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Analysis of Profitability and Operational Efficiencies of Cocoa Marketing: Empirical Evidence from Nigeria

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ABSTRACT This study examines empirically profitability and operational efficiencies of cocoa marketing in Nigeria. Using primary data, the result of the analysis revealed that for every ₦ 100 invested in the cocoa trading in the study area, licensed buying agents (LBAs), Exporters and Warehousing Agents realized profit of ₦ 3, ₦ 7 and ₦ 44.9, respectively .This positive and size of profit obtained for each cocoa marketing institutions is an indication that these institutions were able to recover their operating expenses, hence post-deregulation cocoa marketing era is profitable and efficient.

INTRODUCTION

Cocoa is the major agricultural commodity export of Nigeria in terms of foreign exchange earning .Although its contribution to the total natural exports earning during the past two decades dropped considerably due to the enormity of foreign exchange earning of crude petroleum .Despite all this, cocoa remains Nigeria's major agricultural export of which the country is the fifth largest exporter of the crop in the world (ICCO, 1999).

Ajayi and Oyejide (1974) reported that the spread of cocoa led to changes in the pre-existing pattern of labour employment .The increasing demand for labour in the area of production and marketing in the cocoa belt area contributed to the overall development of a different pattern of labour migration in Nigeria.

In recent time Federal and state government of Nigeria have made it a matter of policy attention to diversify the present over dependence of the country's economy on oil, by focusing on tree crops such as cocoa and food crops such as cassava production which is a reflection of the set up of the presidential initiative on the production of these crops .As a result of this, more people are going into establishment of cocoa plantation which in the long run necessitated the spring up of more cocoa plantation and participation of many people in cocoa marketing in Nigeria.

In an attempt to appraise performance of institutions involved in cocoa marketing, in order to asses how well the process of cocoa trading is operated with emphasis on the profitability performance of the participants, critical economic evaluation of institutions involved is essential in the frame work of efficiency, equity, stability, technology, price stabilization, level of output and product risks which the economist consider, as an important issue, since research has shown that the type of pricing policies ,pricing procedure ,pricing technique ,pricing strategy adopted and the set of polices arrived at in an industry influence the performance in such industry.

However, for this study, efficiency ratio, profitability ratio and operational efficiencies were used to appraise the performance of cocoa marketing institutions in Nigeria. Operational efficiency is a measure of comparison of the least marketing cost incurred by a firm (most efficient firm) in an industry to the marketing cost incurred by each of the firm whose performance is being rated in the industry. The lesser the marketing cost of firm, the more efficient is the operation when compared with other firms in the marketing industry.

RESEARCH METHODOLOGY

The Study Area: The study was carried out in Ondo and Ekiti states. The two states have 18 and 16 Local Government Areas respectively, with both having a tropical climate, heavy rainfall during the rainy season (March- November). The favorable climate account for the very reason why over 80% of the inhabitants are farmers. They grow both cash and food crops. The cash crops grown include kolanut, cocoa and coffee. They also grow food crops such as Yams, Maize, Cocoyam etc. mostly at small scale level as in the case of cocoa.

Sampling Technique and the Data: A multistage sampling technique was used to select the respondents. The first stage involved a purposive sampling of 12 Local Government Areas from each of the state because of the prevailing number of cocoa marketers in the areas while the second stage involved a simple random selection of a total of 140 respondents which include licensed Buying Agents, Exporters and Warehousing Agents from the selected LGAs. Data were collected with the aid of a structured questionnaire designed to collect information on quantity of purchased cocoa in metric tons, size of capital used (₦), size of credit facilities given to customer by LBA, Naira value of chemical to the farmers, number of customer farmers of the LBA, number of Local buying Agents, quantity of cocoa in metric tons, cost and selling price per metric ton.

Analytical Technique: To evaluate empirically the performance of cocoa marketing in the study area ,cost and return analysis was used to examine the profitability of the marketers in the study area to examine the profitability of the marketers while efficiency ratio, profitability ratio and operational efficiencies were used to examine the cocoa marketing performance in terms of efficiencies measure.

Cost and Return Analysis: This was used to determine the profit margin of the marketing institutions and is specified as follows:

$$\pi = TR - TC = PxQ - TC$$

Where:

π =Profit

TR = Total Revenue

TC = total Cost

Profit in terms of output is given by total revenue (TR) from the sale of output or income earned from services rendered less the total cost (TC) of producing the output.

Total revenue is quantity of product multiplied by the price of output which is assumed to be constant.

Total cost is a function of output, because cost increases in the level of output. Hence, for this study, total cost is equal to (total tonnage purchased X producer price + additional cost) +fixed cost.

