RESEARCH ARTICLE

Effects of Socio-Economic Variables on the Profitability of Groundnut Processing in Taraba State, Nigeria.

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ABSTRACT:

This paper examined the effects of socio-economic variables on the profitability of groundnut processing in Taraba State, Nigeria. A purposive and three-stage sampling technique was adopted in selecting 170 groundnut processors for the study. Descriptive statistics and multiple regression were used to analyze the data. The study revealed that age, household size, processing experience and income of groundnut processors have positive effect on profit. While marital status, sex and level of education were not determinants of profit earned from groundnut processing. The result also shows that the major constraints faced by groundnut processors in the study area were: unavailability of high oil yielding groundnut variety, seasonality of groundnut production and lack of capital for expansion. It was recommended that effort should be made by the government to encourage groundnut processors to form Cooperative Societies in order to enable them acquire equipment and financial support from bank and government to increase the capital base needed to boost the level of groundnut oil and groundnut cake production.

Keywords: Groundnut processors, Taraba State, Profitability, Socio-economic variables.

INTRODUCTION

Groundnut (Arachis hypogea) which also goes by several other names such as peanuts, earthnuts, monkey-nuts and pinders is a legume that grows in the ground. It is commonly available during the rainy season. Groundnut is an annual crop grown on about 19 million hectares in tropical and sub-tropical regions and the warmer areas of temperate regions of the world, due to its edible oil and protein rich kernels and seeds (Woodroof, 2003). It is a rain fed crop in most areas of Nigeria and is cultivated either as a sole crop, or in association with cereals such as maize, sorghum or with legumes such as pigeon peas. The crop grows well on deep, well-drained sandy loam soils that are well supplied with calcium and contained a moderate amount of organic matter (Nnamdi, 2010).

Groundnut production in Taraba State is largely done by women. The popular variety cultivated are Kano local, Kano 50, Castle Cary, Samnut 21, 22 and 23 (rosette resistant varieties). It is grown as a sole crop or intercropped, but performs better as sole crop. Limitations in groundnut production in Taraba State ranges from land availability, labour, fund, availability
of appropriate fertilizer dosage, disease control, proper storage to marketing. Women farmers in Taraba are resource poor and illiterate groundnut producers. They partake in all aspects of the groundnut value chain. There has been a decline in groundnut production and participation by women farmers in the State (Idoko et al., 2014).

Groundnut is a cash crop providing income and livelihoods to the farmers. It also contributes to nutrition of farm families through consumption of energy and protein rich groundnut kernel and provides nutritious fodder to livestock. Groundnut is also important for smallholder agriculture and the national diet in Nigeria; it contributes significantly to dietary requirements in most parts of the country.

Groundnut oil extraction can be done through modern or traditional methods. Modern method of oil extraction involves the use of machines and electric equipment that facilitates effective production of groundnut oil and groundnut cake within a short period of time. However, traditional method of extracting the oil content in the kernel is used by many people in West and Equatorial Africa (Duke, 2004).

Groundnut seed constitute the largest portion of the factor of production employed in the production of groundnut oil and groundnut cake. The average cost of raw groundnut was estimated as N86.83 per 30kg (Iliyasu et al., 2008). Usually, the task of groundnut processing is carried out by women and children (Abdulazeez et al., 2010). In oil production, a 5kg unshelled bag of groundnut produces a 0.75L bottle of groundnut oil. This is normally done by local oil expellers. The 0.75L bottle of cooking oil is sold for between N80.00 to N100.00 (Iliyasu et al., 2008). Groundnut oil and groundnut cake production are one of the main sources of protein used as feed for poultry and can provide an alternative source of edible oil. Thus, it can contribute considerably as income source and as one-way of job creation for self-employment. Iliyasu et al. (2008) opined that small-scale processors must be assisted to rise beyond subsistence to increase their incomes through more efficient use of resources. They must be guided on what level of inputs combination that would ensure optimum production and hence promote profitability.

