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COST AND RETURNS OF *"Garcinia kola*Heckel''(BITTER KOLA) MARKETING AND ITS USEFULNESS IN ABIA STATE, NIGERIA

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ABSTRACT

Inspite of the importance of bitter kola,there has been a dearth of information on the marketing of bitter kola in Abia state.The research looked at the cost and return of bitter kola marketing and its usefulness in Abia State, Nigeria, with the goal of suggesting ways to improve the end product or identifying areas where the product's marketing was lacking. Using a purposive sampling technique, 60 respondents were chosen for the study. Data obtained were analysed using descriptive statistics and budgeting techniques. Findings revealed that majority were female for marketers (82.6%). Majoriy of the Marketers (63%) were married. The findings further showed that majority of marketers (37.0%) have formal education. Also majority of the marketers (67.4%) constitute the household size ranging from 1-5 persons, while findings also revealed that majority of marketers (63%) had years of experience ranged between 1-5 years.The marketing of bitter kola was lucrative, according to budgetary analysis, with a monthly revenue of ₦159,120.00for the marketers, a net return of ₦53,615.96 and a marketing efficiency ratio of 0.51. Benefit cost analyssis showed that thebitter kola marketer received back around ₦1.51 for each naira spent. However, one of the biggest obstacles to bitter kola marketing in the study areas were deforestation and seasonal fluctuations in production.This study concludes that the commercialization of bitter kola in Abia State was lucrative as it is being used purposely for medicinal, cultural, or social purposes.

Keywords: Marketing efficiency, Constraints, Marketers, bitter kola, Cost, Returns Analysis.

Introduction

In West Africa, Garcinia Kola Heckel, sometimes known as Bitter Kola, is a valuable and profitable tropical tree that yields nuts in great amounts (Ikpesu *et al*., 2015). According to Unaeze *et al*. (2013), the tree is typically found in the humid lowland forests of Nigeria, Cameroon, Ghana, and the Benin Republic. The tree produces widely consumed edible and medicinal seeds (Asa *et al*., 2015). The name "bitter kola" comes from the nuts' slightly sweet flavor that follows a bitter aftertaste. Despite its bitter taste, Garcinia kola nuts are commonly eaten as snacks and used for their stimulant effects due to their high caffeine content (Adedokun *et al*.,2018).

The trees are abundant in densely populated areas of natural and secondary forests where the predominant land-use system involve tree-crop plantation farming. The major places where the commodity is found growing wild are forest reserves and free areas of the rainforests (Babalola and Agbeja, 2010)) or it is either planted or conserved on farms of oil- palm- cocoa-yam plantations (Adebisi, 2004). These two

growing regions are found in low-altitude areas with an annual rainfall of 2,000 to 2,500mm, temperatures of 21 – 32^{0}C and a minimum relative humidity of 76% (Ojedokun and Adetunji, 2019))In addition to being a stimulant, the Garcinia nut is frequently used as an aphrodisiac and when chewed, has a bitter, astringent, and resinous taste. It is greatly sought after because of its regarded therapeutic qualities and the fact that consuming excessive amounts of it does not induce indigestion, unlike cola nuts (Adebisi, 2004). Slow-growth rate of Garcinia Kola is a characteristic that makes raising its seedlings challenging. Although Marcots farming approach can result in fruiting after only 4–5 years(Yakubu and Akinyele,2021), the tree has a naturally long gestation phase that can continue up to 10-15 years before flowering and fruiting (Adebisi, 2004).

Among the notable clans of Eastern Nigeria, Garcinia Kola is a very important and well recognized plant used for centuries to treat chest cold in traditional medicine (Okojie *et al.*,2009). Ofusori *et al*.(2008) found that rats given cola extract for 28 days had enhanced lung function, confirming the renowned clan's folklore use. Adefule-Ositelu *et al.* (2008) found that eye drops containing a 0.5% extract of Garcinia Kola seeds also lower intraocular pressure. Because of an over-reliance on natural sources and a meager supply from harvesting from a few stands in farms and personal gardens, the market price of this significant forest product is rising yearly. In Sub-Saharan Africa, the gathering and selling of different non-timber forest products provides a living for several households (Ogunwusi, 2012). Seasonal variations, productivity variations, deforestation, pests, and diseases, insufficient resource inputs, insufficient knowledge, and a lack of decent roads and modern techniques have reduced the motivation of collectors to source bitter kola from the forests. Hence, there are few or no statistics on the economics within which bitter kola marketers operate to guide realistic policy and programme formulation to achieve profitability in the enterprise.

