PROFIT ANALYSIS OF PROCESSED CASHEW NUTS MARKETERS IN NJABA LOCAL GOVERNMENT AREA OF IMO STATE, NIGERIA

Obi-Nwandikom, C.O[1]., Anyiam, K.H[1]., Okoro, F.N[2]., Enoch, O.C[1]., and Bekee, P.C.[1]
[1]Department of Agricultural Economics, Federal University of Technology Owerri, Imo State, Nigeria
[2]Department of Agricultural Economics, Michael Okpara University of Agriculture, Umudike, Abia State Nigeria
Corresponding author: kelechihenry20@gmail.com   ORCID (0000-0003-3775-4714)

Abstract

This study examined the profit analysis of processed cashew nuts marketers in Njaba Local Government Area of Imo State, Nigeria. Specific objectives were to identify and describe the strategies used by the processed cashew nuts marketers to sell the product, analyze the profit of processed cashew nuts marketers, and determine the factors affecting the profit of processed cashew nuts marketers in the study area. Primary data were collected using a well-structured questionnaire from 50 respondents who were selected through multistage, purposive and snowball sampling techniques. The data were analyzed using descriptive statistics, profit model, and Ordinary Least Square multiple regression. The results of the strategies used by the respondents showed that selling at motor parks, bus stops and junctions, packed in a corked bottle and a branded nylon were the most used strategies for marketing cashew nuts in the study area. The results of the profit analysis of cashew nuts showed that an average profit of ₦176,235.33 was realized from the sale of 7kg of processed cashew nuts in a month. An average of 10kg of raw cashew nuts were purchased for an average of ₦ 35, 719.77 per kg. The result also showed that the respondents incurred an average marketing cost of N13,967.00 in a month. The return per investment revealed that the respondent earned 32kobo for every ₦ 1 invested in cashew nuts marketing per month.

The results of the factors affecting the profit of processed cashew nuts showed that the coefficient of multiple determination (R^2) had a value of 0.939, which means that 93.9% of the variation of the factors that affect the profit of cashew nut respondents in the study area was accounted for by the explanatory variables in the model. The F-ratio value of 66.486 was highly significant at the 1% probability level, indicating a good fit for the model. Coefficients of gender ($P<0.1$), occupation($P<0.1$), and quantity sold($P<0.01$) were positive and significant. In contrast, coefficients of marital status($P<0.1$), education attainment($P<0.1$), and marketing experience($P<0.01$) were negative and significant determinants of factors that affect the profit of processed cashew nuts.

I recommended government prompt intervention in organising the cashew nut market, and stakeholders in the cashew nut industry should adopt digital marketing strategies to increase their customer base.

Keywords: Cashew nuts. Marketing strategy, profit, factors affecting profit

Introduction

Cashew Anacardium occidentale L. is cultivated in all the agro-ecological zones of Nigeria including the semi-arid areas, but with a high concentration in the middle belt areas. In Nigeria, Imo state is among the 27 states that engage in commercial cashew production (Agbongiarhuoyi, Uwagboe, Agbeniyi, Famuyiwa, and Shittu, 2020). Cashew is an important cash crop that earns foreign exchange for the country and the state particularly Njaba and contributes significantly to the economy. The cashew nut kernel has a pleasant taste and flavour and can be eaten raw, fried, and sometimes salted or sweetened with sugar (Muktar, 2021).

Since many years ago, cashew nuts have been used as a snack, it is more frequently utilized as an ingredient for ice cream, energy bars, biscuits, etc. Compared to peanuts, cashew nuts are high in fibre, promoting healthy weight growth by enhancing digestive function. The demand for cashew products is growing in the global market arena because of their importance to health as a source of invincible fat in the diet (Jeyavishnu, Thulasidharan, Shereen, and Arumugam,

2021). It is rich in protein, healthy fat, and antioxidants that help reduce bad cholesterol that leads to stroke, heart attack, and other cardiovascular diseases (Eze, Macharia, and Ngare, 2023).

In Njaba, Imo state, local cashew nut processors and marketers are mostly the youths and women who are engaged in small-scale cashew nut enterprise as a means of livelihood to provide for their needs and that of their households.

