

## ANALYSIS OF THE PROFITABILITY OF RICE MARKETING ENTERPRISES IN ENUGU STATE, NIGERIA.

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### ABSTRACT

The issues surrounding the marketing of local rice in Nigeria has continued to be of concern to stakeholders and policy makers. This study investigated the profitability of rice enterprises in Enugu State, Nigeria. Specifically, it estimated the profitability of rice marketing enterprises in the area and went further to identify factors that influence the profitability of rice enterprises. Multistage sampling procedure; consisting of random and purposive sampling techniques were employed in selecting the 84 respondents from the three agricultural zones in the State. Data were collected by means of questionnaire. The profitability index and return on investment were used to estimate the profitability of rice marketing in the area. He ordinary least squares multiple regression technique was used to estimate factors that influence the profitability of rice marketing in the area. The results show that the profitability of rice marketing in the area was 0.1942 while the rate of return on investment was 24.10%. Profitability of rice marketing in the area was significantly influenced by age of the marketer, marketing experience, transportation costs, other marketing costs and depreciation of capital assets. The study recommended the provision of good road infrastructure to enhance the evacuation of rice from the area of production to where it is sold. The study also advocated the use of modern marketing equipment by the marketers.

**Key words:** Profitability, Marketing, Rice, Enugu State.

### INTRODUCTION

The greatest challenge to the agricultural production in Nigeria is how to ensure increased food production and value addition of agricultural products. Agricultural Development focuses on credit and non-credit users to create a more effective, transformational approach that achieves poverty reduction and hunger alleviation for all, and also improves productivity between credit and non-credit users. (World Food Programme, 2017). The major agricultural products in Nigeria include cassava, corn, rice, millet, cocoa, groundnut, palm oil, rubber, sorghum, yam, and livestock (Aminu and Anono, 2012). Today, rice is the most important staple food and the most common cereal food crop in Nigeria (Akpokodjeet *al.*, 2001; NCRI, 2004). It is the main source of food energy and an important source of protein providing substantial amounts of the

recommended nutrient uptake of zinc and niacin. Rice consumption has risen tremendously since 1970 (10.3 per cent per annum), as a result of the accelerating population growth rate (2.8 per cent per annum) and increasing per capita consumption (7.3 per cent per annum) leading to an increase in domestic demand over domestic supply. In response to meeting the shortfall in the supply-demand gap. The Nigerian government earlier resorted to importation of milled rice. This situation has made Nigeria to become the largest importer of rice in Africa (Daramola, 2005). The situation remained so until 2016 when the present government banned the importation of rice in Nigeria. Despite the ban on rice importation, huge quantities of imported rice flood Nigerian markets and this has left locally produced brands merely struggling to survive with very few having any significant presence in some of the markets ([www.dailytrust.com.ng](http://www.dailytrust.com.ng), July 1, 2018). Care (2004) described marketing as a machine that directs production along the line most suited to the consumer requirement. Thus, production is limited by the extent of marketing. Where the local markets are too small to absorb the increased output of the farmers and the prospects for moving the local gluts to areas of scarcity are poor, then the producer incentives to production are likely to be dampened. Where the local market with poor absorptive capacity is the only outlet, the farmers will be constrained to make their production decision or plan with the local market in view. Ikisan (2004) highlighted the contributions of agriculture and food marketing towards an attempt to improve rural income in developing countries. According to him, the inequality of income between the rural and urban areas draws people away from agricultural production and places greater stress upon the infrastructure and social services of a country's towns and cities. Antonaci, Demeke and Vezzani (2014) also asserted that a guaranteed market for farmer's produce was a risk mitigating measure and a ready invitation to produce more. He further stressed that the marketing arrangement in a community must ensure that what was produced was sold or stored. Nigerian agriculture has been variously described as being characterized by low farm Income level, low levels of capacity to satisfy the food needs of the population and low productivity because primitive techniques of production are still being used by the farmers (Ohajiana, Onyenweaku, 2001). Consistently, farming in Nigeria is characterized by low level of

private capital investment and changing technology (Mbah, 2001, Nwaruet *al.*, 2004), resulting in low output and income.