The problems of groundnut processing was observed to be seasonality of groundnut, insufficient supply of raw groundnut, obsolete processing, poor and inconsistent quality of processed products and poor quality of raw groundnut supply (Lambert, 2001).

Despite the importance of groundnut processing in our daily lives little is known about the effect of social economic variables on the profitability of groundnut processing in the study area. It is against this background that this study was carried out to examine the following objectives:

1) determine the socio-economic characteristics of groundnut processors in Taraba State

2) examine the effect of socio-economic variables on the profit margin of groundnut processors.

3) identify major constraints associated with groundnut processing in the study area.
MATERIALS AND METHODS

The Study Area

The study was conducted in Taraba State of Nigeria. Taraba State is located in the north-eastern part of Nigeria. The state lies between latitude 6º 30’ and 9º 36’ north of the equator and longitude 9º 10’ and 11º 50, east of the Greenwich meridian (Taraba State Ministry of Information, Youth, Sport and Culture [TSMIYSC], 1999). The State consists of undulating landscape dotted with a few mountainous features. These include the scenic and prominent Mambilla plateau. Also the State lies largely within the tropical zone and has a vegetation of low forest in the southern part and grassland in the northern part. The Mambilla plateau within an altitude of 1,800 meters above sea level has a temperate climate all year round. It shares common boundary with Bauchi State in the north and Gombe State in the north east, Adamawa State in the east and Plateau State in the North West.

The State is further bounded to the west by both Nassarawa and Benue States, while it shares an international boundary with the Republic of Cameroon to the south and south east. It consists of sixteen Local Government Areas with an estimated population of 2,688,944 (2006 census). It has a total land area of 54,473km. The soil type is predominantly sandy loam in the northern part and loamy clay in the southern part. The mean annual rainfall ranges from 800mm in the north to over 1800mm in the south, while the daily temperature ranges between 14.8°C and 34.4°C. Taraba State have many ethnic groups, including, Jenjo, Kutep, Chamba, Mumuyes, Mambila, Wurkums, Fulani’s, Jukun, Ichen, Tiv, Kaka, Hausa and Ndoro.

The major occupation of the people is Agriculture. Cash crops produced in the state include coffee, tea, groundnut and cotton. Crops such as maize, rice, sorghum, millet, cassava and yam are produced in commercial quantity. Also livestock such as cattle, sheep and goats are produced in fairly large scale.

Population and Sampling Procedure

The population of study consist of all groundnut processors in the study area. Sample was selected from the population of all groundnut processors in the study area. It was selected using multistage sampling techniques. Three Local Government Area (Zing, Ardokola and Yoro) were purposely selected at the first stage, due to the high level of groundnut production in the area. Two wards were also purposely selected from each of the Local Government Area because of the concentration of the respondents in the wards, making the total of six wards namely: Zing, Munkin, Kwanaduste, Sunkani, Yorro and Pupule at the second stage.

The sample selection plan table shows how the simple random selection of respondent at ward level was done.

Data Collection and Analysis

Primary data were collected using structured questionnaire on the socio-economic characteristic of groundnut processors and constraint associated with groundnut processing. Prior to the administration of the questionnaires, the questionnaires were pre-tested and necessary corrections were made. Content validity was used to determine the adequacy of the research instrument. In
the process, the instrument was thoroughly examined by appropriate experts independently. The experts gave their critical opinion on the adequacy and relevance of the instrument to the objectives of the study. The observation was harmonized and necessary corrections were effected on the instrument before the field survey commenced. The test-retest method was used to determine the reliability of the research instrument. Twenty copies of the research instrument was administered twice to the respondents at a given intervals. The two results were correlated and a correlation coefficient of 0.920 was obtained indicating high reliability.

The data collected for this study was analyzed using both descriptive and inferential statistics. The descriptive statistics such as mean, frequency and percentages was employed to analyze the socio-economic characteristics of groundnut processors in Taraba State while gross margin and multiple Regression was used to determine the effect of groundnut processing on profit in the study area.

