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Analysis of Cassava Product (Garri) Marketing in Ekiti Local Government Area, Kwara State, Nigeria

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Abstract

This study is on analysis of cassava product (garri) marketing in Ekiti Local Government Area, Kwara State, Nigeria. Data for the study were obtained from 150 respondents from the target group using a two-stage sampling procedure and analyzed using descriptive statistics, Gini Coefficient and Lorenz Curve. Gini Coefficient for all cassava product traders was estimated to be 0.624 or 62.4%. The estimated Gini Coefficient show high degree of inequality in the sales/income distribution. The Lorenz Curve plotted further revealed sales/income inequality among the traders. A wide gap between line of inequality and the plotted Lorenz Curve showed that there is a high inequality in the distribution of income among traders.

Keywords: Analysis, cassava, product, marketing, Nigeria

Introduction

Cassava has become a staple food for the continent of Africa and accounts for approximately one third of the staples produce in the continent (FAO, 1986). In Nigeria, farmers produce cassava as a source of family food and income (IITA, 2004).

Currently, Nigeria is the largest producer of cassava in the world (FAO, 2004) and it is believed that production of cassava is a way farmers could easily get out of poverty since it requires less input and could grow even under harsh environmental conditions.

The country has diversified agro-ecological zones which are suitable for producing wide range of annual and perennial crops including cash crops and food crops. However, Nigeria is ranked 8th in terms of cassava yield (kg/ha). This situation could be attributed to the varieties available in Nigeria and farming practices being adopted amongst other factors. Cassava is cultivated in the 36 states and Federal Capital Territory of Nigeria.

Cassava is used in many ways. It is used as a staple, for manufacturing, industrial feed, and many other forms (Asiedu, 1989). For production of most traditional foods, it could be made to fermented and unfermented bread, snacks and alcoholic drinks (Mandal, 1993).

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Cassava can be processed into garri, flour, tapioca, pellets and chips. It is a good source of animal feeds. Federal Government of Nigeria is promoting 20% cassava inclusion in the wheat flour which is expected to increase cassava cultivation and reduce yearly wheat importation.

Garri is produced from cassava by peeling, washing and grating of harvested root which is poured into a bag and subjected to pressure to drain out water and left to ferment for 2-4 days.

The fermented and resulting pulp is then removed, sieve and fried in wide shallow metal pan until it is well dried. A well dried garri can stay for up to three months without spoilage. Garri can be soaked in water and taken or made into a paste by adding hot water to it to make a paste and then taken with soup.

Besides, the need to meet the food demands of the ever increasing Nigerian population, industrial requirements such as the production of laundry starch and livestock feeds have made the establishment of large-scale cassava farm business desirable for farmers and industrialists.

Despite the fact that cassava production in Nigeria is increasing at 3 per cent every year, the country continues to import starch, flour, sweeteners that can be made from cassava.

The demand for industrial cassava based products such as glucose and dextrose and starch is rising. For instance, about 121,000 metric tonnes of glucose and dextrose was imported in 2008, which was about three times more than imports in 2002 (Ayodele *et al.*, 2011).

However, cassava growers face variety of challenges which affect their productivity and profitability. This could also be found in processing and marketing of cassava products.

Achoja *et al.* (2012) reported that majority of the farmers indicated that inadequate finance (35%), land fragmentation (27%), and high cost of labour (15%) were the major problems challenging export-led cassava production intensification.

FAO (2004) also reported that Nigeria is ranked low in terms of yield of cassava production

(kilogram per hectare) relative to such countries as Brazil, Thailand and Indonesia who are major producers of cassava after Nigeria with yield per hectare at 10.8, 13.43, 16.84 and 12.02 tonnes for Nigeria, Brazil, Thailand and Indonesia respectively. According to FAO (2004), global cassava production is expected to rise with increasing demand for cassava based industrial products.

IITA (2004) reported that Benue and Kogi States in the North Central zone are the largest producers of cassava, while Edo, Cross River, Akwa-Ibom, Rivers and Delta States dominate cassava production the South-South zone.