Cashew nuts have the potential to improve the well-being of processor- marketers, particularly in Njaba, and make the area a choice destination for cashew markets because of the concentration of several cashew plantations. However, this potential is not fully enhanced and explored due to presumed neglect by the government in that sector of the economy to tap into the global demand for cashew nuts. If this is to be investigated, the well-being of the processors and marketers in terms of profit realization and expansion of the marketing operation will be achieved (Nmeregini, Ubokudom, Chukwu, Onyekwelu, and Eze, 2023). However, it is not known how cashew processors have exploited this opportunity to improve economic returns from value-added cashew products, processed in Njaba Local Government Area. Several factors have led to poor development of the cashew market particularly in Njaba, some of such factors include poor storage facilities for processed cashew nuts, unregulated market prices, poor qualities of marketed cashew nuts, and many more (Gbenga, 2019).

Marketing is one of the significant aspects of agriculture. It is the performance of all the activities involved in the flow of agricultural products and services from the initial points of production until they reach the hands of the ultimate consumers. Poor trading systems of some crops and their products partly lead to the inherent inefficient agricultural commodity marketing, particularly in Njaba.

Profit analysis is the process of measuring the profitability of cashew nuts marketers in engaging in the activities of marketing cashews after some time. It helps to calculate the profit the marketers will make after engaging in a marketing exercise. Profit analysis is the first step to measuring the profitability of a marketer (Wann, 2022).

However, it is not known how cashew processors have exploited this opportunity to improve economic returns from value-added cashew products, processed in Njaba Local Government Area. Several factors have led to poor development of the cashew market, particularly in Njaba. Some of these factors include poor storage facilities for processed cashew nuts, unregulated market prices, poor quality of marketed cashew nuts, and many more (Gbenga, 2019).

Despite the health benefits of consuming cashews, which would have increased the demand for nuts, the demand for cashew nuts in Njaba and its environs is on the decline due to the high prices of processed seeds, many consumers have chosen peanuts over cashew nuts. Other factors such as poor marketing strategies on the part of local processors, and unregulated market prices have also contributed to this trend. There is a need for proper media sensitization on the health benefits of consuming cashews. Local processors should adopt strategic marketing methods to attract more local cashew consumers (African Cashew Alliance, 2022).

From the researcher's knowledge, no research has been done on the current topic in Njaba LGA, Imo State, Nigeria. Hence, there is a need for this research on cashew nuts marketing in the study area to fill this existing literature gap. To address this, the following specific objectives will be addressed; identify and describe the strategies used by the processed cashew nuts marketers to sell the product, analyze the profit of processed cashew nuts marketers, and determine the factors affecting the profit of processed cashew nuts marketers in the study area.

METHODOLOGY

The study was conducted in Njaba Local Government Area of Imo State, Nigeria which has 48 communities. It is located within latitudes 5°42' 3.42 N and longitudes 7°36.98^I E with an area of around 84 km^2 (Imo State Gov., 2023). The LGA is bounded by Oru East, Isu, Mbaitoli, Orlu, and Nkwerre Local Government Areas. It has a population of 143,485 at the 2006 census and a projected population of 199,400 people in 2022(National Population Commission, 2006; National Bureau of Statistics, 2022). Trade is an important feature of the economy of Njaba LGA with the area hosting several markets such as the Afor Umuaka and the Eke Umuezukwe markets where a wide variety of commodities are bought and sold. Farming is also a key occupation of the area's populace with crops such as yam, cassava, cocoyam, cashew nuts, and oil palm grown in the area.

Food commodity marketing in the area is carried out in open markets mostly found in rural areas. Sometimes, aggregators buy from farmers directly on their farms and send them to urban and bigger markets.

Multi-stage sampling technique was used for the study. In the first stage, five (5) communities were selected on purpose from Njaba LGA, considering the significant quantity of cashew nut marketed in these communities. In the second stage, one (1) market was selected on purpose from each of the (5) communities giving a total of five markets. Considering the dominance of cashew nut marketing in these markets, Afor Umuaka, Nenasa market, Okwudor market, Eke Umuezukwe, and Orie Nkume market were purposively selected. Finally, 10 of the cashew nut traders were selected from each of the markets using snowball sampling technique making a total of fifty (50) cashew nut traders

that formed the sample size for this study. Since the market does not have a well-defined registered association of cashew nuts traders, a snowball sampling technique was suitable for the study.

The primary data collection was collected through a well-structured questionnaire. Data analysis was achieved using descriptive statistics, profit analysis, and ordinary least squares regression analysis.

Profit was achieved with the profit model used by Nse-Nelson et al. (2017).

π = profit (Naira), π = SP – (PC +MC) ... (1)

Where π = Profit (₦) = $SP_i - (PC_i + MC_i)$ ... (2)

MC_i = Total marketing cost incurred by the ith cashew nut trader (₦).

