Factors Influencing the Cost and Profit of Beans Market in Umuahia North Local Government Area of Abia State, Nigeria

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ABSTRACT

The study examined the factors influencing the cost and profit of Beans, market in Umuahia North Local Government Area of Abia State, Nigeria. Three markets were purposely sampled, while 45 wholesalers of Beans were randomly sampled from the three markets. Descriptive statistics, cost and return analysis and regression models were used to analyze the data collected. The results showed that the business was profitable. The significant variables that influenced costs of marketing were level of education, seasonality of the product and house hold size of the marketers, while the significant variables that influenced profits were age of the marketers, household size and volume of sales. Major problems faced by the marketers were high transportation cost, bad road, poor market infrastructures, unstable pricing of commodity, and seasonality of the commodity. Based on the findings, it was recommended that policies for ameliorating the cost and constrains be implemented. More people should be encouraged via provision of soft loans take to this trade to enhance competition and efficiency. The cost of the product as well as profits can be addressed when socio economic and marketing infrastructure are improved upon in the region.

Key words: *determinants, cost, marketing, profit, beans.*

INTRODUCTION

In West and Central Africa, the beans trade is an ancient practice that pre-dates the European intrusions into the region. Beans (*Phaseolus vulgaris*) is one of the most commonly grown staple food in most of Africa (Singh, 2009). It is produced in most parts of Africa with production concentration in the eastern and central highlands, since it's introduction from America in the 1500s and subsequent years (Hidalgo, 2011).

Aveling (1999) noted that Beans is a legume grown in many parts of the world, and its commonly called black eyed pea, southern crowder pea, and cow grams. It has served as staple food for centuries and has been eaten in different forms. It is consumed by people from all income levels and is a primary source of dietary proteins for the poor in Africa, America, Europe and other parts of the world. Wortmann *(*2004) supposed that common beans yields 25% of total calories and 45% of protein intake in most American diets. It is mostly valued by the poor because all parts of it have uses to which they can be put. While it can be eaten fresh or dried, the leaves can be eaten as vegetables and the stalk as material in the making of soda ash (Sonnia *et al.*, 2000). Basically in human diet, beans provided a rich combination of carbohydrates (60-65%), proteins (20-25%), fats (less than 2%), vitamins and minerals and other essential elements (Fulgence *et al.*, 2007). Adewale (2005) and Bressami (1985) noted that the consumption of beans has brought numerous solutions to many nutritional disturbances in African diets, and has solved the problems of the poor regarding the high cost of animal based protein sources. One factor that makes beans marketing very gainful is its utility potentials (Ibro *et al.*, 2008; Bakori (2007). Beans from studies have come to be known to possess major forms of utility. It has time utility, owing to the fact that it can

be stored favourably; form utility, as it can be processed into countless forms for human and industrial uses. Musa (2009), noted that big dealers come from southern and eastern Nigeria and purchase large quantities, which they resell to retailers in the southern markets (Bressami, 1985; Fulgence *et al.* 2007). He also noted that chief among the reasons for the high profitability of beans marketing in the southern region is the processing potentials of beans, and the fact that beans production in the region is very low. There is hardly a family that does not have something to do with beans in one form or the other at least twice or thrice a week.

Nigeria is one of the largest producers, consumers and exporters of beans according to Musa (2009). In the 1990s Nigeria accounted for about 45% of the world's beans production, and by 2004, she was also the world's largest importer and exporter of beans, with annual imports of around 300,000 metric tons from neighboring nations and about twice volume as exports (FAO, 2007). Most beans production in Nigeria is in the Northern region with Kano State being the main production belt, accounting for about 200,000 metric tons annually (Bakori, 2007). Beans prices in the Northern region show distinct seasonality, with the lowest prices typically occurring during the harvest period (October- December) and the highest prices occurring during the growing season (April- August). Musa (2009) noted that it is costlier than the other grains. This is owing to demand, as beans is common food of the poor as well as the rich, Bressami (1985), Adewale (2005) and Kormara *et al*. (2008). According to National Bureau of Statistics (2007), annual production has more than double from 1,300,000-1,400,000 metric tons reported in the early 1990s to 3, 915,000 metric tons in 2009. The trend of increase has continued to date.

