Economics of Marketing of Food Grains in South Western Nigeria

Kassim Adekunle Akanni*

Abstract: The marketing and distribution of food grains are characterized by a low level of efficiency and high marketing margins. This has caused high product prices and limited the accessibility of the commodities to numerous prospective consumers. The implication is chronic malnutrition in children and various degrees of manifestation of diseases in nursing mothers and adults. This study therefore treats the economics of marketing of food grains in South Western Nigeria with a view to addressing some of the militating factors in distribution chains. A total of 250 respondents were sampled for the study in the five states in the zone. A multistage sampling technique was used to gather the sample.

The marketing margin was highest for food grain marketers in Osun State, with N900.00 per 100 kg of maize. The least value of N433.00 per 100 kg was however recorded for marketers in Oyo State. The average marketing margin for food grain marketers in the region is N662.60 per 100 kg of maize. The average marketing margin for cowpea stood at N1 347.60, which is slightly higher than the least value of margin recorded for the marketers in Oyo State. Marketers in Ogun State recorded the least margin of N300.00 per 50 kg bag of polished rice. This is against the N550.00 margin recorded by the marketers in Ekiti State. The average marketing margin for the product in the region is N440.00, which is slightly lower than the marginal values in Osun, Ondo and Ekiti States. The mean marketing efficiency for maize in South Western Nigeria is 0.82. This is slightly lower than the average efficiency level for Oyo State (*i.e.* 0.90). For cowpea and polished rice, the mean marketing efficiency levels are 0.78 and 0.71, respectively. The levels of market concentration stood at 0.326, 0.369 and 0.4943 for the marketers of maize, cowpea and polished rice, respectively. The marketers of these commodities should be more evenly distributed over the marketing space, so that the level of marketing efficiency could improve. The bottlenecks created by the activities of middlemen in the distribution network should also be minimized, so that many households in the region can have access to the food grain products.

Keywords: food grains, marketing margin, marketing efficiency, concentration of marketers; South Western Nigeria.

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Economía de la comercialización de cereales en el suroeste de Nigeria

Resumen: La comercialización y la distribución de cereales se caracterizan por un bajo nivel de eficiencia y altos márgenes de mercadeo. Esto ha sido la causa de altos precios en los productos, y ha limitado el acceso de bienes básicos a numerosos consumidores prospectivos. Ello implica desnutrición crónica en niños, y distintos grados de manifestación de enfermedades en adultos y mujeres en lactancia. Este estudio, por consiguiente, trata la economía de la comercialización de cereales en Nigeria sudoccidental, con vistas a estudiar algunos de los factores militantes en las cadenas distributivas. Para el estudio se consiguió una muestra de 250 entrevistados en los cinco estados de la zona. Se usó una técnica de muestreo por multietapas para reunir la muestra.

El margen de comercialización más alto fue para los negociantes de cereales en el estado de Osun, con N900.00 por 100 kg de maíz. Sin embargo, el valor más bajo (de N433.00 por 100 kg) lo registraron los comerciantes del estado de Oyo. El margen de comercialización promedio para los negociantes de la región es de N662.60 por 100 kg de maíz. El margen de comercialización promedio para el frijol caupí estuvo a N1347.60, ligeramente más alto que el valor más bajo de margen, registrado por los comerciantes del estado de Oyo. Los negociantes del estado de Ogun registraron el margen más bajo, de N300.00 por saco de 50 kg de arroz blanco. Esto es en contraposición con el margen de N550.00 registrado por los comerciantes del estado de Ekiti. El margen de comercialización promedio para el producto en la región es N440.00, ligeramente menor que los valores marginales en los estados de Osun, Ondo y Ekiti. La media de eficiencia de comercialización para el maíz en Nigeria sudoccidental es 0.82. Esto es ligeramente menor que el nivel de eficiencia promedio para el estado de Oyo (*i.e.* 0.90). Para el frijol caupí y el arroz blanco, la media en los niveles de eficiencia de comercialización es 0.78 y 0.71, respectivamente. Los niveles de concentración de la comercialización estuvieron en 0.326, 0.369 y 0.4943 para los negociantes de maíz, frijol caupí y arroz blanco, respectivamente. Los comerciantes de estos bienes deberían estar más uniformemente distribuidos a lo largo del espacio de comercialización, para que el nivel de eficiencia del mercado pudiera mejorar. También deben minimizarse los cuellos de botella creados por las actividades de intermediarios en la cadena de distribución, para que muchos hogares de la región puedan tener acceso a los productos de cereales.