SP_i = Selling price of the ith cashew nut trader (₦).

PC_i = Purchasing cost of the ith cashew nut trader (₦)

Objective IV, which is to determine the factors affecting the profit of processed cashew nuts marketers in the study area will be achieved using the Ordinary least squares multiple regression analysis model was stated implicitly as follows; Ibe et al. (2022):

$Y = f (X_1, X_2, X_3, X_4, X_5, X_6, X_7) e_i$ ... (3)

Where;

Y = Profit of cashew nut marketed (₦),

X_1 = Age (years),

X_2 = Gender (female is 1; male is 0),

X_3 = Marital status (married is 1; not married is 0),

X_4 = Education attainment (years),

X_5 = Occupation (farming is 0; trading is 1),

X_6 = the household size (number),

X_7 = marketing experience (years),

X_8 = Quantity sold (kg),

X_9 = Cost of packaging material(₦), and

e_i = Stochastic error term.

RESULTS AND DISCUSSIONS

3.1 Strategies of Selling Processed Cashew Nuts

The strategies used by the respondents are presented in Table 1

Table 1: Distribution according to selling strategies

Strategy	Frequency	Rank
Packaged in a branded nylon and sell at the motor parks	34	(3rd) ***
Packaged in a bottle and sell at the motor parks	45	(1st) *****
Sell at traffic hold-up	20	(4th) **
Sell at bus stops and junctions	36	(2nd) ****
Displayed at the supermarkets	3	(6th)
Displayed at the pharmacy shops/offices	10	(5th) *
Online sales	2	(7th) Ls

Source: Field Survey Data, 2024. Multiple response, *** = Highest rank, **** = second highest rank, *** = third highest rank, ** = fourth highest rank, * = fifth highest rank, and Ls = Least rank.**

Table 1 displays the results of a survey conducted on the marketing and sales strategies employed by cashew nut processors in the study area. The study found that the most used strategy was packaging in bottles and selling at motor parks, followed by selling at bus stops and junctions, packing in branded nylon and selling at motor parks, and finally, online sales being the least used strategy. These marketing strategies have proven successful in boosting sales for the respondents. However, the marketing of cashew nuts is often hindered by price instability caused by the seasonal nature of cashew nut production, as well as poor storage and processing facilities. Therefore, marketers employ different strategies to ensure quick sales of processed cashew nuts, as noted by Salau et al. (2017).

3.2 Profit Analysis of Processed Cashew Nut Marketed per Month
The profit of cashew nuts marketed in a month is presented in Table 2
Table 2 Estimated profit of marketed processed cashew nuts

Items	Details	Mean Amount(₦)/processed cashew nuts
Sales:	7kg of processed cashew nuts @ ₦ 78,200	547,400
(A) SP		**547,400**
Purchase		
Raw cashew nuts	10kg of raw cashew nuts purchased @ ₦ 35,420	354, 200
Firewood	2 bundles @ ₦ 500.00	1000
Kerosene	1 litre @ ₦ 1,997.67	1,997.67
(B) PC		**357, 197.67**
Marketing cost		
Transportation		1,418.00
Loading/ Offloading		3450.00
Packaging materials		2.094.00
damages		4940.00
Other cost		2,065.00
(C) MC		**13, 967.00**
Profit = A – (B+C)		**176,235.33**
IRR ($\frac{profit}{sales}$)		**1:0.32**

Source: Field Survey Data, 2024

Table 2 showed that the respondents made an average profit of ₦176,235.33 from the sales of 7kg of processed cashew nuts. On the other hand, an average purchasing cost of ₦357,197.67 was incurred for purchasing an average of 10kg of raw cashew nuts in a month in the study area.

Table 2 also reveals that an average marketing cost of ₦13,967.00 was expended during the marketing of the processed cashew nut. The return per investment was 1:0.32, which means that for every ₦1 invested in processed cashew nut, 32 kobo was realized. This implies that cashew nuts marketing is profitable. Therefore, if adequate attention is paid to this sector of the Imo State economy particularly Njaba, the market would be properly organized, and the marketers would make more profits in the long run.

This finding is consistent with Nmeregini et al., (2023) who reported that for every naira spent on cashew processing and marketing, 20, 37, 34, and 29 Kobo accrued as the net profit, respectively. This indicates that cashew processing and marketing is profitable.

