

PROFITABILITY ANALYSIS OF GROUNDNUT OIL PROCESSING AMONG WOMEN IN ZURU EMIRATE OF KEBBI STATE

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ABSTRACT

This research work determines the profitability of groundnut oil processing among women across seasons in Zuru Emirate of Kebbi State. The specific objectives of the study were to determine the socioeconomic characteristics of groundnut oil processors, determine the costs and return in groundnut oil processing and determine the constraint encountered by women processors in the study area. Multi-stage sampling techniques was employed to collect data from one hundred and fifty three (153) women groundnut oil processors. Data collected were analyzed using descriptive statistics, and Net farm income (NFI) from the three processing seasons. The results indicated that majority 82.30% of processors are young and within their active age, majority 62% were married, majority 46.20% of women groundnut oil processors had formal education, majority of women groundnut oil processors had 56% years of experience and majority 93.00% had the household size of 1-10. Result also revealed an average net farm income of ₦7,099.50, ₦5,537.92 and ₦5,258.82 at peak, lean and off seasons respectively. This concluded that groundnut oil processing enterprises in the study area is a profitable venture across seasons. The study recommends that processors should be train on managing input and credit should be provided by interested organization (Agencies).

Keywords: Groundnut, processing, Profitability and socio-economic characteristics.

1.0 INTRODUCTION

The crop processing industry of Nigeria like other African countries is dominated by the informal sector comprising mainly of small and medium scale rural enterprises owned and operated by men and women who depend solely on indigenous technology (Aseidu, 2009). Groundnut, soya beans, banana, palm kernel, potatoes, cassava, *et cetera*, were some of the dominant agricultural produce that are processed into local foods consumed by the rural communities in Nigeria (Napodo and Ditto, 2013).

FAO (2011) defined food processing and preservation as a set of physical, chemical and biological processes that are performed to prolong shelf-life of foods, and at the same time retain the features that determine the quality, such as colour, texture, flavour and especially its nutritional value. Aboki (2015) also defined Processing as any activity that maintained or raises the quality or alters the physical and/or chemical characteristics of a product, material, object, *et cetera*. Processing can be simple and quick or complicated Processing was an important component of agribusiness development, because a large portion of farm production underwent some degree of change between harvesting and final use. It has also been noted that Agricultural processing activities are small-scale and require low investment capital, hence can easily be undertaken by women (FAO, 2011).

FAO (2012) observed that increased urbanization, distance between home and work-place, working women and changes in family cohesion has increased demand for shelf-stable, convenience and value added food Agricultural processing facilities have a strong impact of stimulating consumer demands backward to the farm sector, to keep pace with demand for raw materials supply for processing.

According to the work of Aliyu (2015), women are famous and major small-scale commercialized produce processors and prime economic actors, subsisting in local informal economies and prominently contributing to household work and welfare.

According to Amber and Katrina (2004) groundnut is considered a women crop in Africa it was originally grown by women to supplement their families diet with protein. However, groundnut production can also be a way for women to earn cash income and participate in the economy consequently, increasing women empowerment. Women value groundnut processing venture for many reason, including: generate income to send children to school, provide high energy and protein food source for their children, oil for cooking and high quality feed for cattle moreover, despite the importance of groundnut processing enterprises in employment generation among the rural women in Zuru emirate of Kebbi State there was paucity of information about the socioeconomic factors, cost and return and as well as the problems associated with the processing were investigated and analyzed in the level of the processors in Zuru emirate. In order to close this gap, this research focus on the profitability in groundnut oil processing among women in Zuru emirate of Kebbi State.

1.1 OBJECTIVES OF THE STUDY

The aim of the study was to determine the profitability of groundnut oil processing in Zuru Emirate.