Palabras clave: cereales, margen de comercialización, eficiencia del mercado, concentración de comerciantes, Nigeria sudoccidental.

Introduction

The Nigerian agricultural sub-sector contributes more than 30 per cent of the total annual gross domestic product (GDP). It employs about 70 per cent of the labor force and provides over 80 per cent of the foods of the country (Adegboye, 2004). Though currently, the contribution of this sub-sector has dropped to about 32 per cent as a result of a shift of labor to industry (World Bank, 2007). World Development Report (1981),

showed that agricultural success generates domestic demand for industrial products, supplies cheap food to industrial workers and raw materials for agro-processing, and encourages labor-intensive industries in small towns and villages. Maize is an important cereal food crop in Nigeria; it is the second most common cereal food crop after rice. It ranks third in the world production of cereal crops. It is a major staple food grown in all parts of Nigeria, and has become an important item of diet for human beings and livestock. It provides energy and vitamins, and the negligible amount of protein output of maize has continued to increase in Nigeria. For example, in 1986 about 1 336 metric tonnes of maize were produced in Nigeria, while in 2003 about 7 019 metric tonnes were produced (CBN, 2003).

Cowpea is of vital importance to the livelihood of millions of people in West and Central Africa. From its production, rural families derive food, animal feeds and cash income. It provides nutritious grains and a rather cheap source of protein for both rural poor and urban consumers, In Nigeria, the production trend of cowpea shows a significant improvement with about 441 per cent increase in area planted and 410 per cent increase in yield from 1961 to 1995 (Ortiz, 1998). Cowpea provides the cheapest protein supplement to the urban and rural poor in Nigeria (Ayinde and Adejobi, 2002). The importance of rice to the national economy cannot be over emphasized as it has become a major staple food in Nigeria. Rice is one of the major cereals which have assumed cash crop status in Nigeria, especially in the areas of employment generation. Due to changing consumer preference for rice and its contribution to per calorie consumption of Nigerians, the demand for rice has been increasing at a rate much faster than domestic production, and more than in any other African countries since mid 1970 (FAO, 2003).

I. Research Problem

Fafchamps *et al.* (2003) noted that the major foodgrains (maize, cowpea and polished rice) constitute 80 to 90 per cent of the per calorie consumption of Nigerians. Low level of domestic production, poor storage facilities and inconsistent trade policies have been found to be largely responsible for insufficient market supply of these commodities (Onu and Illiyasu, 2008). The mean output levels for rice, sorghum, millet and maize, within the last ten years, stood at 3 758 000, 9 928 000, 7 360 000 and 9 342 000 tonnes, respectively. Similarly, the total land area under

cultivation, for the same period, stood at 2 341 125, 7 067 625, 4 803 250 and 3 513 750 hectares for rice, sorghum, millet and maize, respectively. In the same vein, the average producer prices for these cereals, in the last one decade, are N78 456.78, N50 727.93, N62 776.41 and N57 873.00 for rice, sorghum, millet and maize, respectively (FAO, 2008). The marketing channels for these crops are rather complex as there are often too many intermediaries in the marketing chains. This causes high marketing margins and declined levels of consumer satisfaction. It has however been argued (Adegeye and Dittoh, 1985; Adekanye, 1988) that a rather simple marketing channel is preferable for agricultural commodities as this elevates the degree of marketing efficiency and distribution of the commodities.

