

CHARACTERIZATION OF MARKETING SYSTEM FOR LOCAL RICE IN NIGERIA

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Abstract

This study exploited the data collected in Kaduna and Ogun states in 2010 to characterize the marketing system for local rice in Nigeria. Summary of major findings showed the degree of product specialization is very low as rice traders also specialized in the sale of other agricultural products. Similarly, the degree of product differentiation is low as some of the marketers do sell mixture of whole and broken rice in addition to selling different rice varieties. The degree of price differentiation is relatively high as this appears to be the only factors in differentiating among the various varieties of local rice in market. There are no entry and exit barrier to local rice trade and marketing in Nigeria. Grading and Standardization still remained a critical problem among local rice marketers in Nigeria and not much is being done to improve on packaging of the commodities. Analysis of market concentration showed that Nigerian local rice market seems to be dominated by retailers and in terms of volume of trade, the market is being controlled by 21% of the local rice marketers. Critical factors constraining the development of the local rice market are low capital base, problem of credit recovery, high cost of transportation, lack of storage facilities and inadequate supply of the product.

Key words: Market system, Local rice, Grading and standardization

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Introduction

Rice research in West Africa has up to now mainly emphasized the generation of pre-harvest yield enhancing technologies in the form of improved varieties, optimal fertilizer and water usage, and improved crop and pest management practices. Little attention has been given to improved harvest and post-harvest rice handling practices and processing technologies. Yet, such improved handling practices and technologies can significantly increase overall rice productivity by reducing rice paddy and grain loss due to poor harvest and rice processing technologies (Wang and Luh, 1991; Hosokawa, 1995). Losses due to late and poor harvesting of the paddy have been estimated at an average of 31% of pre-harvest paddy production in Mauritania (AGETA, 2000). Further losses are incurred with inadequate drying, storage and milling practices.

Also, little attention has been paid to improving the processing and marketing of locally produced rice. In general, there is a significant grain quality gap between locally produced rice and imported rice. The locally produced rice that is sold in West African Markets tends to be made up of broken and whole grain rice of different varieties, sizes and colour. It is also usually mixed with weed seeds, stones, sand and insect residues. Most rice producing West African countries have industrial and semi-industrial rice milling operations that can produce rice with a grain quality similar to that of imported

rice. Small scale de-husking and milling machines that can produce good quality rice grains are also found in many rice-growing communities. The problem seems, however, to lie in the quality of the paddy rice delivered to rice millers (SAED, 2000; Kergna and Coulibaly, 2001).

The quality of rice paddy may not be an important issue as long as it is de-husked and milled by farmers for their own consumption or for sale to rice-deficient farmers who are used to the low quality standards. In fact, some farmers prefer their lower quality rice, which they find to be more nutritious and filling. However, non-farming rice consumers, especially those living in urban areas, are very sensitive to the poor grain quality of locally produced rice.

The characterization of the post harvest was copiously dealt with in the Nigerian Rice Sector study conducted by WARDA in collaboration with NISER between 2002 and 2003. Attempt was also made to examine the consumer preference and marketing distribution chain for imported rice. Therefore, the current study is to complement the existing studies by characterizing the different agents and marketing chain for paddy and local rice in Nigeria.

Objectives of the Study

The broad objective of this study is to characterize the different agent and paddy/rice marketing chains from farmer's field to the consumers' plate. The specific objectives are to:

- 1) Characterize the rice market and marketing system for local rice in Nigeria;
- 2) Trace the marketing channel for local rice in the country; and
- 3) Come up with suggestions for the improvement of the marketing system for local rice in the country.

Conceptual Definitions and Literature Review

Conceptual Definitions

For the ease of analysis, a brief description of some of the relevant concepts used in this study is hereby defined. Some of the defined concepts include marketing, marketing channels, market institutions and market concentration. Marketing is defined as the process of planning and executing the concept, pricing, promotion and distribution of ideals, products and services to create exchange that will satisfy the needs of individuals and organization. Rice marketing is the performance of all business activities in the flow of paddy and milled rice from the point of initial production until they bare in the hands of the final consumers at the right place, the right time, and as convenient as possible, at a profit margin so as to keep the farmers and marketers in business (Iheme, 1996).