**Gross Margin Analysis**

The gross margin of an enterprise is the difference between total revenue from production and variable cost of production. Gross margin is used as a measure of profitability when fixed cost of the enterprise is negligible. Gross Margin (GM) was used to determine the Profitability of groundnut processing. Total Revenue includes the returns from groundnut oil and groundnut cake, while total variable cost includes cost from raw groundnut, salt, water, pepper, firewood and cost of other variable inputs. Gross margin is expressed as follows:

\[ GM = TR - TVC \ (N/Kg) \]

Where:

\[ GM = \text{Gross Margin} \ (N/30Kg) \text{ groundnut} \]

\[ TR = \text{Total Revenue} \ (N/Kg) \text{ from groundnut oil and groundnut cake} \]

\[ TVC = \text{Total variable cost N/Kg) of producing groundnut oil and groundnut cake}. \]

**Multiple Regression**

Multiple regressions were used to determine the relationship between the independent variables (age, level of education, marital status, gender, income and processing experience) and the dependent variable (Profit). It is implicitly expressed as follows:

\[ Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, \) \]

\[ Y = \text{Profit from Groundnut processing} \ (N) \]

\[ X_1 = \text{Age of the respondents} \ (\text{years}) \]

\[ X_2 = \text{Level of Education} \ (\text{Number of years spent in school}) \]

\[ X_3 = \text{Marital Status} \ (\text{dummy variable: 1=married, 0=unmarried}) \]

\[ X_4 = \text{Sex} \ (\text{dummy variable: 0 = female and 1 = male}) \]

\[ X_5 = \text{Processing Experience} \ (\text{Years}) \]

\[ X_6 = \text{Household size} \ (\text{Number of persons}) \]

\[ X_7 = \text{Income} \ (N /30kg) \text{ groundnut} \]

\[ E = \text{Error Term}. \]
RESULTS AND DISCUSSION

Social economic characteristics of groundnut processors

The result in Table 2 shows that 31.2% of the respondents were aged group 41-50 while 3.5% were in age group 1-20. This implies that most of the respondents are middle aged and hence agile and economically productive. This is in line with the finding of Asa (2003) who studied the effect of Akwa Rubber Estate Limited on the Livelihood of Rural People and found out that people in this group are more economically active and independent than those in the age group less than 21 years and above 60. The result also reveals that 44.7% of the respondents were married while 10.0% were single. The large population of married women in groundnut processing could be as a result of high family responsibility on the women and as such there is need for them to engage in extra hard work to enable them meet up with home and business challenges. This is similar to findings of Abdulazeez et al. (2012) in a study of Economies of Small-scale Agro-enterprise which states that majority of women processors are married.

The analysis of sex shows that majority of the groundnut processors were female (95.3%), only 4.7% were male. This could be due to the fact that the production of groundnut oil and groundnut cake involves a lot of tedious activities and patience that can only be conveniently carried out by women and also the business requires little amount of money to start, this makes it easier for them to embark on it as they are considered to be backward financially in the study area. This is similar to the findings of Hussaini et al. (2010) in an evaluation of Groundnut Processing by Women which states that groundnut processing is mostly done by women.

Analysis of the distribution of household size shows that most of the processors (57.6%) had household size ranging from six to ten; only 7.6% had household size above 15. This implies that the women processors have access to family labor especially for the tedious operation since a larger family may have sufficient family labor for production. This is similar to the finding of Ogundele (2003) who studied Technology Differentials and Resource-Use Efficient in Rice Production and found out that household size plays a significant role in small-scale enterprises where entrepreneurs rely on household members for the supply of about 80% of the labour requirement and it can be used as proxy to family labour availability.