In general terms, marketing is concerned with all stages of operation, which aid the movement of commodities from the farms to the consumers. These stages include assembling of goods, transportation, processing, grading and financing of all these activities. Adegeye and Dittoh (1985) noted that agricultural marketing was an indication of consumer preferences through the prices they are prepared to pay. This in turn affects the production decision of farmers, as they are likely to produce crops which have high demand. This is of paramount importance to both farmers and markets, but also to policy makers. An efficient marketing system is therefore desired so as to properly stimulate the nation's economy. To assess the market performance and determine the market efficiency, there is the need to estimate the market margins of the intermediaries, such as wholesalers and retailers. Studies (Adekanye, 1988; Ikpi, 1981; Olayemi, 1998) have shown that the marketing margins are high for food crops in South Western Nigeria, as the prices paid by consumers are not commensurate with the level of satisfaction they derive from the consumption of these commodities.

Again, Asante (1993) noted that high transportation costs of farm produce from the farms to the market places occasioned by poor conditions of rural roads and poor storage facilities often lead to high market prices of foodgrains. These and many other factors hinder effective marketing of food grains.

The specific objective of this study is to assess the level of market concentration, efficiency and constraints to effective food grains marketing and distribution in South Western Nigeria. Findings from this study are expected to provide solutions to a series of challenges hindering effective marketing and distribution of food grains, and thus ensure

increased access of the commodities to many prospective consumers in the region.

II. Literature Review and Theoretical Framework

Olayinka and Aminu (2006) defined a market as an area over which buyers and sellers negotiate the exchange of a well-defined commodity. Markets exist whenever buyers and sellers can be in touch with one another (Adegeye and Dittoh, 1985). The most important factors for the existence of markets are that the goods to be sold must exist, there must be seller and buyer, and both must agree on a price. Marketing is often concerned with all the stages of operations which aid the movement of commodities from the farms to the final consumer. These activities include assemblage of goods, storage, transportation, processing, grading and financing of these activities. Marketing is an aspect of the production process which has enjoyed much attention over the years. It could also be defined as the process of planning and executing the concept, pricing, promoting and distribution of ideas, goods and services to create exchange that satisfies individual and organizational objectives.

Adeyanju (1997) is however of the opinion that marketing entails activities that are involved in the transfer of goods and services from producers to consumers. It can thus be viewed as the function that provides and directs all the business activities assessing and converting all consumers' purchasing power into product or service to the final users or consumers, so as to achieve the profit target or other objectives set by the marketer.

The term marketing efficiency refers to the efficient allocation of resources to achieve the greatest possible consumer satisfaction. Adegeye and Dittoh (1985) noted that factors that affect the efficiency of markets included market control, externalities and information. Market control refers to the structure, conduction and performance issues, while externalities such as pollution or education relate to the non-market price, incorporated costs and benefits and imperfect information to the access to and availability of market information such as price, supply, demand and quality information (Van Anrooy, 2003).

Technical efficiency measures the effectiveness or competence with which the physical aspects of marketing are performed. These physical aspects include storing, transportation and other activities meant to reduce waste and prevent deterioration in quality. Technical efficiency can

also be defined as the ability to achieve a higher level of output, given a similar level of production inputs (Ajani and Olayemi, 2000).

Economic efficiency refers to the realization of maximum output in money terms, or of a given output with the minimum resources. Economic efficiency combines technical and allocative efficiency. Pricing efficiency is concerned with how effectively price reflects the costs of moving the output through the marketing system. The ingredient for efficient marketing is consumer demand, which is accurately and quickly relayed back to the producer, and the resulting information on producer supply is relayed back to the consumer. Marketing and distribution services are provided at the minimum cost per unit, compatible with the kinds and quality of services required. Normally, the cost of marketing services will be reflected in the marketing margin, thereby enhancing innovation and flexibility so that market intermediaries are able to respond to new opportunities in terms of location or product quality, and the national objectives of marketing are assisted.

