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Socio-economic Analysis of Cassava Marketing in Benue State, Nigeria

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ABSTRACT: The purpose of this study is to analyze the socio-economics of cassava marketing in Benue State, Nigeria. Data were collected from randomly sampled 107 cassava marketers in Benue State, using a structured questionnaire. The study revealed that most of the cassava marketers had secondary education (72.9%). The study also revealed that marketing of cassava is mostly undertaken by females (57%). The result showed that married people (59.8%) were mostly involved in the marketing of cassava. The study revealed that cassava marketing is operated in a competitive market environment and the marketing margin obtained by an average cassava marketer is 31%. Cassava marketing is a profitable venture in the study area. It was also revealed that greater percentage of cassava traded in the study area was primarily obtained from the farmers. Majority of the respondents (92.5%) belong to cassava marketing association. The most pressing problem (46.73%) faced by the marketers is high taxes during transportation. Majority of the cassava marketers use the revenue generated from cassava business to train their children in schools and buildings of modern houses (57.0).There is the need to: open centralized cassava market in the study area; construct good network of feeder roads; establish processing companies/facilities; restructure the entire marketing system. Traders should be encouraged to form agricultural marketing cooperatives in order to eliminate the exploitative activities of the middlemen. Marketing agencies should be enforced by government to take care of the marketing problems that are associated with the speculative activities of the middlemen.

KEYWORDS: cassava marketing, marketing margin, market structure, marketing channel, cassava farmers.

1 INTRODUCTION

Today, the amount of food available per person on a global basis is 18 percent higher than 30 years ago. Most developing countries benefited from this development with the result that their nutrition has witnessed very tremendous improvement. As impressive as this improvement is, about 800 million people worldwide still suffer from chronic hunger; and one quarter of this population resides in Africa. The situation gets worse every year and can lead to a catastrophe if it is not possible to increase food supply at a rate faster than that at which the world population increases (Knirsch, 1996a).

Cassava is the chief source of dietary food energy for the majority of the people living in the lowland tropics, and much of the sub-humid tropics of West and Central Africa (Tsegia *et al,* 2002). Therefore, its production and utilization must be given prime attention in food policy. Even though farmers have not yet attained the desired technical efficiency in cassava production as a result of weak access to external inputs such as fertilizers and herbicides (Ezedinma *et al*, 2006), the wide scale adoption of high yielding varieties and the resulting increase in yield have shifted the problem of the cassava sector from supply (production) to demand issues, such as finding new uses and markets for cassava. The government of Nigeria considers a transition from the present status of usage to the level of industrial raw material and livestock feed as a development goal that can spur growth with increase in employment. This consideration underscores the various research and policy initiatives in cassava improvement, production, and processing.

Estimates of industrial cassava use in Nigeria suggest that approximately 16 percent of cassava root production was utilized as chips in animal feed, 5 percent was processed into a syrup concentrate for soft drinks and less than 1 percent was

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processed into high quality cassava flour used in biscuits and confectionery, dextrin, adhesives, starch, and hydrolysates for pharmaceuticals and seasonings (Ene, 1992).

At present, a wide range of traditional cassava forms (such as *gari, fufu,* starch, *lafun, abacha,* etc) are produced for human consumption (Kormawa *et al,* 2003). In view of the renewed emphasis on cassava production (supply), processing and utilization in Nigeria, it becomes necessary to examine cassava marketing, and its prospects especially in combating poverty, hunger and raising food security among vulnerable groups including women and infants.

Evidence has shown that cassava production has been increased from 1999 to date. (FMARD 2004), however, post harvest system such as processing, packaging, marketing storage distribution and transportation have constrained sustainable cassava production in recent times (RUSEP 2002). This has resulted into substantial losses, which complicate food insecurity status in terms of available calorie dietary consumption. Studies have shown that efficient marketing system stimulates agricultural production (Awoyinka and Ikpi 2005; Adesope et al, 2005). However, marketing of food in Nigeria has been characterized with a lot of deficiencies (Adekanye, 1970 and Abdullahi 1983). These deficiencies have constrained sustainable agricultural development in one way or the other. In Nigeria, several policy studies (Mayong *et al.,* 2003; Presidential Initiative on Cassava, 2003) have been commissioned to identify potential contributions of agricultural marketing policy to agricultural development, these studies, however, failed to incorporate strategies for combating perennial constraints to effective and efficient food marketing in Nigeria.

The Structure-Conduct-Performance paradigm, which began with Bain (1956), rested on two ideas. The first idea involved a one-way chain of causation that ran from structure (concentration) to conduct (the pricing behaviour of firms) to performance (profitability). High concentration, it was argued, facilitated collusion and led to high profits. To explain why these high profits were not eroded by entry, the second idea came into play: it was argued that high levels of concentration could be traced to the presence of certain 'barriers to entry'. In Bain's 1956 book, these barriers were associated with the presence of scale economies in production, a factor that can be taken as an exogenous property of the available technology.

