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Structure, Conduct and Performance of Rice Marketing in Kebbi State, Nigeria

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The study was conducted in Kebbi State which were purposively selected due to its importance in rice production and marketing. The sampling method used was simple random sampling technique. The State was divided into four, according to Kebbi State Agricultural Development Project (ADP) zones, namely Argungu, Bunza, Yauri and Zuru Zones. The survey was employed in four ADP zones. Four sampled markets were selected using simple random sampling method among the available markets. The marketing information was randomly collected from the selected 40 producers, 40 consumers and 40 market participants (traders) in rice marketing respectively, making a total of 120 respondents. The result was analyzed using descriptive statistic and Gini coefficient. The Gini coefficient result shows that 0.59. Since the coefficient ids closer to one, the concentration of the market is relatively high, indicating the existence of the inefficiency of the market. The Conduct shows that 100% of the sampled traders agreed that the purchase price of rice is entirely dependent on demand and supply of rice market per day. It also shows that the purchase price of rice cannot be clearly identified until the final transaction took place.

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INTRODUCTION

Rice ranks second after wheat in cereal production the world over, but comes first as far as human consumption is concerned, as half of the world population depends entirely on rice (Grist, 1985; Lancon, Ereinstein, Akande, Titilola, Akpokodje, and Ogundele, 2001). Rice has become a food security crop as well as a cash crop in Nigeria. Accordingly, Nigerian Agricultural Extension and Research Liaison Services (NAERLS) (2014) observed that in Nigeria, rice employs over 15 million people in its value chain. Rice bran oil is used for cooking, soap making, carrier for insecticides and anti-corrosive and rust resistance. It is also used in the brewing industries. Rice straw is used as a source of fuel, the manufacture of straw board, for thatching and for making hats and mats (NAERLS, 2014).

The demand for rice in Nigeria has soared over the years. It is consumed across all income groups and production has however not kept pace with consumption. Nigeria is one of the major importers of rice in the world. Nigeria consumes more rice than it produces leading to significant imports over the years. Nigeria's rice consumption is expected to jump to 35 million metric tons by 2050. The widening domestic rice deficit is being met by importation as Nigeria is both the largest producer and consumer of rice in the West African sub-region (NAERLS, 2014). The crop is predominantly produced by small-holders. The area puts under its cultivation and production in 2010 was estimated at 2, 012, 740 ha which increased to 3, 095,900 ha in 2014. Similarly, the estimated output of rice increased from 4, 080, 940 metric tons in 2010 to 6, 734, 100 metric tons in 2014 (NAERLS, 2014).

Despite the many advantages of rice to consumers and producers, a major problem of rice production is the marketing system which is the link between production and consumption. Since Agricultural marketing involves all those legal, physical and economic services that make it possible for products to get to consumers in the form desired by consumers, at the place desired by the consumers and at the price agreeable to producers and consumers for effecting a change of ownership/possession. This then means that agricultural marketing involves the creation of utilities of form, place, time, and possession. At a time the federal government is working on diversifying the country's economy towards agriculture and other sustainable sectors due to dwindling prices of oil in the whole world, it is envisaged that with the twenty billion naira loan targeted to rice farmers across the country for rice production, it is hoped that the government would look in the direction of rice marketing in order to stimulate the value chain addition if the government is to get its policy of rice production on sound footing.

Marketing is one of the greatest restraint in Agricultural sector in Nigeria; some marketing problems have seriously hampered the efficiency of the marketing system. In a part of the world where malnutrition is a major problem, there is the need to seek ways of improving the marketing system for rice, thus making it available throughout the year with little variation in prices. The producers will be sure of selling all they can produce while the consumer is sure to get what he wants throughout the year.

The market for most agricultural products in developing countries, particularly Nigeria is not specialized and their value chain is underdeveloped. The price of rice is cheap at the time of harvest and increases during the periods of scarcity. Bearing in mind that small scale farmers in Nigeria are faced with the problem of little resource endowment, leading them to sale all their products during harvest and left with little or none reserved for future purposes. Since marketing agencies are a crop of powerful and organized wholesalers and or retailers who have formed themselves into a strong cartel, they thus dictate the price at the farm gate and also create an artificial glut by withdrawing from the purchase of rice for some time, thereby forcing farmers into panicking disposal of their products at ridiculously low prices. This affects the margin that accrues to the farmers, thus contemplating withdrawing from the production with dire consequences to the nation's economy.