Marketing margins, consumer prices, availability of physical marketing facilities and market competition are indicators identified with marketing efficiency.

Marketing margin represents the difference in price paid to the first seller and that paid by the final buyer (Adegeye and Dittoh, 1985). The difference between the producer price and the final consumer price is a measure of the total value added in the marketing process. Marketing margins are mostly governed by the demand for, and supply of, marketing services. This margin can be measured in monetary terms. It can be expressed either in cash or as a percentage of the retail cost. Margins indicate the relative cost of marketing at a particular time.

The Gini coefficient model and the Lorenz curve estimates are often used to describe market structure. According to Dillion and Hardarker (1993), the Lorenz curve is obtained by plotting the cumulative proportion of the sellers from the smallest to the largest number against the cumulative proportion of their sales earnings. If the distribution is totally equitable, the curve will fall on the 45-degree line. The greater the inequality the larger the departure from the 45-degree line. The Gini coefficient is the measure of the proportion of the area between the curve and the 45-degree line. When the Gini coefficient is greater than 0.35, there is a high inequitable distribution and a higher coefficient, which means a higher level of concentration and, consequently, higher inefficiency in the market structure.

III. Methodology

III.1. Area of Study

The area of study is South Western Nigeria, comprising five (5) states, viz: Oyo, Ogun, Ondo, Osun and Ekiti. This is a predominantly agrarian region of the country and thus many of the inhabitants are farmers, while others are involved in various disciplines such as civil service, hunting, fishing, and local art works, among others. The average daily temperature is 26.5 degrees Celsius, while the average humidity is 80 per cent. The annual rainfall is usually between 1120-2000 mm, while the average air pressure is 1012 milibars.

III.2. Method of Data Collection

Primary data was collected from five (5) states in the South Western region of Nigeria with the aid of a structured questionnaire and personal interviews. A multi-stage sampling technique was used to collect the data. The sampled food grain marketers were identified through their various registered marketing unions/associations. The lists of these unions/associations are also available at the respective state's Ministry of Commerce, Industry and Cooperatives. Fifty (50) food grain marketers were randomly selected from the grain markets in each of the five states. All the samples were taken with due respect to the size of the respective markets and the population of the registered marketers. Thus, a total of 250 respondents were sampled for the study. Information was collected on their socio-economic characteristics, cost and selling prices, and market structures and efficiency, among others.

III.3. Method of Data Analysis

Both descriptive statistics and quantitative methods were used in the survey. Marketing margin, according to Kohls (1985), represents the difference between the price paid by the final buyer (consumer) and the price paid to the first seller (at farm gate).

$$\text{Marketing margin} = \text{Buyer's price} - \text{seller's price}$$

Marketing efficiency is the measure of the market performance. It is expressed like this:

Marketing efficiency, ME = $\dfrac{\text{Net margin}}{\text{Marketing cost}}$ X 100%

The net margin accruing to the wholesaler or the retailer is the difference between the marketing margin and the marketing cost. The marketing cost is the sum of transport costs, storage cost and other costs. If marketing efficiency = 1 (highly efficient), it implies that the market is said to be efficient. But when ME >1 (over efficient), it implies that abnormal profit is being made in the trade, and some elements are unduly reaping from the efforts of others. Again, when ME <1(under efficient) implies that a sizeable loss is being recorded in the trade. A moderate level of efficiency is also achieved.

The Gini coefficient estimates were used to analyze the level of concentration in food grain marketing. It is a measure of inequality of income. It was given as:

$$G = I - \sum (Fi + 1 - Fi)\,(Yi + 1 + Yi)$$

Where
Fi = proportion of food grain marketers in the ith food grain market.
$Fi + 1$ = proportion of food grain marketers in the next lower food grain market.
Yi = stock level/markets returns for food grain marketers in the ith food grain market.
$Yi + 1$ = stock level/market returns for food grain marketers in the next food grain market.