The result further revealed that majority (57.6%) of the respondents had informal education while 1.7% had tertiary education. This implies that processors in the study area have low level of education and relied mostly on traditional tools and equipment for processing groundnut, hence, earn low profit. Since education plays a significant role in technology transfer and skill acquisition, processors with high level of education earn high profit because they can easily adapt to new technologies. This result is in line with the findings of Kumbhakar and Bhattacharya (1992) who studied Price Distribution and Resource Use Inefficiency and Abdulai and Huffman (1998) in an Examination of Profit Inefficiency of Rice Farmers and found out that education have positive impact on profitability of their respondents.
Results of the years of experience shows that 46.5% of the respondents have been engaged in the enterprise for about 11-20 years, only 17.1% had processing experience for more than 20 years. This implies that the processors are highly experienced in the enterprise and that introduction of any change may be difficult to adopt. This is different from the findings of Abdulazeez et al. (2012) that studied the economies of small-scale agro-enterprise in Nigeria and found out that most of the women groundnut processors had household size ranging from 6-10.

**Gross Margin Analysis**

Gross margin (GM) was used to analyze the costs and returns in the production of groundnut oil and groundnut cake. It was used to measure profitability on the assumption that the fixed costs of production are negligible (Atingha, 2007). Total revenue include the returns from groundnut oil and groundnut cake, while total variable cost includes cost from raw groundnut, salt, water, pepper, firewood and cost of other variable inputs.

Costs and returns in the production of groundnut oil and groundnut cake per 30kg of raw groundnut processed are presented in Table 3. The average total cost of processing was ₦7,440 which was dominated by the variable cost of raw groundnut that accounted for 89% of the average total cost. The average gross returns of ₦10,630 was obtained from groundnut processing. The return from groundnut oil accounted for 81.3% of the average total revenue, while groundnut cake which is a bye product yield revenue of 18.7%. The gross margin per week of 30kggroundnut processed was estimated as ₦3,190. In a month, which on the average involved 4 cycles, a gross margin of ₦12,760 was realized. Therefore, this implies that groundnut processing is profitable in the study area. This is similar to the findings of Rahman (2003) and Iliyasu et al. (2008) that groundnut processing is a profitable enterprise.

The return on investment in groundnut oil and groundnut cake production was estimated as 43% (₦0.43). This means for every one naira invested in production of groundnut oil and groundnut cake a profit of 43 kobo is realized, Since the prevailing interest is 24% in the economy. Therefore, investment in groundnut oil and groundnut cake production is profitable.

**Effect of Socio-economic Characteristics of Groundnut Processors on Profit Margin**

A person’s marital status indicates whether the person is married or single (Echeka & Emeka, 2005). The analysis on Table 4 shows that the coefficient of marital status was negative and significant. Its significance means that marital status is a determinant of profit which did not conform to the prior expectation that marital status would have a positive relationship with profit. This could be as a result of other marital commitment which may be affecting their groundnut processing business. This is however contrary to the finding of Hussaini et al., (2010) in their study of economics of groundnut processing using Kebbi State as a case study that majority of the people engaged in groundnut processing are married women.

For the level of education, the result of the analysis showed that the level of education was negative and significant. Its significance means level of education is a determinant of profit. Since education plays a significant role in technology transfer and skill acquisition, processors
with high level of education could earn high profits because they could easily adapt to new technologies. This result is in line with the findings of Kumbhakar and Bhahacharya, (1992) who studied rice distribution and resource use inefficiency and also Abdulai and Huffman (1998) in an examination of profit inefficiency of rice farmer found that education has positive impact on profitability.

The coefficient of income was positive and significant. It shows that income of groundnut processors have a significant relationship with profit. The reason could be that as income increases, their level of investment in the business will also increase and hence results in increased profit. This is in line with the prior expectation that income will have a positive relationship with profit.

**Constraints Associated with Groundnut Processing**

The result in Table 5 shows that the constraints faced by groundnut processors in the study area vary from one respondent to another. However, three major constraints were pointed out by the processors which include, seasonality nature of groundnut, unavailability of high oil yielding groundnut variety and inadequate capital for business expansion.