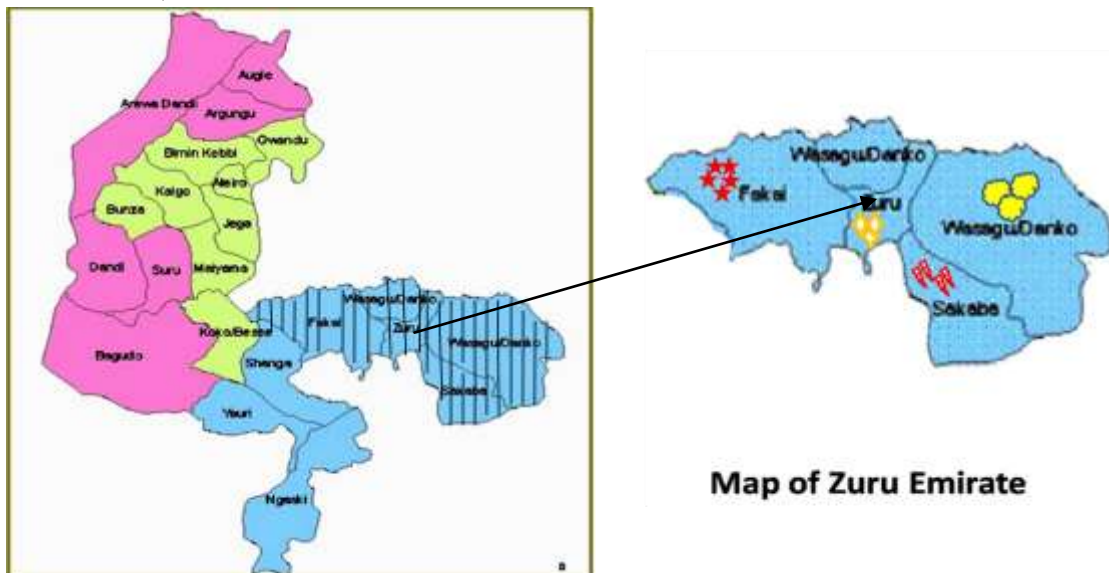
The objectives were to:

- i examine the socio-economic characteristic of groundnut oil processors
- ii estimate the costs and return in groundnut oil processing across seasons
- iii determine the constraints encountered in the study area

2.0 METHODOLOGY

2.1 STUDY AREA

Zuru Emirate is one of the four Emirates in Kebbi State. The emirate comprises of four (4) Local Government Areas, namely: Danko - Wasagu, Fakai, Sakaba and Zuru. Zuru Local Government Area is located in South-eastern part of Kebbi state within longitude $5^{\circ}14^{15.78}$ 'E and latitude $11^{\circ} 26^{16.79}$ 'N (Wikipedia, 2010). It has an area of $41,855 \text{ km}^2$ and a population of 3,238,628 as at (Wikipedia, 2010). It is bordered to Anka Local Government Area of Zamfara State to the North, to the South West by Rijau Local Government Area of Niger State and West by Koko - Besse Local Government Area. The climate lies within the tropical Sudan savannah, the minimum temperature of the area ranges from 15° - 24° C while the maximum ranges from 32° - 39° C, with the annual rainfall ranging from 560 - 1300mm. The first rain fall usually beings from April and last for five (5) to six (6) months (Augu and Lawal, 2005).



2.2 Sampling Technique and Sample Size

Multi – stage sampling technique was employed in the data collection. Zuru Emirate comprises of four Local Governments namely; Zuru, Danko - Wasagu, Sakaba and Fakai Local Governments. In the first stage, two (2) districts were purposively selected from each local Government area based on the predominance of women groundnut oil processors, giving a total of eight (8) Districts, namely: Zuru- Senchi and Dabai; Danko-Wasagu- Waje

and Kanya; Sakaba - Dirin - Daji and Sakaba and Fakai - Bajida and Fakai. Secondly, from each district, two (2) villages were purposively selected based on the predominance of women groundnut oil processors, giving a total of sixteen (16) villages. Thirdly, from a sampling frame of seven hundred and eighty four (784) woman processors, proportionate random sampling of 20% from the villages were made and this gave a total sample of one hundred and fifty three women groundnut oil processors.

Table 1: Show the sampling Planned

LGA	District	Village	No. of women processors	Proposed Sample (20%)
zuru	Senchi	Senchi	23	5
		Bahago	17	3
	Dabai	Dabai Dabai	149	30
		DabaiDoruwa	74	15
Dankowasagu	Waje	Tungan gaya	23	5
		Waje	32	6
	Kanya	Rafin Gora	23	5
		Gommawa	32	6
Sakaba	Sakaba	Sakaba	77	15
		Wangachi	23	5
	Dirin Daji	Dirin Gari	93	19
		Mazamaz	37	7
Fakai	Bajida	penin Amana	18	4
		Penin Gaba	11	2
	Fakai	Mahuta	83	17
		Doro	44	9
Total	8	16	784	153

Source: Field survey, 2016

2.3 Data Collection

Primary data were collected for the study through the use of structured questionnaires which were used to elicit relevant information on the socio-economic characteristic of women groundnut oil processors such as age, marital status, educational level, years of experience and household size. Other information sourced include prices of both inputs and output to groundnut processing at peak, off and lean season and problems encounter in groundnut oil processing were identified.