3.3 Determinants of factors affecting the profit of cashew nuts marketers
The results of factors affecting the profit of cashew nuts marketers is presented in Table 3
Table 3: Determinants of factors affecting profit

Explanatory variables	+Linear function	Exponential function	Double-log function	Semi-log function
Constant	893658.43	10.619	11.405	245000.22
	(0.862)	(7.207) ***	(7.973) ***	(0.416)
Age	144.087	0.010	0.434	-7799.98
	(0.853)	(0.423)	(1.301)	(-0.567)
Gender	84505.626	0.560	0.075	89625
	(1.936) *	(0.902)	(0.343)	(0.995)
Marital status	-81093.875	-0.492	-0.330	-71189.64
	(-1.753) *	(-0.749)	(-1.343)	(-0.703)
Education attainment	-6198.93	-0.063	-0.087	17799.98
	(-1.890) *	(-0.919)	(-0.330)	(0.165)
Occupation	28422.698	0.605	0.218	4333.57
	(1.608) *	(0.911)	(0.831)	(0.040)
Household size	-449.552	-0.029	-0.265	36640.04
	(-0.058)	(-0.260)	(-1.079)	(0.363)
Marketing experience	-3021.864	-0.042	-0.182	18582.65
	(1.658) *	(-1.238)	(-1.342)	(0.332)
Quantity sold	39448.002	0.121	1.176	397763.02
	(23.512) ***	(5.062) ***	(12.050) ***	(9.893) ***
Packaging materials	-5.612	9.812E-005	-0.236	-33655.67

	(-0.850)	(1.046)	(-2.515) **	(-0.872)
R^2	0.939	0.456	0.879	0.813
Adj. R^2	0.925	0.334	0.843	0.756
F-value	66.486***	3.727***	24.203***	14.451***

Source: Field Survey Data, 2024. + = lead equation, * = significant at 10%, ** = significant at 5% and * = significant at 1%. Values on parentheses are t values.**

Table 3 indicated that the linear functional form was the most effective equation. The coefficient of multiple determination (R^2) had a value of 0.939, which means that 93.9% of the variation of the determinants that affect the profit of cashew nut marketers in the study area was accounted for by the explanatory variables in the model. The F-ratio value of 66.486 was highly significant at the 1% probability level, indicating a good fit for the model.

Gender (P<0.1), occupation(P<0.1), and quantity sold(P<0.01) were positive and significant determinants that affect the profit of processed cashew nuts. On the other hand, marital status(P<0.1), education attainment(P<0.1), and marketing experience(P<0.01) were negative and significant determinants that affected the profit of processed cashew nuts.

The coefficient of gender was positively related to the determinants of factors that affect the profit of cashew nut marketers in the study area. This implies that gender plays a positive role in ensuring profit for cashew nuts in the study area. An increase in profit is connected to the gender decision to ensure that profit exceeds the cost incurred in the process of marketing the processed cashew nuts.

The coefficient of marketing experience was negatively related to the factors affecting the profit of processed cashew nuts in the study area. Marketing experience determines the state of profit whether high or low profit. This implies that as the marketing experience of the marketers decreases, profit also reduces by ₦1.658. This is contrary to the expectation that an increase in marketing experience results in an increase in profit for the marketers. However, according to the findings of Nmeregini et al. (2023), more experience can lead to innovations and ideas to project exportable commodities to earn higher profits.

The coefficient of marital status was negatively related to the profit of processed cashew nuts, with a decrease in the number of married cashew marketers resulting in a decrease in profit by ₦1.753. This could be linked to the fact that married respondents spend a significant part of their profit on maintaining their homes. However, this does not agree with the report of Ibeagwa et al. (2021), which posited that marriage and childbearing reduce the cost of hiring labour and therefore increase the net income of respondents.

The coefficient of education attainment was negatively related to the profit of processed cashew nuts, with a decrease in education attainment resulting in a decrease in profit by ₦1.890. This highlights the reason why most of the marketers in the study area have a secondary education. Education is essential for marketers who wish to increase their sales of cashew nuts to increase their profit.

The coefficient of occupation was positively related to the profit of processed cashew nuts, with a respondent whose primary occupation is cashew nuts marketing increasing the profit by ₦1.608. This could be attributed to the various strategies employed to increase profit by the respondents whose primary occupation is cashew nut marketer.

The coefficient of quantity sold was positively related to the profit of processed cashew nuts, with an increase in the number of processed cashew nuts sold resulting in an increase in profit by ₦23.512 in the study area. This is so because as more cashew nuts are sold, more income is realized, hence more profit is being made. This is consistent with the findings of Ojedokun et al. (2020), which showed a significant positive relationship between the selling price and profitability of cashew nuts.