Faced with this kind of scenario, empirical analysis of rice marketing to ensure that the marketing system is made more efficient is a step in the right direction, since the structure and conduct of a market determines its performance, it is important to study the problems associated with the structure, conduct and performance of rice marketing in Kebbi State with a view to offer solutions on how rice marketing could be more efficient. This study, therefore, seeks to find out ways of improving the marketing system for rice in the study area through empirical analysis and answering the following research questions:

1. What are the socioeconomic characteristics of rice sellers?
2. In what forms do traders market rice?
3. What is the structure of rice marketing?
4. How is the conduct of rice marketing?
5. How profitable is rice marketing?
6. What are the marketing margins and efficiency of rice marketing?
7. What are the marketing channels for rice marketing?
8. What are the constraints to rice marketing?

The broad objective of the study is to examine the structure, conduct and performance of rice marketing in Kebbi State, Nigeria.
The specific objectives are to:

1. Identify the socioeconomic characteristics of rice sellers in the study area,
2. Identify the different forms that traders market rice in the study area,
3. Examine the structure of rice marketing in the study area,
4. Describe the conduct of rice marketing in the study area,
5. Determine the costs and returns of rice marketing in the study area,
6. Determine the marketing margins and efficiency of rice marketing in the study area,
7. Describe the marketing channels for rice marketing in the study area,
8. Identify the constraints involved in rice marketing in the study area.

The efficiency of the marketing system or lack of it has tremendous implications on the future of rice production. If the independent farmer does not have a competitive market price for his product after production or a method to manage his price risk, he will be forced into a contractual situation. This has a

tendency to affect investment decisions in rice production, especially now that the government is focusing on increasing rice product

LITERATURE REVIEW

The Structure, Conduct and Performance Theoretical Framework

The structure, conduct and performance (SCP) framework was made popular by the industrial organization economists. The SCP approach was developed in the United States as a tool to analyze the market organization of industrial sector and it was later applied to assess the agricultural system and the framework was to evaluate the performance of industries in the USA.

The basic assumption of this approach is that the performance of any market is the result of the conduct of participants, which in turn is determined by the market structure. A structure- conduct- performance causal relationship is assumed to exist even though the view of some analyst, the relationship could occur in the reverse direction. Performance- conduct- structure (Pickering, 1974; Olukosi*et al.*, 2005). The performance of a certain market or industry depends on the conduct of its sellers and buyers which, in turn, is strongly influenced by the structure of the relevant markets (Scarborough and Kydd, 1992; Abbott and Makeham 1990; Olukosi*et al.*, 2005). All the three parameters do not have unidirectional movement, but rather have an interdependent relationship. Hence, market structure does not only influence market performance, but also has an impact on market conduct. Furthermore, performance also affects the development of market structure and market conduct.

Market Structure

Market structure can be defined as those characteristics of the organization of the market which seem to influence strategically the nature of competition and pricing within the market These include – (a) the number and relative size of buyers and sellers in the market (b) the degree of product differentiation (c) the relative ease or difficulty with which buyers and sellers may enter into or out of the market(Olukosi*et al.*, 2005). Thus, from market structure perspective, in an efficient market there should be sufficient number of firms in an industry given the size of the overall market and the firms of appropriate size are needed to fully capture the economies of scale; there should be no barriers to entry to the market; and firms should have full market information. Competition plays a key role in harnessing the rivalry and the profit seeking of the market place in order that it may serve the public interest (Kohls and Uhl, 1985).

Market Conduct

Adekanye and Olayide (1988) defined Market conduct as the behavior of marketers with regard to their pricing and product policies, it refers to the behavior that firms pursue in adopting or adjusting the market in which they sell or buy, for example advertising, price fixing policies , predatory or exclusionary tactics etc. "Acceptable conduct" includes the aspects that there are enough firms in the market to create some uncertainty in the minds of firms' managers regarding whether price changes both up and down; firm manager will be followed by competitors; there is no unjustified price discrimination; there is no collusion among different firms, and there are no pricing or other matters (Wolday,1994). According to Abbott and

Makeham (1990) conduct refers to the market behavior of all firms. In what way do they compete? Are they looking for new techniques and do they apply them as practicable? Are they looking for new investment opportunities, or are they disinvesting and transferring funds elsewhere? It means the strategies of the actors operating in the market. The specified structural features of atomistic numbers, homogeneous product, and free entry and exit require a form of conduct such that each firm must operate as if in isolation. The market behavior of firms will determine whether or not they compete and whether they are acting innovatively to improve market efficiency. Informal association between even a small number of firms (collusion) can cause price distortions and seemingly independent firms can have joint ownership (subsidiaries) (Staal, 1995).