The central thrust of the Structure-Conduct-Performance literature lay in relating the level of concentration to the level of profitability (profits/fixed assets, say) across different industries (Sutton, 2006). Here, it is necessary to distinguish two claims: The first relates to the way in which a fall in concentration, due for example to the entry of additional firms to the market, affects the level of prices and so of price-cost margins. Here, matters are uncontroversial; that a fall in concentration will lead to a fall in prices and price-cost margins is well-supported both theoretically and empirically. To test this idea it is appropriate to look at a number of markets for the same product, which differ in size (the number of consumers), so that larger markets support more sellers. It can then be checked whether prices and so price-cost margins are lower in those larger markets which support more sellers.

A second, quite different (and highly controversial) claim relates to the net profit of firms (gross profit minus the investment costs incurred in earlier stages), or their rates of return on fixed assets. In the 'free entry' models used in modern game-theoretic literature, entry will occur up to the point where the gross profits of the marginal entrant are just exhausted by its investment outlay. In the special setting where all firms are identical in their cost structure and in their product specifications, the net profit of each firm will be (approximately) zero, whatever the level of concentration. This symmetric setup provides a useful point of reference, while suggesting a number of channels through which some relationship might appear between concentration and profitability (Sutton, 2002).

Despite the fact that there are large demands for cassava and its products in large quantities, some of the products in the area are not yielding desired economic benefits. The reasons for this could be partly attributed to either lack of adequate or faulty marketing systems and strategies and probably the exploitative tendencies of middlemen who seem to be more actively involved in marketing cassava and cassava products in the study area. Consequently, the objective of this paper is to carry out socio-economic analysis of cassava marketing in Benue State, Nigeria. The following null hypothesis was stated and tested: cassava marketing is not profitable in the study area.

2 METHODOLOGY

2.1 THE STUDY AREA

Benue State is one of the 36 states of Nigeria located in the North-Central part of Nigeria. The State has 23 Local Government Areas, and its Headquarters is Makurdi. Located between Longitudes 6^0 35'E and 10^0E and between Latitudes 6^0 30'N and 8^0 10'N. The State has abundant land estimated to be 5.09 million hectares. This represents 5.4 percent of the national land mass. Arable land in the State is estimated to be 3.8 million hectares [29]. This State is predominantly rural with an estimated 75 percent of the population engaged in rain-fed subsistence agriculture. The state is made up of 413,159 farm

families [30] and a population of 4,219,244 people [31]. These farm families are mainly rural. Farming is the major occupation of Benue State indigenes. Popularly known as the "Food Basket" of the Nation, the State has a lot of land resources. For example cereal crops like rice, sorghum and millet are produced in abundance. Roots and tubers produced include yams, cassava, cocoyam and sweet potato. Oil seed crops include pigeon pea, soybeans and groundnuts, while tree crops include citrus, mango, oil palm, guava, cashew, cocoa and *Avengia spp*.

2.2 SAMPLING TECHNIQUE

Benue State is divided into three agricultural zones. Local Government Areas with high concentration of cassava marketing in Benue State were purposively selected for the study. Based on this, one local government area with high concentration of cassava marketing in Benue State was purposively selected from each of the three agricultural zones in Benue State thereby bringing the total to three local government areas selected for the study. From each of the selected local government areas, 40 cassava farmers were randomly selected giving a total of 120 respondents.

2.3 DATA COLLECTION

Primary data were mainly used for the study. The primary data were obtained through the use of a structured questionnaire, copies of which were administered to the 120 respondents selected for the study. However, only 107 questionnaires were returned.

2.4 METHOD OF DATA ANALYSIS

Data collected were analysed using both descriptive and inferential statistics. Descriptive statistics include frequency distribution and percentages while inferential statistics comprised marketing margin analysis. The null hypothesis was tested using t-test analysis.

2.5 MARKETING MARGIN ANALYSIS

Marketing margin analysis was used to determine the marketing margin of cassava marketing in the study area. The market margin or the farm-to-retail price spread is the difference between the farm value and the retail price. It represents payments for all assembling, processing, transporting, and retailing charges added to farm products (Elitzak, 1996). Marketing margin can be computed using the formula:

Marketing margin (MM) = Selling price – supple price x 100

Selling price 1

Where,

Selling price is the retail price at the consumer end

Supply price is the farm price at the producer end

2.6 THE T-TEST ANALYSIS

The profitability of cassava marketing in the study area was tested using the t-test statistic formula. The *t* statistic to test whether the means are different can be calculated as follows:

$$t = \frac{\overline{X_1} - \overline{X_2}}{S_{X_1X_2}.\sqrt{\frac{2}{n}}}$$

Where:

$$S_{X_1X_2} = \sqrt{\frac{1}{2}\left(s_{X_1}^2 + s_{X_2}^2\right)}$$

Here $S_{X_1X_2}$ is the grand standard deviation (or pooled standard deviation), 1 = group one, 2 = group two. The denominator of *t* is the standard error of the difference between two means.

