FACTORS INFLUENCING THE INCOME OF COOPERATIVE AND NON COOPERATIVE GARI MARKETERS IN BENDE LOCAL GOVERNMENT AREA, ABIA STATE, NIGERIA

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Abstract
The study examined the factors influencing the income of *gari* marketers in Bende Local Government Area, Abia State, Nigeria. Specifically, the income determinants of the marketers were analysed and compared for cooperative and non cooperative *gari* marketers. A total of 60 respondents were used for the study. The data obtained were analysed with the use of multiple regression models and z-test. The regression analysis showed that age, marketing experience, transportation cost, purchase cost, and capital (depreciation on equipment) were significant variables that influenced income of *gari* marketers for cooperative marketers while for non-cooperative marketers, marketing experience, transportation cost, purchase cost and formal education were the significant variables that influenced their income. The z- test showed that there was a significant difference between the income of cooperative marketers and that of non cooperative marketers. Based on the findings, it is recommended that traders should be encouraged to form or join active marketing cooperatives because of its benefits in adding value and boosting their income, thereby increasing welfare and alleviating poverty.
Keywords: effects, cooperative society, marketing, *gari*.

Introduction
Agriculture which was the mainstay of Nigeria economy is the major occupation of the rural people. The contribution of agriculture in the socio-economic development of Nigeria cannot be overemphasized. Prior to the oil boom in the 80s, agriculture was the life wire of the nation's economy. It provided employment for more than 80 percent of the Nigerian population and also served as the main source of food, fibre, raw materials as well as foreign exchange (Umebali, 2003).
Presently, the contribution of agriculture to the economy has been remarkably low with an annual growth rate falling behind population increase. The increasing deficit in food production is evidenced by the increase in the volume of food production and food importation into the country. Umebali (2003) pointed out that despite the fact that more than 50 percent of the total labour force was involved in farming yet output was not enough to feed the ever increasing population.

Cooperative is one of the most important preconditions for efficient resource mobilization to accelerate high productivity in food production and marketing. The cooperative rural approach recently has come under several criticisms because of its slowness in responding to social needs and challenges. The acid-test of a good cooperative society therefore is whether or not it is performing the purposes for which it was set up.

Marketing plays a crucial role in a market economy. Its role becomes more important in areas where there are high level of commercial activities and high rate of urbanization (Olukosi and Isitor 1990). Marketing is concerned with all stage of operation, which aid the movement of commodities from the farmers to the consumers, and these include assemblage of products, storage, transportation, processing, grading and financing these activities (Kohls, 1980). For the *gari* marketers, the emphasis is how to enhance their productivity, thereby increasing their income and livelihood. The consumption of *gari* particularly among the low income earners is assuming a place of high importance. This is as a result of the economic situation and population increase and as well as the relative affordability of the commodity for many households. In a competitive economy, agricultural development cannot occur without improved marketing. This is because agricultural marketing is concerned with all the economic activities involved in the production and distribution of agricultural products (Odii and Ubih, 2000). The important role of cooperatives in marketing of agricultural product is to ensure affordable and adequate food for the increasing population and enhance the marketers' returns (Praskash *et al*, 1998; Banmeke and Ajayi, 2006). But due to myriads of problems, most cooperative in developing economies are unable to significantly impact on the income and living standard of their members and surrounding environment. Therefore, this study was designed to assess the contribution of cooperative to the income of farmers under their fold in the study area. Thus, the objectives of the study were to determine factors influencing the income of *gari* marketers as well as examine if there was any significant difference in the income of both the cooperative marketers and non cooperative marketers.

Methodology
The research was conducted in Bende Local Government Area of Abia State, Nigeria. Administratively, the local government is divided into eleven (11) communities. These include: Bende, Itumbuzo, Umuhu Ezechi, Ozuitem, Uzuakoli,

Umuimenyi, Nkpa, Alayi, Ugwueke Ezukwu, Item and Igbere. In the research work, multi-stage sampling technique involving purposive and random sampling techniques was used. Purposive sampling technique was used for the selection of three (3) out of the eleven (11) communities in Bende Local Government Area of Abia State, Nigeria. Purposive sampling technique was employed because functional cooperative societies are not in all the communities. The communities selected for the study were; Uzuakoli, Ozuitem and Item respectively, each with a cooperative society making (3) three cooperative societies. The reason was that there were functional cooperatives with gari marketers as members in these areas. Respondents were randomly selected from the list of cooperative members, with (10) cooperative *gari* marketers from each of the (3) three societies making (30) thirty cooperative *gari* marketers. From the 3 communities that were selected, (10) ten respondents each from the communities were also selected for non cooperative *gari* marketers giving a total of 30. Therefore, a grand total of 60 respondents were used for the study.

