Economic Analysis of Staple Food Marketing in Benin Metropolis, Edo State, Nigeria

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Abstract: The study investigated the marketing of staple food in Benin Metropolis of Edo State, Nigeria with the objective of examining the economics of staple food marketing. Multi-stage sampling procedure was used to collect data from 90 respondents. The data were analyzed using descriptive statistics, budgetary analysis, and ordinary least square method. The result from the analysis shows 91.1% of the respondents were females and 74.4% had secondary education. Analysis showed that marketers made an average profit per bag of N308.96 (rice), N1,743.36 (beans) and N1,010.97 (garri) in Oba market and those in New Benin market made a profit of N302.35 (rice), N1,708.37 (Beans) and N861.17 (garri), while Ekiosa marketers made an average profit of N256.64 (rice), N1,730.08 (beans) and N961.75 (garri) respectively. Regression result shows that marketing cost (p<0.01) and quantity sold (p<0.01) were the variables that determine the marketing margin. High interest rate (28.9%), insufficient capital (42.2%), price fluctuation (13.3%) where among the constraints faced by the marketers of staple foods in the study area.

Keywords: Marketing margin, profit, rice, beans, garri.

INTRODUCTION

Agriculture is a reliable and viable source of food and income for the ever increasing population and this sector has a greater role to play in a developing economy such as Nigeria. Nigeria is blessed with abundant natural resources with a substantial agricultural potential which makes it ranks first among the leading agricultural producers in the region and still it is the largest importer of staple foods in West Africa. Prior to the oil boom and accelerated rural-urban migration, agriculture was the major occupation of the rural sector (Olusegun 2008, Arene and Mkpado 2004). Despite the abundant of crude oil, the agricultural sector continues to play a prominent role in Nigeria’s economic development. Agriculture accounts for about 36.5% of the country’s gross domestic product and providing employment for 70% of the population. With a population of 150 million people, Nigeria is without contest the leading agricultural power and the largest market in West Africa. While the production of staple foods has greatly increased over the last twenty five years, yet production cannot cover the rising demand for staples. Nigeria is by far the largest agricultural producer of staple crops in West Africa and Production there is thought to have grown by 30% to 40% between 2000 and 2009. Production of staple food in West Africa rose from 59 million in 1980 to 160 million tonnes in 2000 to 212 million in 2006, (Soule et al., 2010). The marketing of agricultural products begins at the farm when farmer plans his production to meet specific demands and
market prospects, (Abbot and Makeham, 1992). Most of the products are basic foodstuffs whose price and distribution are considered strategic by government. According to Olayemi (1982) food marketing is very important but neglected aspect of agricultural development. He noted that more emphasis is usually placed by government on policies to increase food production with little or no consideration on how to distribute the food produced efficiently and in a manner that will enhance increased productivity. Agricultural marketing is the main driving force for economic development and has a guiding and stimulating impact on production and distribution of agricultural produce. The increasing proportion of the population living in urban centers and rising level of income require more organized channels for processing and distributing agricultural products. Marketing, according to Kohls and Uhi (1990), is concerned with all stages of operation, which aid movement of commodities from producers to consumers. The level of efficiency in the market is determined by assessing the marketing structure, conduct and performance amongst others, conditions. The main objective of the study is to examine the activities involved in staple foods marketing in Benin City. The specific objectives are to: identify the socio-economic characteristics of the marketers, estimate the cost and returns of the marketers in the study area, determine the factors affecting marketing margin and identify the problems faced by the marketers in the marketing of the product.

This study stands to benefit the stakeholders in the staple foods industry as it seeks to educate prospective investors in industry about the profitability or otherwise of the staple food commodity. The outcomes could also indicate ways by which some aspect of the market for staple foods can be improved upon thereby encouraging a wide and efficient market for the commodity.