Marketing Channel is simply the path of a commodity from its raw form to the finished form or the path of a product as it moves from the producers to the final consumers. Market Institutions are the different middlemen and organizations involved in marketing. The middlemen are the link between producers and consumers. These middlemen are private individuals who perform the various marketing functions involved in the purchase and sales of goods as they are moved from producers to the consumers. They are classified into the assemblers, commission agents, wholesalers

and retailers. Market Concentration is a function of the number of firms and their respective shares of total production in a market. It is a criterion that can be used to rank order various distributions of firms' shares of total production in the market. Commonly used market concentration measures are Market Concentration Ratio (CR), Herfindahl-Hirschman Index (HHI) and Hannah-Kay (1971). The concentration ratio (CR_n) is defined as the market share of the n largest undertakings competing in the market.

$$CR = \sum_{i=1}^n X_i$$

CR_n = concentration ratio for n largest undertakings competing in a certain market.

X_i = market shares of the undertakings.

Note: An undertaking is presumed to be dominant if it has a market share of at least one third. A number of undertakings is presumed to be dominant if it

1. consists of three or fewer undertakings reaching a combined market share of 50% or
2. consists of five or fewer undertakings reaching a combined market share of two third.

Herfindahl-Hirschman Index (HHI) is another widely accepted indicator for market concentration which takes into account the relative size and distribution of the companies in a market. Squaring the market share of each firm competing in the market and then summing the resulting numbers calculate it.

$$HHI = \sum_{i=1}^m X_i^2$$

HHI = Herfindahl-Hirschman Index

X_i = Market shares of the undertakings

m = number of undertakings competing in a certain market.

Methodology

Data Collection and Analysis

This study was conducted in Kaduna and Ogun states. From each state, two NERICA producing Local Governments (LGAs) were selected and two markets were selected from each LGA. Thus, a total of 8 markets were selected from the two states. From each market, a sample of 5 local rice marketers was randomly selected making a total sample of 40 marketers from the two states. Aside, other stakeholders such as rice farmer association, miller associations were also interviewed. In-depth interviews were also conducted for representative of the rice wholesalers and retailers in each state and the officials of the respective state ADPs. The analytical technique was mainly descriptive and content analysis with the use of some inferential statistics and the application of the Herfindahl-Hirschman Index for the determination of market concentration.

Results and Discussions

Socio-Economic Characteristics of Rice Marketers in Nigeria

The socio-economic characteristics of rice marketers in Nigeria are as presented in table 1. The variables examined included sex of respondents, age of business, category of business, ownership of business, level of education of respondents and source of initial capital for their business. The table shows that Rice marketing in Nigeria is dominated by female as majority of the respondents (55%) were female while male accounted for 45%. Most of the marketers have long standing experience in the trade as the average age of business among the rice marketers in the two states was 11.5 years. This gives the marketers the opportunity to predict the market with some degree of accuracy. The results also show that local rice market in Nigeria is dominated by the retailers.

About 63% of the respondents are retailers while wholesalers accounted for 32%. The remaining 5% are semi-wholesaler. In terms of ownership, majority of the respondents (87.5%) are owners of their business while the remaining 12.5 claimed to be assisting the owners in the business. For those who are assisting the owners, 7.5% are daughters while 5% are sons of the owners of the business. Most of the respondents can read and write as about 73% had more than primary education. In fact, 12.5% of the respondents attended junior secondary school, 25% completed senior secondary school while 7.5% had university education. The major source of initial capital for the rice marketers in Nigeria is through personal savings as indicated by 67.5% of the respondents. About 30% sourced their initial capital through friends and relatives while only 2.5% acquired their initial capital through credit.

Table 1: Characteristics of Local Rice Marketers in Nigeria

Variables	Frequency distribution of respondents	Percentage distribution of respondents
Sex		
-Male	18	45
- Female	22	55
Average age of Business (yrs)	11.5	
Category of Business		
Wholesaler	13	32.5
Semi Wholesaler	2	5.0
Retailer	25	62.5
Ownership of Business		
Owner	35	87.5
Assistants	5	12.5
Level of education of respondents		
None		
Primary	3	7.5
Junior secondary	11	27.5
Senior secondary	5	12.5
University	10	25.0
Quranic	3	7.5
Others	7	17.5
	1	2.5
Source of initial capital		
Personal saving	27	67.5
Friends and relatives	12	30.0
Credit (loan)	1	2.5

Source: Field Survey, 2010

Characteristics of Local Rice Market in Nigeria

Degree of Product Specialization

In a developed market, sellers are expected to specialize on the sale of a particular product. In the case of rice marketing in Nigeria, majority of the local rice sellers also sell other products apart from rice as indicated by 75% of the respondents. Such products include vegetable oil, sugar, salts and other agricultural products. Even for those specialized in the sale of rice, they often sell different varieties including imported rice. In fact, about 60% of those who specialized in the sale of rice do sell imported rice. However, only 37.5% of the respondents also sell other food stuff as indicated in table 2.