The agronomic practices and conditions required for beans production is usually the same where ever it is cultivated. Based on the studies done by several experts as quoted by Omoniyi (2004), beans need a well tilled fresh seed beds or ridges. It's usually planted as sole crop. Sowing is usually done between July to August and around September in high rainfall areas. There are many varieties but the most popularly demanded are the black eyed white grains and the brown types. Production and marketing of beans are important activities in the Nigerian agricultural sub sector.

Marketing is the exchange process that occurs in order that goods and services are delivered to customers. Marketing is broadly defined as the performance of all business involved from the point of commodity production, till they get to customers (Mejeha *et al.,* 2000).

Itkonem (2005) defines marketing channel as the route taken by products as they travel from production to the intermediaries, through which goods finally get to consumers. Marketing channel is the link or arrangement built by intermediaries through which the various farm commodities travel between producers to consumers. As goods and services pass through the intermediaries, costs are incurred and margins are added.

Adegeye and Dittoh (1985) defines marketing costs as those expenses incurred in carrying out the marketing functions such as market charges, cost of storage, packaging and distribution, processing, assembling dues and levis ,transportation etc. They noted that marketing cost compose mainly of variable costs and fixed costs in a broad sense. These two costs, when added together in any production or marketing process are called the total cost (Mbadiwe, 2009).

Profits are the rewards of indulging in the production and marketing process. They are also called value added by marketing or simply net-returns, Solumbe *et al.,* (2002) made reference to theory of the firm which holds that firms exist to make decisions in order to maximize profits by interacting with the market to determine pricing and demand and then allocate resources according to models that ensure the attainment of their supreme objectives. They then defined profit as that amount of money left when a producer or marketer has removed his production or marketing expenses (total cost), from the sum total of what he collects after the process, (total revenue).

An efficient marketing process is one that has the ability to create time, place, form and possession utility for consumers satisfaction and all stakeholders in the system in a cost effective manner (Mejeha *et al.*, 2000).

Many studies have been conducted with regards to the problems confronting the marketing of agricultural products. Generally the marketing of most agricultural products follow the same pattern (Mejeha *et al.*, 2000). The problems cut across a whole range of marketing mix elements and their application to marketing conditions. The profits made by marketers depend on how well and effective they are in handling these complexities.

Inefficiencies characterize commodity marketing in most developing economies. Itkonem (2005) in his studies identified problems which he stated are the major problem affecting marketing of beans to include condition of commodities, transportation and communication difficulties, government policies, political instability, bad weather and improper of handling. These problems among others influence the cost and profits in the market.

Objectives of the study

The broad objective of this study is to examine the factors influencing the cost and profit of beans market in Umuahia North Local Government Area of Abia State, Nigeria. **The Specific Objectives are to:**

- identify the marketing channels and sources of beans.
- evaluate the cost and returns and marketing efficiency of Beans marketing
- determine the factors influencing the profit and cost of Beans marketing.
- identify the problems facing Beans marketers.

METHODOLOGY

Umuahia North Local Government Area (LGA) of Abia State, is made up of two major clans, namely; Ibeku and Ohuhu, which consists of many communities such as Isieke, Emede, Afaranta, Ossah, Ndume, Amaforo, Nkwoachara, Nkwoegwu, Umuhu and Isingwu. Its located within latitude (DMA) $5^0$31 60N and longitude (DMS) 7^0 28" 60E. Its bounded by Bende Local Government Area on the West, Isikwuato Local Government Area on the South, Umuahia South on the North and Ikwuano Local Government, on the east. It lies within the rain forest zone with average rainfall of 2,169.9mm and at an altitude of 122m above sea level. According to National Population Commission (2009) the number of households are around 32,790 with a population density of 599 and surface area of 244,560km^2.

Sampling Procedure

Three major markets were purposively chosen from the L.G.A, and from each of the markets, fifteen beans marketers (wholesalers) were randomly selected from a list of marketers from the unions, making a total of forty-five respondents.

Method of Data Analysis

The analytical techniques that were used for the objectives of the study were as follows;

1. For objective one, which dealt with marketing channel of beans suitable line diagrams were used.
2. For objective two, which dealt with cost and returns and marketing efficiency, the following were used.
   a) NR = TR – TC
   b) TC = TR – NR

Where

NR is net-returns or profit of the marketers.

