Socio-Economic Analysis of Wholesale Rice Marketers in Abia State, Nigeria

N. M. Agwu and J. O. Ibeabuchi

***Abstract*—The study was on the socio-economic analysis of wholesale rice marketers in Abia State, Nigeria. The study described the socio-economic characteristics of the traders, determined the socio-economic factors that influenced profitability, ascertained the marketing margins, percentage sales receipts as well as the percentage total variable cost (structural efficiency) of the enterprise and made some policy recommendations based on the findings. A multi-stage sampling technique was used and administered strictly on the wholesalers who deal on local rice. Five markets were selected from each of the local government areas. After this, twenty traders were randomly selected from the already selected markets. In all, a total of 100 respondents were selected for the study. Descriptive statistics, multiple regression, marketing margin, percentage sales receipt as well as structural efficiency formulae were used in the analysis of the data. The result showed that majority of traders accounting for 54 percent had secondary school certificate. The result also showed that 74 percent of them had spent between 6 and 10 years in the business. Income, years of experience, educational attainment of the traders and sex of the traders were major determinants of profitability in the enterprise. Percentage sales receipts obtained were 11.43 percent while 1.33 percent was obtained as percentage total variable cost, indicating that the enterprise is structurally efficient. The study recommended that agencies involved in the building of roads should extend such to these localities where rice is produced. Also females should be empowered economically to go into the trade, given their profit levels in the enterprise.**

***Index Terms*—Profitability, rice, structural efficiency, wholesalers**

I. Introduction

Rice cultivation is of great antiquity. It is recorded as growing in China in about 2800 BC and in India not later than 1500 BC [1]. From a primary centre of diffusion, presumably in South East Asia, it has spread to nearly all tropical, sub tropical and warm temperature countries of the world. In Nigeria, rice is cultivated in virtually all of Nigeria's agro-ecological zones, from the man-grove and swamp environments in the coastal areas of the Niger Delta to the dry zones of the Sahel in the North [2].

By the year 2000, out of 25 million hectares of total land cultivated in Nigeria, about 6.4 percent (1.6 million hectares) were used for growing rice.

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At Nigeria's independence in 1960, rice was merely a festival food consumed mostly in affluent homes at Christmas and during other religious festivals. However, since the mid 1970s, rice consumption in Nigeria has risen tremendously [3].This is reflected in an annual per capita consumption of 3kg in 1960 to an average of 18kg in the 1980s, reaching 22kg between 1995 and 1999. It is estimated that total consumption as at 2000 stands at 4.4 million tonnes of milled rice with annual consumption per capita standing at 29kg. It is estimated to rise at 11 percent per annum [2], [3]. This increase is expected to be induced by income growth.

Nigeria food sector has been characterized by excess demand over supply due primarily to a high population growth rates of about 3 percent per annum; high rates of urbanization and rising per capita income and stimulated by both export revenue boom and wage increases.

Specifically, Nigeria's per capita consumption of rice has grown significantly at about 7.3 percent [5] .To bridge the gap; the federal government of Nigeria over the years has embarked on policies and incentives for the farmers to increase production. The most recent among them is the presidential initiative on rice inaugurated by the Olusegun Obasanjo's administration. The objective of the initiative was to increase rice production, improve milling quality, promote marketing to provide domestic rice for consumption and to reduce national rice importation, as well as to achieve 15 million metric tonnes of rice production from the 3 million hectares of consolidated farm lands by 2007 [4]. As beautiful as this may be, such may not be fully realizable, without proper marketing channels and activities.

Marketing of local rice according to [6] is divided into four stages with a change of product ownership occurring between each stage. The stages in successive order are 1) production through harvesting 2) movement from the farm to processing centres 3) movement of the milled rice from processing areas to urban consumption centres and finally 4) the wholesaling and retailing in urban centres. After the abolition of the marketing boards, private individuals were in full charge of marketing of locally producing rice. Association of market men and women exist in most urban markets [2].

The most significant characteristic of a sound marketing system lies in the distribution channel [7]. The marketing channels used by the farmers are not always performing at the same efficiency in terms of their returns (that is different channels have different returns). Socio-economic conditions, disorganized conditions of producers, nature of product, lack of infrastructural facilities, marketing complexity, etc, create obstacles against the use of efficient channels [7]. Using the efficient channels reduces 20.the distance between the farmer

and the final consumers thereby reducing middlemen's share in the channel that ultimately, increases farmer's share on the consumer's price [8]. In developing economies such as Nigeria, most farmers and agricultural commodity marketers do not exploit the potentials of their socio-economic characteristics optimally due to ignorance, unreliable data, amongst other inadequacies [9].

Hence, this study which is aimed at analyzing the socio-economic characteristics of wholesale local rice marketers in Abia State. This study will 1) describe the socio-economic characteristics of the marketers 2) determine the socio-economic variables that affect profitability of the marketers in the study area 3) ascertain the marketing margins, percentage sales receipts, percentage total variable costs (structural efficiency) of the marketers and 4) make policy recommendations based on the findings.

