

EFFICIENCY OF BITTER KOLA MARKETING IN ABIA STATE, NIGERIA

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Abstract

The goal of marketing of agricultural products is to ensure that consumers get satisfaction from the entire process of production, as well as create benefit to the various participants in the marketing channel. This study analyzed the efficiency of bitter kola marketing in Abia State, Nigeria. The specific objectives of the study were to identify the main marketing channels of bitter kola marketing in Abia State, determine the marketing efficiency and the factors influencing the marketing efficiency of bitter kola, and ascertain the problem encountered by the marketers of bitter kola in the study area. A multistage sample technique was used in selecting 40 bitter kola marketers. Data were collected through the use of structured questionnaire and interview schedules which were administered to the respondents. Descriptive statistical tools like frequency tables, means and percentages and ordinary least squares (OLS) regression were used to analyze the data. The marketing chain of bitter kola showed that the key actors involved in the marketing of bitter kola were farmers/producers, assemblers, wholesalers, retailers and consumers. The average marketing efficiency of the bitter kola marketers was 1.19%, which showed that bitter kola marketing was relatively efficient as a return of 19kobo was made for every ₦1 spent. This implies the value added by marketing was less than the total marketing cost. The significant variables influencing marketing efficiency were age of the marketer ($P = 0.01$), years of education ($P = 0.01$), marketing experience ($P = 0.05$), selling price ($P = 0.01$), purchase cost ($P = 0.01$), marketing costs ($P = 0.01$), and access to credit ($P = 0.01$). The major problems faced by the bitter kola marketers were seasonality of the commodity which makes the commodity scarce during the off season, high cost of transport incurred in sourcing the commodity from producers and local markets, lack of storage facilities especially during the harmattan periods causing the nuts cover to peel off. Other problems identified by the markers include weather condition, insufficient capital and daily charges by government at the markets. The study there recommended that policies aimed at reducing cost incurred in the marketing process should be put in place for improved efficiency. Such policies will include among others reduction of transportation cost by constructing rural roads, and provision of credit facilities to alleviate capital constraints.

Keywords: Efficiency, Bitter Kola and Marketing

Introduction

Bitter kola (*Garcinia kola*) belongs to the family of plants called *Guttiferae* and the genus is *Garcinia* (Iwu, 1993). It is a perennial crop endemic in the humid lowland rainforest vegetation of the West and Central African sub regions. It is found in coastal areas and lowland plains up to 300m above sea level (Aiyelaagbe and Adeola 1993). It is grown in the rainforest belts with annual rainfall of 2,000mm to 2,500mm, temperature ranges from 21.4°C to 32.15°C and minimum relative humidity of 76.34% (Ntamag 1997). It is mainly grown on homesteads in southern Nigeria (Uko *et al.*, 2001). It is known as “Aku ilu” in Igbo land, “Orogbo” in Yourba and “Namiji-goro” among the Hausas. Fresh, well air dried and adequately stored bitter kola nuts commands the

highest market price. The importance of bitter kola cannot be over emphasized. Bitter kola has social, cultural, medical/health, and economic implications. *Garcinia kola* possesses a wide range of potentials and attributes. It is usually called “bitter kola” or “male kola” because of its bitter taste, or for its supposed aphrodisiac activity, respectively. Bitter kola holds a high position of cultural importance among all Nigerian tribes particularly the Yourba and Ibo communities, as it is an important component of materials used in traditional naming, marriage, and other ceremonies in welcoming guests.

Bitter kola is a medicinal plant; it is used with other antimicrobial in the fight against diseases. Bitter kola is reported to have some medical values especially in the treatment of cough, ulcer and hypertension; and to improve digestibility (Adedeji *et al.*, 2008). Iwu (1993) and Okoro (1993) noted that it can be used as an antidote for snake bite, poison, substance overdose and use as snake repellent. It also improves mouth odour. The plant has been reported to possess anti – ulcerogene and gastric acid lowering effect (Okunji and Iwu, 1991). Ibronke *et al.* (1997) noted the anti-fungal effect of bitter kola; and the roots and stems are very effective, efficient and reliable in cleaning the teeth of many people in southern Nigeria (Okwu and Ekeke 2003; Olabanji *et al.*, 1996).

The economic importance of bitter kola cannot be underestimated. A cursory survey of researches involved in the trade of bitter kola established that a substantial amount of revenue can be realized from farm gate to village and urban markets. Lapido (2003), noted that in Nigeria, about ten percent of the total output of bitter kola is harvested from planted trees, while the rest are collected from the wide and this seriously affects the availability of bitter kola in the market. Falconer (1990) and Adel (2006), noted how bitter kola engages the rural women through collection of the fruits to marketing of the nuts help them generate income to solve their domestic problems the sustenance of many rural farmers in Nigeria through trade on bitter kola.

