

Profitability Analysis of Cocoa Marketing in Abia State, Nigeria

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ABSTRACT: The study was conducted to analyze the profitability of cocoa marketing in Abia state, Nigeria, with specific objectives to examine the socioeconomic characteristics of the respondents, determine the level of marketing cost, profit, and marketing efficiency of cocoa marketers, and estimate the determinants of profit for cocoa marketers. Data was gathered from 120 cocoa marketers in 2 local government areas and 12 villages, using a multi-stage random sampling technique. Structured questionnaire schedules were employed for data collection and analysis involved descriptive statistics such as frequency distributions, mean and percentages, budget analysis, Shepherd Futrell model, and multiple regression models. Findings revealed that the majority of cocoa marketers are male, married, literate, young with a household size of 7 persons, and have at least 8 years of marketing experience. The cost and return analysis indicated that cocoa marketing is profitable, with the cost of Aquabouy accounting for 40.01% of the total marketing cost. Additionally, the selling price and marketing cost were identified as significant variables influencing the profit of cocoa marketing. It is recommended that the government of Abia state should strengthen facilities such as agricultural banks, commercial banks, and microfinance banks to enable cocoa marketers to access loans at a single-digit interest rate with no collateral and minimal bureaucratic hurdles.

Keywords: Abia, analysis, cocoa, profitability, marketing

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INTRODUCTION

Cocoa is one of the cash crops which are exported in Nigeria. With the advent of petroleum boom in the early 1970s Nigeria economy began to witness a decline in agricultural marketing as attention of the government shifted from the agricultural sector to the oil sector. In spite of its significance, however Folayan *et al* (2006) as

cited in Fadipe *et al.* (2012), noted that cocoa marketing in Nigeria has witnessed a downward trend after 1971 season, when its export declined to 216,000 metric tons in 1976 and 150,000 metric tons in 1986, therefore reducing the country's market shares to about 6% and to fifth largest producer to date.

The production of these export crops in Nigeria has suffered a reduction in recent years owing to a number of factors. Oduwole (2004) as cited by Oluyole *et al* (2013) in his study identified ageing cocoa farms as one of the factors responsible for the decline in cocoa production in Nigeria. Cocoa has remained a valuable crop and major foreign exchange earner among other agricultural commodity export of the country (ICCO, 2001). Cocoa marketing in the development of the Nigerian economy cannot be over emphasized as it brings about increase in income and improvement in the standard of living of the citizenry. It also increases employment opportunities for the teeming population. Marketing has been embraced as another alternative for earning a living besides farming and engagement in white collar jobs. Many crops are being marketed in Nigeria at large and at state levels and some of the crops being marketed in Abia states which have attracted a wide range of interest include cocoa marketing.

Marketing involves all legal, physical and economic services necessary to make products from the producers available to the consumers and plays a significant role in the development of any economy (Olukosi and Isitor, 2004). According to Farayola *et al.*, (2013), marketing is the critical link between farm production sector on the one hand and non-farm sector, industry and urban economy. The development of the food and agricultural sector relies heavily on efficient marketing which brings about improved pricing thus resulting in a better distribution of income among producers of agricultural produce. The more efficient the marketing functions are performed, the better the marketing system for both the farmers, food marketing firms, consumers and the society at large (Farayola *et al.*, 2013). Efficient marketing of cocoa has become important marketing objective among marketers in Abia state. As marketer's aims at maximizing profit from a given level of cocoa quantities, they carry out their marketing activities by minimizing the cost involved in marketing of these produce as well as taking advantages of the price variations caused by seasons of glut and abundance in the production of these crops.

Several factors have been identified as sources of this inefficiency in marketing of food commodities in Nigeria. These factors include paucity of physical infrastructure such as storage facilities, transportation system, access to roads, communication channels and inadequate economic data for planning and research (Nwauwa, 2011). Other factors include high level of intermediaries in the marketing, distribution chain, high concentration of food stuff marketing at wholesale level as well as high erratic prices which will further depress the level of agricultural production (Okoh, 2005; Afolami *et al.*, 2000; Tijani and Ajobo, 1997).

