

Analysis of Value Chain Business by Cassava Wholesalers in Akwa Ibom State, Nigeria

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Abstract

This study analyzed the Cassava Wholesale Business in Akwa Ibom State. Specifically, the study analyzed the cost and returns to cassava wholesale business in the state and estimated the factors that were responsible for the respondents' decision to add value to Cassava in the study area. A sample size of fifty wholesalers was selected from across the six Agricultural zones in the State. Results obtained reveal that the sales of garri was the most profitable wholesale business while major costs borne by the respondents were transportation, loading and off-loading with transportation constituting a major part of the cost structure. Factors that were found to determine value added by wholesalers were Age, Education, Experience, Cooperative membership and access to credit facility. It is therefore recommended that these wholesalers should form cooperatives and raise capital which can be invested in their business to expand its scale of operation.

Keywords: Wholesalers, Cassava, Value Chain, Value-Added, Profit, Costs

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1. Introduction

Nigeria is the largest Cassava producing Country in the World (Oruonye *et al.*, 2021). Cassava not only serves as food crop, it is a major source of income and employment for rural households in Nigeria. As a food crop, cassava has some inherent characteristics which make it attractive especially to the small holder farmers in Nigeria (Akerlele *et al.*, 2019). It is estimated that 37 percent of dietary energy comes from Cassava and it is the cheapest source of calories for both human nutrition and animal feeding (Ijigbade *et al.*, 2021). The large population of Nigeria depends on daily basis on it as their main dish. Because of its high demand both locally and internationally, it is deemed fit to be cultivated more than it is done now (Akerlele *et al.*, 2019). Four out of five rural Nigerians eat cassava-based meal at least once a week (Ezedinma *et al.*, 2007). Two hundred and twenty-six (226) kilocalories of cassava are consumed per person per day in Africa (FAO, 2012). Cassava is one of the most important crops for Nigerian farmers; it is the most widely cultivated crop and provides food and income to over 30 million farmers and large numbers of processors and traders. According to Ijigbade *et al.*, (2021), the crop provides basic raw materials for many small- scale businesses such as Cassava flour mills, bakeries, fast food firms, restaurants, garri processing firms as well as employment. Common cassava products in Nigeria include, but not limited to; 'garri', 'akpu', tapioca, starch, chips and flour. The roots are processed into garri, fufu, tapioca, chips and cassava flour for human consumption as well as paper, pellets, adhesive, and a carrier for pharmaceuticals etc. (Nigeria National Report, 2006, Nwokoro, *et al.* 2007; Azaino, 2008). Apart from food security and social stability, cassava is also a potentially important industrial raw material that would not only support local industry but can be exported (Philips *et al.*, 2004). Global demand for Cassava products (flour, starch, ethanol, chips and pellets) run into several billions of dollars in transaction value with China leading the demand at 60 percent of total imports. Other Cassava import destinations are found in North America, Europe etc (Oruonye *et al.*, 2021).

Nigeria is the global leader in Cassava production, some 4.5 million farmers cultivate this crop over an area of 7.22 million hectares with a yield exceeding 59 million tonnes per hectare (FAOSTAT, 2019).

Despite her comparative advantage in cassava production, Nigeria is not one of the major players in the global value- added trade of cassava-based products (Sahel, 2021). Unarguably, cassava is a potential foreign exchange earner for Africa (and Nigeria in particular). The earning potential is huge and can only get bigger in the light of the rising demand for the crop for variety of uses (Skills Outside School Foundation, 2021). Farmers due to post-harvest losses do not recognize that, there are other links in the value chain that can help them to regain the losses they encountered during the time of planting and value addition (Ukoha *et al.*, 2015). Ogidi (2016) posited that as desirable as agribusiness is to economic well-being, many countries in sub – Saharan Africa, including Nigeria, are yet to optimize their potentials. According to the source, the challenges are not unconnected to the relegation of agriculture to subsistence farming, non – prioritization of agribusiness at the different levels of governance, lack of infrastructure, poor storage facilities, poor state of research, poor and disjointed value chains, occasioned by discovery of oil. Furthermore, cassava production is plagued with issues of inefficient production and distribution of quality products and unreliable quality assurance system. These issues hinder the production of quality cassava roots that are of interest to end users particularly industrial

processors (Sahel, 2021).

