Profitability of Cashew Nut Marketing in Oyo State, Nigeria

OJEDOKUN Ajibola Olajide[1*], OGUNLEYE Kehinde Yewande[2] and ADELOWO Idris[2]

[1]*Department of Agriculture, Lagos State University, Epe Campus, Lagos State, Nigeria*
[2]*Department of Agricultural Extension, Ladoke Akintola University of Technology, Ogbomoso, Osun State, Nigeria*
**Corresponding author: adifferentpiece@gmail.com*

Abstract: **- The study was conducted to evaluate the profitability of cashew nut marketing in Oyo State, Nigeria. The study used primary data which was collected from a total of one hundred and twenty marketers using simple random sampling technique. The data were analysed using descriptive statistics, budgetary analysis and multiple regression analytical technique. The study showed that marketing of cashew nut is productive and profitable. The study also revealed that marketing costs, selling price, purchase price, quantity of cashew nut purchased and transportation costs significantly influenced cashew nut marketing. The study thus recommended that adequate transportation should be provided by government and the existing roads should be refurbished to minimize transportation costs.**

Keywords: **Profitability, Marketing, Cashew nut, Determinants, Oyo**

I. INTRODUCTION

Cashew (*Anacardiumoccidentale* L.) is one of Nigeria's cash crops that have over the years given the country recognition worldwide. It was introduced into Nigeria many years ago by the Portuguese explorers and it has rapidly spread to all agro-ecologies of the country (Hammed and Anikwe, 2008). The crop has not only been used for food for many years but it is also an important income generator. The trees are mainly grown for their kernels, which when roasted have a very pleasant taste (Oladejo, 2015). The crop is cultivated in 20 States of the country which includes Kwara, Kogi, Oyo, Edo, Ondo, Anambra, Enugu, Benue, Cross River, Imo, Sokoto, Nassarawa, Ogun and Osun (Ezeagu, 2002). In addition, Nigeria is ranked the fourth largest producer of cashew nuts in Africa after Tanzania, Cote d'Ivoire and Guinea Bissau while in the world, she is ranked seventh (Okon, 2016). Nigeria produces an average of 80,000 metric tonnes annually from a total area of 10,000 hectare, thus contributing almost 16% of the total production in Africa and 5% of the global production (Farayola *etal*., 2013).

One of the very important parts of cashew is the nut which is mostly being exported to India with almost 18,000 metric tonnes to 23,000 metric tonnes of raw nuts estimated to be exported annually (Farayola *etal*., 2013). In addition, Nigeria like other developing countries has recognised the potential economic value of cashew and has made a concerted effort to improve production of the crop (Ogunsina and Lucas, 2008). This together with the increased awareness of the economic benefits of the crop has led to astronomical increase and renewed interest in the agri-business of the crop (Hammed and Anikwe, 2008).

Despite its relevance in economic development, the potential of the crop in Nigeria is yet to be fully exploited (Asiru*et al.*, 2005). Presently in Nigeria, products of the cashew tree are under-utilised for income generation. Similar, there exists much wastage of the fresh apples on farms since a negligible portion is consumed by the harvesters. This wastage has continued to reduce the revenue of farming household (Lawal*etal*., 2011).The nuts that are wasted on the farm would have added to the revenue of farming households if sold and thus increased their welfare. Also, despite the critical roles of marketing to a country's agricultural development, successive Nigerian governments paid more attention to the production aspect, with little attention to marketing related activities (Idachaba, 2000). Furthermore, the cashew nut gatherers are often times exploited by the so-called cashew nut retailers and wholesalers. These gatherers end up getting peanuts for the sales of their nuts just because they cannot afford to transport their nuts to the cities and main markets (Salau *etal*., 2017).

It is in line with this that this study estimated the profitability of cashew nuts marketing and determined the factors influencing profitability to cashew nuts marketing.