METHODOLOGY

The study was conducted in Benin Metropolis of Edo State. The state has eighteen local government areas with a land mass of 17,802km² (6,873 sq miles) and a population of 3,497,502 and it lies roughly between longitude 06° 04′ E and 06° 43′ E and latitude 05° 44′ N and 07° 34′ N. The State has boundaries with Delta State on the South, Ondo State on the West, Kogi on the North and on the East by Anambra states (NPC, 2006). The State is delineated by Edo State Agricultural Development Programme into three agricultural zones namely, Edo South, Edo Central and Edo North (EADP, 2003). The study area centred on Benin City which is an urban center and also the heart of Edo State.

The data for this study were obtained mainly from primary sources with the aid of a well structured questionnaire administered to staple food marketers (rice, beans and garri) in the study area. The information collected bothered on their socio-economic characteristics, revenue data as well as challenges faced by the marketers in the study area. A multi-stage sampling technique was adopted for this study. Firstly, Benin City was purposively selected due to the limited time of the study and the amount of money available at my disposal. Secondly, three (3) markets were randomly selected namely Oba, New Benin and Ekiosa markets. The final stage was the random sampling of thirty (30) marketers each
from the three (3) markets totaling ninety (90) marketers on the whole.

The data generated from the study were analyzed using descriptive statistics, budgetary analysis as well as ordinary least square method. Gross margin can be stated as:

\[ GM = TR - TVC \]

Where \( GM \) = Gross Margin, \( TR \) = Total Revenue, \( TVC \) = Total Variable Cost.

The marketing margin formula as adopted by Adekanye, 1998 is stated as:

\[ MM = SP - PP \]

Where \( MM \) = Marketing Margin, \( SP \) = Selling Price, \( PP \) = Producer Price.

The net profit is represented as:

\[ \Pi = TR - TC \]

Where \( \Pi \) = Net Profit, \( TR \) = Total Revenue, \( TC \) = Total Cost.

A straight line depreciation formula was used to determine the values of the fixed cost of items used in the marketing of staple food as follows:

\[ \text{Dep. Cost} = \frac{\text{Total Cost}}{\text{Expected Life Span}} \]

Regression analysis:

The implicit form is stated as follows:

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

Where \( Y \) = Marketing margin

\( X_1 \) = Age in years

\( X_2 \) = Sex measured as dummy (male=1 and female=2)

\( X_3 \) = Marketing cost in naira

\( X_4 \) = Quantity sold per month in kilogram

\( X_5 \) = Marketing experience in years

\( e \) = error term

The three functional forms of model were tested and one that gave the best fit based on statistical and econometric considerations was chosen.

RESULTS AND DISCUSSION

Data in Table 1 present information on the socio-economic characteristics of the respondents. The result shows that 91.1% of the staple food marketers were females, while 8.9% were males, which indicated that more women were involved in staple food marketing which is in line with the report by ENADEP (2009) that women constitute overwhelming population of those who are involved in agricultural produce marketing as against men who focus more on artisan, subsistent farming and civil service occupations. Majority (81.1%) of the marketers were married while a large number (52.22%) of them were of 41 years and above. 74.4% of the marketers had secondary education. About 57.78% of the marketers had less than 10 years staple food marketing experience, while 73.3% of the marketers had a family size of equal to or less than 5 members.