Over the years, there has been a growing concern regarding the dwindling agricultural production in Nigeria. The poor performance of the agricultural sector has led to high food import bills, lingering food insecurity, escalating social vices and un-sustainability of the national resource base (Mbah, 2001). Lack of capacity for value addition and huge post harvest waste are challenges that farmers in the rural areas have to contend with.

As a result of this, the Nigerian Government both at the State and Federal levels have stepped up efforts to promote the local production and marketing of staples including rice through incentive schemes and programmes (Odunze, 2019). These agencies and programmes, such as Nigerian Agricultural Land Development Authority (NALDA) established in 1992, the Community Banks established in 1990, the Rice Production Stabilization Programme (RPSP) of 1988 and the various states' Grains Boards among others, were introduced to assist in the production, marketing and distribution of rice.

Considering the importance of rice to man and in national development, the Nigerian government as well as individuals have made several attempts to increase commercial rice enterprise but their efforts have been beset with a lot of constraints, such as infrastructural and marketing problems and very high and rising costs of labour and equipment. The marketing of any

commodity is a specialized technique and demands proper organization. The ever-increasing demand for rice products makes the marketing of rice a significant area to investigate. This study therefore seeks to investigate rice marketing in Enugu State, Nigeria. It specifically looked at i. the socioeconomic characteristics of rice marketers; ii. their return on investment; and iv. the factors that influence marketing net return in the area.

**METHODOLOGY**

The study was carried out in Enugu State of Nigeria. Enugu State is located in the Sout-east geopolitical zone of Nigeria. The State is located within the following geographical coordinates: - 5<sup>0</sup>56'N to 7<sup>0</sup>06N, and 6<sup>0</sup>53' to 7<sup>0</sup>55'E. Enugu State is bounded on the east by Cross River State, on the north by Benue and Kogi States, on the south by Abia State and Imo State on the west by Anambra State and North-East by Ebonyi State. It occupies an area of about 8,022.95km<sup>2</sup> (Ezike, 1998) and has a population of about 3,257,298 (NPC, 2006).

Occupation of the people is predominantly farming and specialized most in the production of yam, cocoa yam, cassava and maize and Cattle, Poultry Sheep and Goat which are mostly carried out in small scale.

Enugu State has 17 Local Government Area (LGA) which are divided into three agricultural zones. The agricultural zones, Local Government Areas and communities where rice is produced in Enugu State are as shown below:

Zones	Local Government Area	Communities
Nsukka	Uzo-Uwani	Adani, Opanda and Umulokpu
	Isi-Uzo	Eha-Amufu
Awgu	Aninri	Nnenwe, Idiabor and Oduma
	Nkanu East	Amagunze, Owo
	Nkanu West	Ugbawka, Nkerefi, Nome
	Orji River	Ugwuoba
Enugu	Ezeagu	Olo

Source: Department of International Development (DFID). 2003.

The study was carried out in the three agricultural zones of the state. The population of this study is the rice farmers in Enugu State. This population is made up of rice farmers in the three agricultural zones namely Zones A, B and C. A multi-stage sampling procedure was adopted for this study. At the first stage, purposive sampling was used to select one Local Government Area each from the three agricultural zones of Enugu State based on intensification of rice production and marketing, giving a total of three LGAs for the study. The second stage involved the purposive and proportionate selection of seven markets from the three Local Government Areas earlier selected based on the intensification of rice marketing activities as

follows: three markets each from Aninri and Uzo-Uwani LGAs and one market from Ezeagu. The third stage will be the random selection of 12 respondents from each of the markets earlier selected giving a total of 84 respondents for the study. Structured questionnaire and direct observations were the primary data collection instruments employed.

