

## STRUCTURAL ANALYSIS OF RICE MARKETERS IN TARABA STATE

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### Abstract

The study examined the structural analysis of rice traders in Taraba State, Nigeria. Primary data were used in sampling 179 traders for this study. Analytical tools were simple descriptive statistics such as mean, frequency and percentages and inferential statistics like t-test, anova and regression analysis to determine influences of socio-economic characteristics on gross margin (performance). The estimated gross margin for influence of socio-economic characteristic revealed that educational status ( $P < 0.05$ ), years in marketing ( $P < 0.05$ ), years of membership and starting capital ( $P < 0.01$ ), had positive influence on gross margin (performance) of the respondents. The result of (ANOVA) showed there is a significant difference in efficiency level of rice marketing among the three groups at 1% significant level. The study recommended that market margin should be used in measuring performance.

**Keywords:** Marketing efficiency, Gross margin, Marketers, Performance

### Introduction

Rice (*Oryza sativa L*), being the second largest cereal (after wheat), shape the lives of million people; more than half the world's population depends on rice for about 80 percent of its calories requirement. Rice has been good partner to mankind, the adaptations in terms of ecological, economical and technological changes around rice facilitated this partnership between man and rice (Braun, 2006).

Past policies did not help local rice production secure a significant market share, and imports have increased since the lifting of the ban on rice importation. Despite successive increases in import tariffs from 50 percent to 100 percent, imported rice now represent more than 20 percent of agricultural imports and half of the total rice consumption. Nigeria has thus become rice importer only second to Indonesia.

Local rice demand is growing quickly due to population growth and urbanization. Nigeria estimated annual rice demand is put at 5 million metric tonnes while annual production on the average was about 2.21 million metric tonnes of milled products leaving deficit of 2.27 million metric tonnes which is bridged by importation

Domestic demand for rice is projected to 7.5 million metric tonnes by 2013, on the assumption that demand rises at 10 percent per annum and the demand for local rice growing at half the rate of imported rice (NRDS, 2009). This increase in demand is because rice has change from being an elitist to ordinary staple food for many Nigerians. Many local dishes are prepared with rice because of its relative ease in terms of storage and preparation.

In terms of local production, rice is now one of the main cereals produced by Nigerian farmers cultivated in virtually all the agro-ecological zones of Nigeria. It covers both the upland and the swamp depending on the variety (Taraba State Agricultural Development Programme, TADP, 2007).

The global value concept as pointed out by global value chain initiative, GVCi (2007), is an arrangement that describes the linkage of participants and their value creating activities that enhanced the movement of goods and services from production, processing to the end user (consumer). The number and conduct of the participant along the chain determine its efficiency, pricing and return accruing to each participant at every stage (GVCi, 2007).

This study is, therefore, assessing the influence of socio- economic characteristics in rice marketing in Taraba State. The result is expected to stimulate favorable and sustainable policies towards improving rice production, processing and enhancing its marketing for effective wealth creation, employment generation that will ensure sustainable and improved socio-economic well-being as well as ensuring profitability among the marketers and eventually improve the country's GDP. To achieve this trend, there is an urgent need to improve the nature of marketing performance and efficiency, this will earn the rice traders more income which will translate to improve in the standard of living as well as empowering more people.

### **Methodology**

The area of study is Taraba State. The state is divided into 16 Local Government Areas administratively with Jalingo as its capital. Taraba State is situated in the North Eastern part of Nigeria, and it lies between latitude 6°25'N and 9°30'N and between Longitude 9°30'E and 11°45'E.

The mean annual rainfall shows a mark decrease from south to North (100mm – 150mm). The

raining season commences in April in the South, the length of the raining season varies from 90 days in the North to maximum of 200 days in the South. The dry season extends from October to early June and is marked by the hot North Eastern harmattan wind.

The population of the state is put at 2,294,800 million (NPC, 2006) and has a land area of 54,428km<sup>2</sup> spread over different ecological zones; its strategic location in the transitional belt between the forest area of the south and grass land of the south affords it the tremendous potential in Agriculture.

### **Nature and Sources of Data**

The data for this study were obtained from primary sources. The primary data were generated directly from the rice marketers in the selected markets of Wukari, Gassol and Jalingo Local Government Areas of Taraba State. Questionnaire and personal interviews were employed in the collection of the needed information on the respondents. The data collected covered relevant information on socio - economic characteristics of rice marketers and other important information relating to source rice and value added.

### **Data analysis Techniques**

The data collected for this study were analyzed using both descriptive and inferential statistics. . Regression analysis and marketing efficiency formula were used.