2.4 Analytical Technique

The analytical tools used for the study include: Descriptive statistics, Net Farm Income.

2.5 Descriptive statistics

Descriptive Statistics such as Frequency, Mean, Standard Deviation and Percentage were used.

2.6 Net farm income analysis (NFI)

The technique was used in analyzing objective (ii). The budgeting analysis involves operations leading to estimation of gross revenue and total cost for the same production period (Ibrahim *et al.*, 2010). Total expenses are defined as the total cost (TC) incurred during production period which is obtained by multiplying the various inputs used by unit prices. On the other hand, the total revenue (TR) or gross farm income (GFI) is the sum of outputs multiplied by their unit prices. Net farm income is the difference between gross revenue and total cost. The model is specified as:

$$\text{NFI} = \text{GR} - \text{TC}; \quad \text{TC} = \text{TVC} + \text{TFC}$$

Therefore

NFI = Net farm income or profit and is the difference between gross revenue and total cost.

GR = Gross revenue (₦) represent the sum of the total value of groundnut oil

TC = Total cost (₦), TVC = Total Variable cost (₦) and TFC = Total fixed cost (₦)

The variable cost items considered include costs of groundnut seed, transportation, fire wood, labor, grinding and ingredients while fixed costs (FC) include depreciation on equipments such as gallon, jerry can, basin frying pan, mortar and pistle, frying machine, oil separating machine, perforated spoon, colander, turning stick, grinding machine and bowel.

3.0 RESULTS AND DISCUSSION

3.1 SOCIO-ECONOMIC CHARACTERISTICS OF WOMEN GROUNDNUT PROCESSORS

The socio-economic characteristics of women groundnut oil processors and distribution, on the basis of age, marital status, household size, educational level and years of experience were analyzed.

Henry, (2014) stated that age has a significant influence on the decision making process of a farmers with respect to risk aversion, adoption of improved agricultural technologies and other production related decision. Age distribution of women groundnut oil processors is presented in Table 2. Results in Table 2 indicated that 82.3% of the women groundnut oil processors are within 21-50 years which account for the majority of women ground nut oil processors in the Zuru emirate. This implies that they were young and energetic within the productive age which could increase their groundnut processing activities.

This result was in line with the findings of Musa (2006) in his study on indigenous resources management among communities in North West of Nigeria, which revealed that women groundnut processors are of middle age category of 20-50 years of age. This result is also in line with that of Abdulraham *et al.* (2015), which show that majority of groundnut oil processors are younger and can contribute positively to agricultural production for next

decade, the older women involved in groundnut oil processing venture 8.5 % are not too strong to carry out the tedious nature of the processing venture.

Result in Table 2 Shows that 62.1% of women groundnut oil processors were married, 18.3% were single while 12.4 and 7.2% were divorce and widowed respectively. The result implies that most of the processors were married and needed to work so as to earn some income to support their families, hence their involvement in small-scale groundnut oil processing. This is in line with findings of Maigida (2012) which reveals that marital status of women groundnut oil processors plays a significant role in agricultural processing activities.

Result in Table 1 shows that majority 46.2 % of women groundnut oil processors had a form of formal educational system (primary, secondary, and tertiary) while 26.1%, 14.0% had obtained Quranic and Adult education respectively. This implies that due to their educational level women groundnut oil processors are likely to adapt to improved groundnut oil processing technology and innovation. According to Oyeleke (1999), education has a positive and significant impact on farmer's efficiency in production. Adepoju *et al.* (2007) also reveals that education enables every individual to gain knowledge and skill and this increases their power of understanding.

The result in Table 5 reveals that 35.0% of the women groundnut oil processors had 6-10 years of experience, 19.0% had 1-5 years. Respondents within 1-10 years experience are the majority representing 54%. 16.0 % had 11-15 years, 14.0 % had 16-20 years while 16.0 % had 21-30. This implies that as the age of women groundnut oil processors increases it decreases the efficiency. This result is in line with that of Iliyasu *et al.* (2008), which show that an experience farmer should be able to estimate the profit and cost incurred as well as input such as raw groundnut seed, labor, transportation and equipments in their production.