2. Methodology

The study area was Akwa Ibom State. The data for this research was obtained from both primary and secondary sources. Primary data for this research was obtained using structured questionnaires while secondary data was obtained from the Akwa Ibom State Agricultural Development Programme (AKADEP) office. Akwa Ibom State is made up of six (6) Agricultural zones and the registered wholesalers of Cassava and its value added products across the zones were Abak (391), Etinan (178), Eket (254), Uyo (367), Oron (97) and Ikot Ekpene (247) which gave a total of 1,534 wholesalers in the state. After a proportional sampling with respect to size of the different zones, the following samples, Abak (13), Etinan (6), Eket (8), Uyo (12), Oron (3) and Ikot Ekpene (8), were obtained giving a sample size fifty (50) Wholesalers of Cassava and its value added products which was used for this study. Data was analyzed using descriptive statistics, means and the Cost and Returns analysis. Factors determining value addition was analyzed using the multiple regression model. The model is as specified below

Factors that determine value added by cassava value chain actors

$$Y = b_0 + b_1 \text{ AGE} + b_2 \text{ EDU} + b_3 \text{ EXP} + b_4 \text{ HHS} + b_5 \text{ ATC} + b_6 \text{ GENDER} + b_7 \text{ COOPMEM} + e_i$$

Where:

Y = Value Added (at the different stages of the chain)

AGE = Age of the value chain actor (in years)

EDU = level of formal education (in years)

EXP = experience in the chain level activity (in years)

HHS – Household size (number of members that assist in the value addition activity)

ATC = Access to Credit (Access to Credit = 1; No access = 0).

GENDER = Gender of the value chain actor (Male = 1, Female = 0)

COOPMEM = Co-operative membership (Member = 1, Not a member = 0)

b_0 = Constant term

b_i = Parameters to be estimated in the multiple regression model

e_i = Error term

3.0 Results And Discussion

3.1 Socio-economic Characteristics of Cassava Wholesalers in Akwa Ibom State.

Table 3.1 reveals that most of the wholesalers in the study area (74 percent) were men while 37 percent were women. Also, most of the Cassava wholesalers (18) fell between the age range of 51 – 60 years while the least (1) fell within the age range of 61 – 70 years and the wholesalers had a mean age of 43 years. Results on the years of formal education Also most of the cassava wholesalers (44 percent) had attained First School Leaving Certificate (FSLC) with a few (2 percent) with Masters degree. It was observed that most of the Wholesalers (54 percent) were members of cooperatives in the area. Also results for years of experience for cassava wholesalers reveal that most of the wholesalers (42 percent) had between 1 and 5 years of experience in the wholesale of cassava.

The cassava wholesalers however had majority of the respondents as men (74 percent) and the (26 percent) as women. The bedrock of the cassava value chain in Nigeria is the female small-scale farmer. Though men are traditionally more involved in cash-crop activities, which gives them the advantage of higher income (Sell and Minot, 2018), the cassava value chain in Nigeria is primarily built upon the labor of women for both farm-level production and value addition. It can be observed that majority of that cassava wholesalers were between that age range of 51 – 60 years (36 percent), followed by those between the age range of 41 – 50 years (24 percent) with a negligible number being between 61 – 70 years

Results from the marital status, Most of the Cassava value chain actors who were mostly into the wholesale of cassava products were mostly single (46 percent). This corroborates Osondu and Obike (2015) who carried out a study on the Comparative analysis of poverty determinants among cassava producing households and opined that the “married class” had access to extra financial, moral and physical support from their spouse that could go a long way in improving their production activities. With respect to level of Education, cassava wholesalers (44 percent), acquired functional literacy (First School Leaving Certificate) which helped them interact with consumers and co-value chain actors. The ability to read and write often acquired as a result of formal education would enable them utilize effectively and efficiently whatever resources they have at their disposal (Osondu and Ijioma, 2014). It could also be observed that farmers had desire for knowledge with a few of the value chain actors spreading up to the Masters degree level.