Descriptive statistics were used to describe the socioeconomics characteristics of the marketers. The profitability ratio and the return on investment were used to estimate the profitability of the marketers. The profitability ratio is given as:

$$Profitability\ of\ the\ markers = \frac{Net\ margin}{Total\ Revenue}$$

The return on investment is given as:

$$\text{Return on investment} = \frac{\text{Net margin}}{\text{Total cost}}$$

Where net margin = Total Revenue – Total Cost

The Ordinary Least Squares was used to estimate factors that influence the profitability of the rice marketers in the area. The model is specified as follows

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, X_{10}, X_{11})$$

Y = profitability (index)

X<sub>1</sub> = gender (Dummy; male =1, female = 0)

X<sub>2</sub> = age (years)

X<sub>3</sub> = marital status (Dummy variable; married =1, otherwise =0)

X<sub>4</sub> = household size (number of persons)

X<sub>5</sub> = level of education (number of years spent in school)

X<sub>6</sub> = marketing experience (Years)

X<sub>7</sub> = cost of transportation (Naira)

X<sub>8</sub> = other marketing Costs (Naira)

X<sub>9</sub> = selling price (Naira)

X<sub>10</sub> = income from marketing (Naira)

X<sub>11</sub> = depreciation of capital assets (Naira)

## RESULTS AND DISCUSSION

Socioeconomics characteristics of the rice marketers

The socioeconomic characteristics of the rice marketers are presented in Table 1.

The table shows the socio-economic characteristics of rice marketers in the study area is dominated by females. About 63% of the marketers were female. This result corroborates with the findings of Mohammed-Lawal, *et al.*, (2014) that marketing of rice is predominantly a female enterprise in Nigeria. 81.4% of the rice marketers were married individuals. It is believed that marital status is synonymous with large household as married individuals with children and dependents could increase family labour and thereby reducing the amount accrued for labour in the case of marketing the rice. This corroborates with the findings

of Amao, Adesiyon and Salako (2007) and Ibekwe *et al.*, (2012) were majority of the marketers were married.

The study found that 30% of the marketers had no formal education and 70% had attained some level of formal education. It implies that there are more educated individuals among the marketers. The high level of education among the marketers may reflect positively in their marketing activities as they will be better positioned to take advantage of marketing information and credit and grants which may be made available by government or other organizations. According to Asiegbu (2016), low literacy level could affect to a great extent the profitability of marketers. Age also has an important role to play in the profitability of rice due to very bulky nature. The result showed that 67.1% marketers were within the age range of 31- 40 years. The mean age of the marketers was 35.2 years. This indicates that majority of the marketers of rice in the area were within the economically active age bracket may be better endowed physically and financially to carry out their rice marketing functions.

Also, 72.9% of marketers had the household size of between 6 -10 years. The mean household size was about six persons. This result suggests that rice marketers have fairly large household sizes and are likely to have access to family labour readily which would therefore reduce the amount spent on labour used in performing marketing functions thereby increasing their profitability. The pressure that comes from feeding a large household may however be a detriment to their profitability. This result agrees with the findings of Oladejo *et al.*, (2014) and (Igboji, Anozie and Nneji, 2015).

53% of the rice marketers had marketing experience of 1-5 years. The mean marketing experience was 8.8. This is an indication that the marketers are fairly new entrants into rice marketing. Being majorly young and educated individuals, these marketers may be more equipped with better techniques and skills which would assist them in their marketing activities and enhance the profitability of their marketing enterprises.