Table 1: Socio-Economic Characteristics of Respondents.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>8</td>
<td>8.9</td>
</tr>
<tr>
<td>Female</td>
<td>82</td>
<td>91.1</td>
</tr>
<tr>
<td>Total</td>
<td>90</td>
<td>100</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>3</td>
<td>3.3</td>
</tr>
<tr>
<td>Married</td>
<td>73</td>
<td>81.1</td>
</tr>
<tr>
<td>Divorced</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>Widow</td>
<td>13</td>
<td>14.4</td>
</tr>
<tr>
<td>Total</td>
<td>90</td>
<td>100</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>( \leq 30 )</td>
<td>11</td>
<td>12.22</td>
</tr>
<tr>
<td>31 - 40</td>
<td>32</td>
<td>35.56</td>
</tr>
<tr>
<td>( \geq 41 )</td>
<td>47</td>
<td>52.22</td>
</tr>
<tr>
<td>Total</td>
<td>90</td>
<td>100</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>19</td>
<td>21.1</td>
</tr>
<tr>
<td>Secondary</td>
<td>67</td>
<td>74.4</td>
</tr>
<tr>
<td>Post-secondary</td>
<td>4</td>
<td>4.4</td>
</tr>
<tr>
<td>education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>90</td>
<td>100</td>
</tr>
<tr>
<td>Marketing experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td>( \leq 10 )</td>
<td>52</td>
<td>57.78</td>
</tr>
</tbody>
</table>

http://www.ijaerd.lautechaee-edu.com
The estimated cost and returns to the staple food marketers in the study area is presented in Table 2. Results showed that the marketing margin for rice, beans and garri were N400, N2000 and N1250 in Oba market, new Benin market and Ekiosa market respectively. From the analysis, gross margin for rice, beans and garri were N322.83, N1,785 and N1,028.33 for Oba market and N338.33, N1,815 and N906.67 for New Benin market while Ekiosa market has N295, N1,770 and N985 respectively. Analysis also showed that the marketers realized a net profit of N308.96 (rice), N1,743.36 (beans) and N1,010.97 (garri) in Oba market and those in New Benin market made a profit of N302.35 (rice), N1,708.37 (beans) and N861.17 (garri) while Ekiosa marketers made a profit of N256.64 (rice), N1,730.08 (beans) and N961.75 (Garri) respectively. The result implies that staple food marketers in Oba market made more profits than marketers in the other two markets. This may not be unconnected to the lower marketing cost incurred by marketers in Oba market when compared with the value of the marketing cost in the other two markets.

Table 2: Estimated Cost and Returns to the staple food marketers

<table>
<thead>
<tr>
<th>Items</th>
<th>Oba market</th>
<th>New Benin market</th>
<th>Ekiosa market</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rice (N)</td>
<td>Beans (N)</td>
<td>Garri (N)</td>
</tr>
<tr>
<td>Variable cost (VC)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchase cost</td>
<td>12,200</td>
<td>18,000</td>
<td>7,000</td>
</tr>
<tr>
<td>Transport cost</td>
<td>50</td>
<td>150</td>
<td>200</td>
</tr>
<tr>
<td>Packaging TVC</td>
<td>27.17</td>
<td>65</td>
<td>21.67</td>
</tr>
<tr>
<td></td>
<td>12,277.1</td>
<td>18,215</td>
<td>7,221.6</td>
</tr>
<tr>
<td>Fixed cost</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rent</td>
<td>8.10</td>
<td>24.31</td>
<td>5.83</td>
</tr>
<tr>
<td>Security</td>
<td>1.67</td>
<td>5</td>
<td>3.33</td>
</tr>
<tr>
<td>Sanitation</td>
<td>1.11</td>
<td>3.34</td>
<td>2.22</td>
</tr>
<tr>
<td>Depreciation on table</td>
<td>1.14</td>
<td>3.43</td>
<td>2.28</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12,291.0</td>
<td>18,256.6</td>
<td>7,239.0</td>
</tr>
<tr>
<td>TC</td>
<td>4</td>
<td>17.36</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>12,297.6</td>
<td>18,291.6</td>
<td>7,343.3</td>
</tr>
<tr>
<td>TR</td>
<td>12,600</td>
<td>20,000</td>
<td>8,250</td>
</tr>
<tr>
<td>Marking margin</td>
<td>400</td>
<td>1,250</td>
<td>2,000</td>
</tr>
<tr>
<td>GM(TR-TVC)</td>
<td>322.83</td>
<td>1,028.3</td>
<td>338.33</td>
</tr>
<tr>
<td>Profit (GM-TFC)</td>
<td>308.96</td>
<td>1,010.9</td>
<td>302.35</td>
</tr>
</tbody>
</table>

