Analysis of Managerial Efficiency Among Agribusiness Firms in Abia State, Nigeria

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Abstract—**This study assessed the managerial efficiency among agribusiness firms in Abia state, Nigeria with specific interest in analyzing their socio – economic characteristics, managerial efficiency levels and its determinants. Purposive sampling technique was used in the selection of locations and firms. Aba and Umuahia were selected given that most of the commercial firms are located. The study employed 50 firms on the basis of their investment value (less N5m).Descriptive statistics and stochastic frontier model were the analytical tools for the study. The result showed that majority of the firms were well established and managed by middle aged, sparingly literate and experienced managers with an appreciable income level and sizable household. The efficiency level of the managers was 0.62 on the average and managerial efficiency was found to be influenced positively by age of the firm, age, income, education of the managers. Efficiency was negatively affected by the household size of the managers. On the basis of the findings, the study suggested that periodic trainings and capacity building programs be organized for the managers to enhance their expertise and managerial competence.**

Index Terms—**Managerial efficiency, agribusiness, firms, microeconomics**

I. Introduction

Theoretical economics recognizes that resources involved in the production process are limited in supply. As such, it demands that these scarce resources should be efficiently utilized. Efficient utilization of resources depends basically on the managerial ability of the entrepreneurs, managers among others (Baksh and Hassan, 2007). The difference between the productivity of two managers in the same place and facing similar environmental condition lies in their managerial abilities. Managerial ability of an entrepreneur can be influenced by level of education (formal and informal), experience, access to extension services and personal ability and traits (Kalaitzandonakes and Dunn, 1995).

Typically, managers are responsible for organizing efficiently the transformation of inputs into productive outputs. Part of this process requires the manager to monitor and evaluate the inputs as well as motivate (in the case of labour). The manager's performance may be crucial for the success of the business if the manager performs well (and output is maximized for a given set of inputs), profit maximization will result (Dawson and Dobson, 2002). Variations in managerial efficiency will arise principally from two services. First, in the absence of monitoring and appropriate incentives the manager may shirk on the job (exert less than maximum effort). Managerial shirking due to the owner's inability to fully observe the manager's actions is known as hidden action. Where there is a problem of hidden action the firm is likely to under-perform in the sense that profits will be sub-optimal. This situation may be rectified by direct monitoring of the manager (usually a costly exercise) or with incentives to 'discipline' the manager into existing full effort (Jensen and Morphy, 1990).

The focus on the agribusiness sector stems from the fact that it dominates all other sectors of the economy in Nigeria. Agribusiness in Nigeria spans the entire agricultural production, processing distribution and consumption spectrum from farm input supplies through farms themselves. Some of them include wood producers, furniture manufacturers, food processors, food packers, food transporters and food marketing companies. If stretched to the farthest limit, more than 75% of all business operations in Nigeria may be classified as agribusiness (Onyido, 2006). As an area of practical application, agribusiness is as old as farming itself, but as a concept of study under modern management, it is relatively new, growing and becoming popular with passing years.

Its uniqueness lies in the fact that it is charged with the job of provision and handling of goods and services related to food and fibre needs of the nation. Majority of the agribusiness concerns operating in Nigeria are primarily in the gamut of the private sector. NISER (1999) observed that 41% of agro-industries are sole proprietorships, while another 41% are private limited liability companies. About 41% are government owned, and 5% are of partnership nature while 8% are public liability companies.

Poor political and economic governance are major causes of the decline in agribusiness development in Africa. General political uncertainty combined with poor infrastructure and a lack of institutional support makes the pursuit of economic growth difficult (Dannson et al, 2004).

There are some researches available in which managerial ability was found as an important factor for improving of personal aspects and decision making characteristics on firm level efficiency. Individual beliefs of a person which can influence his decision are taken as a personal aspect. Ohlmer (1998) and Ohlmer et al (1997) found a connection between the ability of a farmer and his or her levels of control. Rougoor et al (1998) considered managerial capacity as consisting of both personal aspects of the manager (in terms of drives and motivation, abilities and capacities, and biography) which affect decision making and which in turn

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affects the performance of a farmer. Solano et al (2006) studied the impact of a series of biographical variables and decision making profiles as a reprehensive of the managerial capacity of the farmers, on the management and performance of their farm. They formed that managerial capacity positively influences the performance of the farm. Also, Trip et al (2002) measures managerial efficiency for the commercial greenhouse growers and they considered decision making process as reflected by producers' good, planning, data recording and evaluation.

There are no analytical studies found so far which considered managerial efficiency as a veritable factor for assessing the success of agribusiness firm in this part of the world. This presents a research gap and hence, the motive for this study which sought to address the following objectives: (i) analyze the socio-economic characteristics of the agribusiness firms; (ii) estimate the average managerial efficiency of the firms (iii) analyze the factors influencing managerial efficiency of firms.