Data analysis was based on the objectives. For the factors that influenced the income of *gari* marketers, Ordinary Least Square (OLS) regression models were used.

Implicitly, the model is stated thus;

$Y_{(1,2)}$ = F (X_1, X_2, X_3, X_4, X_5, X_6, X_7,) Where: Y = Income of the marketers ($\mathbb{N}$)

$_1$ = Cooperative marketers, $_2$ = Non-Cooperative marketers

X_1 = Age in years; X_2 = Marketing experience in years; X_3 = Household size (number of people living together with the respondent in the same house), X_4 = Transportation Cost ($\mathbb{N}$); X_5 = Purchase Cost ($\mathbb{N}$); X_6 = Capital (depreciation on equipment ($\mathbb{N}$)); X_7 = Formal education in years.

For the test of difference in income for cooperative and non cooperative marketers, the z-test was used. The z-test is stated thus;

$$z = \frac{X_1 - X_2}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}}$$

Where t = students 't' statistics.

X_1 = Mean Value income of cooperative *gari* marketers

X_2 = Mean value income of non cooperative *gari* marketers

S_1^2, S_2^2 = Variance of co-operative *gari* marketers and non-cooperative gari marketers respectively.

n_1 = Number of Cooperative *gari* marketers

n_2 = Number of non-cooperative *gari* marketers.

Result and Discussions

The findings of the research work are presented and discussed accoding to the objectives.

Factors that influenced the income of *gari* marketers.

The various factors influencing the income of *gari* marketers are shown in Table 1

Table 1: Factors that influenced the income of cooperative *gari* marketers

Variables	Linear+	Exponential	Double-log	Semi-log
Constant	129575.006	11.535	3.983	-3.822E6
	(7.671)***	(8.988)***	(5.777)***	(-2.504)**
Age	1191.945	0.011	-0.682	-44846.687
	(2.680)***	(0.382)	(-0.637)	(-0.611)
Marketing Experience	-882.185	0.008	0.016	-55615.148
	(2.041)***	(2.755)***	(2.047)**	(-0.718)
Household size	14227.847	-0.030	-0.381	16196.082
	(0.972)	(-2.308)**	(-0.835)	(3.160)***
Transportation cost	8.474	0.00	0.010	238897.486
	(3.593)***	(-1.058)	(2.916)***	(1.763)*
Purchase cost	1.068	4.399E-6	0.840	173929.872
	(9.252)***	(5.732)***	(6.583)***	(6.154)***
Capital	23.041	-0.001	0.176	128355.763
	(3.067)***	(-0.532)	(3.163)***	(0.537)
Educational level	-116.732	-1.721E-5	-0.035	-19769.241
	(-0.864)	(-1.917)*	(-0.419)	(-1.076)
R^2	0.831	0.655	0.703	0.685
R^{-2}	0.777	0.546	0.609	0.585
F-ratio	15.465***	5.975***	7.445***	6.847***

Sources: field Survey data, 2011.
*** Significant at 1%, ** Significant at 5%, * Significant at 10%, + Lead equation, the figures in parenthesis are t-ratios.

The Linear model was chosen as the lead equation based on the number of significant explanatory variables, the F-ratio, the value of the R^2 and conformity to *apriori* expectation. The F-ratio was significant at 1% showing the overall significance of the result. The R^2 was 0.831 which implies that about 83% of the variation in the income of marketers was explained by explanatory variables while the remaining 17% was accounted for by the error term or variables not accommodated in the model. From the result of the regression, five variables; age, marketing experience, transportation cost, purchase cost and capital were the significant variables that influenced the income of cooperative *gari* marketers.

The age of cooperative *gari* marketers was significant at 1% and had a positive effect on income which means that increase in age resulted to increase in the income of the marketers. The marketing experience was significant at 1% and was positively related to income. This shows that experience had significant influence on the income of the marketers

of cooperative *gari*. That is, the higher the marketing experience of the individual, the more skilful and better adoption of technologies needed in the marketing system and hence competition (Obasi, 2008). Transportation cost was significant at 1% and was positively related to income. This implies that increase in transportation cost leads to increase in income. This may be due to the fact that as transportation cost increases, marketers increase their price in a proportion that is higher than the increase in transportation costs thereby increasing income as a result.

Purchase cost had a significant positive effect on income of the marketers which means that increase in purchase cost leads to increase in income. This may equally be as a result of marketers increasing their price higher than the increase in purchase cost. Capital was also significant at 1% and was positively related to income. This implies that the more the capital depreciation of the individuals, the more marketers strategize to offset the cost in their business and increase income (Irukwu, 2000).

Table 2: Factors that influenced income of non-cooperative gari marketers.