In Nigeria, the bulk of cassava output is produced by semi-subsistence and small holder family farms that generally use traditional farming methods (Okuneye, 1997; Upton, 1997; Nweke, 1997).

Oni (2013) reported the distribution of the total income generated in the cassava value chain as follows, the medium scale processor had the lion share that represented 42 percent of total income generated at the various levels of the value chain. This was followed by the large scale processor with 21.4 percent.

The domestic wholesale trader followed behind them with 16.54 percent of total income generated. Medium Scale industrial user was the next important income earner with 11 percent of total income.

The farmer who originated the process of the value chain trailed behind all the actors with just only 0.03 percent of the income generated in the value chain.

The retailer came closely behind the exporter, but both have a low share of 1.04 percent and 3.21 percent respectively. The results revealed the earning of the farmer was very low compare to all other actors in the cassava value chain.

The main objective of this study is to identify the socio economic variables of the cassava product (garri) marketers and the income distribution among them in the study area.

Methodology

The study was conducted in Kwara State, Nigeria. Kwara State lies in the southern guinea savannah vegetation zone of the country. The State experiences two (2) seasons in a year: the wet season (April- September) and dry season (October –March). Annual rainfall is about 1000-1500mm.

The State shares boundaries with Ekiti, Oyo, Osun, Kogi and Niger States of Nigeria. It also has international border with the Republic of Benin along its north-western part.

The state is categorized into four (4) agricultural zones (A, B, C, and D). There are a total of 1,258 rural communities in the state.

The target population for the study is the cassava product (Garri) marketers in the state; the sampling technique was purposeful sampling of Ekiti local government area of the state as it represents the largest producer of cassava in the state (KWADP, 2004).

It is on this premise the sampling frame and distribution was focused.

A two stage sampling technique was adopted in the selection of samples for the study.

The first stage was a random selection of 10 communities out of 22 communities in Ekiti Local Government Area. These 10 communities have a total of 376 registered cassava product marketers.

The second stage involved the random selection of 40% from each 10 communities of the sampled registered cassava marketers which is 150 marketers.

The tools for analyses included use of descriptive statistics such as frequency tables and percentages to analyze the socio- economic characteristics of the cassava processors. Gini Coefficient and Lorenz Curve were used to determine inequalities among the cassava product marketers.

Gini-coefficient is the most commonly used measure of inequality. The coefficient varies between 0, which reflects complete equality and 1, which indicates complete inequality. Lorenz Curve on the other hand maps the cumulative income/sales shares on the vertical axis against the distribution of the population on the horizontal axis. Gini Coefficient (GC) is given as:

$$GC = 1 - \sum TZ$$

Where

T= proportion of traders per period of study/100
Z= cumulative proportion of sales of traders per period of study/100

Results and discussions

Socio economic characteristics of cassava processor

The socio economic characteristics of the cassava marketers in the study area are shown in the table 1. The study revealed that about 78% of the traders are female.

In Nigeria, agricultural activities are gender specific. Women in most cases are more involved in post-harvest activities than men. Processing is one of the post-harvest activities of cassava.

Table1: Socio-economic characteristics of the traders

Variable	Frequency	Percentage
Gender		
Male	32	21.3
Female	118	78.7
Total	150	100
Age (years)		

≤ 30	17	11.4
31-40	61	40.7
41-50	43	28.7
50 and above	29	19.3
Total	150	100
Scale of Operation		
Retailers	45	30.0
Itinerant wholesalers	27	18.0
Sedentary wholesalers	11	7.3
Processors	67	44.7
Total	150	100
Educational Level		
No formal education	61	40.7
Primary	44	29.3
Secondary	34	22.7
Tertiary	11	7.3
Total	150	100
Marital Status		
Single	12	8.0
Married	55	36.6
Widowed	33	22.0
Widower	25	16.7
Divorced	25	16.7
Total	150	100
Number of Dependants		
0-4	57	38.0
5-8	84	56.0
Above 8	9	6.0
Total	150	100
Marketing Experience		
1-10	65	43.3
11-20	52	34.7
21-30	22	14.7
Above 30	11	7.3
Total	150	100

Source: Field survey, 2012

The study revealed that about 44.7% of the traders are small scale processors that process the cassava tuber to garri and or cassava flour.

