) per day (since N50, 000 = N136.99 per day and is less than N225). This implies that 72.5% of the sampled respondents were living below the poverty line of US $1.5 (N225) per day before joining yam marketing business. I lowcver, it is just 3.6% of the sampled respondents that are living below the poverty line after joining the business. This shows that yam marketing has generated income capable of moving 69% (68.9%) of the respondents well above the poverty line.

The table further shows that the total number of sampled respondents who earned between Nl 00,001 - N300,000 and above before joining the yam marketing enterprise was 18.8%. This implies that only 18.8% of the sampled respondents were clearly above the poverty line of US $1.5 before joining the business. However, after joining the business, the number of sampled respondents who earned between Nl 00,001- N300,000 and above

phenomenally increased to 93.2%. This means that after joining the yam marketing business the proportion of sampled respondents living well above the poverty line increased drastically from 18.8% to 93.2%. This further implies that after joining the yam marketing enterprise, only 6.8% of sampled respondents were still living below the poverty line of US $1 .5 per day, as against 81.2% before joining the business. Fefa (2012), also reports that the proportion of cassava processors and marketers in Benue State before their involvement into the business increased from 19.6% to 83.4% after they had joined the processing and marketing. The following ratio further demonstrates the impact of the business on the income of participants as follows:

$$(R) = A::r^{\wedge}_{e\ an,U3l\ :3COM-3e,or:;.3SI}\ {}^{\wedge\wedge}*i oo \dots\dots\dots\dots\dots\ (8)$$
$$= l:os:=o!i:c^x\ 100 = 3.4 \times 100 = 34\%$$

The above ratio shows that participating in yam marketing activity had increased the average annual income of sampled respondents by 34%. Increase in income had surely improved the standard of living of the respondents and hence reduced poverty.

Determination of Poverty Status of Sampled Respondents

In order to determine the poverty status of sampled respondents the poverty line of US$1 .5 was used to estimate the respondents' status before and when they joined yam marketing business. These estimates were further used to classify the respondents into a category of either being poor or non-poor. Two maprjways were used in arriving at these classifications:

a. A moderate poverty line equivalent of rof the. mean income per year

b. A core poverty line equivalent of r of the mean income per year

These criteria were used alongside with the Foster-Greer-Thorbecke (FGT) index and the different dimensions of poverty

and incidence, FGT_0/ FGT_t and FGT_2 were calculated. The results obtained are presented in Table 2 below.

Table 2: Poverty Indices of Respondents Before and During Yam Marketing

Index	Before Joining Yam Marketing	After Joining Yam Marketing
i. Mean Annual Income - Mean annual income -Mean annual income	1467,718.58 N45,145.72 1422,572.67	14233,091.10 14155,394.07 N77,697.03
ii. Headcount Index (FGTo) Core Poor Moderate Poor Non-Poor	0.46 (46%) 0.19 (19%) 0.35 (35%)	0.15 (15%) 0.17 (17%) 0.68 (68%)
iii. Poverty Gap Index (FGTi) Core Poor Moderate Poor	0.48 0.41	0.34 0.29
iv. Severity of Poverty (FGT_2)	0.221	0.113

Source: Field Survey, 2014

Table 2 above shows that a respondent with an average annual income greater or equal to N45,145.,72 before joining yam marketing was said to be non-poor or rich. On the other hand, any respondent with an average annual income below N45,145.72 but greater that N22, 572.67 before joining the business was considered to have been moderately poor. Any respondent with an amount of income below N22,572.67 was considered to be extremely (core) poor.

Table 2 further shows that after joining yam marketing the respondents[7] upper poverty line was drawn to be N155, 394.07. This means that a respondent with an average annual income

greater or equal to N155, 394.07 when he had joined yam marketing activity was considered to have been non-poor or rich. However, income below N155, 394.07 but which was greater or equal to N77,697.03 when he had joined yam marketing was considered to have been moderately poor. Thus, a core or extreme poverty line of N77,697.03 was drawn. This means that a respondent whose average annual income fell below N77,697.03 after joining yam marketing was considered to have been extremely or core poor. It can be observed from Table 2 that a respondent who is considered to have been moderately poor when he joined yam marketing, that is a respondent whose average annual income fell below N155, 394.07 would have been considered as non-poor with same average annual income range, when he or she had not joined yam marketing yet. This is because before yam marketing, a respondent was considered as non-poor with a bench mark average annual income of N45,145.72.