Table 2: Characteristics of Local Rice Markets in Nigeria

Variables	Frequency distribution of respondents	Percentage distribution of respondents
Sell other things apart from rice		
Yes		
No	30	75.0
	10	25.0
Sell imported rice		
Yes	24	60.0
No	16	40.0
Sell other food stuff		
Yes	15	37.5
No	25	62.5
Average price of 50kgbag (N)		
Shinkafa Tuwo	2, 210	
Wazobia	2, 613	
Cap-rice	5, 233	

Source: Field Survey, 2010

Degree of Product Differentiations

Even though local rice market in Nigeria is characterized by low degree of product specialization, the degree of product differentiation has been very high among the rice marketers. The various variety of rice found in the market are differentiated by their sizes, colour and shape. So far, five different local varieties were identified in the two states where representative samples were drawn.

Degree of Price Differentiation

In fact, price differentiation is one of the ways by which local rice marketers differentiate between types of local rice and between local rice and imported rice. For example, while a 50 kg bag of Yar China cost N2210 in Kaduna state, the same measure of Yard as cost N2613 as compared with N5233 for cap rice of the same quantity. In terms of Entry and Exit Barrier, there are no entry and exist barriers to rice marketing in Nigeria. This, however, has rarely made it difficult to enforce quality control and standardization.

Marketing Functions and Costs

Grading and Standardization

A survey of local rice markets in the sample states revealed that rice grading is not a usual practice in Nigeria and as such, there are no standard measures for local rice in the country. Nigerian local rice marketers sell mainly parboiled rice with varying degree of quality and standard. For example, field survey revealed that while 92.5% of the respondents are selling whole rice, 7.5% do sell mixture of whole and broken rice. Currently in the country, the measures vary from states to state (Table 3).

Transportation of Local Rice

Local rice is transported from the processing centres to the market with the use of head, donkey, motor cycle and vehicles by road as reported by 92.5 % of the respondents. In terms of cost of transportation of local rice to the nearest local market, the average cost of transportation in Ogun state was found to be N50 per 50kg bag for an average distance of 35km. The same measure will cost N125 for an average distance of 30 km in Kaduna state. Hence, an average of N87.50 is required to transport a 50kg bag of local rice within the state through an average distance of 28.5km by road in Nigeria. Interstate transportation cost may, however, be higher.

Table 3: Marketing Functions and Costs

Variables	Frequency distribution of respondents	Percentage distribution of respondents
Grading and standardization		
Respondents selling whole rice	37	92.5
Respondents selling mixture of whole and broken rice	3	7.5
Transportation		
Average distance to the nearest market (km)	28.5	
Average cost of transportation (N)	87.5	
Storage		
Duration of storage		
No storing	3	7.5
Daily	1	2.5
Weekly	14	35.0
Monthly	22	55.0
Average quantity stored/month (kg)	4, 741	
Average monthly storage cost (N)	2, 180	
Packaging of Local Rice		
Average monthly quantity of rice package(kg)	2, 180	
Average monthly packaging cost	543	
Other Marketing Cost		
Average monthly security cost (N)	1, 280	
Average monthly maintenance cost (N)	400	
Average monthly tax payment (N)	430	
Average monthly cost of business location (N)	825	
Credit Facilities		
Credit sales	31	77.5
Credit buying	35	87.5
Extension of credit Facilities		
To consumers alone	24	60.0

To retailer alone	11	27.5
To both consumers and retailers	5	12.5

Source: Field Survey, 2010

Storage of Local Rice

Local rice is stored mostly on monthly basis in Nigeria by the local rice marketers as indicated by 55% of the respondents. However, in urban market where buying and selling activities are more pronounced, the duration of storage could be shorter and is usually on weekly basis as revealed by 35% of the respondents. Very few of the respondents (2.5%) do store on daily basis probably due to low volume of trade. For those who store on monthly basis, an average of 4,741kg of rice is stored per month by the marketers. This translates to an average of 85 bags for 50kg bag of rice per month. The total average monthly storage cost as indicated by the respondents was N2, 180 which translates to N27/50kgbag. Packaging of Local Rice Packaging and re-packaging is one of the marketing functions expected to be performed by marketers within a marketing system.