The survey revealed that about 40.7% are within the age of 31-40years. This indicates that the traders are still active and vibrant and as such it would have positive effect on the marketing activities.

The literacy level shows that about 29.3% of the traders are primary school leavers, about 40.7% of the sample is illiterate and a very small fraction has tertiary education, this may affect

their level of marketing efficiency due to the fact that education enhances productivity.

In addition, education will enhances use of modern communication technology such as internet. On the year of marketing experience, the survey shows that 43.3% % of the traders had between 1- 10 years of experience in the marketing activities, while 34.7% had experience between 11-20 years' experience, experience is very important in every business as it enables traders to learn from previous mistakes in their marketing activities.

Years of experience may sometimes take in lieu of education. About 36% of the respondents are married while 61% have five or more dependants.

In a typical Nigeria rural set up, the respondents are expected to take care of their dependants while the dependants also work for their masters.

The dependants are expected to give helping hands in cassava marketing. The study revealed that 90% of the traders have free entry and exit to the market while about 10% of the respondents have restriction to the market.

This may accounts for the reason while garri marketing is very common in the study area. The study also indicates that about 76% of the traders process their product into garri while only 14.7% process it into cassava flour and 9.3% are involved in both products; this is as a result of high market demand for garri as against cassava flour. Garri is one of the staple foods of the study area and Kwara State in general.

There is always a ready market for garri. People come from within and outside the study area to

purchase garri and marketers as well take garri out of the state to market.

The study also revealed that 58.7% of the major source of information comes from fellow traders, there is a limit to the kind of information one can get from a fellow traders. The information from this source may be local 14.7% of them access information from extension agents. This is low! There may be a need to promote extension services among the traders.

Extension services are not meant for producers only. Only 3.3% of the traders access information from the internet and journal articles. This is expected because about 41% of the respondents did not have formal education.

The rapid use of mobile telephone sets in Nigeria has increased access to the internet. Most people cannot access internet from their mobile handsets because of illiteracy. Internet provides information across the globe. Access to internet facilities will enable the traders market their goods globally.

Table 2: Marketing performance of cassava trader

Variable	Frequency	Percentage
Market Entry and Exit		
Free entry	135	90.0
Restricted	15	10.0
Total	150	100
Cassava Processed Products		
Garri	114	76.0
Cassava flour (Lafun)	22	14.7
Both	14	9.3
Total	150	100
Source of Information		
Fellow traders	88	58.7
Extension agents	22	14.7
Trade unions	35	23.3
Internet/Journal	5	3.3
Total	150	100

Source: Field survey, 2012

Gini coefficient and Lorenz curve analysis results

Gini Coefficient for cassava product traders in the study area was estimated to be 0.624 or

62.4%. This result indicates that there is a high degree of inequality in the sales/income distribution.

The sales distribution shows that 67% of traders received about 34.7% of total sales and this result indicated that about 65% of market sales were concentrated in the hand of less than 35% of the marketers.

The Lorenz Curve plotted further revealed sales/income inequality among the traders. A wide gap between line of inequality and the plotted Lorenz Curve showed that there is a high inequality in the distribution of income among traders.

Among different traders, Gini-coefficient value of 65.3% (0.653) was estimated for the wholesalers followed by retailers with estimated

value of 56.8% (0.568), while the processors had the least value of 52.2% (0.552).

This showed that inequalities in sales/income among the itinerants are more serious when compared with other categories of cassava marketers.

Generally, it can be inferred that cassava traders experience high degree of inequality as reflected by estimated Gini-coefficient (above 50%) and plotted Lorenz Curve.

This is a reflection of inefficient market structure since the lower the inequality in sales volume, the more efficient is the structure of marketing system and vice-versa.