The regression model employed in the examination of the influence of socio-economic characteristics on performance of rice marketers is specified as follows:

$$Y = F(x_1, x_2, x_3, x_4, \dots, x_6, e)$$

Where Y = performance of rice marketer in N

X<sub>1</sub> = age of rice marketer in years

X<sub>2</sub> = house hold size

X<sub>3</sub> = years of experience in rice marketing in years

X<sub>4</sub> = educational status

X<sub>5</sub> = marital status

X<sub>6</sub> = years of membership

e = error term

$$GM = GI - TVC$$

Where GM = Gross margin of the rice marketer in N

GI = Gross income in N

TVC = Total variable cost in N

Marketing efficiency was calculated using the formula:

$$\text{Efficiency} = \frac{\text{value added by marketing activities}}{\text{Marketing Cost}} \times 100$$

### **Results and Discussion**

Table 1 presents the result of regression analysis on the factors influencing gross margin (performance) of the respondents in Taraba State. The equation of best fit was selected with conformity to apriori expectations of the number of the significance, signs of coefficients, higher coefficient of determination and significance of the F statistics. Here the linear form was selected as the lead equation because of its minimal standard error, F significant value and high adjusted R<sup>2</sup>.

Specifically, the result showed the adjusted R<sup>2</sup> as 0.22 implying that 22% of the variations in the gross margin (performance) in the rice marketed were explained by changes in the explanatory or independent variables. The result also indicated the coefficient of educational status, years in marketing, years of membership and start-up capital had significant influence on gross margin of rice marketed. Specifically, educational status and years in marketing were found positive and has significant influence on gross margin at 5 percent level of probability, implying that increase in educational level and years of experience in marketing will increase the gross margin of rice marketed by the value of the coefficients. Start-up capital also has positive coefficient and affects gross margin of rice marketed at 1 percent level of probability, this means that increase in start-up capital by one unit will also increase the gross margin of rice marketed by the value of the coefficient. Result further showed that years of membership also have positive coefficient and affects gross margin at 10 percent probability level, implying that increase in years of membership by one year will also increase gross margin by the value of the coefficient value. The coefficients of age and household size were found negative and not significant at 5 percent probability level; this means that increase in age and household size will reduce gross margin by value of the coefficients. Result, also, showed that sex has negative coefficient and not significant at 1 percent probability level; this means that increase in sex reduce gross margin by value of the coefficient. F statistics showed that the variables are jointly significant at 1% significant level.

**Table 1 : Regression Model Showing Influence of Socio-Economics Characteristics on Performance of Respondents**

Variables	Linear	Double log	Semi Log	Sbt Sig	Lead	equation
Constant	-119688.66 .279	8.982	1.453	110117.305	-1.087	
Sex	4.7829.356 .276	.217	.342	43792.764	-1.092	
Educational status	52856.951 .021	.253	.070	22615.676	2.337**	
Age	-1516.146 .669	.009	.875	.3539.263	-.428	
Household size	704.984 .859	0.002	-0.16	5346.514	.132	
Years in market	14554.58 .040	.38	.060	7027.297	2.071**	
Years of membership	11286.540 .084	.067	.564	6487.137	1.740***	
Startup capital	.772 .001	5.118E-006	.065	.225	3.435*	

Source: (Authors computation, 2014)

(\*), (\*\*),(\*\*\*) t-ratio significant at 1%, 5% and 10% respectively

$R^2 = 0.249$  Adjusted  $R^2 = .218$  Sb= 1.54842 F= 8.094  $P \leq 0.01$

### **3.1 Gross Margin Analysis of Rice Traders in Taraba**

The result indicates that the mean cost incurred on transportation of paddy rice to sales and processing places for both retail, wholesale and contact sales were N20,255.78, N21,569.41 and N17,083.26 with their standard deviations of 15277.18, 21276.00 and 8292.47 respectively. The result further revealed that mean cost of storage for wholesale is N24,574 which is the highest cost incurred among the group of marketers, reasoned been that wholesalers store much of rice as compared to the retailers and contact sales with mean cost of N17593.23 and N18125.00 respectively. The result also revealed that the mean cost of paddy for retailers, wholesalers and contact sales as N821727.27 N2483726.47 and contact N4101533.33 with their respective standard deviations of 152770.18, 2899624.30 and 3694569.85. The result revealed that the mean gross margin of retail N82,674.72 and gross margin/bag of rice was N422.05 for wholesaler N8297,905.58 and N577.71 and contact sales N1,557,500 and N752.77 respectively. This corroborates the finding Musa *et al* (2012)

### **3.2 Marketing Efficiency**

The result of marketing efficiency showed that 53.3% of the respondents who sell 10 or less than 10 bags of rice were efficient, 43.6% represents 78 respondents who sold between 10.01 and 20.00 bags of rice were efficient in rice marketing in the study area.