For significance testing, the degree of freedom for this test is 2*n* − 2 where *n* is the number of participants in each group.

3 RESULTS AND DISCUSSION

3.1 SOCIO-ECONOMIC CHARACTERISTICS OF THE RESPONDENTS

The result in Table 1 shows that majority of the cassava marketers (49.53%) are within the age range of 20 and less than 30 years while 38.32% fall between the age range of 30 and less than 40 years. This implies that, cassava marketing in the study area is dominated by young people. This is because the business requires a lot of energy and is labour intensive, moving from one place to another to assemble the products for marketing and hawking of the agricultural produce.

Table 1. Percentage Distribution of Respondents by Socio-economic Characteristics

Variable	Frequency	Percentage
Age		
< 20	6	5.61
20<30	53	49.53
30<40	41	38.32
40<50	**7**	6.54
Total	**107**	**100**
Sex		
Male	46	43.00
Female	61	57.00
Total	**107**	**100**
Marital Status		
Single	28	26.2
Married	64	59.8
Divorced	2	1.9
Widowed	13	12.1
Total	**107**	**100**
Education		
Non-formal	1	0.9
Primary	28	26.2
Secondary	78	72.9
Tertiary	0	0
Total	**107**	**100**

Source: Field Survey, 2012

Table 1 also shows that majority of the respondents (57%) were female while 43% were male. This implies that cassava marketing in the study area is dominated by female gender. The dominance of the females in the business is because males have to go to offices, farms and other places in order to ensure the provision of the capital (money) required for family transactions while the females are engaged in carrying out the marketing of cassava.

Table 1 indicates that majority of the cassava marketers in the study area were married (59.8%) while 26.2% were single. This suggests that cassava marketing in the study area is dominated by married couples. This is attributable to the fact that cassava marketing is a profitable venture, which can serve as a reliable source of livelihood for the family.

The result in Table 1 shows that majority (72.9%) of the respondents have secondary education while 26.2% have primary education. This result suggests that almost all the respondents are literate enough to give room for effective communication in doing their cassava marketing business.

3.2 Marketing Margin of an Average Cassava Marketer

Table 2 presents the marketing margin of an average cassava marketer in the study area. The result showed that marketing margin of an average cassava marketer in the study area is 31% per kilogram of cassava. This implies that 100% sales results in the marketing margin of 31%. This means that N1 sale results to a price spread of 0.31 in the marketing of cassava products in the study area.

Table 2. Marketing Margin of an Average Cassava Marketer in the Study Area

VARIABLE	VALUE
Selling price	3,500
Supply price	2,400
Marketing margin	31.4

Source: Field Survey, 2012

The result of the t-test in Table 3 rejects the null hypothesis of no significant difference between the selling price (consumer price) and supply price (farm price) of cassava among the marketers. This suggests that there is significant difference between the selling price (consumer) and supply price (farm price) of cassava and cassava products among the respondents, implying that cassava marketing earned a significant marketing margin in the study area. This means that cassava marketing is a profitable venture in the study area.

Table 3. T-Test of No Significant Difference between the Selling Price and Supply Price of Cassava among the Respondents

	Selling Price	Supply Price
Mean	3523.64	2438.12
Hypothesized mean difference	0	
Degree of freedom	212	
t-stat	9.54369029	
t-critical one-tail	1.654554876	
t-critical two-tail	1.975092037	

Source: Field Survey, 2012

3.3 Structure of Cassava Marketing in the Study Area

Table 4 shows that 92.5% agreed that there is free flow of price information in the marketing of cassava while 7.5% disagreed that there is no free flow of information. This implies that there was a good knowledge of price information among the respondents.

Table 4. Percentage Distribution of Respondents by Flow of Market Information

Flow of price information	Frequency	Percentage
Free flow of price information	99	92.5
Restricted flow of price information	8	7.5
Total	**107**	**100**

Source: Field Survey, 2011

Table 5 indicates that price fixing among the respondents was majorly by bargaining (74.9%). This suggests that the market forces determine the price of cassava among the respondents.

Table 5. Percentage Distribution of Respondents by Price Fixing

Method	Frequency	Percentage
Bargaining	80	74.8
Quantity traded	11	10.3
Current price	12	11.2
Group decision	4	3.7
Total	**107**	**100**

Source: Field Survey, 2012

The result in Table 6 shows that most of the cassava marketers (94.4%) in the study area were free to buy and sell their products anywhere. Therefore, this implies that there is case of free entry and free exit and also freedom of buying and selling of cassava in the study area. This suggests that cassava marketing in the study area is a competitive venture.