Table 3: Estimation of Gini- coefficient for all the wholesalers

SALE(N)	No of traders	Proportion of traders (T)	Cumulative Proportion (n)	Total value of sales	Proportion of total sales	Cumulative proportion (Z)	$\sum TZ$
1-50,000	9	0.34	0.34	302,992	0.255	0.255	0.0289
50,001-1000,000	6	0.23	0.57	462,600	0.315	0.57	0.04945
100,001-150,000	2	0.67	0.64	288,000	0.181	0.751	0.02072
150,001-200,000	4	0.15	0.75	768,000	0	0.751	0.0768
200,001-250,000	2	0.07	0.86	451,000	0.067	0.816	0.04473
250,001-300,000	2	0.07	0.93	582,000	0.08	0.896	0.05614
300,001 and above	2	0.07	1	707,800	0.102	1	0.07
Total	27	1	1	3562392	1	1	0.34674

$$GC = 1 - \sum TZ = 1 - 0.34674 = 0.65326 = 0.653$$

Table 4: Estimation of Gini- coefficient for all the retailers

SALE(N)	No of traders	Proportion of traders (T)	Cumulative Proportion (n)	Total value of sales	Proportion of total sales	Cumulative proportion (Z)	$\sum TZ$
1-50,000	7	0.19	0.19	216,000	0.09	0.09	0.02
50,001-1000,000	2	0.06	0.25	113,600	0.047	0.137	0.01
100,001-150,000	6	0.16	0.41	797,000	0.331	0.468	0.08

150,001-200,000	5	0.14	0.55	956,000	0.397	0.865	0.13
200,001-250,000	0	0	0.55	0	0	0.865	0
250,001-300,000	18	0.45	1	0	0	0.896	0.39
300,001 and above	1	0	1	325,000	0.135	1	0
Total	38	1	1	2,407,600	1	1	0.4320

$$GC = 1 - \sum TZ = 1 - 0.43204 = 0.556796 = 0.568$$

Table 5: Estimation of Gini –coefficient for all processors

SALE(N)	No of traders	Proportion of traders (T)	Cumulative Proportion (n)	Total value of sales	Proportion of total sales	Cumulative proportion (Z)	$\sum TZ$
1-50,000	24	0.52	0.52	801,450	0.255	0.255	0.1326
50,001-100,000	14	0.3	0.82	989,456.8	0.315	0.57	0.171
100,001-150,000	5	0.12	0.94	569,600	0.181	0.751	0.0901
150,001-200,000	0	0	0.94	0	0	0.751	0
200,001-250,000	1	0.02	0.96	210,000	0.067	0.816	0.01632
250,001-300,000	1	0.02	0.98	252,000	0.08	0.896	0.0179
300,001 and above	1	0.02	1	320,000	0.102	1	0.02
Total	46	1	1	3,142,507	1	1	0.4479

$$GC = 1 - \sum TZ = 1 - 0.44796 = 0.55204 = 0.552$$

Table 6: Estimation of Gini –coefficient for all categories of cassava traders

SALE(N)	No of traders	Proportion of traders (T)	Cumulative Proportion (n)	Total value of sales	Proportion of total sales	Cumulative proportion (Z)	$\sum TZ$
1-50,000	46	0.41	0.41	1,469,742	0.1398	0.1398	0.05731
50,001-100,000	29	0.26	0.67	2,168,940	0.2063	0.3461	0.08998
100,001-150,000	15	0.13	0.8	1,850,400	0.176	0.5221	0.06787
150,001-200,000	11	0.03	0.83	2,108,000	0.2005	0.7226	0.07226
200,001-250,000	3	0.04	0.87	661,000	0.0629	0.7855	0.02356