The Gini coefficient, which measures the degree of concentration, ranges from 0 to 1. A Gini coefficient of 0 implies perfect equality in distribution, while a Gini coefficient of 1 means perfect inequality. In practice, the actual value of the Gini coefficient lies between these two extremes. The estimate of Gini coefficient was done for the marketers of maize, cowpea and polished rice in different markets in the study area. Observed data was thereafter compared.

IV. Result and Discussion

IV.1. Analysis of Marketing Margin for Maize Across markets in South Western Nigeria

The marketing margin, which represents the difference between the buyers' price and the sellers' price, is shown in table 1.The marketing margin

Table 1. Marketing margin analysis for maize across markets

Markets	Unit of measure (kg)	Buyer's price (N̶)	Seller's price (N̶)	Market margin (N̶)
Oyo	100	7 683.00	7 250.00	433.00
Ogun	100	7 840.00	7 000.00	840.00
Osun	100	7 310.00	6 410.00	900.00
Ondo	100	7 450.00	7 000.00	450.00
Ekiti	100	7 600.00	6 910.00	690.00

Source: Field survey data (2010).

was highest for foodgrains marketers in Osun State with N900.00 per 100 kg of maize. The least value of N433.00 per 100 kg was however recorded for marketers in Oyo State. The average marketing margin for foodgrains marketers in the region is N662.60 per 100 kg of maize. Lower values of marketing margin are desirable as they imply higher levels of marketing efficiency among the marketers. Although there are variations between markets on the basis of the marketing services performed, farmers receive about half of retail prices of foodstuffs in Nigeria (Adeyokunnu, 1980). Thus, the lower the marketing margin the more efficient the market.

IV.2. Marketing Margin Analysis of Cowpea

Again, the value of market margin for cowpea across markets in South Western Nigeria was least for the markets in Oyo State and highest for the markets in Ekiti State (table 2). The average marketing margin for cowpea stood at N1 347.60, which is slightly higher than the least value of margin recorded for the marketers in Oyo State. The implication of this is that cowpea is most efficiently marketed in Oyo state than elsewhere in South Western Nigeria. It has often been observed that the interplay of series of marketing activities causes variations in the marketing margin among the marketers of food grains in the region. This is in line with the earlier position of Adeyokunnu (1980), who noted that factors responsible for high margins include multiplicity of traders, which leads to duplication of functions and the small scale of operation, inefficient processing, transportation bottlenecks and losses due to storage.

Table 2. Marketing margin analysis of cowpea across markets

States	Unit of measure (kg)	Buyer's price (N)	Seller's price (N)	Market margin (N)
Oyo	100	12 440.00	11 161.00	1 279.00
Ogun	100	12 130.00	10 790.00	1 340.00
Osun	100	12 300.00	10 939.00	1 361.00
Ondo	100	12 220.00	10 862.00	1 358.00
Ekiti	100	12 052.00	10 652.00	1 400.00

Source: Field survey data (2010).

IV.3. Analysis of Marketing Margin for Polished Rice

Marketers in Ogun State recorded the least margin of N300.00 per 50 kg bag of polished rice. This is against the N550.00 margin recorded by the marketers in Ekiti State. The average marketing margin for the product in the region is N440.00, which is slightly lower than the marginal values in Osun, Ondo and Ekiti States. A fairly moderate margin recorded in Ogun state may have been caused by the series of marketing activities involving polished rice and some other food items. This is occasioned by the geographical boundary location of the State with the Republic of Benin, which is noted for her popularity in polished rice trade in the West

Table 3. Analysis of marketing margin for polished rice

States	Unit of measure (kg)	Buyer's price (N)	Seller's price (N)	Market margin (N)
Oyo	50	7 300.00	6 900.00	400.00
Ogun	50	7 200.00	6 900.00	300.00
Osun	50	7 300.00	6 850.00	450.00
Ondo	50	7 400.00	6 900.00	500.00
Ekiti	50	7 500.00	6 950.00	550.00

Source: Field survey data (2010).