Market Performance

The Performance of the market is a reflection of the impact of structure and conduct on product price, costs and the volume and quality of output (Cramers and Jensen, 1982; Kohls and Uhl, 1985; Olukosi*et al.*, 2005). If the market structure in an industry resembles monopoly rather than pure competition, then one expects poor market performance. (Cramers and Jensen, 1982;Olukosi*et al.*, 2005). In the assessment of how well the process of marketing is carried out, according to Abbott and Makeham (1990) performance is how successfully its aims are accomplished. Is produce assembled and delivered on time and without wastage? Is it well packaged and presented attractively? Is the quality, reliable and are contract kept? Is the consumption of the products, increasing and sales in competitive market expanding? These are such many practical

indications of how well a certain marketing system is operating. Market performance can be measured by marketing costs, efficiency and margins.

METHODOLOGY

The study will be carried out in Kebbi State, Nigeria. The choice of Kebbi State is based on the fact that it is one of the major states involved in both rice production and marketing. Kebbi State is located in the northwestern part of Nigeria and occupies a land area of about 36,229 square kilometers with a population of about 3,351,831 (NPC, 2006). Projecting this population to 2017, the state has a population of about 3,998,067 square kilometers. The State lies between latitudes 10° 05[1] and 13° 27[1]N of the equator and between longitudes 3° 35[1] and 6° 03[1]E of the Greenwich. This area is characteristic of Sudan savannah sub-ecological zone with distinct wet and dry seasons. Soils are ferruginous on sandy parent materials evolving from sedentary weathering of sandstones. Over two- third of the population are engaged in agricultural production, mainly arable crop alongside cash crops with animal husbandry. The major crops cultivated include sorghum, millet, maize, cowpea, sweet potato, rice, vegetables and fruits. Cash crops grown here include soybeans, wheat, ginger, sugarcane, tobacco and Gum Arabic.

Sampling Design and Data Collection

The study was conducted in Kebbi State which were purposively selected due to its importance in rice production and marketing. The sampling method used was simple random sampling technique. The State was divided into four, according to Kebbi State Agricultural Development Project (ADP) zones, namely Argungu, Bunza, Yauri and Zuru Zones. The

survey was employed in four ADP zones. Four sampled markets were selected using simple random sampling method among the available markets. The marketing information was randomly collected from the selected 40 producers, 40 consumers and 40 market participants (traders) in rice marketing respectively, making a total of 120 respondents.

Primary data were generated for this study through a farm marketing survey using cost route approach. The primary data were collected from both rice retailers/wholesalers and rice farmers through the use of pre- tested and well trained ADP enumerators under the supervision of the researchers. The household socioeconomic characteristics, time of sale, how rice is sold, to whom is sold, size of purchase, marketing charges, handling charges, involvement of marketing associations, marketing strategies, marketing costs such as transport, storage etc., volume of sales and input-output data were constituted of the bulk of the data collected.

Analytical technique

The following tools of analysis will be used in the study; **Descriptive statistics** to measure frequencies, percentages, ranking etc.,**Gini Coefficient,** Farm budgetary technique: G**ross margin analysis,** will be estimated per rice marketer.

Gini-Coefficient and Lorenz curve

The Gin coefficient was used along with Lorenz curve to measure the level of marketer's concentration. This will determine the degree of competition or monopoly in the market.

The Gini coefficient (G) is given as:

G = 1 -$\sum$XY--- (2)

Where

G = Value of the Gini coefficient

X = Percentage of rice marketers

Y = Cumulative percentage of the marketer's sales income

$\sum$ = Summation sign

The G has a possibility of values ranging from 0 to 1 expressing the extent to which the market is concentrated. The values of G equals to 1 when there is a perfect monopoly in the market. The G equals to 0 when there is perfect competition in the market. The value of Gini coefficient is the same as the ratio of the area between the Lorenz curve and the 45^0 line to the total area below the line. Accordingly, when there is perfect competition in the market, the curve coincides with the 45^0line. The further away the curve is from the 45^0line the greater the level of concentration in the market.