The most important constraint faced by groundnut processors in the study area was the unavailability of high oil yielding groundnut variety. Processors prefer using raw groundnut with high oil content, since their profit depends on the quality and quantity of groundnut oil and groundnut cake they produce, and the aim of every business is to make profit. However, this groundnut variety is mostly unavailable or expensive. This results in low profitability and hence leads to poor participation of women in the enterprise. However, this is different from the findings of Abdulazeez et al. (2012) in their study of economics of small-scale agro-enterprise in Kwara State, Nigeria, which states that the major constraints associated with groundnut processing are household size and processing experience.

Secondly, seasonal supply of groundnut; It is available at the end of the crop production cycle. Its supply is usually available only during one or two brief periods in the year. The demand for groundnut oil and groundnut cake is relatively constant throughout the year. Therefore, processors must contend with a supply imbalance and problems of inventory management, production scheduling and coordination among processing and marketing segments of the processors-to-consumer chain. Seasonality also leads to a shortage in the working capital available to handle the bulge in expenses and the heavy financial cost of carrying the inventory. Such financial shortages can lead to short falls in raw material procurement, causing severe under-utilization of the processing plant’s capacity and hence decrease profitability. A similar finding was also made by Haruna et al. (2006) in their study of the economics of groundnut processing among the rural women in Katagun Local Government Area, Bauchi State, Nigeria.

Thirdly, groundnut processors in the study area are poor and hence lack capital for business expansion. They work to acquire basic necessities such as food, clothing and shelter through groundnut processing. This has manifested in continuous food crisis associated with shortfall in supply, rising cost of living, poverty, malnutrition,
and disease and social unrest. In the time past several programs were been carried out by researchers and government through the Microfinance Bank and Bank of Agriculture and these have impacted positively on the production of groundnut oil and groundnut cake. There are, however some locations in Taraba State that were not captured during the dissemination of financial support for increased return on groundnut processing. This is in line with the findings of Haruna et al. (2006).

**CONCLUSION AND RECOMMENDATIONS**

Groundnut processing in the study area is mostly carried out by married women between the age group 41-50 with household size ranging between 6-10. Most of them had informal education and have experience in the production of groundnut oil and groundnut cake for about 11-20 years. The regression analysis showed that marital status and income were significant which means they were determinant of profit while household size, processing experience, age and sex were not significant.

Groundnut processing is a profitable business with a gross margin of N103/kg/week and in a month N412/kg would be realized. However, the production of groundnut oil and groundnut cake is affected majorly by unavailability of high oil yielding groundnut variety, seasonality of groundnut and inadequate capital for business expansion. Groundnut processing has been a major source of employment and income to the society. Thus, more efforts need to be made at increasing the level of groundnut oil and groundnut cake production so as to improve the livelihood and economic activities of the small-scale entrepreneurs in the study area

Based on the findings of the study, the following recommendations are made:

a. Effort should be made to encourage groundnut processors to form cooperative societies in order to enable them acquire equipment and financial support from banks and government to increase their capital base needed to boost the level of groundnut oil and groundnut cake production.

b. Government should provide adequate storage facilities at an affordable price in order to ensure the availability of groundnut throughout the year.

c. Research institute should provide high oil yielding varieties of groundnut at affordable price and be made available to groundnut processors.

d. Government should encourage the public and private sectors to support and invest in groundnut processing.

**REFERENCES**


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Table 1: Sample Selection Plan

<table>
<thead>
<tr>
<th>Local Government Areas</th>
<th>Wards</th>
<th>Population</th>
<th>Sample proportion</th>
<th>Sample size</th>
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</thead>
<tbody>
<tr>
<td>Zing</td>
<td>Zing</td>
<td>83</td>
<td>0.3</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Munkin</td>
<td>100</td>
<td>0.3</td>
<td>30</td>
</tr>
<tr>
<td>Ardokola</td>
<td>Kwanaduste</td>
<td>118</td>
<td>0.3</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>Sunkani</td>
<td>100</td>
<td>0.3</td>
<td>30</td>
</tr>
<tr>
<td>Yorro</td>
<td>Yorro</td>
<td>50</td>
<td>0.3</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Pupule</td>
<td>118</td>
<td>0.3</td>
<td>35</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>569</td>
<td>0.3</td>
<td>170</td>
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</tbody>
</table>