African sub-region. The marketing margin is used to estimate the value added by marketers in food grain marketing. Ahmed and Rustagi (1987) concluded that rice offers a relatively large share of the final value to producers, compared to other food grains.

IV.4. Level of Efficiency in the Marketing of foodgrains

Marketing efficiency is used to measure the market performance. Low market efficiency could be interpreted as an inefficient marketing system. However, according to Olukosi and Isitor (1990), market efficiency is a function of both pricing and operational efficiency. The mean marketing efficiency for maize in South Western Nigeria is 0.82. This is slightly lower than the average efficiency level for Oyo State (*i.e.* 0.90). For cowpea and polished rice, the mean marketing efficiency levels are 0.78 and 0.71, respectively (table 4). These values are slightly higher than the mean efficiency levels for Ondo and Ekiti States for the same period.

In Oyo State, polished rice had the least marketing efficiency value of 0.67, while cowpea had 0.98. For Ekiti State, the efficiency levels remained 0.63 and 0.58 for the two food grains, respectively. The implication of this is that cowpea and polished rice are more efficiently marketed in Oyo State than in Ekiti State, while polished rice is the most efficiently marketed food grain in Ogun State and, indeed, in the whole of South Western Nigeria. As a matter of concern for public policy there should be

Table 4. Marketing efficiency values for foodgrains

State	Marketing efficiency values		
	Maize	*Cowpea*	*Polished rice*
Oyo	0.90	0.98	0.67
Ogun	0.88	0.86	0.91
Osun	0.84	0.81	0.70
Ondo	0.78	0.66	0.65
Ekiti	0.69	0.58	0.63
Mean	0.82	0.78	0.71

Source: Field survey data (2010).

attempts by governments, corporate bodies and various stakeholders towards inducing more efficient resource allocation, modifying the environment and creating more infrastructure necessary for market expansion, technological progressiveness and cost reductions.

V. Market Concentration of Food Grains Marketers

V.1. Concentration of Maize Marketers

The degree of market concentration among food grain marketers was estimated by Gini coefficient (GC). This estimation was necessary because the marketers were observed to be unequally distributed in the markets of the region. Quite often, the level of concentration of the marketers of a particular commodity is determined, among other things, by the location and magnitude of the markets, and the associated marketing costs (Adeyokunnu, 1980). The estimated GC value for the maize marketers is thus shown in table 5.

Table 5. Concentration of maize grain marketers

A	B	C	D	E	F	G	H	I	J
0-20	90	60.0	60.0	4 040	0.60	49.5	49.5	0.495	0.297
21-40	35	23.3	83.3	3 325	0.233	40.7	90.2	0.902	0.210
41-60	25	16.7	100	800	0.167	9.8	100	1.00	0.167
Total	150	100		8 165	1.00	100			0.674

Source: Field survey data (2010). A = Class interval of quantities of maize marketed (bags). B = Number of marketers (No). C = Percentage of the total of marketers (%). D = Cumulative percentage of the total of marketers (%). E = Total quantities of maize transacted within the time of research (bags). F = Fraction of the total of marketers. G = Percentage of quantities of maize transacted (%). H = Cumulative percentage of quantities of maize transacted (%). I = Fraction of the total of quantities of maize transacted. J = Product of columns F and I; *i.e.* FI. Thus, the Gini coefficient (GC) value =1- FI = 1-0.674 = 0.326.

