



PROFITABILITY ANALYSIS OF COOPERATIVE WOMEN IN SMALL -SCALE CASSAVA FLOUR (LAFUN) BUSINESS IN IWO ZONE OSUN-STATE, NIGERIA

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ABSTRACT

Lafun is an innovation in cassava-tuber system, it is being generally embraced in all major towns in Osun-State, Nigeria. The study examined profitability analysis of cooperative women in small-scale cassava flour business in Iwo Zone of Osun-State, Nigeria. A multi-stage sampling technique was adopted to select the sample size of 120 respondents using a well structured questionnaire. Data was analysed using descriptive and inferential statistics. Respondent's average monthly income was ₦124,245.50k. The gross margin and net income of small-scale cassava flour business were ₦9,581.146 and ₦9,091.489 respectively. The rate of return on investment was accounted for 35.90% which indicated that cassava flour (Lafun) processors were able to realized profit of 36k per unit. Measures of performance indicated that the venture is viable, economical and profitable in the study area. It was recommended that processors should come together to form cooperative groups. Young unemployed females both married and singles who are still very active should join the enterprise to generate income and self-employment for themselves. Governments should encourage processing of cassava flour (Lafun) by giving Lafun processors soft loan and subsidize equipment needed for high quality of cassava flour processing to make huge profit and become food security

Keywords: Cassava, Tuber, Small-Scale, Enterprise, Cooperative, Flour

INTRODUCTION

In Nigeria, as in most developing countries, cassava is one of the most important carbohydrate sources. The large population of Nigeria depended on cassava daily as their main disk such as gain, Lafun and fufu, the leaves are consumed as vegetable, and it serves as raw materials to industries as well as been a means of alleviating poverty. In spite of the various uses cassava is known for, as an agent of self sufficiency in food production, the gain derived from it's production by rural farmers is still not sufficient to keep the resources poor farmers above the poverty line. Voviann (2016) stated that Nigerians are poor and hungry despite effort made by various governments in improving agricultural productivity and efficiency of the rural farmers who are the major stakeholders of agricultural production. Cassava is majorly produced by small-scale farmers in the rural communities of the country with little or no use in agricultural business sector as an industrial raw material (Raphael, 2008). Over two-third of the total production of cassava is consumed in various forms by humans; and it is a stable food crop for over 50 million Nigerians, providing more than 70% of their energy requirement. Cassava is useful in various ways which give the crop high potential as foreigner in Nigeria. Apart from its usefulness as food, it is an important raw material for industries for the production of starch, flour, alcohol, chips, gum, paper, pellets, adhesive, confectionaries, pharmaceuticals and livestock feeds (IITA, 2005). 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. 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. 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% of total income generated at the various levels of the value chain. This was followed by the large scale processor with 21.4%. The domestic wholesale trader followed behind them with 16.54% of total income generated. Medium Scale industrial user was the next important income earner with 11 per cent of total income. The farmer who originated the process of the value chain trailed behind all the actors with just only 0.03% of the income generated in the value chain. The retailer came closely behind the exporter, but both have a low share of 1.04% and 3.21% respectively. The results revealed the earning of the farmer was very low compare to all other actors in the cassava value chain.

Damilola *et.al.*, (2023). Conducted a study that assessed the impact of credit use on profitability among cassava smallholder farmers in Southwest, Nigeria. Multi-stage sampling procedure was used to select 210 smallholder cassava farmers for the study. A structured questionnaire was used to collect data on the socio-economic characteristics and profitability of cassava farmers. Data were analysed with descriptive statistics, budgetary analysis, ordinary least squares (OLS), and t-test statistics. Results shown that 60.0% of the farmers were male, 81.0% were married, 33.3% had secondary education, 70.5% had no contact with extension agents, 71.9% were members of a cooperative society, 61.9% had savings and 49.5% had access to credit. Furthermore, the mean age, farming experience, farm size, and household size of the sampled cassava farmers were 43 years, 19 years, 3.1 hectares, and 6 persons, respectively. Budgetary analysis shows that mean revenue per hectare from cassava production was ₦131,917.8/ha for credit users with gross margin of ₦85,138.7/ha and return on investment of 1.54, whereas ₦117,602.5 /ha for non-users with gross margin of ₦71,923.4/ha and return on investment of 1.31, implicating that cassava production is a profitable and viable enterprise and that credit users are more profitable than non-users. Farm size ($p < 0.01$), membership in cooperative society ($p < 0.10$), and credit ($p < 0.01$) significantly influenced the profitability of the cassava farmers. The test of the mean difference in revenue and net farm income was significant at 1%. The study concluded that credit had a positive significant influence on cassava farmers' profitability. Hence, credits should be made available by relevant stakeholders like government and non-governmental organisations, to cassava farmers in the study area. The main objective of the study is to examine the profitability analysis of cooperative women in small-scale cassava flour business in Iwo zone of Osun-State. The specific objectives are to: describe the socio-economic characteristics of small-scale cassava flour processors, estimate the cost and returns and level of profitability in small-scale cassava flour processing and identify the major problems associated with small-scale cassava flour processing in the study area.