According to Iheke and Osondu (2012), a sound and efficient marketing system plays great role in achieving economic growth and prosperous agriculture. They defined an efficient marketing system as that in which cost of marketing is minimized and wastage is eliminated. Marketing as an activity for development stimulates technological innovation, specialization, resource use as well as increase in supply of and demand for commodities (Scarborough and Kydd, 1992). The marketing system generates price incentives and rewards. Price of a commodity is a key factor determining the demand and supply of a commodity. Hence, Iheke and Osondu (2012) noted that an efficient marketing system will locate where there are surpluses and bring them to areas of shortage and ensures that supplies of goods that are seasonal become available all through the year with little variation in prices.

Efficient marketing brings about improved pricing which leads to better income distribution among the key players in the production-marketing chain. Marketing is the critical link between farm production sector, the rural non-farm sector, industry and urban economy. 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.

Bitter kola is a product that generates income for many people in rural and urban areas in developing countries including Nigeria (Adel, 2006). The market price of this important product is escalating annually due to supply-demand gap and inefficient marketing system. Sunderland (2001) noted that distribution and marketing of bitter kola are not properly recorded in Nigeria due to lack of or scanty documentation of market information. Famuyide *et al.* (2011) investigated the

marketing efficiency as well as the profitability of *Garcinia cola* and *Afomomum melegneta* in selected markets in Ibadan, Oyo State. The result showed a marketing efficiency (ME) of 1.69 and 1.29 for *G.col*a and *A. melegneta* respectively. This implies that for every naira (N1) spent on *G.col*a there is 69k return and a return of 28k on every naira spent on *A.melegneta*.

Agbelade and Onyekwelu (2013) examines poverty alleviation through optimizing the marketing of *Garcinia kola* and *Irvingia gabonensis* in Ondo State, Nigeria. The result showed that marketing of forest fruits species is a profitable enterprise with an average profit of ₦19,123.37 per marketer per month. The analysis of variance for the two forest fruit species indicated that *Irvingia gabonensis* generated the highest annual income in rainforest ecosystem while *Garcinia kola* generated the highest annual income in derived savanna ecosystem. Major constraints militating against these forest fruit species are poor market access and infrastructure development. The paper recommended among other things that domestication and interventions of these forest fruit species should be encouraged for proper management and sustainability.

There is therefore the need to evaluate the marketing efficiency of bitter kola in Abia State of Nigeria. The specific objectives of the study were to identify the main marketing channels of bitter kola marketing in Abia State, determine the marketing efficiency and the factors influencing the marketing efficiency of bitter kola, and ascertain the problem encountered by the marketers of bitter kola in the study area.

Methodology

This study was conducted in Abia State of Nigeria. Abia is a State in South Eastern Nigeria. It is located between latitude 4° 40' and 6° 14' North of the equator and longitudes 7° 10' and 8° 0' East of the equator. Abia has a total land area of 5,243.7km², approximately 5.8% land area of Nigeria. It has a total population of 2,833,999 from the 2006 population census, with a population density of 448.4/km² (NPC, 2006). It shares common boundaries to the north with Ebonyi State; to the south and southwest with Rivers State; and to the east and southeast with Cross River and Akwa Ibom States respectively. To the west is Imo State and to the northwest is Anambara State. The State is made up of 17 Local Government Areas (LGAs), divided into three agricultural zones namely: Ohafia, Umuahia and Aba Agricultural Zones (Abia ADP, 2004). Agriculture is the major economic sector of the rural inhabitants. Bitter kola is sold in all the markets in the State, mostly in small quantities.

A multistage sample technique was used to select the bitter kola marketers. In the first stage, the markets were stratified into rural and urban markets. The second stage involved the random selection of 3 rural and 2 urban markets in the State. The third stage involved the random selection of 8 bitter kola marketers in each market to give 40 marketers.

Data were collected through the use of structured questionnaire and interview schedules. Data collected were on socioeconomic characteristics of the marketers like age, marketing experience, household, marketing information as it pertains to costs items and returns, and constraints encountered in the marketing of bitter kola. Descriptive statistical tools like frequency tables, means and percentages and ordinary least squares (OLS) regression were used to analyze the data.