250,001 - 300,000	4	0.01	0.88	1,132,000	0.1077	0.8932	0.03372
300,001 - 350,000	1	0.01	0.89	320,000	0.0304	0.9236	0.00923
350,001 - 400,000	1	0.01	0.9	384,000	0.0365	0.9601	0.00960
400,001 - 450,000	1	0.01	1	420,000	0.0399	1	0.01
Total	111	1	1	10,514,542	1	1	0.37556

$$GC = 1 - \sum TZ = 1 - 0.375567 = 0.624433 = 0.624433 = 0.624$$

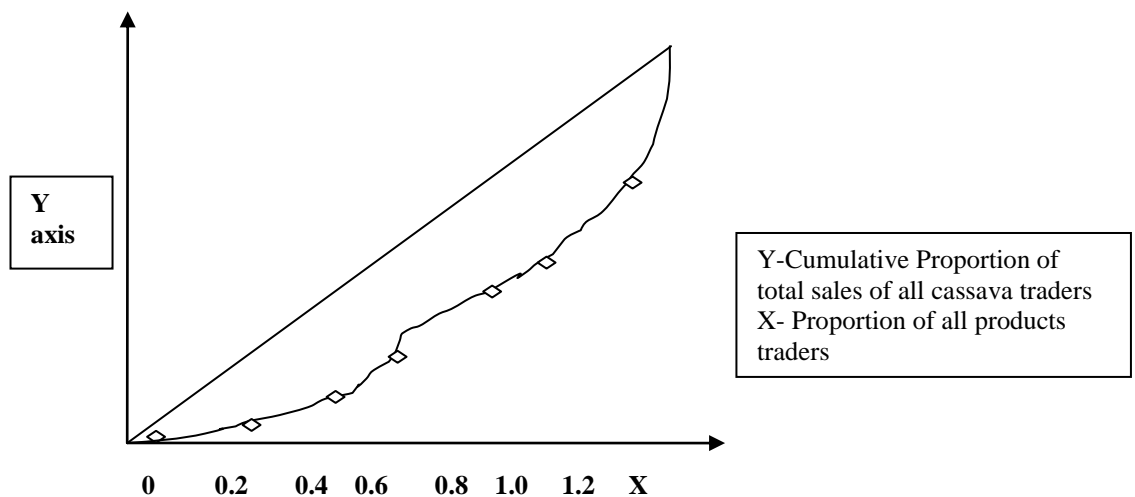


Fig. 1: Lorenz curve for all categories of cassava traders

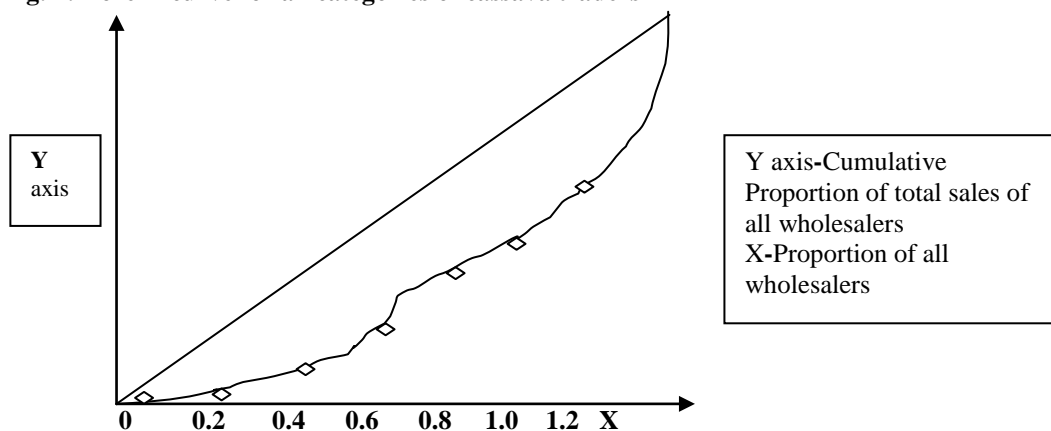


Fig. 2: Lorenz curve for all categories of all wholesalers

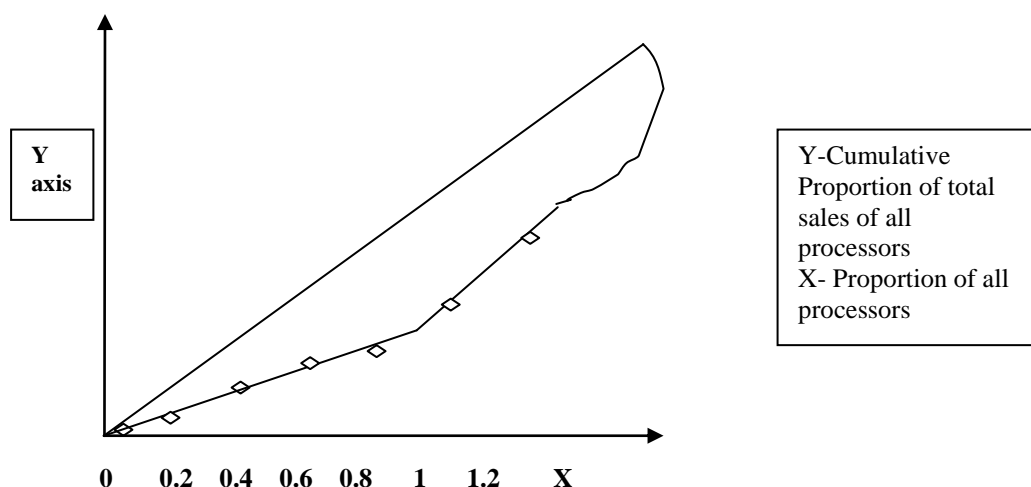


Fig. 3: Lorenz curve for all categories of processors

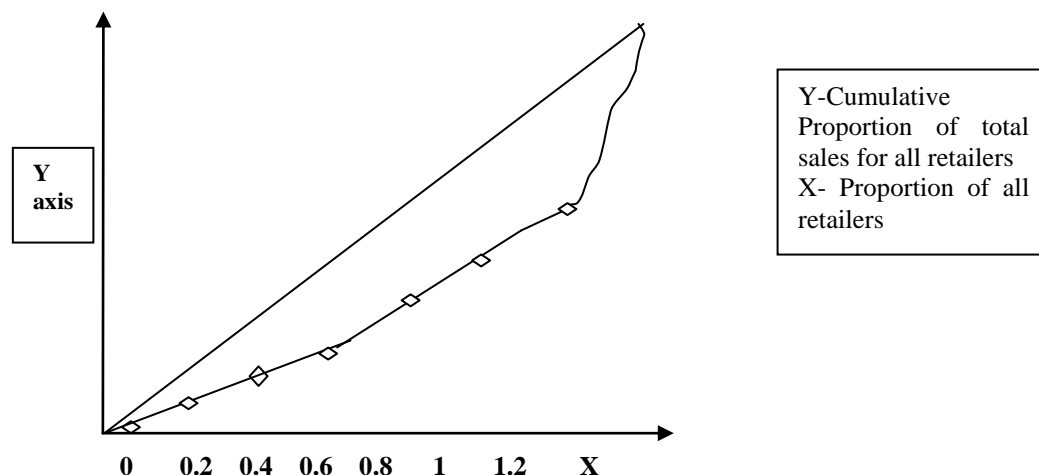


Fig. 4: Lorenz curve for all categories of retailers

Conclusion and recommendation

It is revealed through this study that majority of the cassava traders are women that fall within the active ages of 30-50 years. Majority of them operate at small-scale level.

The cassava market is characterized by many buyers and traders who receive information from each other. Extension and internet information is very low among the traders.

Extension information is not only for farmers. Cassava traders need extension services that will

improve their various activities. Garri is the most popular and common product traded by the respondents. Garri is mostly consumed locally with very low export potential.

Through extension activities, traders could be introduced to other products from cassava with export potentials. Some of these products could be handled at small-scale level.

Analysis of Gini-coefficient reveals that there are serious inequalities among the traders, a situation leading to concentration of sales in the hands of just few large traders.

This scenario is not good as it does not promote healthy competition. There are every possibilities that large trader could compete the small traders out of business.

There may be a need to organize the small traders into cooperative groups and help any existing cooperative of small traders to be more active. The cooperatives should be able to provide necessary credit for the small traders and be forums for educating them.

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