Source: Researcher’s sample design, 2016

Table 2: Socio-economic Characteristics of Groundnut Processors (n=170)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percentage</th>
<th>Mean</th>
<th>Standard deviation</th>
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<tbody>
<tr>
<td>Age (Years)</td>
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<td>42.03</td>
<td>12.62</td>
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<tr>
<td>1-20</td>
<td>6</td>
<td>3.53</td>
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<td></td>
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<tr>
<td>21-30</td>
<td>22</td>
<td>12.94</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31-40</td>
<td>48</td>
<td>28.24</td>
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DOI: [10.18819/ijavs.2017.1562]
<table>
<thead>
<tr>
<th>Age Category</th>
<th>Number</th>
<th>Percentage (%)</th>
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<tr>
<td>41-50</td>
<td>53</td>
<td>31.18</td>
</tr>
<tr>
<td>51-60</td>
<td>28</td>
<td>16.47</td>
</tr>
<tr>
<td>Above 60</td>
<td>13</td>
<td>7.65</td>
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**Marital Status**

<table>
<thead>
<tr>
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<th>Number</th>
<th>Percentage (%)</th>
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</thead>
<tbody>
<tr>
<td>Single</td>
<td>17</td>
<td>10.00</td>
</tr>
<tr>
<td>Married</td>
<td>76</td>
<td>44.71</td>
</tr>
<tr>
<td>Divorced</td>
<td>32</td>
<td>18.82</td>
</tr>
<tr>
<td>Widowed</td>
<td>43</td>
<td>25.29</td>
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**Sex**

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<thead>
<tr>
<th>Gender</th>
<th>Number</th>
<th>Percentage (%)</th>
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<tbody>
<tr>
<td>Male</td>
<td>8</td>
<td>4.71</td>
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<tr>
<td>Female</td>
<td>162</td>
<td>95.29</td>
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**Household Size**

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<th>Number</th>
<th>Percentage (%)</th>
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<td>1-5</td>
<td>39</td>
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<tr>
<td>6-10</td>
<td>98</td>
<td>57.65</td>
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<tr>
<td>11-15</td>
<td>20</td>
<td>11.77</td>
</tr>
<tr>
<td>Above 15</td>
<td>13</td>
<td>7.65</td>
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**Level of Education**

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<th>Number</th>
<th>Percentage (%)</th>
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<td>Primary</td>
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<tr>
<td>Secondary</td>
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<td>13.53</td>
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<td>Tertiary</td>
<td>3</td>
<td>1.77</td>
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<tr>
<td>Informal</td>
<td>98</td>
<td>57.65</td>
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**Processing Experience**

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<th>Percentage (%)</th>
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</thead>
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<td>1-10</td>
<td>62</td>
<td>36.47</td>
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<tr>
<td>11-20</td>
<td>79</td>
<td>46.47</td>
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<tr>
<td>Above 20</td>
<td>29</td>
<td>17.06</td>
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</table>

**Income**

<table>
<thead>
<tr>
<th>Income</th>
<th>Number</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8,001-9,000</td>
<td>20</td>
<td>11.77</td>
</tr>
<tr>
<td>9,001-10,000</td>
<td>44</td>
<td>25.88</td>
</tr>
<tr>
<td>10,001-11,000</td>
<td>106</td>
<td>62.35</td>
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</table>