In order to mitigate the problem of inefficient marketing

among cocoa marketers in Abia state, the major problems confronting marketing of cocoa such as pest and disease, inadequate storage facilities, price instability, high cost of transportation, poor infrastructure, taxation cost, absence of strong marketing, high cost of board of preservation, low access to finance and low patronage need to be addressed. Thus, it becomes imperative to look at the profitability of cocoa marketing in Abia state, Nigeria.

Despite the importance of cocoa marketing in the provision of business opportunity to most individuals both in the rural and urban areas of Abia states as well as generating income to these marketers, the efficiency at which the marketing of this crop is carried out remains a subject of concern. This is because the level of efficiency in the marketing of cocoa would affect the level of marketing cost and profit earned among cocoa marketers in the area of study. For these reasons, this study wants to fill the knowledge gaps to categorical analysis the factors that affect the profitability of cocoa marketing in the study area. This study is to analysis the profitability of cocoa marketing in Ikwuano and Bende local government area in Abia state. The specific objectives is to examine the socio economic characteristics, determine the levels of marketing cost, profit and marketing efficiency of cocoa marketers , estimate the determinants of profit for cocoa marketers in the study area;

METHODOLOGY

This study is conducted in Abia state. Abia state was carved out of Imo state on 27th August, 1991 during the Ibrahim Babangida military regime. The name Abia is an acronym from the first letters of the four groups of people; Aba, Bende, Isuikwuato and Afikpo, (with the creation of Ebonyi state Afikpo ceased to be part of Abia state). The area known as Abia state was part of the east central state created by the military government of General Gowon on May 27th, 1967. On 3rd February 1976, the area also became part of Imo state created by the federal military government of the late general Murtala Muhammed. It shares boundaries to the north with Ebonyi state, to the south and southwest with rivers state, to the east and southeast with Cross River and Akwa ikom state, to the west is Imo state and to the northwest is Anambra state. The population of the state is 2,833,999 (NPC, 2006). The state lies within approximately latitudes 4° 40' and 6° 14'N and longitudes 7° 10' and 8°E (Ngex.com).The inhabitants are spread across 5834 square kilometre. The population is homogenous predominantly Igbos. The people of Abia state are predominantly farmers, traders and civil servants. The main crops produced in the state are both food and cash crops. The main food crops in the state are yam, rice, cassava, plantain, banana, maize and

cocoyam while crops are palm produce, cocoa and rubber.

The population of this study is made up of agribusiness entrepreneurs who are involved in the marketing of cocoa. A multi-stage sampling technique was used in sampling for respondents. The first stage involves a random selection of 2 Local Governments Areas in Abia state. The second stage of the sampling involves random selection of 3 communities from each of the 2 Local Government Areas selected in Abia state. The community to be purposively selected was those known for cocoa marketing. The third stage of the sampling involves the selection of 2 villages from each of the communities selected from Abia state. This gave a total of 12 villages used for the study. The twelve (12) villages selected include: Itum, NdiAgwu, Ugbo, Ujari, Achara, Agbo, Agba, Elugwu, Agbamuzu, Abgamiri, Amakpo, Amoji. The fourth and final stage of the sampling procedure involved the selection of 10 cocoa marketers from each of the selected villages in Abia state. This gave a total of 120 cocoa marketers from Abia state.

Primary data was used for the study. Data was obtained using 2 sets of well-structured questionnaires. Interview schedule was used to elicit information from the respondents. Data was collected on the socio-economic characteristics of the respondents; such as gender, age, education, marital status, marketing experience, household size, years of experience, selling cost, marketing cost, of respondents. Descriptive statistics such as means, percentages and frequency distribution was used to examine the socio economic characteristics, budget analysis and Shepherd Futrell model was used to determine the marketing cost, profit and marketing efficiency, multiple regression analysis models was used to determine the profit.