This was confirmed by the Lorenz curve in figure 1, which indicated that there existed a close distance between the line of equality and the constructed Lorenz curve for maize grain. The implication of this is that many marketers controlled a major share of the quantity transacted. This meant that there was equality in the distribution of maize grain among marketers.
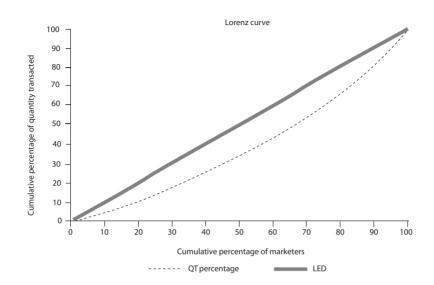
Figure 1. Lorenz curve showing concentration of maize grain marketers

Source: Field survey data (2010). QT = Quantity of marketers in maize grain trade. LED = Line of equality of marketers in the distribution chain.

V.2. Concentration of Cowpea Marketers

The degree of market concentration among cowpea marketers is estimated by Gini coefficient (table 6). The result of the analysis shows that the distribution of the cowpea marketers is perfectly equal. The Gini coefficient value is 0.369. It was shown that the cowpea markets were slightly concentrated in South Western Nigeria. This was confirmed by the Lorenz curve in figure 2, as there existed a close distance between the line of equality and the constructed Lorenz curve for cowpea. Thus, table 6 shows that the marketers of cowpea are fairly distributed in the South Western region of Nigeria.
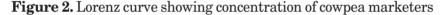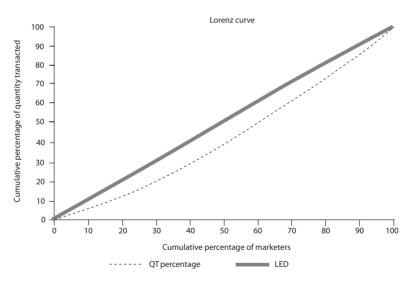
V.3. Concentration of Polished Rice Marketers

The Gini coefficient value is 0.494. It was shown that the Lorenz curve is a little further distant away from the line of equality, that is, the 45 degree line (table 7). This thus means that the marketers of polished

Table 6. Concentration of cowpea marketers

A	B	C	D	E	F	G	H	I	J
0-20	67	44.7	44.7	2 755	0.447	25.6	25.6	0.256	0.114
21-40	61	40.7	85.4	7 060	0.407	65.6	91.2	0.912	0.371
41-60	22	14.6	100.0	955	0.146	8.8	100	1.00	0.146
Total	150	100		10 770	1.00	100			0.631

Source: Field survey data, 2010. *A* = Class interval of quantities of cowpea marketed (bags). *B* = Number of marketers (No). *C* = Percentage of the total of marketers (%). *D* = Cumulative percentage of the total of marketers (%). *E* = Total quantities of cowpea transacted within the time of research (bags). *F* = Fraction of the total of marketers. *G* = Percentage of quantities of cowpea transacted (%). *H* = Cumulative percentage of quantities of cowpea transacted (%). *I* = Fraction of the total of quantities of cowpea transacted. *J* = Product of columns F and I; i.e. FI. Thus, the GC value = 1- FI = 1-0.631 = 0.369.

Figure 2. Lorenz curve showing concentration of cowpea marketers

Source: Field survey data, 2010. QT = Quantity of marketers in cowpea trade. LED = Line of equality of marketers in the distribution chain.
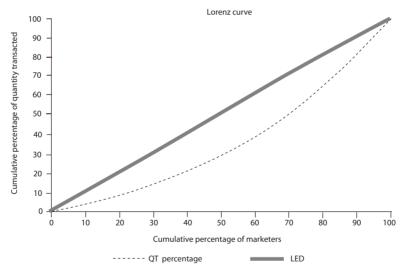
rice are not so concentrated within some particular trading zones in the region. This was confirmed by the shape of the Lorenz curve in figure 3, which indicated that there existed a close distance between the line of equality and the constructed Lorenz curve for the commodity. The