Furthermore, results indicate that most of the Wholesalers (54.00 percent), were members of cooperatives and were well experienced in their respective value chain activity. Also, it could be observed that majority of the cassava wholesalers had household sizes ranging between 1 to 5 persons. It was also observed that most of the Cassava wholesalers (62 percent) had access to the credit facilities. Cassava value chain actors in the study area

had acquired basic education with most of them acquiring functional literacy to help them interact with customers and co-value chain actors in the study area. The value chain actors were well experienced in their respective value chain activities.

3.2 Distribution of cost and returns of wholesalers of cassava Products in Akwa Ibom State.

Results on the Costs and returns to wholesalers of Cassava products in the study area indicate that the major sources of revenue to the wholesalers were Cassava tubers, Stem cuttings, fufu (Akpu) and garri. It could be observed from the results that Transportation and Loading/ offloading the cassava and cassava value added products were the major costs borne by the wholesalers, with transportation constituting over 70 percent of the cost of trading these value added products. The result further indicates that the sales of garri by wholesalers was most profitable (₦2,324,071.20) in the study area followed by the sales of fufu (₦ 1,997,385). This corroborates (Ani *et al.*, 2019) who opine that net profits derived from processing Cassava into garri was significantly higher than other cassava value added products. However, the least profitable was the sales of the cassava stem cuttings with an average profit of ₦294,601.

3.3 Determinants of Value Added to Cassava by Wholesalers in Akwa Ibom State.

The results in Table 3.3 show the determinants of Value added by wholesalers of cassava and Cassava value added products in the study area. The Exponential model was selected as the Lead equation, being the one with highest R square (0.872) and F- Ratio (12.22) values. From the results on determinants of value added by wholesalers, it was observed that a total of five (5) variables were significant. These variables were Age (0.0572) and Education (0.2851) which were significant at 10 percent level of significance and Years of Experience in Value Chain Activity (0.9629), Membership of Cooperative Society (1.8550) which were significant at 5 percent and Credit Access (0.9629) which was significant at 1 percent level.

Education (0.2851) being significant at 10 percent indicates that an increase in the level of Education of the Wholesaler would lead to an increase in the value added by the wholesaler to cassava products. These variable were found to all have a positive relationship with the dependent variable (Value added by wholesalers). It can be deduced from the results that wholesalers of Cassava and its value added products, were well experienced in the trading of cassava and its value added products and could readily access credit (0.9629) when needed. Also, the wholesalers were well educated (0.2851) which also enabled them plan their business effectively in order to make profit. This is in consonance with Sebopetji and Belete (2009) and Osondu, Obike and Ogbonna (2015) who were of the view that a higher educated farmer would have enough money to finance production requisite. Generally, age, education, access to credit, membership of cooperatives and the years of experience were factors which significantly affected the wholesale of cassava and its value added products in the study area.