II. Research Methodology

A. Study area

The study was conducted in Abia State, Nigeria. Abia State was created on the 27th day of August, 1991 from the old Imo State, with its capital at Umuahia. The state lies between Longitude $04^0 40'$ and $06^0 14'$ North and Latitude $07^0 10'$ and $08^0 40'$ East. It is bounded by Imo State on the West, Ebonyi and Enugu State on the North, Cross Rivers and Akwa Ibom States on the East and Rivers State on the South [10]. The state has a land mass of about 6320 km^2 with a population of about 2, 33,999 persons [11]. The State is made up of 17 Local Government Areas. The climate is tropical with dry and rainy seasons. It has an annual rainfall of about 668 mm. A large proportion of the people are engaged in agriculture and they produce mostly yam, maize, cocoyam, rice, cashew, plantain and cassava.

B. Scope of the Study

This study was restricted to only wholesalers who deal on local rice in the state.

C. Selection of respondents

Purposive and multistage random sampling methods were used in the selection of the respondents. First five Local Government Areas – Aba North, Umuahia North, Umuahia South, Ikwuano and Bende Local Government Areas were selected. After this, one market from each of the already selected Local Government Areas was made. The markets are the Ngwa Road Market for Aba North, Umuahia main market popularly called Isigate for Umuahia North, Ahia Ukwu for Umuahia South, Ndi Oro market for Ikwuano and Afor Umuoche for Bende. This was followed by a random selection of twenty traders from each of the five markets. This came to 100 traders. These 100 respondents were then administered with questionnaire.

D. Method of Data Collection

The data were mainly from primary sources. These were obtained with the aid of questionnaire which was administered to the respondents (wholesalers). Ninety six (96) respondents returned their questionnaire correctly filled while 4 were not correctly filled and were discarded. Effectively 96 responses were used for the study.

E. Data Analysis

Objective 1) was realized by the use of descriptive statistics such as percentage, frequencies etc. Objective 2) was realized by multiple regression. Objective 3) and 4) were achieved by the use of marketing margin, structural efficiency formulae, percentage sales receipt and percentage total variable cost formulae respectively.

F. Model Specification

The model for the multiple regression is specified thus;

$Y = f(x_1, x_2, x_3, x_4, x_5, x_6, x_7\ e)$

Where: Y = Profitability

X_1 = Income (₦)

X_2 = Age of trader (years)

X_3 = Educational attainment (years)

X_4 = Household size (No. of persons)

X_5 = No of years in business (years)

X_6 = Marital status (dummy) (married 1; otherwise, 0).

X_7 = Sex male = 1; female 0 (dummy)

e = Stochastic error term

Four functional forms of the above model were tried viz, linear, semi-log, double log and exponential.

The explicit forms of the functional forms were as follows:

Linear function

$$Y = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6 + b_7x_7 + e$$

Semi Log function

$$Y = b_0 + b_1\text{Log}x_1 + b_2\text{Log}x_2 + b_3\text{Log}x_3 + b_4\text{Log}x_4 + b_5\text{Log}x_5 + b_6\text{Log}x_6 + b_7\text{Log}x_7 + e.$$

Double Log function

$$\text{Log}Y = b_0 + b_1\text{Log}x_1 + b_2\text{Log}x_2 + b_3\text{Log}x_3 + b_4\text{Log}x_4 + b_5\text{Log}x_5 + b_6\text{Log}x_6 + b_7\text{Log}x_7 + e.$$

Exponential function

$$\text{Log } Y = b_0 + b_1\text{Log}x_1 + b_2\text{Log}x_2 + b_3\text{Log}x_3 + b_4\text{Log}x_4 + b_5\text{Log}x_5 + b_6\text{Log}x_6 + b_7\text{Log}x_7 + e.$$

For the margin:

Marketing Margin (MM) = Selling Price (SP) – Purchase price (PP)

MM = SP – PP.

$$\text{Percentage sales receipt} = \frac{\text{margin}}{\text{Total sales receipt}} \times \frac{100}{1}$$

$$\text{Percentage total variable cost} = \frac{\text{Total variable cost}}{\text{Total sales receipt}} \times \frac{100}{1}$$

III. Results and Discussion

Majority of the respondents (83.3 percent) falls within the age range of 20 – 45 years. This means that the enterprise is dominated by the younger ones who are more active and stronger considering the bulky and heavy nature of the bags of rice the traders often carry in and out of their stalls. This requires strength. This result is consistent with [12] in a study with plantain marketers.

Table 1 below shows that females constitute majority of the respondents, having 54 percent while males involved in the enterprise were 45 percent. Previous studies like [13]-[15] had indicated that woman play active roles in the marketing of agricultural produce. The result of the present study therefore did not come as a surprise.