Table 7. Concentration of polished rice marketers

A	B	C	D	E	F	G	H	I	J
0-50	90	60	60	11 395	0.60	20.3	20.3	0.203	0.1218
51-100	35	23.3	83.3	40 850	0.233	72.8	93.1	0.931	0.2169
101-150	25	16.7	100	3 900	0.167	6.9	100	1.00	0.167
Total	150	100		56 145	1.00	100			0.5057

Source: Field survey data (2010). *A* = Class interval of quantities of polished rice marketed (bags). *B* = Number of marketers (No). *C* = Percentage of the total of marketers (%). *D* = Cumulative percentage of the total of marketers (%). *E* = Total quantities of polished rice transacted within the time of research (bags). *F* = Fraction of the total of marketers. *G* = Percentage of quantities of polished rice transacted (%). *H* = Cumulative percentage of quantities of polished rice transacted (%). *I* = Fraction of the Total of quantities of polished rice transacted. *J* = Product of columns F and I; i.e. FI. Thus, the GC value =1- FI = 1-0.5057 = 0.494.

Figure 3. Lorenz curve showing concentration of polished rice marketers

Source: Field survey data (2010). QT = Quantity of marketers in polished rice trade. LED = Line of equality of marketers in the distribution chain.

implication of this is that there was equality (or evenness) in the distribution of polished rice among marketers. This finding is of important concern to the policy makers on food grain marketing and distribution in the region. Tax offices and Federal offices charged with

the responsibilities of increasing the level of internally generated revenues may also find this information useful for planning purposes.

VI. Conclusion and recommendations

Effective marketing and distribution of food grains enhances the level of accessibility to the commodities among consumers (Olayemi, 1998). Again, increased concentration of grain marketers is expected to improve consumers' access to the commodities at reduced costs. This is in view of the fact that these food items are in limited supply to many prospective consumers due to a low level of marketing efficiency and associated transportation challenges. The marketing margin was highest for food grain marketers in Osun State, with N900.00 per 100 kg of maize. The least value of N433.00 per 100 kg was however recorded for marketers in Oyo State. The average marketing margin for food grain marketers in the region is N662.60 per 100 kg of maize. Lower values of marketing margin are desirable as they imply higher levels of marketing efficiency among marketers. Reduced marketing margin could be attained by limiting the number of market intermediaries and minimizing marketing costs in the distribution chains. This is in support of the earlier positions maintained by Adegeye and Dittoh (1985) and Adekanye (1988). It was again noted that cowpea is most efficiently marketed in Oyo state than elsewhere in South Western Nigeria. This implies that cowpea is the most easily available grain to the consumers at affordable costs. Fairly effective storage facilities, which allowed all-year-round market supply of the commodity, may also be responsible for its efficient marketing in Oyo State. Estimation of the Gini coefficient values, which expressed the level of concentration of food grain marketers, indicated that while there was a slight concentration of marketers in both cowpea and maize markets, the markets for polished rice were slightly scattered in various locations in the region. This may be because the South Western region is a major producing area for maize, and a destination point for cowpea, which is usually produced in the Northern part of the country. Polished rice, on the other hand, is often imported and sometimes brought into the region from major producing areas in the Eastern and Northern parts of the country (Adekanye, 1988).

Enabling environment should be created by the principal factors in the distribution chain, so that marketing margins could be reduced to the barest minimum in the zone. The marketers of these commodities should also

be more evenly distributed over the marketing space, so that the level of marketing efficiency could improve. Marketers of foodgrains should not restrict their activities to major towns and cities alone, but rather penetrate and trade in those areas where foodgrains are not produced at all. All agents/elements who have no economic relevance in the distribution network but merely act as parasites on the system should also be eliminated. The bottlenecks created by the activities of the middlemen in the distribution network should also be minimized (or eliminated), so that many households in the region can have access to the foodgrain products. Lastly, the quality and the number of food storage facilities should be stepped up so as to extend the longevity and enhance the quality of foodgrains in the zone.

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