Thus, cost and return analysis of bitter kolamarketing and its usefulness was carried out.. The particular goals of this study were to assess the socioeconomic profile of bitter kola ,marketers ; ascertain the cost and return analysis of Garcinia kola marketing in the study areas; assess the sociocultural significance and ubiquity of Garcinia kola; and pinpoint any limitations.

Materials and Methods

The study was carried out in four communities in Abia State Nigeria.They are geographically situated within latitude 5^{o}N and 7^{o}N and longitude 7^{o}E and 9^{o}E Greenwich meridian (NRCRI,2019).The agroecological vegetation structure of the communities is diverse and complex, reflecting the variety of crops and natural habitats present in the areas.The average annual temperature ranges between 24°C and 28°C. Abia State is part of the tropical rainforest zone, with dense vegetation comprising both primary and secondary forests. The state also has areas of derived savanna, particularly in regions that have experienced deforestation and agricultural activities.The study was purposively carried out in four Local Governments of Ikwuano, Umuahia North, Umuahia South and Bende due to the possession of Research based Institutes and a viable market suitable for the crop with a total population of approximately 2,845,380(NPC, 2006).

Sampling Technique

Multistage sampling technique was adopted in the selection of 60 respondent for the study.. The first stage involved selecting one community purposivelyfrom each Local Government Area due to availability of bitter kola therein, in the second stage there

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was a random selection of three villages(due to availability of bitter kola in the areas) from each of the selected communities making a total of twelve villages(Table 1).From each village, 5 marketers gave data(due to availability of bitter kola in the areas) for this study through copies of well designed structured questionnaire, total 60.

Table1. Study Areas Locations of the Marketers of *G.kola* in Abia state Nigeria

State	Local Government Area	Community	Villages
Abia	Ikwuano	Umudike	Umudike
			Amaoba
			Umugbalo
	Bende	Bende	Amaogwu
			Agbomiri
			Ndiokorieukwu
	Umuhia North	Ibeku	Okwuta
			Lodu
			Umuaoroko
	Umuahia South	Olokoro	Umuala Olokoro
			Itu olokoro
			Itaja Olokoro

Data Analysis

Data collection was analyzed using cost and returns analysis and marketing margin analysis.

The cost and returns of *Garcinia kola* marketing, gross margin analytical procedure was employed thus:

$$GM = TR - TVC \quad \ldots\ldots\ldots\ldots\ldots \quad 1$$

$$TC = TVC \quad TFC \quad \ldots\ldots\ldots\ldots \quad 2$$

$$\pi = TR - TC \quad \ldots\ldots\ldots\ldots \quad 3$$

Where:
GM = Gross Margin
TC = Total Cost
TFC = Total Fixed Cost
TVC = Total Variable Cost
π = Profit.(from equation 3)

Marketing margin was arrived at thus:

$$\frac{\text{Selling price} - \text{Cost price}}{\text{Selling price}} \quad \ldots\ldots \quad \text{Eqn } 4$$

While marketing efficiency(%) $= \frac{\text{value added by marketing (net return)}}{\text{Total Marketing cost}} \times \frac{100}{1}$ …….. Eqn 5

Results and Discussion

Socioeconomic characteristics of the respondents

Result in Table 2 shows that majority the marketers 82.6% and 17.4% were females and males . Thus women engaged in mostly marketing the seeds and consumption activities while men did most of the harvesting and processing (Aiyeloja *et al.*, 2012). Bitter kola marketing is gender specific due to high percentage of females. Women do marketing better compared to men because of the bargains ability (Anuebunwa, 2006, Ogunwande *et al.*,2009). The resultalso shows that the mean age for marketers is 30. The implication of this is that young people engage more in the bitter kola marketing business than the older people in the study area. Marketing is best accomplished by young people because of its furious nature. (Nwaru, 2004) agrees with this finding who reported that Age is necessary in marketing of Agricultural and Forest produce. The result also revealed that the majority of the

the marketers (37% and 63%) were single and married respectively.