Gini-Coefficients are aggregate inequality measures and can vary anywhere from zero (perfect equality) to one (perfect inequality). In actual fact, the Gini-Coefficient with highly unequal distributions typically lies between 0.50 and 0.70, while with the relatively equitable distribution; it is on the order of 0.20 to 0.35.

RESULTS AND DISCUSSION

Market Structure of the Rice Marketing

The Gini coefficient was used to determine the market structure of the rice marketing. The market structure analysis for wholesalers and retailers reveals a Gini coefficient of 0.59 in table 1. Since the coefficients are closer to one, the concentration of the market is relatively high, indicating the existence of inefficiency in the market structure. The research further revealed that access to information was limited as traders had inadequate information about the availability of rice with little information regarding the pricing. Also, price

discrimination prevailed in the market as rice was sold at different prices to different consumers in various parts of the market due to inadequate information by consumers, even though there exist free entry and exit in the market.

Table 1: Market Structure of the Rice Marketing

Annual sales N	Number	Proportion (X)	Cum Prop	Annual sales N	Proportion of cum. Total sales (Y)	XY
Retailers/whole sellers						
<10,000	18	0.45	0.45	155013	0.17	0.07
10,000-30,000	13	0.32	0.77	278088	0.40	0.23
>30,000	9	0.22	0.99	464100	0.52	0.11
Total=	40			891201		
GC= 1-£XY	GC=1-0.41=0.59					

Sources; Field Survey, 2017.

Conduct of Traders in Rice Marketing System

Market conduct refers to the exchange practice and pricing behavior of the marketing firms that make up the industry to examine the influence of the existing market structure on the market conduct and the bargaining power of marketing actors in the marketing system. Here in this analysis the market conduct of firms in the subsector has been analyzed using information like selling and buying behaviors and price setting strategy of sample traders. Furthermore, type of exchange used, supply, demand, and price trend forecast, information and quality specification, timing and means of exchange and response to the anticipated changing environment.

Almost 100% of the sample traders agreed that the purchase price of rice is entirely dependent on demand and supply of rice in the market day. All sample traders also confirm that the purchase price of rice cannot be clearly identified until the final transaction took place. The selling price of rice is set by a combination of buyers, negotiation and also demand and supply balance of rice in the market. Provision of better price than others and use of strong negotiation word power and various combinations of these two strategies are applied by most rice traders to attract buyers and sellers. All sample respondents transact their rice on cash payment bases in all sample markets (100%) at the time of transaction.

Table 2: Buying, Selling and Pricing Strategy of Rice Traders in Sample Markets

Marketing strategy	Marketing behavior of Traders	Marketplace (Study area)	%
Who set the purchase price of rice in 2017?	Buyer	37	92.5
	Seller	3	7.5
How is the purchase price set?	Demand & supply	38	95

	Negotiation	2	5
Time of purchasing price of rice set	At the time of Purchase	40	100
Who decide your rice Selling price?	Buyers	40	100
	Negotiation	0	0
How is your rice Selling price set?	Demand and supply	37	92.5
	Negotiation	3	7.5
How do you attract your Suppliers?	Provide better price	34	85
	Negotiation power	6	15
How do you attract your Buyers?	Provide better price	29	72.5
	Negotiation power	5	12.5
	Better price& negotiation	6	15
Type of payment	Cash	40	100
	Credit	0	0

Sources: Field Survey, 2017.

Performance of Rice Marketing System

 Marketing costs of traders

The marketing cost of rice trading is presented in Table 3. In rice trading the highest average marketing cost of various traders is registered by labor cost in all categories of traders that is 100 naira/rice bag. The next highest average marketing cost in rice trading is attributed to storage cost that is 100 naira/rice. The storage cost is due to long and theft in the course of the storage period. Loading and unloading costs, transportation costs are worthwhile to be mentioned as they have significant contribution to the transaction cost involved in rice trading, farmers and whole sellers incur the highest marketing cost in rice trading business accounting 100 and 500 per bag of rice. Higher marketing cost by actors in marketing channels reduces the relative competence of the marketing channel in the market chain.

Table 3: Marketing Cost of Rice Marketing System

Cost items	Frequency	Traders category Retailer/Whole seller/rice bag in Naira	Total per 2 market day
Transportation Cost	40	100	200
Storage loss Cost	40	100	200
Loading and unloading cost	40	200	400

Sources: Field Survey, 2017.

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