In the case of local rice marketing in Nigeria, little is being done by marketers in terms of packaging of the product. Apart from the 50 kg bag which appears to be the major packaging unit, no other packaging unit is adopted by the marketers. For ease of handling and transportation, one would have expected smaller unit such as 5 and 10 kg bags. From the field survey, an average of 2180kg is being re-packaged on monthly basis by the local rice marketers. A total monthly packaging cost of N543 is being incurred which represent an average of N10.50 per 50kg bag per month. Other marketing cost incurred by the local rice marketers in Nigeria include provision for security and supervision which cost an average of N1280 per month, maintenance cost which amounted to N400 per month, tax payment of N430 per month and cost of business location averaged N825 per month

Credit Facilities by Local Rice Marketers

Another major function often performs by local rice marketers is the extension of credit sales to their numerous customers. Available statistics from the field survey showed that 77.5% of the respondents demanded and obtained credit supply from their suppliers. Similarly, 87.5% of the respondents do allow buyers to buy from them on credit. For those who allow buyers to buy on credit, 60% extend such facility to consumers while 27.5% do extend it to retailers. The remaining 12.5% do extend such facility to both.

Market Integration and Marketing Channel for Milled Rice in Nigeria

Origin of Products

Available data from the field survey showed that 75% of the respondents sell local rice produced in their locality. In terms of specific place of purchase, 55% of the respondents buy from urban market, 17.5% from village market, and 12.5% from weekly market while the remaining 15% buy from other sources (including farm gate) as shown in Table 4.

Table 4: Market Integration

Variables	Frequency distribution of respondents	Percentage distribution of respondents
Origin of product		
Local rice	30	75.0
Imported rice	10	25.0
Place of purchase		
Urban market	22	55.0
Village market	7	17.5
Weekly market	5	12.5
Other sources (farm gate)	6	15.0

Source: Field Survey, 2010

Marketing Channel

The marketing channel for local rice is very similar in the two states under survey. Paddy move from the farm gate through the various agents to the rice millers. From the millers in the rural areas, milled rice enter the rural market through bulk buyers from where the assemblers gather them for on-ward transmission to the urban market. From the urban market, wholesalers pick it up and sell to retailers who in turn sell to the final consumers. Sometimes, local rice moves from the urban market through the state agent to the central market in other state. The generalized marketing channel for local rice in Nigeria is depicted in Figure 1.

Market Concentration

Nigerian local rice market seems to be dominated by retailers as indicated by 62.5% of the respondents. Almost one-third of the market is being controlled by the wholesalers while 5% is under the control of semi-wholesaler. In terms of buyer concentration, the consumers who buy for home consumption dominated the market as they accounted for 66.7% while other retailers and food vendors accounted for the remaining 33.3%

In terms of volume of trade, available statistics from the field survey revealed that about 36.8% of the respondents sold less than 6 bags of rice per month. About 42.1% sold between 6 and 20 bags per month while 21.1 % sold between 21 and 72 bags per month. The volume of trade has also been found to vary with the period of the harvesting season as average sales by local rice marketers in the last three months preceding the survey (October, 2007) showed a gradual decline from 710kg/month through 639kg/month to 453kg/month.

Table 5: Market Concentration

Variables	Frequency distribution of respondents	Percentage distribution of respondents
Retailers share of the market	25	62.5
Wholesalers share of the market	13	32.5
Semi-wholesalers share of the market	2	5.0
Final consumers share of the market	26	66.7
Other retailers and food vendors share of the market	14	33.3
Volume of trade		
Respondents selling < 6bags/month	14	36.8
Respondents selling between 6 and 20 bags/month	16	42.1

Respondents selling more than 20 bags/month	8	21.1
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Source: Field Survey, 2010

Marketing Constraints

A lot of factors are currently undermining the development of the local rice market in Nigeria. Some of these factors are endogenous while others are exogenous. Among the endogenous factors is low capital base as indicated by 35% of the respondents. Another critical endogenous factor is low credit recovery rate by the marketers whenever credit sale is advanced to their customers. This is attested to by 22.5% of the respondents. The exogenous factors include inadequate supply as reported by 12.5%, lack of storage facilities (12.5%) and high cost of transportation (12.5%). These problems can be solved by mobilizing personal savings, borrowing from bank, cooperative or group contributions, bulk purchase, pulling of resources together to buy in large quantities so as to enjoy economies of scale and through credit buying.

Conclusion

This study has revealed the level of under development of the local rice market in Nigeria. A lot needs to be done to improve on grading and standardization of the commodity while efforts needs to be devoted towards developing small size packaging materials for ease of handling and transportation. The opportunities and potentials to develop this market abounds deriving from the high literacy level of the marketers and the fact that they have already formed themselves into associations. These associations only need to be registered in order to mobilize them for this purpose and for them to benefit from group savings and loan facilities from banks.

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