METHODOLOGY

The Study Area

The study was carried out in Iwo Zone specifically in Iwo and Ola-Oluwa Local Government Areas of Osun-State Nigeria. Osun-State is one of western States in Nigeria. It was created in 1991 from the eastern third of Oyo-State. It was bounded by the Kwara-State on North-east. Ekiti and Ondo on the east, Ogun-State on South, and Oyo on the West and North-West. It has thirty (30) Local Government Areas with six zones, its capital is located at Osogbo. The land area is 42,251km². The population of the State was 5,423,435 (NPC, 2022). The annual rainfall distribution is 1020-2030mm. The mean temperature is 85 OF. Farmland is rich in humus and the soil type is loamy with a pH range of 5.5 - 6.5. The vegetation supports growth of major crops such as cassava, maize, yam, palm oil and



kola nut, hence, majority of the population predominantly practice agriculture. The estimated population is about 453,422 (NPC, 2022).

Methods and Data Collection

Both Primary and Secondary data were used for this study. The primary data was gathered using a well structured questionnaire that was personally administered and interviewed the sampled cassava flour processors. Secondary data was obtained from internet sources, published articles, text books, dissertation, projects and other relevant publications relating to cassava flour processing.

Methods of Data Analysis

The study used both descriptive and inferential statistics to analyze the collected data. Descriptive statistics such as frequency table, percentages and mean was used to describe socio-economic characteristics of the respondents and problems associated with cassava flour processing in the study area. Inferential statistics such as budgetary analysis was absorbed to estimate the cost and returns, and profitability level of the enterprise.

Sampling Techniques and Sample Size

A multi-stage sampling technique was employed to select respondents for the study. In the first stage, one zone was picked out of six (6) zones in Ogun State, because of their high concentration of cassava flour processors in those towns. In the second stage, two (2) Local Government Areas were systematically selected from Iwo zone: Ola-Oluwa and Iwo Local Government Areas. In the third stage, six (6) communities /villages (Asamu, Ife-Odan, Telemu, Asa, Feesu and Agbowo) were randomly selected from the chosen Local Government Areas. The villages/communities were randomly selected. In the last stage 20%, 10%, 5%, 25% and 5% respectively were selected from each towns based on number of the available small- scale cassava flour processors making a total of 120 respondents.

Budgetary Analysis

Budgetary Analysis was used to estimate cost and returns, and the profitability level of the enterprise as adopted by Ogunniyi and Omotoso, (2011)

Gross Margin (GM) Estimation:

This is the difference between the total revenue and total variable cost. It is expressed mathematically thus,

Model Specification

$$GM = TR - TVC \quad \dots (1)$$

A positive *GM* indicates that the operating cost is being covered and the business can be sustained.

Where:

GM = Gross Margin

TR = Total Revenue

TVC = Total Variable Cost

$$TR = P \times Q \quad \dots (2)$$

Where,

P = Price of cassava flour sold per bags (₦/kg)

Q = Quantity of cassava flour produced per annum

Net Income or Net Margin (*NI*) Analysis

This is the difference between the total revenue (*TR*) and total cost (*TC*). Mathematically,

$$NI = TR - TC \quad \dots (3)$$

Where,

NI = Net Income or Profit (₦)

TR = Total Revenue

TC = Total Cost

$$PI = NI/TR \quad (4)$$

$$RRI = NI/TC \times 100/1 \quad (5)$$

$$RRVC (\%) = TR - TFC/TVC \times 100/1 \quad (6)$$

$$OR = TVC/TR \quad (7)$$

Where,



PI= Profitability Index

RRI= Rate of Return on Investment

RRVC= Rate of Return on Variable Cost

OR= Operating Ratio.