II. MATERIALS AND METHOD

Study area

This study was carried out in Ogbomoso, Oyo State. It is one of the largest town in Oyo State with an urban population of about 861,300. Ogbomoso is made up of five Local Government Areas (LGAs) namely: Ogbomoso North, Ogbomoso South, Ogo-oluwa, Oriire, and Surulere. The town lies between latitude 80^0 29' North of the equator and between $40^0$30' North of the Greenwich Meridian. Ogbomoso has an area landmass covering about 37,984 square kilometers and located in the Northern part of Oyo State. The vegetation of Ogbomoso is dominated by derived savannah vegetation and it is a commercial center situated in an agricultural region producing yams, cassava, corn, cotton, cashew and tobacco.

Sampling procedure and sample size

A simple random selection of forty marketers were generated from each LGA using the list of registered marketers. This made up the one hundred and twenty (120) cashew nut marketers used for the study.

Method of data analysis

Various analytical tools and procedures were employed for this study. Descriptive statistics such as percentages, frequencies and means were employed to explain the socio-economic characteristics of the respondents; budgetary analysis was used to determine the profitability of cashew nut marketers while multiple regression was used to determine the factors that influenced profitability of cashew nut marketing.

Budgetary technique

Budgetary technique was employed to determine the profitability of cashew nut marketing. The various costs were identified. Gross marketing margin measures the difference between selling price and purchased price. The selling price is obtained by multiplying the unit price of each bag of cashew nut by the quantity sold while the purchased price is obtained by multiplying the cost of each bag of cashew nut by the quantity purchased. The variable costs are those costs that vary with the total level of output and they include the cost on offloading/loading, association levy, agent fee as well as transportation. The addition of total variable costs and total fixed costs gives the cashew nut marketing costs incurred. Using the straight line method, the depreciation expenses were calculated on the fixed items which were then used in the analysis.

The equations are:

$$SP = P_i \times Q_i \quad (1)$$

$$PP = C_i \times Q_i \quad (2)$$

$$TMC = TVC + TFC \quad (3)$$

$$GMM = SP - PP \quad (4)$$

Where: GMM is Gross Marketing Margin, TMC is the Total Marketing Cost, TVC is total variable cost, TFC is the total fixed cost, SP is the Selling Price, PP is the Purchased Price, C_i is the cost of cashew nut per 80kg bag, P_i is the price per unit of bag of cashew nut and Q_i is the per unit quantity of cashew nut bag sold.

Marketing efficiency (ME) was used also to ascertain the performance and profitability of cashew nut markets.In an attempt to examine the marketing efficiency of cashew nut in the study area, the following formula was adopted:

$$\text{Marketing efficiency} = \frac{SP - PP}{\text{Marketing cost}} \times 100 \quad (5)$$

When ME = 100%, it implies that the participant just recovered the cost incurred in carrying out the marketing services. This is breakeven point for the marketer.

ME > 100% implies that the participant covered the cost of marketing and made a margin above the 100%. This is profit for the marketer

ME < 100% indicates that the participant is operating at a loss.

Regression model

To identify the factors influencing the profitability of cashew nut marketing, a multiple regression was used. The dependent variable was the computed profitability index for each marketer. A number of explanatory variables were identified and included in the model. The implicit function is given as:

$Y = f(X_1, X_2, X_3, ---, X_{10})$

Where;

Y = Profitability index;

X_1 = Age of cashew nut marketer (Years);

X_2 = years of formal education (Years);

X_3 = Household size (Number);

X_4 = Marketing experience (Years);

X_5 = Marketing cost (₦);

X_6 = Quantity of cashew nut purchased (Number);

X_7 = Selling price (₦);

X_8 = Purchase price (₦);

X_9 = Transportation cost (₦);

e = Error term.

Different regression functions like linear, exponential, semi-log and Cobb-Douglas were used. Out of the regression functions used, the Cobb-Douglas regression function was adopted as the lead equation based on the highest coefficient of determination (adjusted R^2), with the highest F-statistics, number of significant variables and the signs of the estimated coefficients.

