

Profitability of Oil Palm Fruit Processing in Okiti Pupa Local Government Area of Ondo State

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Abstract: This study focuses on the profitability of the oil palm fruit processing in Okiti pupa Local Government Area of Ondo State. Data were collected through a well structure questionnaire and stratified sampling was used to select sixty respondents for the study. Inferential statistic was used to analysis the data, as well as gross margin analysis. From the study it was found out that, average variable cost is lower than the total average revenue, also the benefit cost ratio is greater than 1 (i.e., 1.185) and rate of returns to investment was 21%. From the above performance indicators, it shows that the business of oil palm fruit processing in this local government is a profitable venture.

Key words: Profitability of small-scale palm, processing

INTRODUCTION

Processing oil palm fruit for edible oil has been practiced in African for thousands of years and the oil produced is highly flavoured and coloured which is an essential ingredient in most of the traditional West African cuisine (Modupe, 1991). Study revealed that the improved method of processing palm oil is more profitable, less time and less labour demanding when compared with the traditional method.

Nigeria drive towards growth and development has been encouraged through the role that agricultural sector played in the economy. Before early 1970s, Nigeria was an important supplier of cash crops such as cocoa, rubber, cotton, groundnut and most importantly palm oil to the international market. Exportation of agricultural produce provided virtually all the exchange earnings in Nigeria before petroleum became an important component of the country's export trade (Olayemi and Olajide, 1976).

The importance of oil palm in Nigeria cannot be overemphasized. Oil palm has been used as an ingredient in animal feed research for more than two decades (Roy *et al.*, 1973; Fetuga *et al.*, 1975). Two kinds of oil can be obtained from this palm fruit which are palm oil and palm kernel oil. Palm oil is extracted from the flesh mesocarp of the fruit which contains 45-55% oil, which varies from light yellow to orange-red in colour and melts

from 25°C. Palm oil is used for the manufacture of soaps, candles and more recently in the manufacture of margarine and cooling fats. The weakly colourless oil extracted from the endoperm of the kernel is used for making ice cream and also an important ingredient in confectionaries.

The general objective of the study is to determine the profitability of palm oil fruit processing in Okitipupa Local Government.

The specific objectives of this research is to

- Determine the socio-economic characteristics of the small-scale oil palm fruit processors.
- Determine the costs and returns in small-scale oil palm fruit processing in this area.
- Determine the profitability of oil palm fruit processors in the study area.

MATERIALS AND METHODS

In order to determine the profitability of small-scale oil palm fruit, processing, three different methods of determining profitability were employ

- Budgetary Analytical Technique

$$GM = AR - AVC$$

Where profit (N) = GM – AFC

GM = Gross Margin
 AR = Average Revenue
 AVC = Average Variable Cost
 AFC = Average Fixed Cost

If the gross margin tends to be positive then it shows that the processing business is profitable but if it has a negative value it implies that the business is not profitable.

Rate of Returns on Investment

$$RRI = \frac{NR \times 100}{ATC}$$

Where

RRI = Rate of Return on Investment
 NR = Net Returns
 ATC = Average Total Cost

The rate of return of investment reveals the profit made by the processor on every unit of Naira invested in the processing business.

Benefit Cost Ratio

$$BCR = \frac{TR}{TC}$$

Where Benefit Cost Ratio (BCR) is used in determining the viability and profitability of the venture the BCR is less than 1 the business not worth venturing into but if the BCR is equal or greater than 1 the business is profitable and is also worth venturing into.

Regression analysis: This is carried out to determine the relationship between the output dependent variable and the inputs use (independent variables).

The implicit form of the regression model is shown below.

$$Y = F (X_1, X_2, X_3, X_4, X_5,)$$

Where Y is the value of the saleable products in Naira

X₁ = Total Cost of Bunches (Naira)
 X₂ = Total Cost of Labour Used (Naira)
 X₃ = Processor's Experience (Years).
 X₄ = Cost of other Inputs (Naira)
 U = Error Term

RESULT AND DISCUSSION

From Table 1

- GM = TAR – AVC
 = ₦233,182.00 – 192,198.04 = ₦ 44,099.87
 NR = ₦ 40,266.84

- Rate of return on Investment.

$$RRI = \frac{NR \times 100}{ATC}$$

$$= \frac{40,266.84 \times 100}{196,751.081} = 21\%$$

196,751.08

NR = Net Revenue

ATC = Average Total Cost

- Benefit Cost Ratio

$$BCR = \frac{TR}{TC}$$

$$= \frac{₦ 233,285}{₦ 196,6751.08}$$

$$= 1.185$$

Where

TR = Total Revenue
 TC = Total Cost

From the above results, it was found that ₦ 44,266.84 was realized as the net returns which implies that oil palm fruit processing in this area is profitable and viable venture

Also, the rate of return to investment was 21%, which indicates that on every N1.00 invested on oil palm fruits processing ₦ 0.21 will be realized as the profit. Finally, since the BCR is greater than (i.e., 1.185), it shows that the business is profitable and worth venturing into.

Interpretation of regression analysis: Table 2, shows the results of the regression analysis. The semi-log functional form was chosen as the lead equation based on the fact that it has a considerable adjusted R² which is 0.66, which means that 66% variability in the dependent variable (cost of saleable product was explained by the independent variable (cost of bunches, cost of labour, cost of other inputs, cost of machineries and processor's experience). The cost of bunches, labour and other inputs were the only variables observed to be significant.

Interpretation of model fitted: The regression result measures the relationship between the dependent variable (Y) which is the value of saleable products and

the explanatory variable (X_1, X_2, X_3, X_4, X_5) which are cost of bunches, cost of labour, processor years of experience, cost of other inputs and cost of machineries, respectively.

The R^2 for the semi log model was 0.66, which means that 66% change in the value of saleable product (Y) was explained by the explanatory variables X_1, X_2, X_3, X_4, X_5 .

The equation for the model is stated thus

$$Y = -2963607 + 231542 X_1 + 286144 X_2 + 12612.882 X_3 + 22274.74 X_4 + 401.87 X_5$$

(-8.503) (4.875) (3.621)
 (0.303) (2.29) (-0.049)

Value in parenthesis represents the t-values

0 < p < 1% level (*)

1 < p < 5% level (**)

Variables X_1, X_2, X_3 and X_4 were significant at 1 and 5%, respectively.

Variable X_1 i.e. the cost of bunches has a positive relationship with the dependent variable Y (i.e., value of saleable products) this means that 1% increase in the cost of bunches will lead to 231542 increase in the value of saleable product.

The cost of labour has a positive relationship with the dependent variable which means 1% increase in the cost of labour will lead to 22274.7 increase in the value of saleable products owing to the positive relationship it has with dependent variable.

RECOMMENDATION AND CONCLUSION

Based on the finding of this research work, the following recommendations are suggested to improve upon the processing operation and increase the level of productivity.

- Cooperative society should be made available as to promote processing operation and transportation of palm oil to the market site at reduced cost.
- Infrastructure facilities such as good road for easy accessibility should be made available as to promote processing operation and transportation of palm oil to the market site at reduce cost.
- Since, processing as a business is profitable and viable, more people should be encouraged to invest in it so as to increase the output of palm oil and palm kernel such that increasing demand for these products will be met.

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