TR is total revenue from sales and TC is total marketing cost.

Marketing Efficiency = $\frac{\text{Output of marketing}}{\text{Input of marketing}}$

$$= \frac{\text{Value of output (₦)}}{\text{Value of input (₦)}} \times \frac{100}{1}$$

Objective three, dealt with the factors that determine the cost and profits and were analysed using multiple regression model, implicitly stated as

$Y_{1,2} = F (X_{1,} X_{2,} X_3, X_4, X_5, X_6,)$

where

Y_1 = Total cost of marketing (₦)

X_1 = Age of the marketers (years)

X_2 = Amount of credit used (₦)

X_3 = Level of education (years)

X_4 = Marketing experience (years)

X_5 = Seasonality (1= peak season, 0= otherwise)

X_6 = Household size (number of persons)

Y_2 = Net-returns of the marketers (₦)

$X_{1,}$ = Household size (number of persons)

X_2 = Volume of beans sold (in bags)

X_3 = Amount of credits (₦)

X_4 = Purchase costs (₦)

X_5 = Other marketing costs (₦)

X_6 = Age of the marketers (years)

RESULTS AND DISCUSSIONS

Marketing Channel and Source of Beans

Distribution by source of Beans of respondents

Table 1.0: Source of beans for marketers

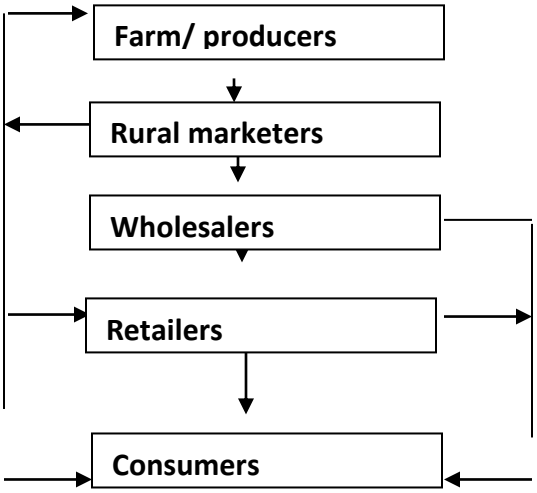
Source of beans	Frequency	Percentage
Northern states	36	80
Southern states	9	20
Total	45	100

Source: market survey, 2014

The result of Table 1.0 showed that 80% of wholesalers got their beans from Northern region wile 20% indicated that they sourced from the southern states. Musa (2009) noted northern states were the highest producer of beans in Nigeria. Beans are favourably produced in Northern regions and thus, the southern states are dependent on the north for supply. This is in the view of the marketers.

Marketing Channel of Beans

Figure 1.0: Chart showing the marketing channel of beans



According to the studies done by Ibro (2005), Musa (2006) and Fulton (2006), the majority of beans consumed in homes and other places, comes also through the channel as displayed in Fig.1.0. It flows from farmers, through rural assemblers, wholesalers, retailers, till they get to consumers.

However there are occasions where consumers obtained directly from producers and wholesalers and rural assemblers, if the source of supply is close to their homes, and centres of consumption. This is scarcely the case, because the consumers are far from the places of production except for industrial consumers who can afford the cost transportation and may buy in large quantities. In that case, they buy it cheaper or in a more convenient manner. Also retailers can avail themselves of this privilege of buying from rural assemblers and producers. Generally it is argued that the activities of wholesalers increases cost of products.

Based on the study, since most of the beans come from the north, the consumers and retailers have no option than to buy from the wholesalers and retailers at any price they sell to them since source of supply is very far and cost of transportation per unit of beans (100kg) bag is very high.

Marketing Cost and Return Analysis

Cost and return analysis from the marketers

A	**Returns ₦**	**Mean value ₦**	**Percentage %**
	Selling price (per bag)	24,000	
	Quality sold (month)	64.1	
	Total return/revenue	1,556,600	
B	Marketing costs ₦		
	Purchase costs/price/bag	20,222	
	Purchase cost	1,296,622	91.38
	Transportation cost	42,158	4.63
	Loading/ offloading cost	10,000	0.99
	Costs of rent	10,933	1,21
	Cost of feeding	5,062	0.98
	Cost of market charges	3,644	0.58
	Depreciation	420	0.23
	Total	**1,389,439**	**100**
C	Net returns (A-B)		
	Total return/revenue	1,556,600	
	Total cost	1,389,439	
	Profit/net returns (₦)	167,161	
D	Marketing efficiency (TR-TC)	1.12	