The result in Table 1 also reveals that 93.00 % of women groundnut oil processors had a household size of 1-10 members while 7.0 % had 11-20 household size. This implies that family labour is recognized as a source of labour supply in groundnut oil processors in Zuru emirate the higher the number of household size the lower cost of labour. According to Abdulrahman *et al.* (2015), number of people in a certain family cannot be used to justify the potential for production. This is because it can be affected by some important factors such as; age, sex, and health status. The result of this study also agreed with that of Mohammed *et al.* (2015) which reveal that 48% of women groundnut processors had a house hold size of 1-10.

Table 2: shows the Distribution of socioeconomic characteristics of groundnut oil processors among women in Zuru Emirate

Age	Frequency	Percentage
11-20	14	9.20
21-30	39	25.50
31-40	49	32.00
41-50	38	24.80
51-60	9	5.90
60 and above	4	2.60
Total	153	100.00
Marital Status	Frequency	Percentage
Single	28	18.30
Married	95	62.10
Divorced	19	12.40
Widowed	11	7.20
Total	153	100.00
Educational Level	Frequency	Percentage
Quaranic	40	26.10
Primary	24	16.00
Secondary	34	22.20
Adult education	21	8.00
Tertiary education	12	14.00
Total	153	100.00
Years of experience	Frequency	Percentage
1-5	29	19.00
6-10	53	35.00
11-15	25	16.00
16-20	22	14.00
21-25	10	7.00
26 and above	14	9.00
Total	153	100.00
Household size	Frequency	Percentage
1-5	75	49.00
6-10	67	44.00
11-15	9	6.00
16-20	2	1.00
Total	153	100.00

Source: Field survey, 2016

3.2 Profitability Analysis

The viability of an enterprise is indicated by the amount of profit realized per period of time. Profit is the difference between the monetary value of goods produced and the cost of the

resources used in their production. The amount of revenue realized and operating cost of a business venture determines how much gain or loss the enterprise can achieve within a certain period. The cost and return (profitability) of groundnut oil processors in study area was measured by estimating the difference between the total revenue from the sale of groundnut output (*kuli-kuli* and oil) and the cost component involved in the processors.

Results for cost and returns analysis is presented in Table 3. The Table shows the average total cost of processing was ₦13, 624.43 which was dominated by the variable cost of processing which accounted for 88.10% of the average total cost. The fixed cost component on the other hand accounts for 11.90% of the average total cost of processing at peak season while the average total cost of ₦13, 483.12 was recorded for lean season, which was dominated by the variable cost of processing 87.93% of the average total cost. The fixed cost component accounts for 12.07% of the average total cost and ₦14588.30 of the average total cost of processing dominated by the variable cost of processing which accounted for 88.84% of the average total cost was recorded for off season. The fixed cost accounted for 11.16%.

In terms of returns, average gross revenue (GR) per respondent of ₦20, 723.99, ₦19, 021.21 and ₦19, 847.12 across the processing seasons at peak, lean and off season were obtained from groundnut oil processing. This shows that for the women groundnut oil processors to be profit efficient, they have to make sell of both groundnut oil and cake (*kulli-kulli*). The average net farm income of respondent per processing cycle of ₦7, 099.50, ₦5, 537.92 and ₦5, 258.82 were recorded at peak, lean and off seasons respectively. This finding is similar to that of Illiyasu *et al.*, (2008). The result shows that the average gross revenue of ₦151.12 was obtained in groundnut oil processing in the study area. This result is in line with Ibrahim *et al.*, (2010), reveals gross revenue of ₦30,817.60 was obtained from groundnut processing, groundnut oil account for 56.3% and groundnut cake (*kulli- kulli*) account for 43.7% with the net farm income of ₦ 10,586.6 per processing cycle in the study.

Table 3: Shows the Costs and Returns Analysis of Groundnut oil processing across the Seasons in Zuru Emirate