**Table 1: socioeconomic characteristics of the rice marketers in the study area**

Socioeconomic characteristics	Frequency	Percentage
Male	26	37.1
Female	44	62.9
Total	70	100.0
Marital Status		
Single	13	18.6
Married	57	81.4
Total	70	100.0
Level of Education		
Non-formal	21	30
Primary Education	15	21.4
Secondary Education	5	7.1
Graduate Education	11	15.7
Post graduate	18	25.7
Total	70	100
Age (years)		
20-30	15	21.4
31-40	47	67.1
41-50	8	11.4
Total	70	100
Mean	35.2	
Household size (no. of persons)		
1-5	18	25.7
6-10	51	72.9
11-15	1	1.4
<b>Total</b>	<b>70</b>	<b>100</b>
Mean	6.08	
Marketing Experience (years)		
1-5	12	17
6-10	37	53
11-15	20	29
16-20	1	1
Total	70	100
Mean	8.8	

Source: Field survey, 2017.

### Profitability of Rice Marketers

The profitability indices and rate of return on investment on rice marketing was presented in Table 2. The values in the Table show that the marketers made an average net margin ₦56223.35. The profitability index for the marketers was 0.1942. This implies that for every one naira which accrued as earnings from rice marketing, 0.1942kobo was received as net margin by

the marketers. The rate of return on investment for the marketers was 24.10%. This means that for every one Naira investment made by the marketers, they got a return of 0.241kobo. This result shows that marketing of rice in the area is moderately profitable, the profitability index being less than 0.5. The return on investment of the marketers was also moderate.

**Table 2: Profitability of Rice Marketing**

Parameters	Values
Total Cost = TC	₦233,298.40
Total Revenue = TR	₦289,521.75
Net Margin = TR –TC	₦56,223.35
Profitability = NM/TR	19.42%
Return on Investment = NM/TC	24.10%

Source: Field Survey Data, 2017

### Factors influencing the profitability of Pooled rice marketing

The estimated regression results for the factors influencing the profitability of pooled rice marketing for the four functional forms is presented in Table 3.

The linear function was chosen as the lead equation based on the values of  $R^2$ , F-statistics and the a priori expectations. The coefficient of multiple determinations ( $R^2$ ) was 0.9675, indicating that 96.75 percent of the variations in profitability level of the rice marketers was explained by the explanatory variables. Also, the F-value of 59.6526 is significant at one percent level of probability indicating that all the explanatory variables jointly exerted significant influence on the level of profit in rice selling.

The result shows that among the eleven variables considered, six variables were found to be significantly affecting the profitability of rice marketing. The variables include: age, marketing experience, transport cost, other costs, selling price, and Depreciation.

The result from the rice wholesaling indicates that the coefficient on age is -9.9010 and has negative significant relationship with profitability at 1%, giving the implication that for a unit increase in the age of a marketer, profitability of herring marketing will decrease significantly. This finding is consistent with the *a priori* expectation. It is expected that increase in age of a marketer will reduce her ability to undertake most effectively her marketing functions some of which are quite strenuous and exerting..

The coefficient of marketing experience (1.0509) was positively signed and significant coefficient at one percent level of significance which indicates that marketers with more years of experience in rice marketing tend to achieve a higher output performance. This may be because they will most likely employ the skills and experience gathered in during the longer period in their marketing activities. The benefit of hindsight is essential especially in taking marketing decisions and this can only be got as a result of experience. This result agrees with the findings of

Sekumade and Toluwase (2014), who posited that agriculture involves a lot of risks and uncertainties; therefore to be competent enough to handle all the vagaries of agriculture, marketers must have stayed in the business for quite some time.

The coefficient of the selling price (3.2312) was positive and significant at one percent, this indicates that as the unit price per rice sold increases, the profitability of the rice marketing enterprise also increases. This is in consonance with a priori expectation. A higher selling price may most likely lead to the higher the revenue accruing to the marketer and hence higher net margin thereby increasing profitability.

The coefficient of transportation cost (-1.8976) was found to have a negative relationship with the level of profitability at 5 percent level of probability. This shows that a unit increase in transport cost will force profitability to reduce significantly. Rice is usually produced in remote rural areas with a dearth of good infrastructure including good roads. This makes the evacuation of the produce quite costly. Also, the bulky nature of the rice is a contributing factor to the high transportation cost associated with its movement from one point to another. The high transportation cost incurred by the marketers adversely affects their returns and dampens the profitability of their enterprise.