This gives a vivid confirmation that the married in the study area were much involved in bitter kola marketing; and this confirms the findings of (Taphone, 2009) who reported that married people have more responsibilities in taking care of their family members and this may be the reason why the enterprise is dominated by them so as to meet those responsibilities. Marriage is a highly cherished value among people in the study area as reported by (Ekong, 2003). The result further showed that little of marketers (37.0%) were literate while only 63% of marketers were illiterate in the study area. Education assistsin resource management and easy access to information for profit maximization.(Nwaru, 2001,Iheke, 2010). The result shows that the majority of the marketers 67.4% constitute the household size ranged from 1-5 persons while 13.0% and 19.6%, fells between the range of 6-10 and above 10 persons of the marketers . Expanding their household, the bitter cola collectors were able to supply inexpensive labor for collecting and processing (Awotide *et al.,* 2011). In line with these findings, it has been seen that the sale and harvesting of non-timber forest products helps big households in rural regions during times of shortage (Sani *et al.*, 1990; Schreckenborg *et al*., 2006).

The result in table 2 further reveals that majority of the marketers (63%) had years of experience ranged between 1-5 years respectively, while (7.4%, 4.3% and 16.1%) , marketers falls between the class of 6-10yrs, 11-15yrs and above 15 years respectively. Long years of involvement in marketing (marketing experience) exposes the marketer to marketing ideas that will help him/her to overcome marketing intricacies in order to achieve high profit. (Okoye *et al.*, 2008).

Table2: Socio-economic distribution of the Marketers of *G.kola* in Abia State Nigeria,

Variable	Frequency	%
Gender		
Male	8	17.4
Female	38	82.6
Age		
21 – 30	26	56.5
31 – 40	-	-
41 – 50	20	43.5
Above 50	-	-
Mean	**30.20**	
Marital Status		
Single	17	37.0
Married	29	63.0
Windows	-	-
Divorced	-	-
Educational Level		
Non-formal education	29	63.0
Primary	17	37.0
Secondary	-	-
Tertiary	-	-
Household size		

1 – 5	31	67.4
6 – 10	6	13.0
Above 10	9	19.6
Mean	**5.6**	
Years of Experience		
1 – 5	29	63.0
6 – 10	15	32.5
11 – 15	2	4.3
>15 yrs	-	-
Mean	**5.1**	
Religion		
Christianity	45	97.8
Trad. worshippers	1	2.2

Usefulness of *G. kola* to the Respondents

Result inTable 3 shows the multiple responses of respondents about the various consumption reasons of bitter kola, 60.7% of the respondents have medical reasons, 17.9% have cultural reasons 8.9% of the respondent have social reasons while 12.5% of the respondent have both medical and cultural reasons. Among the various ailments and attributes which the respondent claimed that bitter kola could resolve are cold remedy and snake repellant (42.9%), Eye pressure, immunity and food poisoning (3.6%), chronic rheumatism, snake repellant and back pain (7.1%), snake repellant (7.1%), cold remedy (26.8%) and all the above mentioned (12.5%). The mode of usage the respondent claimed are daily (37.5%), weekly (30.4%), fortnightly (12.5%), and monthly (19.6%). About 66.1% of the respondent claimed and asserted that they used it for all their family members while 33.9% disclaimed the usage. The improvement notice with the usage of bitter kola is either instant (42.2%) or gradual (51.8%); while the forms of usage are as raw (98.2%) and grounded (1.8%) as claimed by the respondent. Almost all the respondent (92.9%) agreed to recommend bitter kola for usage while 7.1% disclaimed the recommendation of usage.

Among the various cultural and social reasons which the respondents claimed that bitter kola is used are weddings and hospitality (19.6%), naming and weddings (12.5%), Traditional health care (19.6%) Hospitality and Traditional health care (12.5%), All mentioned above except Naming, Oath taking and Traditional health care (7.1%), All aforementioned except Divination and hospitality (54%), All except Naming and wedding ceremony (3.6%).

The major sources of bitter kola according to the respondent are Market (96.4%) and Natural forest (3.6%). While the quantity purchased at a time according to the respondent are 1-3kg by 80.4% of the respondent, 4-6kg by 16.1% of respondents and 7-10kg by 3.6% of respondents. The amount spent on bitter kola at the time of purchase varies from ₦50 – ₦100 by 51.8% of the respondents, ₦150 – ₦200 by 35.7% of the respondents, ₦300 – ₦400 by 7.1% of respondents and more than ₦500 by 5.4% of the respondent. All the respondents claimed that seed is the part of bitter kola commonly used.