*Source: Field survey, 2016*

### Table 3: Costs and returns in production of groundnut oil with 30kg of groundnut.

<table>
<thead>
<tr>
<th>Items</th>
<th>Quantity</th>
<th>Amount (₦)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Revenue</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Groundnut cake (kg)</td>
<td>19.87</td>
<td>1987</td>
<td>18.69</td>
</tr>
<tr>
<td>Groundnut oil (liter)</td>
<td>57.62</td>
<td>8643</td>
<td>81.31</td>
</tr>
<tr>
<td><strong>Average total revenue</strong></td>
<td><strong>77.49</strong></td>
<td><strong>10630</strong></td>
<td><strong>100</strong></td>
</tr>
<tr>
<td><strong>Variable cost</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Groundnut (kg)</td>
<td>30</td>
<td>6600</td>
<td>88.71</td>
</tr>
<tr>
<td>Labor (man days)</td>
<td>1</td>
<td>450</td>
<td>6.17</td>
</tr>
<tr>
<td>Grinding</td>
<td>-</td>
<td>200</td>
<td>2.74</td>
</tr>
<tr>
<td>Firewood (kg)</td>
<td>25</td>
<td>100</td>
<td>1.37</td>
</tr>
<tr>
<td>Salt (g)</td>
<td>0.5</td>
<td>20</td>
<td>0.27</td>
</tr>
<tr>
<td>Pepper (g)</td>
<td>0.2</td>
<td>10</td>
<td>0.14</td>
</tr>
<tr>
<td>Water (liters)</td>
<td>20</td>
<td>10</td>
<td>0.14</td>
</tr>
</tbody>
</table>
Transport - 50 0.69
Average total variable cost - 7,440 100
Gross margin - 3,190 -
Return on investment - 0.428 43


Table 4: Regression Estimate of Relationship between Socio-economic Characteristics of groundnut Processors and Profit (semi-log function)

<table>
<thead>
<tr>
<th>Socio-economic Characteristics</th>
<th>Co-efficient</th>
<th>Standard error</th>
<th>T-value</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-78,869.960</td>
<td>7,405.116</td>
<td>-10.651</td>
<td>0.000*</td>
</tr>
<tr>
<td>Age</td>
<td>104.292</td>
<td>346.385</td>
<td>0.301</td>
<td>0.764</td>
</tr>
<tr>
<td>Marital Status</td>
<td>-152.060</td>
<td>82.546</td>
<td>-1.842</td>
<td>0.067**</td>
</tr>
<tr>
<td>Sex</td>
<td>-286.180</td>
<td>329.427</td>
<td>-0.869</td>
<td>0.386</td>
</tr>
<tr>
<td>Level of Education</td>
<td>-264.774</td>
<td>134.569</td>
<td>-1.968</td>
<td>0.051**</td>
</tr>
<tr>
<td>Household Size</td>
<td>-31.651</td>
<td>107.215</td>
<td>-0.295</td>
<td>0.768</td>
</tr>
<tr>
<td>Processing Experience</td>
<td>45.524</td>
<td>93.358</td>
<td>0.488</td>
<td>0.626</td>
</tr>
<tr>
<td>Income</td>
<td>8,916.451</td>
<td>784.688</td>
<td>11.363</td>
<td>0.000*</td>
</tr>
<tr>
<td>F-value</td>
<td>22.701</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>0.503</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted-R</td>
<td>0.481</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Computed from Field Data, 2016

** = significant at 5%, * = significant at all level (1%, 5% and 10%)

Table 5: Constraints associated with the production of groundnut oil and groundnut cake.

<table>
<thead>
<tr>
<th>Constraint</th>
<th>Mode</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seasonality of groundnut</td>
<td>45</td>
<td>1</td>
</tr>
<tr>
<td>Unavailability of high oil yielding groundnut variety</td>
<td>38</td>
<td>2</td>
</tr>
<tr>
<td>Inadequate capital for expansion</td>
<td>25</td>
<td>3</td>
</tr>
<tr>
<td>Low volume of product</td>
<td>14</td>
<td>4</td>
</tr>
<tr>
<td>Inconsistent and insufficient supply of raw groundnut</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td>Inappropriate or obsolete processing</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Lack of readily available market</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Inadequate processing equipment</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Unstable price of output</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Unstable price of inputs</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Incomplete return from credit sales</td>
<td>2</td>
<td>11</td>
</tr>
</tbody>
</table>