The mean marketing efficiency found for both retailers, wholesalers and contact sellers was 74.85% 101.13% and 111.96% is in variance with the findings of Akanni (2010) who found mean efficiency of 82% for maize marketers in the southern Nigeria. The results further revealed that contact sales group are more efficient in rice marketing than wholesalers and retailers in the study area, and ANOVA showed there is a significant difference in efficiency level of rice marketing among the three groups at 1% significant level which could be as a result of their additional marketing cost such as transportation, middlemen and storage costs e.t.c. which translate to higher value addition in the marketing process.

Table 2: Descriptive Statistics of Gross Margin of Rice Marketers in Taraba

Statistics	Retailers			
	Cost Of Transport	Cost of Storage	Cost of cashew	Tvc
Mean	20255.78	17593.35	821727.27	860121.73
S.t.d	15277.18	18571.81	1115788.99	1125794.95
Minimum	0	0	66600.00	80500
Maximum	6400	12000	7020000.00	7079000
			<b>Wholesalers</b>	
Mean	21569.41	24574.26	2483726.47	2529870.14
S.t.d	21276.07	23162.59	2899624.29	2899617.180
Minimum	0	0	15300.00	15600.00
Maximum	96000	95000	18090000.00	18129000
			<b>Rural assemblers</b>	
Mean	17083.33	18125.00	4101533.33	4136741.66
S.t.d	8292.47310679	3694569.85	3702209.86	449326.25
Minimum	0	9000	258300.00	270300.00
Maximum	32000	42500	13120000.00	13172500.00
			<b>Gm</b>	
				<b>Gm/ Bag</b>
			82674.72	442.05
			147623.93	255.37
			200	3.70
			981000.00	1477.78
			297905.58	577.71
			403564.06	300.03
			2400.00	38.71
			254600.00	2307.50
			499025.00	620.95
			102.75	
			23400.00	417.65
			1557500.0	752.17

Source: (field survey, 2014)

<b>Numbers of bags sold</b>	<b>Market efficiency</b>			
=10.00	99(53.3)			
10.01 – 20.00	78(43.6)			
20.01 – 30	1(0.6)			
30.01 and above	1 (0.6)			
<b>ANOVA Result</b>				
Groups	Mean	Std.dev	F	Sig
Retailers	74.853	4.30154	2.05	(0.01)
Wholesaler	101.131	4.1486		
Contact sales	111.962	2.14186		

**Source: (Authors computation, 2014)**

Values in parenthesis are in % and F=2.05P=0.01

### **Conclusion**

This paper has assessed structural analysis of rice traders in Taraba State. The objective was to analyze influence of socio-economic characteristics on gross margin obtained by rice marketers and determine marketing efficiency in the state. The study also revealed that average gross margin of 17593.35 per sales period. This showed it is a profitable enterprise. The result further revealed that years of farming experience, years in marketing and start-up capital has significant effect on gross margin of the respondents at 1% 5% and 10% respectively. Age, household size and sex do not have significant effect on gross margin. The mean marketing efficiency for retailers, wholesalers and contact sales are significant at F =0.01. The study is limited to only paddy marketers and recommend that policy measure should be put in place to encourage young and vigorous individual to engaged in paddy marketing and market margin should be used to measure performance,

### **References**

- 1.Akanni, K. A. (2011).Economics of marketing of grains in south west Nigeria. *Economia Mexicana NUEVA EPOCA* DE proxima publication /forthcoming
- 2.Braun, J. V. (2006). Publish policy and Market (propcom) funded by international

- collaboration for sustaining and expanding Rice development.
3. Daniel R., Agrides G. and Adreas G. (2006) December 2006. The Roles of Donors in Value Chain.
  4. Global Values Chain Initiative (CIVCI), (2007): Through small scale processing institute of Development Venture in Nigeria: The case or Rice note 2
  5. International Rice Congress on “Science, USAID – NESG (2005). Approaches on the technology and Trade for Peace Market
  6. Musa, Y.N., Reuben J. and Magaji, I.Y. (2012). Problems associated with agricultural produce marketing in Nigeria: the experience of milled rice women marketers from southern Taraba State, Nigeria. *Research Journal of Agricultural and Environmental Management* Vol. 2(1), pp. 022-026.
  7. NPC (2006): National Population Census Facts sheet Issued 31<sup>st</sup> 2007B. 82, Jalingo Taraba State.
  8. Taraba State, Agricultural and Rural Development Programme (TADP, 2007) Annual Report on Marketing of Agricultural Commodities.
  9. [www.interreseaux.org/.../pdfNRDS\\_FINAL\\_National\\_rice\\_development\\_strategies\\_15/7/2012](http://www.interreseaux.org/.../pdfNRDS_FINAL_National_rice_development_strategies_15/7/2012) retrieved.
  10. [WWW.FAS/STAT/..pdfNBS](http://WWW.FAS/STAT/..pdfNBS) National bureau of statistics online 20/9/2012 retrieved 4.22 pm