Source; market survey, 2014

The result in Table 4.3 showed that purchase cost of beans was the highest fraction of the entire marketing costs. It accounted for 91.38%. Transportation costs ranked second, accounting for 4.63%. This was understandable from the fact that the beans consumed in the study area was majorly obtained from Northern Nigeria that was about 1200km from the markets used for the study, in Umuahia North L.G.A of Abia State. This agreed with the study done by Olokosi and Isitor (1990), on cost of marketing. Next in rank was cost of rent which accounted for 1.27% of marketing costs. Others were 0.58% for marketing charges, 0.13% for depreciation, 0.88% for cost of feeding, 0.99% for loading/offloading cost.

Average net return realized was ₦167,161, which is quite meaningful an amount to make by wholesalers in a month. This is far more than the monthly minimum wage of civil servants in Nigeria. The marketing efficiency was 1.12. This shows that for every N1.00 invested, the marketers obtained about N1.12k. Furthermore, the efficiency was greater than one, indicating good performance in marketing. This agrees with the studies of Adewale, (2005).

Regression Analysis on Cost of Marketing and Profit of Marketers

The result of the analysis of the cost of marketing and the profit of marketers of beans were presented in this section.

Regression results on determinants of marketing cost

Table 2.0: Result of estimated regression analysis on marketing costs

Variable	**Linear +**	**Semi-log**	**Double-log**	**Exponential**
Constant	217716.228	11.776	.619	-3.484E6
	(.085)	(5.988)***	(.035)	(-.147)
X_1 (Age of marketers)	6863.064	.006	.387	278175.898
	(.478)	(.531)	(.726)	(.389)
X_2 (Amount of credits)	-7.933	4.691E-5	.990	146160.398
	(-.068)	(.521)	(571)	(.063)
X_3 (level of Education)	37688.306	.027	.458	622458.933
	(2.940)***	(2.726)***	(2.998)***	(3.036)***
X_4 (marketing experience)	99798.736	.031	-.039	-4254.826
	(.435)	(.176)	(-.219)	(-018)
X_5 (seasonality)	-48851.932	-.0029		
	(-1.527)*	(-.803)		
X_6 (household size)	798.058	.001	.149	102522.334
	(2.400)**	(4.368)***	(3.699)***	(1.900)*
R^2	.657	.746	.745	.642
R^2 (Adjusted)	.603	.706	.709	.592
F-ratio	1.823*	2.34	2.002	1.982

Source: market survey data, 2014

X = significant at 10%, + = lead equation

Xx = significant at 5%, xxx = significant at 1%

Figure in parenthesis are t-ratios.

From the four functional forms in Table 2.0, the linear form was chosen as the lead equation based on the number of significant variables, the F-ratio, which was significant and conformity to *apriori* expectation. The F-ratio was significant, which showed significance of the regression line. The R^2 was 0.657, which showed that about 65% variation in marketing cost was accounted for by the variables in the model, while about 35% was due to error.

The significant variables in the model that influenced cost of marketing were level of education, seasonality of the products and house hold size. Level of education was positive and significant at 1%, and positively influenced the cost of marketing. This was in conformity with *apriori* expectation. The coefficient of seasonality was found to be negative and significant at 10%. Its influence on cost of marketing was negative, indicating that when beans was not in season, the cost increased, affecting marketing costs. This was also in conformity with *apriori* expectation that during off season, agricultural products are more costly and generally influenced the marketing costs. The coefficient of the house hold size was positive and significant at 5%. This suggests that with increasing household size, the attendance to marketing needs would decrease as other needs of the family may reduce business size and thus the inherent cost incurred. This also conformed to *apriori* expectation.