RESULTS AND DISCUSSIONS

Socio-economic Characteristics of the Respondents

The results shown that 4.2% had less than 30 years of age, substantial percentage 33.3% and 41.7% of the respondents had their age fell within 31 – 40 years and 41-50 age bracket respectively. Also, 20.8% of the respondent had their age fell within 51 – 60. This implied that the respondents were in their bracket age and agile to work productively. This finding, agrees with the findings of Olorunfemi and Oladele, (2019). The marital status of the respondents shown that 12.5% of respondents were single, 70.8% were married, 6.7% were divorced, 5.8% were widowed and 4.2% were separated. The high percentage of the respondents suggested that they need to invest more to generate more income to cater for their family. Formal education is a widely known as an avenue for improving knowledge and rate of skill acquisition. The study showed that 11.7% of the respondents had no formal education, 38.3% attended primary school education, 47.5% had secondary school leavers while 2.5% were educated up to tertiary institution level. The result showed that majority of respondents attended school at various levels of education, meaning that they can write and read, this findings disagrees with Nweke (2020) who says that majority of women are illiterate. The study revealed that majority (79.2%) of the cassava flour processors were christians and 17.5% of them practiced Islam while 3.3% practiced traditional worship as religion. This implied that respondents were associated with one religion or the other, which showed that there was no religious barrier in their business. This findings concur with (Mary et.al, 2019). Years of experience is expected according to a *priori expectation*, to increase profitability and cassava flour productions. The number of years in which the respondents have been engaged in the enterprise could be used to measure their efficiency. It was revealed that 12.5% had less than 5 years of experience, 20.8% of the respondents had between 5-10 years of experience, 25.0% had between 10 and 15 years of experience, 27.5% had between 16-20 years while 27.5% had 21 and above years with approximation average of 6 years experienced. This indicated that respondents had gathered experience and they were not new in their enterprise. The findings also shown that the more than half (54.2%) of the respondents had between 4-6 people as household size while 18.3%, 10.8%, 5.8% and 10.8% of the respondents had 3 or less than, 7-9, 10-12 and, 13 and above people as household size, with an average of 5 individuals as household size. This gave clear indication of better and moderate household size in the study area. Membership of cooperative, findings shown that 10% of the respondents had less than 5 years, 37.5% had 5-10 years of membership, 8.3% also had 11-15 years while 27.5% and 16.7% had 16-20 and, 21 and above years of membership respectively. The results revealed that 25.8%, 19.2%, 17.5%, 13.3% realized less than ₦100,000, ₦100,000-₦200,000, ₦201,000-₦300,000 and ₦301,000-₦400,000 as monthly Income respectively, while 9.2% and 15.0% generated ₦401,00- ₦500,000 and ₦501,000 and above respectively with approximate average of ₦250,000:50k as monthly Income. This findings agreed with (FAO, 2017) asserted that the level of income determined the asset ownership.



Table 1: Socio-economic Characteristics of the Respondents

Variables	Value	Frequency	Percentage	Cumulative frequency	Average	
Age	< 30	5	4.2.	4.2	41 years	
	31-40	40	33.3	37.5		
	41-50	50	41.7	79.2		
	51-60	25	20.8	100.0		
Marital status	Single	15	12.5.	12.5		
	Married	85	70.8	83.3		
	Divorced	8	6.7	90.0		
	Widowed	7	5.8	95.8		
	Separate	5	4.2	100		
Household size	< 3	22	18.3	18.3	5 persons	
	4-6	65	54.2	72.5		
	7-9	13	10.8	83.3		
	10-12	7	5.8	89.2		
	13 & above	13	10.8	100.0		
Years of Experience	< 5	20	15.4	15.4	6 years	
	5-9	53	40.8	56.2		
	10-14	27	20.7	76.9		
	15-19	21	16.2	93.1		
	20 and above	9	6.9	100.0		
Education attainment (years)	No formal education	14	11.7	11.4		
	Primary	46	38.3	49.7		
	Secondary	57	47.5	97.2		
	Tertiary	3	2.5	100.0.		
Religion						
Christianity						
Islam		95	79.2	79.2		
Traditionalists		21	17.5	96.7		
Membership of Cooperative		4	3.3	100.0		
	<5	12	10.0	10.0	8 years	
	5-10	45	37.5	47.5		
	11-15	10	8.3	55.8		
	16-20	33	27.5	83.3.		
	21 & above	20	16.7	100.0		
Monthly income (₦)	< ₦100,000	31	25.8	25.8	₦250,000. 50k	
	₦100,000- ₦200,00	23	19.2	45.0		
	₦201,000- ₦300,000	21	17.5	62.5		
	₦301,000- ₦400,000	16	13.3	75.5		
	₦401,000- ₦500,000	11	9.5	85.0		
	₦501,000 and above	18	15.0	100.0		
TOTAL		120	100			

Source: Field Survey Data, 2024



Cost and Returns and Profitability of Small-scale Cassava Flour Processing in the Study Area

The average estimated costs and return of cassava flour processing /production in the study area were ₦25,327.010 and ₦34,418.499 per year respectively. while the gross margin and net income to the small-scale cassava flour business were ₦9,581.146 and ₦9,091.489 respectively. The estimation for Rate of return on investment, rate of return on variable cost, profitability ratio and operating ratio were recorded as 35.90%, 136.60%, 0.30 and 0.72 respectively. The rate of return which was accounted for 35.90% indicated that for every single unit of cassava flour processing, processors were able to realized profit of 36k per unit. Conclusively, the measures of performance indicated that cassava flour venture in the study area is viable and profitable. This agreed with Onu and Okoronwo (2019) that poultry production is profitability.