4. Conclusion

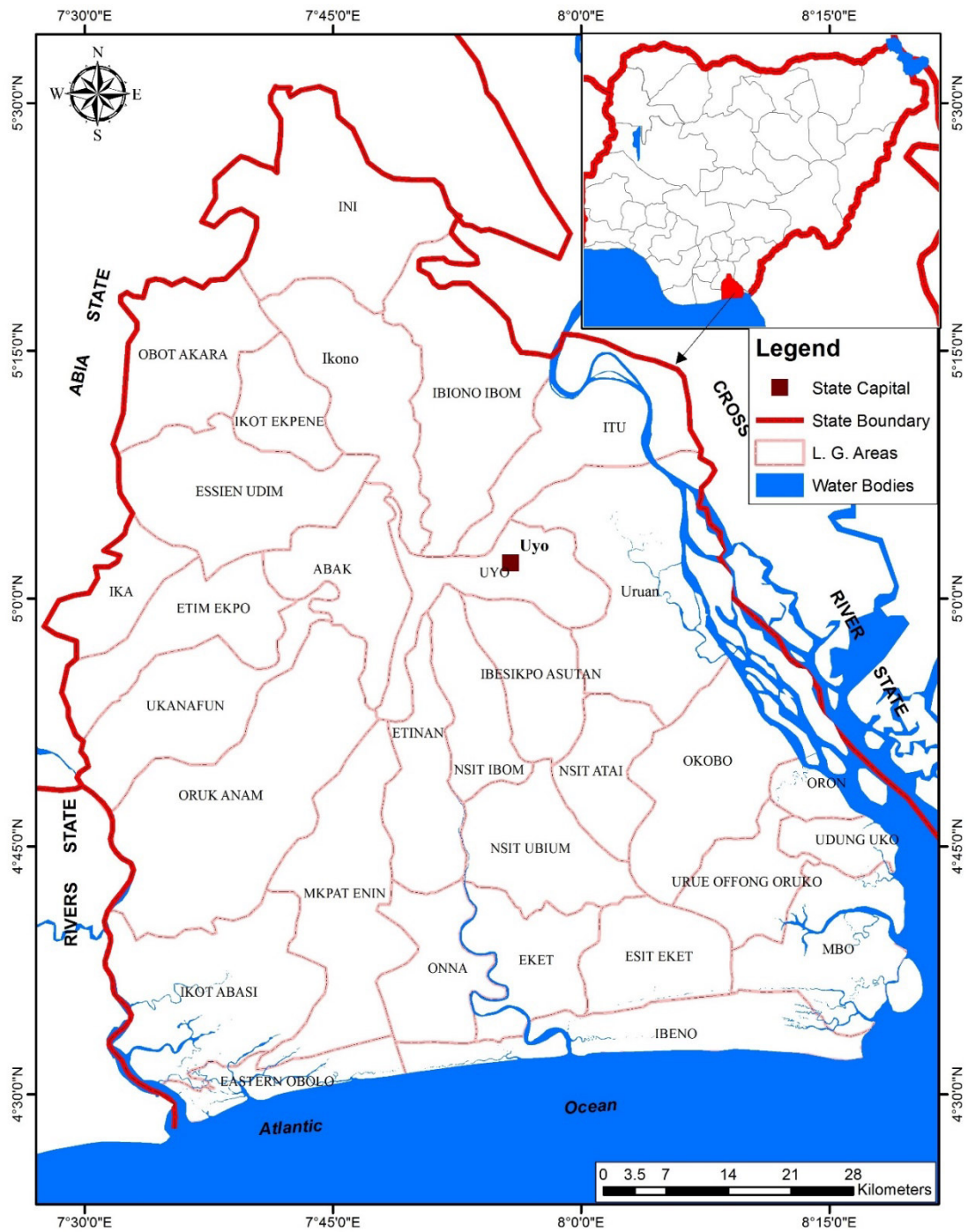
The study analyzed the activity of wholesalers along the Cassava Value Chain in the study area and estimated the profits that accrued to the wholesalers as a result of their involvement in the Cassava value chain activity in the area. The results showed that wholesalers were mostly men and traded mainly on Cassava tubers, stem cuttings, garri and fufu (akpu). Sales of garri was the most profitable item sold by these wholesalers. Also, age, education, access to credit, membership of Cooperatives and years of experience were factors found to affect the profitability of the wholesalers activity in the study area. This study therefore recommends that these wholesalers should form Cooperatives amongst themselves and raise Capital which can be invested in their business thereby expanding the scale of operation. This in turn will increase the returns obtained from their wholesale business.

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The Map of Akwa Ibom State



Source: Cartography and Map Library, Dept. of Geography, University of Uyo, Akwa Ibom State.

Table 3.1. Socio-economic Characteristics of Cassava Wholesalers in Akwa Ibom State.

Socio-economic Characteristics	Frequency	Percentages	Mean
Gender			
Male	37	74.00	
Female	13	26.00	
Age (In Years)			
21 – 30	8	16.00	
31 – 40	11	22.00	
41 – 50	12	24.00	43 years
51 – 60	18	36.00	
61 – 70	1	2.00	
Marital Status			
Single	23	46.00	
Married	19	38.00	
Divorced	2	4.00	
Widowed	6	12.00	
Highest Educational Level Attained			
First School Leaving Certificate (FSLC)	22	44.00	
Junior Secondary 3 (JS 3)	13	26.00	
Senior Secondary 3 (SS 3)	6	12.00	
Ordinary National Diploma (OND)	2	4.00	
Higher National Diploma (HND)	3	6.00	
Bachelor’s Degree (B. Sc)	3	6.00	
Masters Degree (M. Sc)	1	2.00	
Membership of Cooperative Society			
Yes	27	54.00	
No	23	46.00	
Experience in Wholesale of Cassava and its Products (in Years)			
1 – 5	21	42.00	
6 – 10	8	16.00	
11 – 15	4	8.00	8 years
16 – 20	7	14.00	
21 – 25	9	18.00	
Above 25	1	2.00	
Access to Credit			
Yes	31	62.00	
No	19	38.00	
Household Size (Number of Persons)			
1 – 5	36	72.00	
6 – 15	13	26.00	5 persons
11 – 15	1	2.00	