Table 3: Usefulness of *G. Kola* to the Marketers in Abia state Nigeria.

		Frequency	Percenyages
Consumption reasons	Medically	34	60.7
	Culturally	10	17.9
	Socially	5	8.9
	Medically / culturally	7	12.5
Ailments / attributes	Cold remedy /snake repellent	24	42.9
	Eye pressure / immunity / food poisoning	2	3.6
	Chronic rheumatism snake repellant and back pain	4	7.1
	Snake repellant	4	7.1
	Cold remedy	15	26.8
	All mentioned	7	12.5
Usage	Daily	21	37.5
	Weekly	17	30.4
	Fortnightly	7	12.5
	Monthly	11	19.6
Used for all family members.	-Yes	37	66.1
	No	19	33.9
Improved noticed	Instant	27	48.2
	Gradual	29	51.8
Usage form	Raw	55	98.2
	Grounded	1	1.8
Recommended	Yes	52	92.9
	No	4	7.1
Cultural / Social reasons for usuage	Wedding / Hospitality	11	19.6
	Naming / Wedding ceremony	7	12.5
	Traditional healthcare	11	19.6
	Hospitality / Traditional healthcare	7	12.5
	All except Naming/Oat taking/Traditional Healthcare	4	7.1
	All except Division /	3	5.4

	Hospitality		
	All except Naming / wedding ceremony	2	3.6
Source of Kola	Market	54	96.4
	Bush	2	3.6
Quantity purchased a time	1 – 3kg	45	80.4
	4 – 6kg	9	16.1
	7 – 10kg	2	3.6
Amount spend on kola / time	₦50 – 100	29	51.8
	150 – 200	20	35.7
	300 – 400	4	7.1
	>500	3	5.4
Parts of kola commonly used	Seed	56	100

Cost and Returns of Garcinia kola market in the study area

The result of cost and returns of the bitter kola Marketing in the study area is presented in Table 4 below. The results shows a monthly revenue of about ₦159,120.00 for the *Garcinia kola* marketers in the study area. The total variable costs item was₦104,992.00per month. The total fixed cost was ₦512.04. The result further shows a Net return of ₦53,615.96per month. Variable cost items were about 99.51% of the total cost of marketing in the study area. The result further shows a RCR of 1:1.51. This implies that for every naira spent about ₦1.51 was returned to the kola marketer. This is in line with the research findings of (Njoku, 2005, Obasi and Mejaha,2009).

The result further shows a marketing efficiency ratio of 0.51. Marketing efficiency is a measure of market performance. It shows the return recorded by the marketers from a unit cost incurred in the business. This marketing ratio of 0.51 implies that the bitter kola marketers returned ₦0.50 for every N1 input in the marketing business. This result shows that the marketers were efficient in terms of output-input ratio in the business.

Table 4: Cost And Returns Analysis of G. Kola Market in the Study Area (Monthly)

A	RETURNS	MEAN VALUE
	Selling Price (per paint)	27,200.00
	Quantity sold (per paint)	23.40
	TOTAL RETURNS (₦)	159,120.00
B	**VARIABLE COST**	
	Purchase cost	100,152.00
	Transporation	2,080.00

	Market charge	1,000.00
	Nylon	320.00
	Storage	440.00
	Feeding	1,000.00
	TOTAL VARIABLE COST	**104,992.00**
	Contingences (10% Of TVC)	**10,499.20**
		-
C	**FIXED COST**	-
	Table	209.80
	Paints	182.24
	Basin	120.00
	TOTAL FIXED COST	512.04
	TOTAL COST (FC + VC)	**105,504.04**
		-
D	**NET RETURNS (TR-TC)**	-
	Total Returns	159,120.00
	Total cost	105,504.04
	NET RETURNS (#)	**53,615.96**
E	**RCR (TR/TC)**	**1:1.51**
F	**M.E (NR/TC)**	**0.501**

Market Margin Analysis

The results in Table5 shows the market margin analysis for Garcinia kola marketers in the study area.