Variables	Linear	Exponential	Double-log+	Semi-log
Constant	6264.169	10.422	1.889	**-990709.174**
	(7.127)***	(31.878)***	(2.957)***	**(-3.082)*****
Age	-1011.233	-0.002	-0.309	**-61454.793**
	(-0.973)	(-0.252)	(-0.996)	**(-1.007)**
Marketing	-3073.190	-0.023	-0.031	**-8039.699**
Experience	(-1.581)	(-1.787)*	(-2.869)***	**(-2.314)****
Household size	1417.577	0.011	0.072	**9248.420**
	(2.319)**	(0.376)	(0.536)	**(0.351)**
Transportation	100.218	0.001	0.199	**28504.143**
cost	(4.316)**	(4.261)***	(1.820)*	**(1.324)**
Purchase cost	0.750	5.933E-6	0.777	**89349.116**
	(5.369)***	(6.433)***	(6.255)***	**(3.654)*****
Capital	424.422	0.003	0.156	**32369.037**
	(1.262)	(1.349)	(0.979)	**(1.029)**
Educational level	23.158	4.391E-5	0.005	**3057.472**
	(0.412)	(0.118)	(3.107)***	**(0.335)**
R^2	0.861	0.889	0.871	**0.726**
R^{-2}	0.817	0.854	0.829	**0.639**
F-ratio	**19.507***	**25.207***	**21.146***	8.328***

Sources: Market Survey data, 2011.
*** Significant at 1%, ** Significant at 5%, * Significant at 10%, + Lead equation, the figures in parenthesis are t-ratios.

The double-log model was chosen as the lead equation based on the number of significant explanatory variables, as well as the value of the coefficient of multiple determination (R^2). The coefficient of multiple determination was 0.87. This implies that 87 percent of total variation in income was accounted for by the independent variables in the model, while the remaining 23 percent variation in income was due to error term. The F-ratio was significant at 1 percent which confirmed the overall

significance of the regression model. Four variables, marketing experience, transportation cost, purchase cost and level of education were the significant variables that influenced the income of non-cooperative *gari* marketers.

The marketing experience was significant and had a negative relationship with income. This may be as a result of marketers not being stable in marketing of one particular product but jumping from marketing

of one product to another, thereby not maximising marketing experience for higher income. Transportation cost was significant at 10 percent and positively related to income. This implies that increase in transportation cost led to increase in income. This may be due to the fact that as transportation cost increases, marketers increase their price in a proportion that is higher than the increase in transportation costs thereby increasing income as a result . This however is not in agreement with expected result since it is believed that the higher the transportation cost, the lower the income of the marketer. The purchase cost was significant at 1 percent and was positively related to income. This implies that increase in purchase cost led to an increase in income. This may be as a result of marketers increasing their price higher than the increase in purchase cost. The level of education was significant at 1 percent and positively related to income which means that increase in educational level also led to increase in income of the marketers and enhanced the ability of the marketers to utilize available resources to achieve optimum output (Abaelu, 2009).

Testing of significant difference between the income of the cooperative marketers and non cooperative marketers.
The result of the test of difference in income is presented in Table 3.

Table 3: The significant difference between the income of both the cooperative and non cooperative marketers.

	Mean	Number	Std.Deviation	Std Error Mean	Df	Z
Income of co-operative marketers	4.65	30	316100.45	57711.78	29	
Income of the non cooperative marketers	1.32	30	85901.68	15683.43	29	
						5.482***

Source; field survey data, 2011

From Table 3, the mean difference between the incomes of the two co-operators was significant at 1 percent significant level. This shows that there was significant difference between the income of the co-operative marketers and non co-operative marketers with the cooperative marketers having higher income than the non cooperative marketers.

Conclusion
The study has confirmed that cooperative *gari* marketers had higher income than the non cooperative *gari* marketers in the study area. The significant variables that influenced the marketers' income were age, marketing experience, transportation cost, purchase cost and capital for cooperative *gari* marketers while marketing experience, transportation cost, purchase cost and level of education were significant for the non cooperative *gari* marketers. Therefore, the cooperatives helped the marketers to improve the level of income in the business.
Based on the findings of the research, the following recommendations were made. Hence, traders/people should be encouraged to form or join actively marketing cooperatives for food crops like cassava. This will increase the income of the *gari* marketers in the area and thereby alleviate poverty among cassava farmers, and as well reduce food scarcity. Also this will enable them to obtain loans from financial institutions easily and also help them solve their marketing problems collectively thereby investing better in the business.

Government should strengthen the existing cooperatives by increasing the cooperatives funding capacity through the provision of loans, and subsidies. Government should also make policies that will stabilize prices of *gari*. Also, in reference to high transportation costs, infrastructural facilities related to transportation should be improved upon to enhance the movement of *gari* and reduce price hike. The significant variables influencing income of the marketers should be taking into consideration in policy formulations.

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