Source: Field Survey, 2020

Table 3.2 Distribution of cost and returns of wholesalers of cassava Products in Akwa Ibom State.

N = 50

Item	Total Cost	Average	Percentage
1. Cassava Tubers			
Revenue	41,550,200	831, 004	100
Cost			
Transportation	6,626,500	132, 530	74.78
Loading / off Loading	1,186,400	23,728	13.39
Rent on Shop	195,900	3,918	2.21
Tickets (others)	852,710	17,054.2	9.62
Total	8, 861, 510	177,230.20	100
Profit (R – C)	32, 688, 690	653,773.80	
2. Stem Cuttings			
Revenue	21,957,500	439,150	100
Cost			
Transportation	5,137,000	102,740	71.08
Loading/ off Loading	1,373,600	27,472	19.01
Rent on Shops	87,900	1,758	1.21
Tickets (Others)	628,950	12,579	8.70
Total	7,227,450	144,549	100
Profit (R – C)	14,730,050	294,601	
3. Fufu (Akpu)			
Revenue	146,443,800	2,928,876	100
Cost			
Transportation	34,211,700	684,234	73.46
Loading/ offloading	7,010,100	140,202	15.05
Rent on Shop	2,195,700	43,914	4.71
Tickets	3,157,050	63, 141	6.78
Total	46,574, 550	931,491	100
Profit (R – C)	99, 869, 250	1,997,385	
4. Garri			
Revenue	185,506,640	3710132.80	100
Cost			
Transportation	54,233,200	1,084,664	78.26
Loading / Offloading	9,734,100	194,682	14.05
Rent on Shop	5,178,730	103574.6	7.47
Tickets (Others)	157,050	3,141	0.22
Total	69, 303,080	1,386,061.60	100
Profit (R – C)	116, 203,560	2,324,071.20	
Total Revenue of Wholesalers	259, 403, 050	5, 188, 061	
Total Cost of Wholesalers	131,966,590	2, 639, 331.80	
Total Profit of Wholesalers	127,436,460	2, 548, 729.20	
Return on Investment (ROI)	96.57		

Source: Field Survey data, 2020.

Table 3.3: Regression Results on Determinants of Value Added By Wholesalers in Akwa Ibom State.

N = 50

Variable	Linear	Exponential	Double Log	Semi-Log
Constant	178055.37 (2.619)***	13.103 (1.816)**	11.330 (2.016)**	-11.738** (2.214)**
Age (X ¹)	2020.349 (2.182)**	0.0572 (1.902)*	0.0685 (1.782)*	0.608 (3.215)***
Gender (X ²)	- 18197.738 (- 0.121)	- 0.084 (-1.095)	- 0.0361 (-1.026)	- 1.029 (-0.378)
Education (X ³)	49150.221 (1.985)*	0.2851 (1.7630)*	0.5411 (1.324)	1.108 (0.964)
Household Size (X ⁴)	68745.621 (1.706)*	0.0346 (1.4786)	1.080 (1.682)*	0.073 (0..089)
Credit Access (X ⁵)	222348.477 (2.063)**	0.9629 (2.137)**	0.175 (0.921)	4.925 (2.056)**
Membership of Co-operative Society (X ⁶)	266924.73 (1.969)*	1.8550 (2.4509)**	0.603 (0.930)	9.402 (2.203)**
Years of Experience in VCA (X ⁷)	0.2035 (0.765)	0.9629 (2.3775)**	0.106 (0.643)	0.915 (2.006)*
R ²	0.813	0.872	0.466	0.581
Adj R ²	0.795	0.846	0.439	0.568
F- Ratio	11.258***	12.122***	8.147***	9.891***

Source: Field Survey, 2020.