III. RESULTS AND DISCUSSION

Socio-economic characteristics of tomato marketers

The result from Table 1 indicated that the mean age of cashew nut marketers was approximately 39 years and standard deviation of ±6 years. This shows that cashew nut marketing is dominated by middle-aged marketers who are very much active. This is similar to the studies by Camillus *et al*., (2014) and Haruna *etal*., (2012) who found out that fresh tomato marketers are relatively young and active to engage in marketing. The results also showed that majority (96.7%) of cashew nut marketers were male which indicates that cashew nut marketing is a male-dominated enterprise. This corroborates the study by Adejobi *et al*. (2011) who reported that tomato marketing is predominantly female dominated. The results further revealed that majority (93.3%) of the

marketers were married and had an average household size of approximately 6 members. This corroborates the findings of Obayelu *et al*., (2014)who also found out that majority of tomato marketers in their study are married and had a household size of approximately 6 members.

The result in Table 1 also showed that cashew nut marketers spent an average of 5 years in attaining formal education. This implies that to an extent, cashew nut marketers are literates who can read and write. This result conforms to the study by Camillus *et al*., (2014) who also found out that the majority of the marketers interviewed for their study were literates. The result further showed that the mean years of experience of marketing was approximately 8 years. Finally, the results showed that majority (95.8%) of those interviewed were primarily cashew nut marketers. This showed that whilst majority were mainly cashew nut marketers, others only ventured into cashew nut marketing as a secondary occupation with the aim of obtaining additional income.

Table 1: Distribution of respondents by their socio-economic characteristics

Socioeconomic characteristics	Frequency	Percentage	Mean (Standard deviation)
Age			
21 – 30	15	12.5	
31 – 40	70	58.4	38.54
41 – 50	33	27.5	(6.44)
51 – 60	2	1.6	
Gender			
Male	116	96.7	
Female	4	3.3	
Marital status			
Single	8	6.7	
Married	112	93.3	
Household size			
1 – 5	63	52.5	5.50
6 – 10	57	47.5	(1.63)
Years of education			
1 – 5	56	46.7	4.89
6 – 10	64	53.3	(1.37)
Marketing experience			
1 – 10	99	82.5	7.63
11 – 20	21	16.5	(4.46)
Primary occupation			
Cashew nut marketing	115	95.8	
Trading	3	2.5	
Farming	2	1.7	

Source: Data Analysis, 2020

Profitability of cashew nut marketing in Oyo State, Nigeria

The results of the budgetary analysis for cashew nut marketers are presented in Table 2. It showed that whist the average selling price of cashew nut per kilogramme was ₦41,000:00K, the average purchase price per kilogramme was ₦36,000:00K. It also showed that the cashew nut marketers incurred a marketing cost of ₦8,648,328.95K and made an average income of ₦660,721.05K. The marketing margin of cashew nut marketers was ₦1,135,250:00K and the gross margin was ₦891,030.00. The result further showed that cashew nut marketers were efficient as they had a marketing efficiency of 239.24%. The fact that the marketing efficiency of marketers in the cashew nut business was greater than 100% is an indication that cashew nut marketing system is productive and profitable.

Table 2: Profitability per cashew nut marketer

Item	QTY	PRICE (₦)	TOTAL (₦)
A. Selling Price (₦)	227.05/80KG	41,000/80KG	**9,309,050**
B. VARIABLE COST			
Purchase Price (₦)	227.05/80KG	36,000/80KG	8,173,800
Labour Cost	2	48,000	96,000
Transportation Cost	227.05	130/80KG	29,516.50
Loading and Offloading Cost	227.05	100/80KG	22,705
Handling Cost	227.05	170/80KG	38,598.50
Shop rent	2	19,000	38,000
Association levy		9,000	9,000
Electricity		5,400	5,400
Agent fee	1	5,000	5,000
TOTAL VARIABLE COST			**8,418,020**
C. FIXED COST Depreciation on basket, bucket, jute bag, vehicle, okada, shed, sack, weighing scale			**230,308.95**
D. MARKETING COST (B + C)			**8,648,328.95**
E. GROSS MARGIN (A – B)			**891,030**
F. NET INCOME (A – D)			**660,721.05**
G. MARKETING MARGIN (SP – PP)			**1,135,250**
H. MARKETING EFFICIENCY $\left(\frac{G}{D}\right)$			**2.3924 (239.24%)**
I. BCR $\left(\frac{TR}{TC}\right)$			**1.076398696**