From the table, it shows that 59 percent of the respondents

were married. By implication, it means that majority of these wholesalers use this enterprise as a source of income which is used to assist their various families.

The result in Table 1 has also shown that 52 of the respondents accounting for about 54 percent had attended secondary school, while 42 percent had acquired tertiary education. However, only about 4 percent of the respondents attended primary school. This means that majority of the respondent can at least read and write.

The result indicate that majority of the respondents (74 percent) had spent between 6 – 10 years in business. 10 percent had stayed between 11 – 15 years a business. Nine percent had spent 1 – 5 years whereas 6 percent of the respondents had spent 16 years and above in business. By implication, the business seems to be a profitable one, since nobody will spend several years in an unprofitable enterprise. The respondents with the household size of between 1-5 accounted for 75 percent whereas those with 6-10 and 11 and above persons were 12.5 percent at per.

A. Socio-economic Determinants of Profitability among Wholesale Rice Marketers in Abia State.

Based on some econometric considerations such as number of significant variables, the F – ratio and the R^2 value, the linear functional form was selected as the lead equation.

As seen in the results on table 7 above, income, years, of experience of the traders, education attainment of the traders and sex which was dummied was significant in influencing profitability in the enterprise. Income was significance at 1 percent level of significance with a positive coefficient. This means that as the income of traders increases, their profitability also increase. Income leads to increase in volume or quantity traded and thus expansion of enterprise. This result is consistent with those of [16], [17], and [18]. The coefficient of number of years of experience of the traders was also seen to be positive and significant at 10 percent level. This result means that as the number years in business increases, so also the profitability of the wholesalers will increase. Experience has been known to lead to perfection in activities. This resultantly manifests in increased knowledge of techniques or otherwise involved in any enterprise. The result of this present study is in line with a previous result obtained by [18] who stated that years of experience led to an increase in the quantity of maize processed as well as improved their techniques. Educational attainment and sex of the respondents significant at 5 percent level but had a negative coefficient.

This means that educational attainment is negatively correlated to the traders' profitability. Given the fact that sex had a negative sign, it then means that females who are in the enterprise made more profit than their male counterparts. The R^2 was 0.826 meaning that 82.6 percent of the variability in the model was explained; while the F-ratio was 59.075.

B. Determination of Marketing Margin and Structural Efficiency of Rice Enterprise in Abia State.

Marketing margin (MM) = selling price (SP) – purchase price (PP) MM = SP – PP

- Average cost of purchase per bag ₦6200.00
  Average number of bags bought per month = ₦1630
  Total amount ₦10, 106,000.00
- Average selling price per bag ₦7,000.00
  Average number of bags sold/month 1630
  Total amount ₦11, 410,000.00
  MM = Marketing margin
  Sp = selling price
  Mm = Sp - Pp

MM = (₦11, 410,000.00 – ₦10, 106,000.00)
= ₦1, 304,000.00

Marketing cost

Transportation = ₦32, 569.50
Storage cost/rent = ₦26, 563.00
Loading = ₦20, 634.00
Off loading = ₦10, 217.00
Association dues = ₦10, 115.00
Sanitation rate = ₦4, 730.00
Cost of bags = ₦47, 54.00
Total = ₦152, 368.50

$$\text{Percent sales receipt} = \frac{\text{Margin}}{\text{Total sales receipt}} \times \frac{100}{1}$$

$$= \frac{1{,}304{,}000{,}00}{11{,}410{,}000{,}00} \times \frac{100}{1} = 11.43\%$$

Percentage Total Variable cost =

$$\frac{\text{Total variable cost}}{\text{Total sales receipt}} \times \frac{100}{1} = \frac{152{,}368.50}{11{,}410{,}000{,}00} \times \frac{100}{1} = 1.33\%$$

Given the 11.43 percent for the percentage sales receipt and 1.33 percent for the percentage total variable costs, implies that the enterprise is structurally efficient. According to Ahmed and Rustagi (1985); Ike and Chukwuji, (2005), very high percentage margin indicates inefficiency because a high cost is incurred in the provision of marketing services. This shows that the enterprise is trying to excel considering the cost incurred in the business.

IV. Conclusion

This paper looked into the socio-economic analysis of wholesale rice markers in Abia state as it affects their margins, percentage sales receipts and percentage total variable cost as well as the determinants of their profitability. Going by the results, it is suggested that agencies involved in the building of roads should extend such to the localities where rice is produced. This will help reduce the transportation cost which translates in reducing the marketing costs on the wholesaler. Efforts should be made to educate the populace on the need to patronize locally produced rice as against the imported (foreign) rice. This will lead to sustained production, creation of employment and more income for traders. Furthermore, given that females engaged in the enterprise seem to make more profits than their male counterparts, females should be encouraged to go into the trade. Women coming together to form associations and cooperatives will go a long way in raising the required funds to start business.

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