The Foster-Greer Thorbecke (FGT) indices of the incidence of poverty ($FGT_{(|}$, FGT,, and FGT.,) were computed based on the classification of the respondents as non-poor, moderate and core poor before and after joining yam marketing business. The results obtained were presented in table 2 above. The table shows that poverty hcaclcount ratio (i.e. $FGT_{()/}$) of 0.46, 0.19 and 0.35 were obtained for the respondents before they joined yam marketing, to reflect their status as core poor, moderately poor and non-poor respectively. This shows that 46% of the respondents were core poor before they had joined the business, 19% moderately poor and 35% non-poor before they joined yam marketing enterprise. I lowever, after joining yam marketing the head count index ($FGT_{()}$), obtained shows 0.15, 0.17 and 0.68 for core poor, moderately poor and non-poor respectively. This implies that 15% of the respondents were core poor, 17% moderately poor and 68% non-poor after joining the business.

On a comparative basis, the headcount ratios show that 46% of respondents before as opposed to 15% after joining yam marketing

were considered as core poor. This means that the proportion of the respondents in the core poor group before joining yam marketing was higher (46%) than when they joined it (15%).This means that core poverty status of the respondents reduced drastically by 31 % when they joined the business. There was also a marginal reduction of the moderate poor category by 2% (that is from 19% before they joined the business to 17% after joining it). The table further shows a huge increase in the proportion of respondents within non-poor group from 35% before joining the business to 68% after joining it. This represented an increase of 33%.

The Table further shows the Poverty Gap Index (FGTj) which is also known as the Average Poverty Gap (APG) or the Normalized Poverty Gap (NPG); which defines the amount of income necessary to bring everyone in poverty right up to the poverty line or the amount an average person would have to contribute in order for poverty to be just barely eliminated. This index was computed for both pre and post yam marketing periods. FGT_t indices of 0.48 for core poor and 0.41 for moderate poor before yam marketing was obtained. This implies that the income level of core poor respondents before they joined yam marketing fell below the poverty line of N-22, 572.67 by 48%. This means that a core poor respondent needed 48% of N22, 572.67 (NIC), 834.88) annually in addition to his income to be moderately poor. Also, the moderate poor income fell below the poverty line of $445,145.72 by 41 %, meaning that the moderate poor needed 41% of N45,145.72 (Nl8,509.75) annually in addition to his or her average annual income for the poverty to be barely eliminated.

However, after joining yam marketing the poverty gap index (FGT_t) of 0.34 and 0.29 were obtained for core poor and moderate poor respectively. This reveals that for the core poor, his income fell below the poverty line of N77,697.03 by 34% of N77,697.03 (N26, 416.99) annually in addition to his annual income to be moderately poor. While a moderate poor needs 29% of the poverty

line of Nl55,394.07 (N45,064.28) annually in addition to his average annual income to be brought right up to the poverty line and his poverty level would be eliminated. Higher poverty lines were however set after joining yam marketing.

Based on these findings it is quite clear that yam marketing enterprise has actually improved the incomes and hence standard of living of the sampled respondents. This was confirmed by the severity of poverty index (FGT-). This index shows the respondents before they joined yam marketing. This incidence of 0.221 does not indicate a serious case (severity) among respondents before joining yam marketing, though it is relatively higher than 0.113, which is the severity or depth of poverty among the respondents when they joined yam marketing.

In order to test the hypothesis (H_c), the logistic regression model was estimated, using the maximum likelihood estimation technique (the binary logit or quadratic hill climbing method). The model was estimated to ascertain the effect of yarn marketing-on the poverty status of the sampled yam marketers. The estimation of the logistic regression analysis was done using EViews Version 7.0 Software Package. The results were collected and presented in Table 3 below.

Table 3: Result of the Logistic Regression Analysis Dependent Variable: PVS

Variable	Coefficien (P)	Std I-	Z-Statistic	Prob.	Exp (P)
(Xi)	-1.654191	0.435871	-3.795140	0.0258	0.19
(X₂)	-0.895350	0.356314	-2.512631	0 .0350	0.41
(Xa)	0.637295	0.186202	3.422637	0.0248	1.89
(X₄)	-0.648481	0.203677	-3.183861	0.2827	0.52
(Xs)	-1.287705	0.499001	-2.580566	0.0316	0.28
(X6)	-0.127841	0.033137	-3.857953	0.0208	0.88
(X₇)	-0.386296	0.128814	-2.998867	0.0339	0.68
(X₈)	-1.446257	0.311421	-4.644057	0.0148	0.24
(X₉)	0.657021	0.122774	5.351420	0.0065	1.93
(Xio)	0.592511	0.217304	2.726641	0.0388	1.81

(Xn)	-0.239625	0.073444	-3.262691	0.0254	0.79
c	1.382690	0.467056	2.960440	0.0250	3.99

McFadden R-squared	0.523284	S.E of regression	
LR statistic	4.35975	Log likelihood	-
Prob (LR statistic)	0.00464	Akaike info Criterion	
I annan-quinn criterion	0.535756	Schwarz criterion	

Source: Output of EViews 7.