Source: Computed from field data, 2013
Data in Table 3 present the three functional forms of the regression result. The semi-log functional form was chosen as the lead equation based on the value of $R^2$ and the number and signs of significant variables. The value of $R^2$ was 68% meaning that the independent variable explained 68% of the variation in the marketing margin. Among the hypothesized variables only marketing cost and quantity sold were significant at 1% level. The coefficient of marketing cost was significant at 1% level with a positive sign which implies that as the cost of marketing activities increases, the marketing margin also increase. Therefore, the marketing cost directly affects the marketing margin of staple foods in Benin City. Contrarily, quantity sold per month was inversely proportional to the marketing margin. It was significant at 1% level which implies that as the quantity sold by the marketer’s increases, marketing margin tends to diminish. This is expected because as the marketers handle larger unit at a time the average unit cost decreases which in turn lower the size of marketing margin.

Table 3: Determinants of marketing margin for staple foods in Benin City

<table>
<thead>
<tr>
<th>Variable</th>
<th>Linear</th>
<th>Semi-log</th>
<th>Double</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1382.491</td>
<td>-1580.640</td>
<td>1.121</td>
</tr>
<tr>
<td></td>
<td>(3.028)***</td>
<td>(-1.936)*</td>
<td>(2.820)***</td>
</tr>
<tr>
<td>Age</td>
<td>1.237</td>
<td>156.999</td>
<td>0.120</td>
</tr>
<tr>
<td></td>
<td>(0.179)</td>
<td>(0.334)</td>
<td>(0.524)</td>
</tr>
<tr>
<td>Sex</td>
<td>98.418</td>
<td>-65.145</td>
<td>-0.244</td>
</tr>
<tr>
<td></td>
<td>(0.517)</td>
<td>(-0.135)</td>
<td>(-1.040)</td>
</tr>
<tr>
<td>Marketing cost</td>
<td>0.043</td>
<td>1573.672</td>
<td>0.852</td>
</tr>
<tr>
<td></td>
<td>(5.322)***</td>
<td>(8.795)***</td>
<td>(9.773)***</td>
</tr>
<tr>
<td>Quantity sold per month</td>
<td>-15.215</td>
<td>-2169.900</td>
<td>-0.889</td>
</tr>
<tr>
<td></td>
<td>(-15.180)***</td>
<td>(-13.228)***</td>
<td>(-11.129)***</td>
</tr>
<tr>
<td>Marketing experience</td>
<td>0.589</td>
<td>17.882</td>
<td>-0.073</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.45</td>
<td>0.68</td>
<td>0.62</td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>0.41</td>
<td>0.66</td>
<td>0.60</td>
</tr>
</tbody>
</table>

Table 4: Major problems faced by staple foods marketers in Benin City

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>High interest rate on loan</td>
<td>26</td>
<td>28.9</td>
</tr>
<tr>
<td>Insufficient capital</td>
<td>38</td>
<td>42.2</td>
</tr>
<tr>
<td>Lack of collateral/guarantor</td>
<td>6</td>
<td>6.7</td>
</tr>
<tr>
<td>High cost of transportation</td>
<td>9</td>
<td>10.0</td>
</tr>
<tr>
<td>High cost of rent</td>
<td>9</td>
<td>10.0</td>
</tr>
<tr>
<td>Price fluctuation</td>
<td>12</td>
<td>13.3</td>
</tr>
<tr>
<td>High cost of marketing charges</td>
<td>7</td>
<td>7.8</td>
</tr>
</tbody>
</table>

Source: Computed from field data, 2013.

CONCLUSION

The marketing of staple foods were found to be profitable and the marketing cost and quantity handled impacted differently on the probability of marketing margin. This result has policy implications on the economics of marketing these products in the studied area.
REFERENCES


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