Budget analysis and Shepherd Futrell model is used to determine the profitability

$$\begin{aligned} TC &= TVC + TFC \\ TR &= P \times Q \\ NR &= TR - TC \end{aligned}$$

Where;

TC = total cost of marketing (naira)
 TVC = total variable cost (naira)
 P = selling price (naira)
 Q = quantity marketed (kg)
 TFC = total fixed cost (naira)
 NR = net return (naira)
 TR = total revenue (naira)

The Shepherd Futrell model is specified in-line with Ugwumba et al. (2011) as follows;

$$\begin{aligned} (\pi) &= GM - TFC \\ GM &= TR - TVC \end{aligned}$$

Where,

π = profit (in naira)
 TR = total revenue (in naira)
 TC = total cost (in naira)
 TFC = total fixed cost (in naira)
 TVC = total variable cost (in naira)
 GM = gross margin (in naira)

The regression model which estimated the determinants of marketing efficiency of cocoa marketers is specified in-line with Farayola *et.al.*, (2013) as follows;

$$Y = f (X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, e_i)$$

Where,

$$Y = \text{marketing efficiency measured as } \left\{ \frac{\text{Total return (N)}}{\text{Total marketing cost (N)}} \right\}$$

X_1 = Age (years)
 X_2 = Martial status (married = 1, single = 0)
 X_3 = Gender (male = 1, female = 0)
 X_4 = Household size (number of persons in the household)
 X_5 = Educational level (years)
 X_6 = Experience (years)
 X_7 = Selling price (Naira)
 X_8 = Marketing cost (Naira) (this covers input cost, transportation cost, storage cost and taxes)
 e_i = Error term

Different functional forms; such as the linear, semi log, double log and exponential function was tried and the most closely fitted chosen on the basis of the econometric and statistical significance of the regression coefficients, the coefficient of determination (R^2) and a *priori* expectation of signs of the coefficients.

RESULTS AND DISCUSSION

Socioeconomic characteristics of the respondents

In terms of gender, the result in (Table 1) showed that majority (65.0% and 63.3%) of cocoa marketers respectively in the study area were male while about 35.0% and 36.7% of them were female. This implies that male dominated cocoa marketing in the studied area. The finding is not inconsonance with that of Nwauwa (2011) who noted that women feature prominently in marketing especially in rural markets where men constitutes less than 5 percent of the traders.

Table 1: Socioeconomic Characteristics of Cocoa Marketers in the study area.

Socioeconomic profile	Category	Frequency	Percentage
Gender	Male	78	65.0
	Female	42	35.0
	Total	120	100.0
Marital status	Single	8	6.7
	Married	112	93.3
	Total	120	100.0
Educational status	Primary incomplete	26	21.7
	Primary complete	20	16.7
	Secondary incomplete	62	51.7
	Secondary completed	3	2.5
	Tertiary completed	9	7.5
	Total	120	100.0
Annual income	189001-2479000	101	84.2
	2479001-4769000	13	10.8
	4769001-7059000	5	4.2
	7059001- 9349000	-	-
	16219001- 18509000	-	0.8
	Total	120	100.0
	Mean	1675461.67	-
Age of respondent	32 – 38	13	10.8
	39 – 45	40	33.3
	46 – 52	36	30.0
	53 – 59	28	23.3
	60 – 66	3	2.5
	Total	120	100.0
	Mean	46.83	-
Household size	2 – 4	30	25.0
	5 – 7	63	52.0
	8 – 10	24	20.0
	11 – 13	3	2.5
	Total	120	100.0
	Mean	6.03	-
Years of experience	1 – 7	26	21.7
	8 – 14	76	63.3
	15 – 21	12	10.0
	22 – 28	6	5.0
	Total	120	100.0
	Mean	10.92	-

Source: field survey 2015

The findings is also contrary to the finding of Bardasi and Wodon (2006) who reported that women are major players in the private sector, particularly in the marketing of cocoa in the study area. The prevalence of men in the marketing of cocoa could be attributed to the strenuous nature of the business which most women may not be comfortable with compared to their male counterparts.

The result of the distribution of the respondents by marital status presented in (Table 1) shows that majorities (93.3% and 94.2%) of the cocoa marketers in the study area were married. This implies that married individuals dominated the market for cocoa in the studied area. The plethora of being married makes most individual to be responsible and to devote themselves to catering for the needs of their family members. This will make them to be very serious with their business (especially where they are the breadwinners) in order to maximize profits. The finding is in consonance with Mafimisebi et al., (2000) who asserted that being married

enhances an individual's level of seriousness with the business, considering their financial needs to feed and train their children.