The marketing efficiency of each bitter kola marketer was computed using the marketing efficiency index model specified by Olukosi and Isitor (2004) as:

$$ME = (\text{Value added by marketing} / \text{Total marketing cost}) \times 100 \quad (1)$$

For the factors influencing marketing efficiency, the OLS regression model, specified in the implicit form was analyzed:

$$ME = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9)$$

Where: ME = marketing efficiency; X_1 = age of marketer (years); X_2 = household size (number); X_3 = years of formal education; X_4 = marketing experience (years); X_5 = selling price (₦); X_6 = quantity of bitter kola sold (₦); X_7 = purchase cost (₦); X_8 = marketing costs (₦); and X_9 = access to credit (measured by the amount of credit received in naira).

Four functional forms of the above model (linear, exponential, double log and semi-log functional forms) were fitted and the best fit model was chosen using some econometric and statistical criteria (high value of the coefficient of determination, R^2 , number of significant variables and the conformity of the signs borne by the coefficients of the variables to *a priori* expectation).

Results and Discussion

Marketing Channel for Bitter Kola

Marketing channel is the path that a commodity follows as it moves from producers to the final consumers, and it is vital in evaluating marketing systems (Olukosi and Isitor, 1990). The marketing channel for bitter kola is presented in Figure 1.

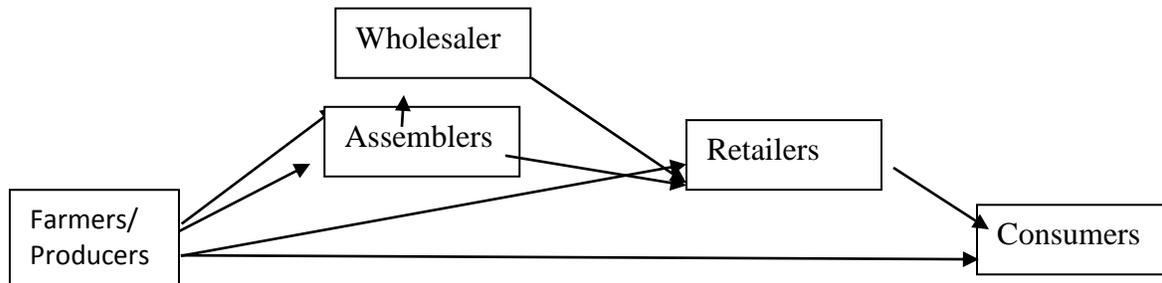


Figure 1: Marketing channel for bitter kola

The pictorial representation of the market channel for bitter kola in the study area indicate that wholesalers buy from the producers or farmers, who in turn sell to retailers, then to consumers. In some cases, farmers sell to rural assemblers, who in turn sell to either wholesalers or retailers. The retailers sometimes could buy from the producers if the distance between farms and the market or retailers home is not much. Farmers could equally sell in small quantities to consumers.

Marketing efficiency

The marketing efficiency of the bitter kola marketers was 1.19%. This shows that bitter kola marketing was relatively efficient. Marketing efficiency of 100% is perfectly efficient and above 100% implies excess profit. This implies that for every that for unit cost incurred, the value added by marketing was 0.0119. This is similar to the findings of Famuyide *et al.* (2011). They reported a marketing efficiency of 1.69% for *G.col*.

Determinants of marketing efficiency

The regression estimates of the determinants of marketing efficiency of bitter kola are presented in Table 1. The double log functional form was chosen as the lead equation based on having higher magnitude of the coefficient of multiple determination (R^2), the number of significant variables, the conformity of the signs borne by the coefficient of the variables to *a priori* expectation, as well as

the significance of the F – ratio. The R^2 was 0.787 indicating that 78.7% of the variations in marketing efficiency were explained by the variables included in the model while 21.3% was due to error. The F – ratio was significant at 1% level of significance indicating the goodness-of-fit of the model. The significant variables influencing marketing efficiency were age of the marketer, years of education, marketing experience, selling price, purchase cost, marketing costs and membership of market association.