CONCLUSION AND RECOMMENDATION

The findings also showed that successful marketing strategies were key in boosting the quantities of cashew nuts sold to make a profit. It is important to give adequate attention to this sector to create an organized market which will ensure a stable economy in the long run.

Moreover, the study revealed that gender played a positive role in ensuring profit for cashew nuts in the study area. Marketing experience, education, and output were factors that determined the profit in the study area. The study recommends that the government's intervention be prompt in organising the cashew nut market, ensuring a stable and controlled price, and stakeholders in the cashew nut industry should adopt digital marketing strategies to create a large customer base and increase profits.

REFERENCE

Agbongiarhuoyi, A. E., Uwagboe, E. O., Agbeniyi, S. O., Famuyiwa, B. S., and Shittu T. R. 2020. Analysis of Farmers' Cashew Nuts Marketing Channels and Information Frequency: Implications for Cashew Sustainability in Nigeria. World Rural Observations 2020; 12(3), 23 -30.

African Cashew Alliance, ACA, 2022. Cashew Market Analysis: African's Share of EU Market, Production Increase. Retrieved from www.africancashewalliance.com/en/news/info/cashew-market-analysis-african-share-of- eu-market-production-increase.

Eze, V.A., Macharia, I., and Ngare, L. 2023.The Economic viability of value-added cashew products processed in Southeast zone, Nigeria. Heliyon, Volume 9, Issue 1, January 2023, e12791.

Gbenga, A. 2019. Ogbomoso takes the front seat in cashew cultivation. The Guardian; Conscience n u r t u r e d b y t r u t h. https://guardian.ng/features/ogbomoso-takes front-seat-in-cash.

Ibe J.C., Okoh T.C., Arua R.N., Opata P.I. and Obuna U.O. 2022. Economic Analysis of Cashew Nut Marketing in Udi Local Government Area, Enugu State, Nigeria. Agro-Science Journal of Tropical Agriculture, Food, Environment and Extension Volume 21 Number 4 (October 2022) pp. 34 – 40.

Imo State., 2023. Njaba (Local Government Area)". www.citypopulation.de. Retrieved May 22, 2023.

Ibeagwa, O.B., Osuji, E.E., Simonyan, J.B., Ben-Chendo, G.N., Ukoha, I.I., Chikezie, C., Obi-Nwandikom, C., Anyiam, K.H., and Okonkwo, E.K. 2021. Effect of Government Subsidies on the Income of Rice Farmers in Awka Agricultural Zones of Anambra State, Nigeria. Journal of Plant Biology and Crop Research, Vol. 4(2), Pg. 1 – 5.

Jeyavishnu K., Thulasidharan D., Shereen M.F., and Arumugam, A. 2021. Increased revenue with high value-added products from cashew apple (Anacardium occidentale L.)—addressing global challenges. Food Bioprocess Technol. 2021; 14 (6):985–1012.

Muktar F. 2021. Nigeria's cashew sector challenges remain despite new facilities. Premium Times. May 25, 2021.

National Bureau Statistics, 2022. Annual Report on population data.

National Population Commission, Census Data, 2006.

Nmeregini, D.C., Ubokudom, I.A., Chukwu, J., Onyekwelu, R.C. and Eze, O.E. 2023. Profitability of Cashew Nut Processing and Marketing in Enugu State, Nigeria. N i g e r i a n Ag r i c u l t u r a l J o u r n a l ISSN: 0300-368X Volume 54 Number 1 April 2023 Pg. 127-132.

Nse-Nelson F.A., Osondu K.R., Oke U.R. and Chux J.C. 2017. Analysis of beef marketing in Awka North Local Government of Anambra State, Nigeria. Agro-Science, 16 (3), 9-14.

Ojedokun, A. O., Ogunleye, K. Y. and Adelowo, I. 2020. Profitability of Cashew Nut Marketing in Oyo State, Nigeria. International Journal of Research and Scientific Innovation (IJRSI), 7(5): 1 – 5.

Salau, S.A., Popoola, G.O. and Nofiu.B. N. 2017. Analysis of Cashew Nuts Marketing in Kwara State, Nigeria. FUOYE Journal of Agriculture and Human Ecology 1(1): 34- 44, 2017.

Wann, B. 2022. The Art of Profitability: Profit Analysis for Beginners.