Regression Results of Determinants of Profits of Marketing

Table 3.0: Results of estimated regression analysis of marketing profit

Variables	**Linear**	**Semi-log**	**Double-log+**	**Exponential**
Constant	-37435.315	9.378	21.148	1.260E6
	(-.904)	(21.023)***	(3.062)	(1.032)
X_1(Age of	-11.268	.013	.807	-31991.973

marketers)	(-.008)	(.934)	(1.812)*	(-.406)
X_2 (Amount of credit)	518.899 .117	.007 (.157)	-.206 (-.1.341)	14412.060 (.530)
X_3 (volume of sales)	3917.941 (3.983)*	.028 (2.612)***	3.001 (4.538)***	300723.151 (2.572)***
X_4 (household size)	-.042 -.855	-2.847E-7 (-.543)	-1.759 (-2.636)***	-146559.393 (-1.242)
X_5 (purchase costs)	-.009 (-.0430	4.332E-6 (1.895)*	.025 9.503)	-18151.141 (-2.086)*
X_6 (other marketing costs)	990.528 (.759)	.008 (.555)	.030 (213)	15599.063 (.628)
R^2	.886	.815	.924	.884
R^2 (Adjusted)	.868	.785	.911	.818
F-ratio	3.204	1.763	2.10	1.808

` Source: market survey data, 2014.

X = significant at 10%, + = lead equation, Xx = significant at 5%, xxx = significant at 1%. Figures in parenthesis are t-ratios.

From the functional forms used in Table 3.0, the double log was chosen as the lead equation based on the number of significant variables, R^2, and their conformity to *apriori* expectation.

The R^2 was 0.924, which showed that about 92% variation in the profit of marketers was accounted for by the variables in the models, while about 8% were due to error. From the results, the significant variables that influenced the profits of the marketers were age of the wholesalers, household size, and volume of sales. The coefficient of age was positive and significant at 10% and was positively related to profit of marketers. This showed that as age of marketers increased, the profits increased. This was so since number of years spent in business was part of their age and it aligns with how much is made. This is in conformity to *apriori* expectation. The coefficient of volume of sales is positive and significant at 1% and positively related to profits of marketers. It is an indication that as volume of sales of beans increased, the profit level also rose. The more sales made, the greater the revenue and the less the effect of the costs. This was in conformity to *apriori* expectation. The coefficient of household size was negative but significant at 1% and negatively related to profit of marketers. This suggested that as household size increased, the profits reduced. This was possible looking at the fact that there would be more persons to be catered for in terms of feeding, housing, education, clothing, medication and other externalities, particularly if they will not end up as traders at the market stalls.

Problems of Beans Marketing

Table 4.0: Problems facing Beans marketers

Table 4.0 showed the problems that faced the beans wholesalers gathered from the study.

Problems encountered	**Frequency**	**Percentage**
High transportation cost	35	77
Bad roads	27	60
Lack of credit facilities	2	4.4
Low demand/percentage	20	44.4
Poor infrastructure	41	91
Seasonality of beans	22	48
Inadequate pricing	35	77

Source; market survey 2014 Multiple respondents recorded

The result in Table 4.0 showed that the major problems faced by the marketers include high transport cost, which accounted for 77%. Usually the price of petrol was unstable and this created sharp rise in the cost of transportation. 60% of the respondents complained about bad roads, which was another cause of high transport cost, especially around the Eastern region. All respondents complained about poor state of infrastructure, especially around the market environment. 48% of respondents complained about seasonality of the product. During off season, the prices varied tremendously. 77% of respondents complained about inadequate pricing, affected by cost of processing, transportation and civil disturbances, as the product came from Northern Nigeria.

Conclusion and Recommendations

The study showed that beans marketing was a profitable venture, judging from the market efficiency which was 1.12%. Judging from the profit levels, the business records good returns and can be used to reduce unemployment If the contrains facing beans marketers are reduced, more unemployed people can make their living from it.

From the findings of the study, marketers of beans mostly experienced high transportion cost, bad roads, poor market infrastructure, seasonality of beans and inadequate pricing. High transport cost was due to distance to source of supply, which is Northern Nigeria and unstable price of fuel. The South east should be developed for beans production, if the agronomic conditions around the zone can support economic production. This can reduce frequent journeys to the North. Also, the bad roads and market infrastructure should be in a good shape so as to ease difficulty of trade and cost. Processing and storage facilities should be provided that will deal with off season inadequacies. The government should also help in granting farmers subsidies, so as to take care of production costs which will in turn reduce cost of the produce and stabilize the price.

Finally, policies created should be implemented promptly and effectively address the significant variables influenced the major concepts in the study.

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