Table 1: Determinants of marketing efficiency for bitter kola

| Variable | Linear | Exponential | Double log + | Semi log |
|--------------------------------|----------------------|----------------------|----------------------|----------------------|
| Intercept | 15.626 (4.44)*** | 0.604 (5.92)*** | 0.451 (4.08)*** | 1.411 (3.36)*** |
| Age (X_1) | 0.081 (3.42)*** | 0.000 (0.30) | 0.130 (3.25)*** | 0.680 (5.35)*** |
| Household (X_2) | 0.010 (0.65) | 0.027 (0.56) | 0.014 (0.62) | 0.046 (0.64) |
| Education (X_3) | 0.004 (-0.39) | 0.011 (2.60)** | 0.093 (3.62)*** | 0.310 (0.49) |
| Marketing experience (X_4) | 0.007 (4.13)*** | 0.019 (0.62) | 0.036 (2.18)** | 0.121 (1.96)* |
| Selling price (X_5) | 0.006 (2.81)*** | 0.004 (4.77)*** | 0.084 (4.14)*** | 0.060 (0.63) |
| Purchase cost (X_6) | -0.000 (-0.34) | -0.000 (-0.35) | -0.518 (-3.00)*** | -1.640 (-0.67) |
| Quantity sold (X_7) | 0.121 (1.31) | 0.044 (1.50) | 0.045 (1.58) | -0.128 (-1.38) |
| Marketing costs (x_8) | -0.001 (-3.31)*** | -0.000 (-3.77)*** | -0.085 (-3.82)*** | -0.244 (-3.34)*** |
| Access to credit (X_9) | 0.000 (6.20)*** | 0.000 (6.82)*** | 0.235 (6.92)*** | 0.652 (6.00)*** |
| R^2 | 0.7320 | 0.7704 | 0.7870 | 0.7452 |
| R^{-2} | 0.6516 | 0.7015 | 0.7231 | 0.6687 |
| F –ratio | 9.11*** | 11.18*** | 12.31*** | 9.75*** |

Source: Computed from survey data, 2015

***= Significant at 1%, ** = Significant at 5%, * = Significant at 10%, + = Lead equation, (...) = t-ratios

The coefficient of age was significant at 1% level of significance and positively related to marketing efficiency. This implies that marketing efficiency increases as the marketer get older. This could be an indication of the length of experience in the marketing process. This conforms to the findings of Anyoha (2010) and Farayola *et al.* (2013). According to Anyoha (2010), older persons are more experienced and efficient in taking decision regarding agricultural production and marketing.

The coefficient of years of educational attainment was significant at 1% level of significance and negatively related to marketing efficiency. This implies that higher level of educational attainment increases marketing efficiency. This conforms to *a priori* expectation because educational attainment enhances marketers' ability to evaluate and use market information as well as adopt innovative marketing strategies which would lead to increased efficiency.

The coefficient of marketing experience was significant at 5% level of significance and positively related to marketing efficiency. This implies that the higher the years of marketing experience, the more efficient that marketer becomes in the marketing process. This conforms to *a priori* expectations. This corroborates the findings of Abah *et al.* (2015). The higher the marketing experience, the more equipped the marketer becomes to handle inherent marketing problems and challenges leading to enhanced efficiency.

The coefficient of selling price of bitter kola was significant at 1% level and positively related to marketing efficiency. This implies that the higher the selling price, the higher the marketing efficiency. Higher selling price, *ceteris paribus*, entails higher efficiency as the marketers would be making more profit. This result is in conformity with those of Evan and Goodwin (2004) and Farayola *et al.* (2013)

The coefficient of purchase cost of bitter kola and marketing cost were significant at 1% level of significance and negatively related to marketing efficiency. These imply that increases in these costs would lead to decrease in marketing efficiency. This conforms to *a priori* expectation. Increased costs reduce the profit margin of the marketers and hence the decrease in marketing efficiency.

The coefficient of credit was significant at 1% level of significance and positively related to marketing efficiency. This implies that access to credit increases marketing efficiency. This conforms to *a priori expectations*. Access to credit alleviate capital constraints, enabling bulk purchases with the associated gains of economies of scale. This explains the positive relation between access to credit and marketing efficiency.

Problems facing bitter kola marketers

The distribution of the respondents based on problems encountered in the marketing of bitter kola is presented in Table 2.

Table 2: Problems encountered by marketers of bitter kola

| Problem | Frequency** | Percentage | Rank |
|----------------------------|-------------|------------|------|
| Seasonality of product | 40 | | 1 |
| High transportation cost | 30 | | 2 |
| Lack of storage facilities | 27 | | 3 |
| Weather condition | 25 | | 4 |
| Insufficient capital | 23 | | 5 |
| Government charges | 15 | | 6 |

Source: market survey, 2015. ** Multiple responses recorded.

The result showed that the major problems faced by the bitter kola marketers were seasonality of the commodity which make the commodity scarce during the off season, high cost of transport incurred in sourcing the commodity from producers and local markets, lack of storage facilities especially during the harmattan periods causing the nuts cover to peel off. Other problems identified by the markers include weather condition, insufficient capital and daily charges by government at the markets.

Conclusion

The study showed that bitter kola marketing was efficient and that the significant factors influencing the marketing efficiency of bitter kola were age of the marketer, years of education, marketing

experience, selling price, purchase cost, marketing costs and membership of market association. The study there recommended that policies aimed at reducing cost incurred in the marketing process should be put in place for improved efficiency. Such policies will include among others reduction of transportation cost by constructing rural roads, and provision of credit facilities to alleviate capital constraints.

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