Table 5 : Market Margin Analysis of *G. kolaM*arketers in Abia State Nigeria

	Prices	**Market Margin**	**Market share**
Selling Price	27, 200		
Purchase Price	17, 120	37.06%	62.94%

The results shows a market margin of 37.06%and a market share of 62.94 for the *Garcinia Kola* marketer.

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Marketing Channels

The flow chart shows the marketing channels for Garcinia kola in the study area

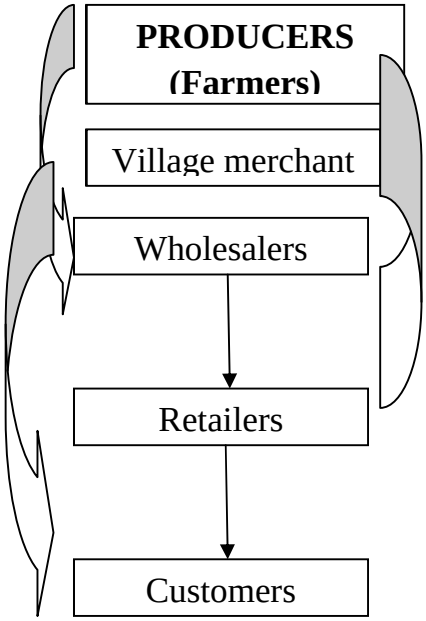


Figure 1 : Marketing Channels of *G. kola* in Abia State.

The chat in Fig. 1 shows the marketing channel for the Garcinia market. From the chart, the Garcinia move frm the farmers to the wholesesalers through the village marchant, thereafter to the retailers and cosumers, the consumers are the last participant in the marketing channels. Also, the wholeselers and retailers can buy directly from the producers while the consumers can buy directly from the wholeselers and retailers. (Obasi,2021)

Constraints faced by bitter kola marketers in the Study Areas

Result in Table 6 shows the constraints to bitter kola marketing faced by the respondent in the study area. Deforestation (95.65%), seasonal fluctuation in production (84.78%), lack of modern processing technology (82.61%) and price fluctuation (73.1%) were the most severe constraint to bitter kola marketing in the villages of Abia State. The findings corroborate (Yusuf *et al.*, 2014) who reported that transportation, irregular supply of products, poor marketing and price fluctuation were major challenges facing the marketers of non-timber forest producers such as bitter kola in Nigeria. (Famuyide *et al.*, 2012) opine that price fluctuation is a major constraint to bitter kola marketing because the forest fruits are not always available throughout the year due to the seasonal nature and perishability which makes them scarce leading to unwanted change in prices of the fruits. In the research region, the least severe obstacles to the selling of bitter kola were the absence of transportation (52.17%) and storage facilities (4.30%)

.**Table 6: Constraints faced by Bitter kola Marketers in the Study Area**

Problem encountered	Frequency	Percentage	Rank
Lack of transport	24	55.17	7th
Lack of storage facility	19	41.30	8th
Prince fluctuation	34	73.91	4th
Middlemen low price	26	56. 52	6th
Season fluctuation in production	39	84.78	2nd
Deforestation	44	95.65	1st
Lack of modern Process technology	38	82.61	3rd
No access to credit facilities	31	67.39	5th
	225	**100**	

- **Multiple responsesrecorded hence the total frequency exceeded the sample size**

Note: = Rank 1 is considered the most severe constraintss while rank 8 is the least severe constraints

Conclusion

Thecost and return analysis result indicates that the commercialization of bitter kola in Abia State was lucrative, as demonstrated by the research. The study also showed that people use bitter kola for medicinal, cultural, or social purposes. However, it also showed that the biggest obstacles to bitter kola marketing in the study areas were deforestation and seasonal fluctuations. The study's conclusions led to the following recommendations:

The state and municipal governments ought to launch an awareness and education campaign on deforestation and actively oppose it;Both governmental and non-governmental organizations in the state should provide bitter kola merchants with subsidized modern processing equipments;In order to overcome some of the main obstacles to their marketing efforts, marketers of bitter kola should try to establish cooperatives in order to improve their access to planting, storage and transportation facilities. Given that price volatility was one of the biggest obstacles to bitter kola marketing in the study areas, the banking sector in Abia State, Nigeria, ought to think about lending money to merchants so they may begin mass trading the product.

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