Table 2: Cost and Returns of Small-Scale Cassava Flour Processing in the Study Area

Inputs (₦)	Average value (₦)	% of TC
Total Revenue (TR) (₦)	34,418.499	
Variable Cost Items:		
Labour Cost (₦)	1,423.751	5.62
Transportation Cost / Fueling (₦)	130.111	0.51
Cost of Cassava tubers/ roots	23,116.290	91.27
Cost of loading and off loading/ market revenue	23.513	0.09
Cost of peeling/ washing (₦)	70.457	0.28
Cost of packaging / sealing (₦)	73.231	0.29
Total Variable Cost ₦	24,837.353	98.07
Gross Margin (₦)	9581.146	
Fixed Cost Items:		
Depreciation		
Drums (₦)	54.915	0.22
Cost of presser (₦)	89.183	0.35
Cost of Sacks/Nylon (₦)	29.700	0.12
Basket	13.121	0.05
Knives	50.200	0.19
Sievers	30.311	0.12
Wheel barrow	23.005	0.09
Interest on loan (₦)	100.100	0.40
Land leased /purchased	99.122	0.39
Total fixed cost	489.657	1.93
Total cost	25,327.010	100
Internal rate of return on variable cost	136.60%	
Internal rate of return on investment	35.90%	
Profitability ratio	0.30	
Operating ratio	0.72	
Net income	9091.489	

Source: Field Survey Data, 2024

Constraints Associated with Small-Scale Cassava Flour Processing in the Study Area

The constraints associated with cassava processing in the study area were highlighted bellow. The constraints includes high cost of transportation (100%), fluctuation price of cassava (98.3%) and seasonal changes (95.8%), poor sales (88.3%) high purchased of equipment (90.8%), lack of capital (86.7%), poor access to good road (83.3%) were all ranked 1st, 2nd, 3rd, 4th, 5th, 6th and 7th respectively. Mean while, lack of storage facilities (82.5%), market channel problems (75.0%), Credit sales



(66.7%), shortage of labour (58.3%) and shortage of water accounted for (50.0%) and ranked as 8th, 9th, 10th, 11th and 12th respectively. The implication is that, the high cost incurred by the cassava cooperative women processors during the cassava processing period will affect their profit and also increase the market cost, which may resulted to reduction of the market margin and also reduce farmer's profitability and income. This result concur with Nwadu (2019) findings which indicated that farmers faced many constraints on their cassava flour processing job.

Table 3: Problem Associated with Small-scale Cassava Flour Processing in the Study Area

Constraints	Yes		No		Rank	Mean
	Frequency	(%)	Frequency	(%)		
Poor access to good road	100	83.3	20	16.7	7 st	2.136
High cost of transportation	120	100.0	0.0	0.0	1 st	,5.550
Seasonal changes Fluctuation price of cassava roots	115	95.8	5	4.3	3 rd	4.213
High purchase of equipment	118	98.3	2	1.7	2 nd	4.252
Lack of capital	109	90.8	11	9.2	4 th	3.441
Poor sales	104	86.7	16	13.3	6 th	2.541
Lack of storage facilities	106	88.3	14	11.7	5 th	2.587
Market channel problem	99	82.5	21	17.5	8 th	2.503
Credit sales	90	75.0	30	25.0	10 th	2.201
Shortage of labour	80	66.7	40	33.3	11 th	1.813
High labour cost	70	58.3	50	41.7	12 th	1.750
Shortage of water	95	79.2	25	20.8	9 th	2.684
	60	50.0	60	50.0	13 th	1.701

Source: Field Survey, 2024, *Multiple response

CONCLUSION AND RECOMMENDATIONS

Majority of the respondents were well experienced in their enterprise, agile, energetic and youthful, married and educated. Respondents had an average household size of about five (5) persons per household, the existing ones were well experienced and they are more efficient in managing thier business effectively. Conclusively, the measures of performance indicated that small-scale cassava flour business is economical, viable and profitable in the study area. Therefore the study recommended that: Females who are of younger age both married and singles who are still very active should be encouraged to go into the cassava flour business because the business is profitable and it will also serves as source of self-employment and income generation, governments at all levels should give small-scale cassava flour processors access to funds with low or no interest rates and easy payback period and subsidize equipment needed for high quality cassava flour processing for the cassava flour producers, so that they can produce in large quantity to met the population demand of the cassava flour, to make huge profit and become food security. Lastly, the respondents should come together to form more cooperative groups from which members could obtain loans at very low interest rates to finance and expand their enterprise

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