Variables	PEAK SEASON			LEAN SEASON			OFF SEASON		
	Average	Total	Percentage of TC	Average	Total	Percentage of TC	Average	Total	Percentage of TC
Cost of groundnut seed	8883.16	1359125	65.20	9022.88	138050	66.92	10349.15	1543420	69.15
Cost of labor	1263.86	193370	9.30	1263.86	19337	9.37	1263.86	193370	8.66
Cost of fire wood	497.17	76070	3.65	400.33	6125	2.97	314.64	48140	2.16
Cost of grinding	951.21	145541	7.00	767.10	117366	5.69	631.69	96648	4.33
Cost of transportation	147.03	22495	1.08	147.03	22495	1.09	147.03	22495	1.01
Cost of ingredients	254.38	38920	1.87	254.38	38920	1.89	254.38	38920	1.74
Total variables cost (TVC)	11996.87	1835521	88.10	11855.56	1813901	87.93	12960.74	1982993	87.05
FIXED COST (DEPRECIATION)									
Gallon	199.20	30481	1.46	199.20	30481	1.46	199.20	30481	1.46
Jerry can	230.70	35059	1.68	230.70	35059	1.68	230.70	35059	1.68
Basin	224.60	34361	1.65	224.60	34361	1.65	224.60	34361	1.65
Frying pan	201.00	30685	1.65	201.00	30685	1.47	201.00	30685	1.47
Mortar and pistle	81.10	12406	0.60	81.10	12406	0.60	81.10	12406	0.60
Frying machine	58.00	8871	0.43	58.00	8871	0.43	58.00	8871	0.43
Oil Separating machine	82.90	12678	0.60	82.90	12678	0.60	82.90	12678	0.60
Perforated spoon	119.90	18340	0.88	119.90	18340	0.88	119.90	18340	0.88
Colander	56.50	8640	0.40	56.50	8640	0.40	56.50	8640	0.40
Turning stick	44.20	6760	0.30	44.20	6760	0.30	44.20	6760	0.30
Grinding machine	161.40	24700	1.20	161.40	24700	1.20	161.40	24700	1.20
Bowel	85.00	13000	0.60	85.00	13000	0.60	85.00	13000	0.60
Chopping board	9.80	3030	0.15	9.80	3030	0.15	9.80	3030	0.15

Knife	65.40	10006	0.48	65.40	10006	0.48	65.40	10006	0.48
TOTAL FIXED COST (TFC)	1627.56	249017	11.90	1627.56	249017	12.07	1627.56	249017	12.95
TOTAL COST (TC)	13624.43	2084538	100	13483.12	2062918	100	14588.30	2232010	100
REVENUE	Average	Total	% of GR	Average	Total	% of GR	Average	Total	% of GR
Revenue from G/ oil (y _i)	11483.99	175705	55.41	10254.54	1568950	53.91	9939.87	1520800	50.08
Revenue from G/cake (y _{ii})	9240.00	1413720	44.59	8766.47	1341270	46.09	9907.12	1515810	49.92
Gross Revenue (GR) = y _i + y _{ii}	20723.99	3170770	100	19021.21	2910220	100	19847.12	3036610	100
NET FARM INCOME(NFI)	7099.50	1086232		5537.92	847302		5258.82	804600	

Source: Field survey, 2016

3.3 Problems Encountered in Groundnut Oil Processing across the Three Season

Results in Table 4 reveals that 83.2% of women ground nut oil processors indicated difficulty in **accessing credit** as a major challenge faced by the processors empirical evidence shows that adequate financing contributes about 25% to the success of groundnut processing firms (Adepoju *et al.*, 2007). This factor has largely undermined the capacity of groundnut processing firms in Zuru emirate of Kebbi State in particular.

Fluctuation in price of input /output was reported by 60 % of processors. This implies that there is instability on the price of input/output which strongly affect their production. High cost of groundnut seed: this was reported by 70 % of the processors. Usually seed is cheap at harvesting season but processors are meager processors lacking capital.

High cost of processing machine: This was reported by 50 % of the processors. Because the processors don't have the finances to purchase the machine which cost up to 250,000 which make it difficult for many processors not to procure the machine.

High cost of transportation: This was reported by 50 % of the groundnut oil processors. When transportation is available as at when due it is usually less in readily not available as at when due it become very difficult and expensive for the processors to carry out their production to the market. Poor electricity supply: This was reported by 46 % of the processors. Due to epileptic power supply it is sometimes difficult for the processors to grind.

Table 3: Distribution of Problems (constraint) Encountered among the Women Groundnut Processors in the Study Area

Constrain	Frequency	Percentage
Difficulties in credit worth	127	83.20
High cost of seed	107	70.00
Fluctuation of price of input/output	92	60.00
High cost of processing machine	77	50.00
High cost of transportation	77	50.00
Poor electricity supply	70	46.00

Source: Field survey, 2016

Conclusion

Inefficiency in groundnut oil processing in study area varies from one season to another due to managerial factors but a significant opportunity exist for improving the livelihood of rural women and alleviate dependences. The opportunity can be exploited through improvement in managerial ability and adoption of new techniques

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