The result of Table 3 shows that the McFadden R-squarcd (Pseudo-Adjusted R-squared) is 0.523284. This means that the total variation in the dependent variable (Poverty Status, PVS) caused by all the explanatory variables in the model is 52.3%. The LR statistic (Pseudo F-statistic) value of 54.35975 is high, which shows that it is significant and suggests elements of joint effect by the explanatory variables or the model. It also shows that the entire model has performed wel! (Akighir and Nomor, 2013). This is also confirmed by the very minimal value of prob. (LR statistic) which is 0.000464. All these further show the high predictive power of the model. The constant or intercept (C) value of 1.382690 indicates that given that respondents did not involve themselves in yam marketing they would have been poor by a magnitude of 1.38. That is if all the predictors are held constant poverty status would increase by 1.38 times only. For a logit model, in order to obtain a more meaningful interpretation of the documented results, the antilog or exponential values given as Lxp (a) of all the partial coefficients were computed and presented in table 3. This result was interpreted in terms of the odds ratio or likelihood of reducing poverty (Gujarati and Porter, 2009; Andohol and Ominyi, 2013). Based on the results, we discover that an increase in the average annual income realized from yam marketing; quantity of yam tubers marketed; house type; access to improved health care; access to clothing; level of education; storage facilities and means of transportation will reduce the respondents' likelihood of being poor by 0.19, 0.41, 0.52, 0.28, 0.88, 0.68, 0.24 and 0.79 times respectively.

This is revealed by their negative signs of the a parameters. On the -other hand the number of square meals taken per day; the household size and cost of transportation of yam will increase the likelihood of being poorer respectively by 1.89,1.93 and 1.81 times (also shown by the positive signs of their a coefficient) Again, this is in total agreement with a priori expectation, except for$X\sim$. All the variables were statistically significant at a=0.05 level, except $X\pm$ (house type).

This further shows that yam marketing has significantly reduced poverty among the respondents. Thus given that the log likelihood value of -47.50289 is less than the probability value of the LR statistic, which is 0.000464. Furthermore, we also observe that the probability value (LR statistic) of 0.000464 is less than the critical value or a (5% or 0.05) level of significance. We therefore reject the null hypothesis (H.-) that all the a's are not significantly different from zero; that is yam marketing has not reduced the probability of being poor among the yam marketers in Ukum Local Government Area. Thus we conclude that yam marketing business has actually reduced the poverty levels of yam marketers in the study area.

Table 3 further reveals that the partial slope coefficients of each variable were computed, while holding other explanatory variables constant. The slope of each variable measures changes in the estimated logit, given a unit change in the value of the predictor variables. The results therefore reveal that a unit change in the observed values of X_{l7} X., , 4, , , , , , and will change the average estimated logit of poverty status by -1.654191, -0.895350, 0.637295, -0.648481, -1.287705, -0.127841, -0.386296, -1.446257,0.657021,0.592511 and -0.239625 respectively. The low standard errors of all the coefficients, coupled with their high z-values and low probability values (p<0.05) indicate that all the coefficients are statistically significant at 5% alpha level, except. The result of the slope coefficients obtained for all the variables perfectly agreed with the a priori expectation, except for (the

number of square meals taken per day). The major problems discovered to be hampering yam marketing in the study area include poor access roads in transporting yam tubers; high cost of transportation of yam tubers to the market; perishable nature of yam tubers; lack of conducive storage facilities; incessant threat of thieves on the high-ways; inadequate capital to start and facilitate the smooth running of the business, difficulty of securing soft loans from the bank due to lack of required collateral securities; exorbitant and multiple government taxes/levies on marketers and high cost of acquiring *yam* marketing shops.

Conclusion and Policy Recommendations

Based on the fact that the null hypotheses for this research were rejected and the alternative hypotheses accepted, it can be concluded that yam marketing business is profitable; has reduced the probability of being poor and has the potential for achieving the objective of poverty reduction in Ukum Local Government Area. This is because, the research found prominently that yam marketing has created employment, generated income and has been found to be quite profitable for respondents in the study area.

It can be concluded further that for the purpose of achieving poverty reduction, the problems identified by this research should be tackled through those recommendations also made by the study. Thus, if this is done, the business of yam marketing would boom and poverty would be drastically reduced in Ukum Local Government Area. Based on the findings of this study, the following policy recommendations were suggested in order to help improve yam marketing business in Ukum Local Government Area of Benue State: Benue State government should establish a yam processing factory in Ukum Local Government Area, particularly in Zaki-Biam to help in the processing of yam tubers into other by-products. This would foster employment opportunity and enhance value-chain in yam production, distribution and consumption in Nigeria; Yam marketers should organize themselves into

cooperatives in order to access loan facility from the bank; Improved and modernized yam storage facilities should be provided in the study area by the government and the people through joint efforts so as to reduce the loss in the value of yam due to poor storage facilities. By so doing, yam distribution and consumption would become an all-time affair in Nigeria.

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