Investigation into the educational status of the respondents shows that majority (51.7%) of cocoa sellers marketers in the study area had complete secondary education as their highest level of educational qualification. In all, 100% of cocoa marketers had one form of formal education or another. This implies that cocoa marketers in the study area were literate and can read and write. The ability to read and to write will help them to carry out various activities in the marketing system smoothly. This is in line with Dogondaji and Baba (2010) who observed that high literacy level could have positive impact on the adoption of technologies. According to Awe *et, al.*, (2012), education bring awareness among marketers especially in the rural areas and consequent upon this, market information that of price variation and changes given to them as well as new

Table 2: Annual Estimates of Marketing Costs and Returns of Cocoa in Abia State.

Items	Value (N/100kg)	% of Value
Total revenue	201,000,000	
Cost of variable inputs		
Wages	161,600	0.43
Transport cost	2,541,700	6.82
Levies on road	293,650	0.79
Loading and offloading cost	276,550	0.74
Storage cost	631,940	1.70
Total variable cost	3,905,440	10.48
Gross margin/profit	197,094,560	
Fixed cost items		
Cost of basket	1,152,500	3.09
Cost of bags	349,240	0.94
Cost of Aquabouy	14,910,000	40.01
Cost of counter scale	2,342,000	6.28
Cost of cutting knife	155,050	0.42
Cost of scoup	225,400	0.60
Cost of scale pan	14,200	0.04
Cost of scale	5,312,000	14.25
Cost of rope	26,950	0.07
Taxes	1,293,000	3.47
Rent	7,579,000	20.34
Total fixed cost	33359340	
Net profit	163,735,220	

Source: field survey, 2015

techniques with respect to marketing could be easily adopted by the marketers.

Investigation into the annual income of the marketers shows that majority (84.2%) of cocoa marketers earn at most N2, 479,000 per annum respectively. The mean annual income of cocoa marketers was N1, 675,461.67. The seasonality in cocoa production may further justify why the annual income earned by cocoa marketers was at variance in the study area. The income earned by both cocoa marketers will help them to cater for their family needs and to mobilize savings for re-investment in their marketing business. This finding is corroborated by Ike and Umuedafe (2013) who opined that marketers with large annual income are likely to save or accumulate enough capital to increase their marketing business. The distribution of the respondents by their age in (Table 1) shows that majorities (33.3% cocoa marketers) were within the age bracket of 39- 45 years old. This was followed by 30% cocoa marketers who were within the age bracket of 46- 52 years old. The mean ages of cocoa marketers in the study area were 46.83 years old. This means that majority of those involved in cocoa marketing business were the active people who can still move around to scout for the commodities. The finding of the study conforms with Awe *et al.* (2012) who observed that sellers below 50years were the active people who can still move around to scout for the commodity they markets.

In terms of household size, the result revealed that majorities (52.0% cocoa marketers) had a household size

of at most 7 persons per household. The mean household sizes of the marketers were 6 persons per household each. This implies that the marketers have relatively large household size, an indication that the traders had responsibilities to cater for and this makes them to be very serious with their business. These findings corroborated with Awe *et al.* (2012) and Ada-Okungbowa *et al.* (2014) who recorded the same number of 6 persons per household in their studies and observed that traders with large household size commit themselves so much to their business in order to maximize profit and be able to cater for their family needs.

In terms of years of experience in marketing, the result shows that majority (63.3% cocoa marketers) had at least 8 years of marketing experience in their respective businesses. The mean years of marketing experience of cocoa marketers is approximately 11 years each. This implies that the traders are practically experienced in their marketing businesses and know when, where and how to sell their commodities in order to maximize profit. Their experience is also sought for in making decisions concerning the marketing of cocoa in Abia state as the case may be. Their experience in marketing could be an incentive in saving towards the sustenance and growth of their businesses. This finding conforms to Akpan *et al.* (2011) who in their study observed that older workers have higher tendencies to save than those that are new on the job. Thus, experienced cocoa marketers will have higher tendencies to save and to re-invest in their marketing business.

Table 3: Determinants of profit of cocoa marketers in Abia state.