Table 6. Percentage Distribution of Respondents by Freedom of Entry and Exit

Entry and Exit	Frequency	Percentage
Free Entry and Exit	101	94.4
Restricted Entry and Exit	6	5.6
Total	**107**	**100**

Source: Field Survey, 2012

The implication of the foregoing results on market structure for cassava is that cassava marketing in the study area is operated in a competitive market environment. This is because high concentration facilitates collusion and leads to high profits. These high profits attract the entry of more firms, which results to fall in concentration. A fall in concentration, due to the entry of additional firms to the market, affects the level of prices and so of price-cost margins. Since there is a number of markets for the same product, which differ in size (the number of consumers), so that larger markets support more sellers. Therefore, prices and so price-cost margins are lowered in those larger markets which support more sellers as a result of entry of more firms, which now compete for the profits. Entry will occur up to the point where the gross profits of the marginal entrant are just exhausted by its investment outlay. Below this point, firms begin to exit the market due to decreased marginal profits.

Table 7 shows that majority of the respondents (92.5%) belong to cassava marketing association. This association provides useful marketing information to the buyers and sellers which enable them to take rational decisions in the market environment in which they operate.

Table 7. Percentage Distribution of Respondents by Membership of Marketing Association

Association	Frequency	Percentage
Member	99	92.5
Non-Member	8	7.5
Total	**107**	**100**

Source: Field Survey, 2012

3.4 Distribution Channel of Cassava Marketers in the Study Area

The result in Table 8 shows that majority (74.9%) of the cassava marketers in the study area get their supply of cassava from farmers. This implies that the study area is highly productive in cassava production.

Table 8. Percentage Distribution of Respondents by Channel of Distribution of Cassava

Source	Frequency	Percentage
Farmers	80	74.8
Local Marketers	23	21.5
Middlemen	4	3.7
Others	0	0

Source: Field Survey, 2012

3.5 Problems and Prospects of Cassava Marketing in the Study Area

The result in Table 9 shows that most pressing problem (46.73%) faced by the marketers is high taxes during transportation. Other problems include poor rural roads (28.04%) and lack of central market (14.95%). The implication is that, the high expenditure incurred by the marketers especially due to poor roads, high or multiple taxes during transportation increase the market cost, which negatively affects the marketing margin.

Table 9. Percentage Distribution of Respondents by Problems of Cassava Marketing

Problems	Frequency	Percentage
High taxes during transportation	50	46.73
Poor rural roads	30	28.04
Lack of central market	16	14.95
Robbery	4	3.74
Accident	4	3.74
Others	3	2.80
Total	**107**	**100**

Source: Field Survey, 2012

Table 10 shows that majority of the cassava marketers use the revenue generated from cassava business to train their children in schools and buildings of modern houses (57.0). This suggests that cassava marketing serves as a source of livelihood among the respondents.

Table 10. Percentage Distribution of Respondents by Social Benefits of Cassava Marketing

Benefit	Frequency	Percentage
Training children in school (a)	24	22.4
Building of modern houses (b)	5	4.7
Buying cars	2	1.9
Employment	15	14.0
Combination of (a) and (b)	61	57.0
TOTAL	**107**	**100**

Source: Field Survey, 2012

4 CONCLUSION AND RECOMMANDATIONS

The study revealed that almost all the cassava marketers in the study area were educated. The marketing of cassava was mostly undertaken by young people and dominated by females.

Furthermore, the study revealed that cassava marketing was operated in a competitive market environment. It was also revealed that a greater percentage of cassava traded in the study area was primarily obtained from the farmers. The cassava marketers in the study area earned a marketing margin of 31%.

The study revealed that the revenues generated by the cassava marketers were majorly used to train children in schools and build modern houses. It was revealed that cassava marketers in the study area faced majorly the problem of high taxes during transportation and poor road network.

Centralized cassava market should be opened in Makurdi Local Government Area. This will attract more customers or buyers and processing industries/companies to buy directly from the farmers, and this will generate more revenues for both farmers and government.

Good network of feeder roads should be constructed either by the government or communities linking rural areas for easy transportation of cassava produce since the product is bulky and vulnerable and this will reduce the transportation cost as complained by the marketers.

Processing companies/facilities should be established in Makurdi Local Government Area. This could be done by government or private companies for easy processing of raw materials into chips as well as bringing processors closer to the

traders. This will reduce the rate of perishability, shorten the chain of distribution and enable traders to receive better prices at reduced transportation cost.

The entire marketing system should be restructured. Traders should be encouraged to form agricultural marketing cooperatives in order to eliminate the exploitative activities of the middlemen.

Marketing agencies should be enforced by government to take care of the marketing problems that are associated with the speculative activities of the middlemen.

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