Source: Data Analysis, 2020

Factors influencing profitability of cashew nut marketing

The result of regression analysis which reveals the effects of socio-economic characteristics of cashew nut marketers on profitability of cashew nut is shown in Table 3. Cobb-Douglas regression was chosen as the lead equation based on the number of significant variables and the value of R^2. The adjusted R^2 was 0.81 meaning that about 81.0% of the variation in the profitability was explained by the independent variables while the remaining 19.0% was accounted for by the error term. The result revealed that though none of the personal characteristics of cashew nut marketers were significant, however all the marketing variables used in the model were significant at 1 per cent alpha level.

Table 3 showed that the coefficient of marketing cost was statistically significant and had negative relationship with profitability. This implies that the higher the marketing cost incurred by cashew marketers, the lower will be their profitability. Furthermore, Table 3revealed that the quantity of cashew nut marketed was significant at 1% and had positive relationship with profitability. This means that the more the quantity of cashew nut a cashew nut marketer markets, the higher will be his/her profitability.

In addition, Table 3 showed that selling price was significant at 1% and had positive relationship with profitability. This agrees with '*a priori'* expectation that the higher the selling price of a product, the higher the profitability. The increase in selling price may be due to increase in value addition. These findings supports the work of Senchi and Yakubu (2014) who declared that any value addition made to Shea butter increases it market price which in turn may leads to higher profit. Finally, Table 3revealed that transportation cost was also significant at 1% but had a negative relationship with profitability. This indicates that as transportation cost increases, the profitability of the cashew nut marketers' decreases. This confirms Ademola *et. al*. (2012) that transportation is one of the major constraints in efficient marketing of Shea butter in Oyo State, Nigeria.

Table 3: Factors influencing profitability of cashew marketing

Variable	Coefficient	Standard error	t	P>t
Household size	-0.157	0.118	-1.32	0.188
Years of experience	-0.125	0.090	-1.38	0.170
Age	0.017	0.288	0.06	0.952
Years of highest education	0.044	0.110	0.40	0.692
Marketing cost	-0.988***	0.060	-16.41	0.000
Quantity of cashew nut	3.542***	0.897	3.95	0.000
Selling price	1.816***	0.386	4.71	0.000
Purchase price	-1.115***	0.415	-2.69	0.008
Transportation cost	-2.404***	0.895	-2.69	0.000
Constant	-17.240	4.365	-3.95	0.000
R-squared	0.8259			
Adjusted R-squared	0.8082			
F	46.57***			

Source: Data Analysis, 2020

IV. CONCLUSION AND RECOMMENDATION

The study was conducted to evaluate the profitability of cashew nut marketing in Oyo State, Nigeria. The study showed that marketing of cashew nut is profitable and that the business is efficient which further indicates that cashew nut marketing system is productive and profitable. The study further revealed that marketing costs, selling price, purchase price, quantity of cashew nut purchased and transportation costs significantly influenced cashew nut marketing. Based on the findings, the following recommendations were made: adequate transportation should be provided by government and the existing roads should be refurbished to minimize transportation costs. Also, since the purchase price and selling price influenced profitability of cashew nut marketing, there is a need for the policy makers to make necessary pricing policies; this is because these prices have an effect on the price(s) that will be paid by consumers as well as those that will be received by the sellers.

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