Variables	linear [†]	exponential	semi-log	double-log
Constant	-276067.681 (-2.712)***	5.454 (22.020)***	-22209014.63 (-5.516)***	-1.144 (-3.403)***
Gender	-29959.473 (-1.092)	-0.062 (-0.946)	609186.835 (0.838)	0.026 (0.427)
Age	2103.867 (0.753)	0.006 (0.955)	-1553927.073 (-0.642)	0.308 (1.525)
Household size	1416.130 (0.163)	0.020 (1.002)	-451385.482 (-0.474)	0.048 (0.608)
Marital status	94123.179 (0.535)	0.100 (0.688)	814893.980 (0.478)	0.003 (0.021)
Educational status	-978.201 (-0.211)	-0.002 (-0.218)	414415.877 (0.584)	0.023 (0.381)
Years of experience	-5016.053 (-1.414)	-0.011 (-1.350)	1282573.185 (1.997)***	0.040 (0.753)
Selling price	0.954 (137.509)***	2.899E-7 (10.945)***	3571338.165 (12.010)***	1.467 (53.059)***
Marketing cost	-1.078 (-38.665)***	-1.223E-6 (-4.681)***	550381.459 (1.242)***	-0.455 (-11.672)***
R ²	0.995	0.639	0.662	0.971
R ²	0.994	0.611	0.637	0.969
F-value	2947.662***	23.201***	27.150***	440.410***

Source: field survey, 2015. †= lead equation, figures in parenthesis is t-value, *** significant at 1%, ** significant at 5%, * significant at 10%, NS = Not significant

Marketing costs and returns of cocoa marketing in Abia State

The result in the (Table 2) showed that cocoa marketing in Abia state was profitable as revealed by the positive gross margin of ₦197, 094,560 per 100kg bag while the net profit is ₦163,735,220 per 100kg bag. The result in (Table 2) indicates that the cost of Aquabouy accounted for 40.01% of the total marketing cost of the cocoa marketers in the study area. This is as a result of the high cost of acquiring this machine which goes for about ₦350,000 per Aquabouy..

Profit determinants of cocoa marketers in Abia State

The results of the regression analysis are presented in (Table 3) below. The linear functional form was selected as the lead equation. It's coefficient of multiple determinations is 0.995 indicating that the explanatory variables in the model explained about 99.5% of the variation in profit of cocoa marketers in the study area while about 0.05% was due to error. The regression result from the lead equation in the (Table 3) showed that 2 variables, selling price and marketing cost were the significant variables that influence the profit of cocoa marketers.

From the result, the coefficient of the selling price was positively significant, implying a direct relationship with the profit. This conforms to the *a priori expectation*, because an increase in the selling price is likely to increase the profit of cocoa marketers. Good consumer

prices motivate cocoa marketers to increase their supply which translates to higher profit level. These results concur with those of Evan (2004) who showed that an increase in product prices leads to increased production and marketing efficiency due to motivation of producers. The coefficient of marketing cost, from the regression analysis was significant and negative at 1% level of significant. This implies an inverse relationship and conforms to a *priori* expectation because an increase in marketing cost is likely to reduce the profit of cocoa marketers. This was due to the transaction costs such as cost of basket, bags, Aquabouy, cutting knife, scoup, scale pan, scale, rope, transportation cost, levies on road, taxes, rent, storage cost and loading and offloading cost incurred by cocoa marketers. This result conforms to those of Dastagiri *et al.* (2013) who showed that marketing costs had a negative effect on marketing efficiency and thus, profit.

Conclusion and Recommendations

This study showed that cocoa marketing is profitable with cost of Aquabouy accounting for 40.01% of the total marketing cost. Selling price and marketing cost significantly influence the profit of cocoa marketing in the study area. Majority of cocoa marketers are males, married, literate, young with household size of seven persons and had at least 8 years marketing experience. In view of the findings of this study, the following recommendations were made Cocoa marketers should be effectively linked to available financial institutions

in the study area and the entire state for provision of on-lending facilities to those stakeholders in terms of loans and micro-credit as well as technical support, bank lending regulations and loan repayment, financial management and record keeping to these stakeholders to promote their business performance. The government of Abia state should strengthen up these facilities (agricultural banks, commercial banks and micro finance banks) where cocoa marketers can access loans at a single digit interest rate with no collateral as well as the bureaucratic bottleneck associated with obtaining loans in the conventional banks. Government of Abia should provide adequate infrastructure such as access roads to promote investment climate for commercial development of cocoa marketing. The government of Abia state should put a policy to standardize the collections of levies on the road from the cocoa marketers. The marketers should be encouraged to form cooperative societies to enable them solve some of their financial obstacle and also get subsidy and other incentive from the government.

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