The coefficient of other marketing costs (-0.2398) showed a negative relationship with the level of profitability of rice marketing in the area and was significant at one percent. This is expected since every cost item deducts from the returns got from marketing. The coefficient of depreciation of capital assets (-3.089) was significant at one percent significant and exhibited a negative relationship with the profitability of rice marketing in the area. This may be an indication that the equipment used for marketing made be quite old and obsolete and hence causing more losses to the rice marketing enterprise.

**Table 3: Regression Result for the factors influencing profitability of rice marketing in the study area.**

Variables	Linear+	Semi-log	Exponential	Double-log
<b>Constant</b>	-6.7208 (-5.1766)	-437496.8452 (-0.8895)	11.0920 (18.8860)	-437496.8 (-0.8895)
<b>Sex</b>	-4.1609 (-1.3760)	-4392.615 (-0.4040)	-0.0027 (-0.0346)	-4392.615 (-0.4040)
<b>Age</b>	-9.9010 (-3.0362)***	-11989.3700 (-0.1633)	0.0067 (0.453740)	-11989.37 (-0.1634)
<b>Marital Status</b>	-9.430 (-0.4038)	5120.5840 (0.3671)	-0.0859 (-0.8081)	5120.584 (0.3670)
<b>Household Size</b>	-1.121 (-0.0271)	-15049.6365 (-1.0289)	0.01894 (1.0167)	-15049.63 (-1.0289)
<b>Level of Education</b>	7.561 (0.4660)	-29787.7423 (-2.8231)***	-0.01009 (-1.3802)	-29787.74 (-2.8231)
<b>Marketing Experience</b>	1.0509 (2.3700)**	-1359.103 (-0.0586)	-0.0337 (-1.6198)	-1359.103 (-0.0586)
<b>Transport Cost</b>	-1.8976 (-8.1329)***	17577.2800 (2.6469)***	-1.9965e-05 (-3.3484)***	17577.28 (2.6469)
<b>Other Costs</b>	-0.2398 (-6.6745)***	325890.4543 (2.3318)	-2.8612e-05 (-3.9878)***	325890.4 (2.3318)
<b>Selling Price</b>	3.2312 (4.4245)***	-21976.2609 (-0.5138)**	-6.9109e-05 (-2.1159)**	-21976.26 (-0.5139)
<b>Income from sells</b>	0.7867 (1.0854)	-228915.6900 (-1.7313)	2.2509e-05 (5.0119)***	-228915.6 (-1.7314)
<b>Depreciation</b>	-3.089 (-8.9913)***	-41771.4690 (-13.8000)***	-1.4498e-05 (-13.1371)***	-41771.46 (-13.8000)
<b>R-squared</b>	0.9675	0.8495	0.9210	0.849543
<b>Adjusted R-Squared</b>	0.9567	0.81433	0.9003	0.814330
<b>F-statistic</b>	59.6526	24.1252	44.549	24.1256

Source: Field Survey Data, 2017

\*\*\*. Correlation is significant at the 0.01 level (2-tailed).

\*\* . Correlation is significant at the 0.05 level (2-tailed).

### CONCLUSION AND RECOMMENDATION

The study established that rice marketing enterprises in the study area is dominated by females, and has moderate profitability. The profitability of rice marketing in the study area is also influenced by a combination of socioeconomic variables and marketing variables.

Based on the findings of the study the following recommendations are made:

- i. There is to improve on the provision of transportation facilities especially good roads so as to reduce the cost of transportation of rice.
- ii. Rice marketers may need to improve on their marketing equipment such that they contribute positively to the profitability of their marketing enterprise.
- iii. Younger people should be encouraged to venture into rice marketing seeing that it is a profitability venture.

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