Measure of Market Performance by Efficiency: As a measure of market performance, efficiency ratio, profitability ratio and operational efficiency are specified as follows:

i. Efficiency ratio (ER) $= \dfrac{TR}{TC}$

ii. Profitability ratio (PR) $= \dfrac{\pi}{TC}$

However, if ER >1 and PR> 1 then the industry evaluated is operationally efficient and vice-versa.

iii. Calculating long run unit cost minimization (LRUCM): The operational efficiencies with respect to local optimum and global optimum performance was calculated using long run unit cost minimization such that firm with the lowest unit cost industry size would be the most operationally efficient for that size locally and the one with that characteristic in the industry will be the most operationally efficient globally. The long run unit cost minimization is specified as follows as the value of the least unit marketing cost incurred by the most efficient firm industry (MC_L) divided by the value of unit marketing cost incurred by the firm whose performance is being compared (MC_i) multiply by 100 as specified below:

$$LRUCM = \frac{MC_L}{MC_i} \times 100$$

Where: MC_L represents firm with the least marketing cost (cost efficient)

MC_i Represents firm whose performance is being compared.

RESULTS AND DISCUSSION

Cost and Return Analysis: The result of cost and return analysis as a measure of profitability among the marketing institutions revealed that licensed buying agents (LBAs) recorded an average total cost and total revenue of ₦24,204,688.1 and ₦ 24,972,939.5 respectively with an average profit of ₦ 774,521.4.Also,the average total cost and total revenue for exporters are ₦ 464,941,559 and ₦ 736,186,683 respectively with an average profit of ₦ 271,245,124.For the warehousing agents, an average total cost and total revenue of ₦ 4,391,950 and ₦ 6,234,995 respectively was obtained from the data analysis with an average profit of ₦ 1,852,045.

However, the size and the positive values of profit obtained confirmed to the fact that cocoa marketing institutions were able to cover their operating expenses with a significance level of profit level obtained from the study area.

Table 1: Summary distribution of cost and return analysis of cocoa marketing institutions in the study area

Parameters	*LBAs*	*Exporters*	*Warehousing Agents*
Total cost ₦*	24,204,668.10	464,941,559	4,391,950
Total Revenue ₦	24,972,939.50	736,186,683	6,243,995
Profit (π) ₦	768,271.40	271,245,124	1,852,045
Profitability ratio(π/TC)	0.032	0.07	0.429
Efficiency ratio(TR/TC)	1.032	1.07	1.429

* 1US$= ₦ 140

Measure of Market Performance (Profitability and Efficiencies)

Profitability Ratio: The computed profitability ratio as presented in Table 1 for LBAs, Expoters and Warehousing Agents are 0.032, 0.07 and 0.429 respectively. This means that for every 100 invested by LBAs, Exporter and Warehousing Agents each gained ₦ 3.2,–₦ 7 and ₦ 42.9 respectively in the study area.Hence,Cocoa trading is confirm to be profitable in conformity with the earlier findings under cost and return analysis.

Efficiency Ratio: The estimated efficiency ratios for LBAs, Exporters and Warehousing Agents are 1.03, 1.07 and 1.43 respectively. Meanning that as the efficiency ratios of each marketing institutions were greater than unity is an indication that their operations are efficient.

Long Run Unit Cost Minimization: Table 2 summaries the distribution of operational efficiencies based on the long run unit cost minimization as defined in section 2.The distribution ranged from 60.44% to 100% for the LBAs and 75.47% to 100% for exporters while the mean operational efficiency for LBAs and Exporters are 71 % and 85.9% respectively .This means, the fact that the computed operational efficiency for the two marketing institutions (LBAs and Exporters) is greater than 60% ,it is an indication that the cocoa marketing is efficient in terms of achieving least marketing cost in carrying out cocoa trading in the study area.

Table 2: Summary of percentage distribution of operational efficiency at LBAs and exporters level

Score	*LBAs*	*Exporters*
Minimum Efficiency x (100)	60.44%	75.47%
Maximum Efficiency x (100)	100.00%	100.00%
Mean Efficiency x (100)	71.00%	85.90%

CONCLUSION

This paper used cost and return analysis and measures of market operational efficiency such as profitability ratio, efficiency ratio and operational efficiency that is based on the least cost unit minimization concept to examine the performance of marketing institutions in the study area. The results of the analysis revealed that profit margin of LBAs, Exporters and Warehousing Agents showed that cocoa marketing is profitable. Using the profitability ratio, it was further discovered that for every ₦ 100 incurred by LBAs, Exporters and Warehousing Agents as institutions involved in cocoa trading realized ₦ 3.2,–₦ 7 and ₦ 42.9 respectively. Meaning that the operations of cocoa marketing institutions (LBAs, Exporter and warehousing agents) are efficient and profitable as efficiency and profitability ratios are positive while the magnitude of percentage operational efficiencies for each of the institutions was more than 60 percent.

The implication of this finding is that cocoa marketing has the potential of improving the standard of living of the participants such that unemployment problem could be alleviated and income evenly distributed considering the profitability level recorded under the recent post liberalization /deregulation era as against cocoa board era in Nigeria.

REFERENCES

Ajayi S.I and T. A. Oyejide. 1974. "The role of cocoa in Nigeria economic development." Nigeria: The Economics of Cocoa Production and Marketing in Nigeria.

ICCO. 1997. "Project Proposal on improvement of cocoa marketing and Trade liberalizing, cocoa producing countries." International Cocoa Organization. Ex /94/6/Rev. 1 (ICCO).