II. Material and Methods

The study was conducted in Abia State. It is one of the five states that make up the South east geopolitical zone of Nigeria and it is located between longitude 040 451and 060 171 North and latitude 071001 and 080101 East. The state bounded by Imo state at the western border; Ebonyi and Enugu States at the North; Cross-Rivers and Akwa-Ibom States at the east and Rivers at the South. The population stood at about 2,883,999 persons with a relatively high density of 580 persons per square kilometer (NPC, 2007); Abia State is divided into administrative blocks called Local Government Areas which is grouped into three (3) agricultural zones namely Ohafia, Umuahia and Aba zones. Abians are predominantly Igbo people and are mainly Christians and entrepreneurial. They are known and reputed for their industry, high market orientation and hospitality. The state has a number of agribusiness firms and industries which include; the moribund Golden Guinea Breweries Plc, Umuahia, Nigerian breweries Plc, Aba, Aba textile mills Plc Aba, Aba Ogwe Golden Chicken Farms Limited, Ogwe, Abia Palms Ltd, Ohambele, Unilever Plc; PZ Plc to mention but a few (ABSEEDS, 2005). Agribusiness firms are scattered all over the country but are concentrated in three main industrial clusters in Nigeria: Kano, Kaduna, Jos in the North; Lagos, Otta, Ibadan in the southern and Port Harcourt, Aba, Nnewi, Onitsha in the Southeast. Agribusiness enterprises in Nigeria can be classified into four major groups, farming inputs supply companies, producing farm firms, food processing agribusiness firms, and food marketing and distribution agribusiness organizations (Dannson et al, 2004).

A. Sampling Technique

The study employed multistage sampling technique in the selection of location and respondents. This technique entails selection in stages. Given that most of the agribusiness firms are located in the commercial cities of the state, Aba and Umuahia were purposively selected for the study in the first stage.

From the cities, 25 agribusiness firms each were randomly selected on the basis of their investment capacity in the second stage. Only small scale agribusiness firms (those whose investment worth less than N5m) in line Central Bank of Nigeria categorization. Within each firm, the most senior manager was selected as respondent representing his firm. This gave a total of 50 agribusiness firms which were used for the study and hence, constituted the sample size.

B. Method of Data Collection

Basically primary data were employed by the study. They were collected with the use of a set of pre-tested and structured questionnaire. Most of the data include socio-economic characteristics of the firms, their input costs and output prices etc. The Secondary information were elicited from published statistical data bases such as the World Bank, UN Data, FAO, journals and other literature

C. Method of Data Analysis

To realize objective one, descriptive statistics such as frequency, mean, tables, percentages were used. There addressed the analysis of the socio-economic characteristics of the firms. Stochastic frontier model employed for the realization of objectives two and three which border on the estimation of the average managerial efficiency and their determinants respectively.

D. Model Specification

Managerial efficiency was measured by comparing actual performance with the efficient performance implied by the firm-specific frontier. The advantage of this approach is that it enables efficiency to be linked to the manager's characteristics directly.

The value of output in naira was employed as the dependent variable in line with Dawson and Dobson (2002) that employed a similar proxy in their own study on managerial efficiency and human capital: An application to English Association Football.

The model is specified thus;

$$\text{InYit}=\beta0+\sum_{k-1}^{n}\beta_k\text{-}Z_{kit}+W_{it} \text{ ....(1)}$$

Where

Y_{it} = Output value in Naira

Z_{kit} = Efficiency factors

β_k = Input/production variables (combination of firm specific and manager's socio-economic variables) which include:

X_1 = Average wage rate

X_2= Unit Value of investment in naira

X_3= Depreciation on fixed inputs

X_4= Unit value of tax in naira

$\sum_{it}$ = composite error term.

The socio-economic characteristics were modeled to assess the managerial efficiency effects and equation is stated thus:

$$\text{Exp. }(-U_i) = a_0 + a_1Z_1 + a_2Z_2 + a_3Z_3 + a_4Z_4 + a_5Z_5 + a_6 Z_6 +a_7Z_7 +a_8Z_8 +a_9Z_9 +\varepsilon i\text{.......... (2)}$$

Where Exp. $(-U_i)$ = Managerial efficiency of the

respondent

a_0 = Intercept
Z_1 = Age of the firm (yrs)
Z_2 = Age of the manager (yrs)
Z_3 = years of experience (yrs)
Z_4 = Access to credit (dummy, yes =1; No = 0)
Z_5 = Number of employees (No)
Z_6 = Household size (No)
Z_7 = Income (N)
Z_8 = Education
e_i = error term

III. Results and Discussion

A. Analysis of the Socio-economic profile of Firms/Managers

In addressing objective one, descriptive statistics were employed and variables such as output value, age of the firm, age of the manager, experience, household size, income cum education were analyzed. The result of the socio –economic characteristics are presented in Table i.

From Table i, the least output value from the agribusiness firms in the study area was N80, 000 and the maximum was about N4.5m. The youngest firm was only 2 years old while the oldest was about 30 years with a mean of 11 years. The shows that majority of the firms were well established given their years of operation. The average age of the managers was 49 years and indicates that they are still within productive age bracket. With a mean of 14 years, they have wealth of experience. Although majority is sparingly educated (8 years), they have manageable household size and income.

B. Determination of Levels of Managerial efficiency

The second objective on the determination of the managerial efficiency of the firms was analyzed with stochastic frontier model and the result was presented in Table ii. The result of the frequency distribution of managerial efficiency estimates in Table ii has shown that the estimates ranged from 0.35 to 0.98. The distribution seemed to be skewed toward the frontier. The minimum managerial efficiency was 0.35, which indicated gross mismanagement of resources while the maximum managerial efficiency score was 0.98. By implications, the most efficient manager operated almost on the frontier. Given the mean efficiency of 0.62, about 50.00% of the respondents are frontier managers since their efficiency scores are above the mean; the average manager needs a cost saving of 38.77% ie (1-0.62/0.98) 100 to attain the status of the most efficient manager.

C. Determinants of Managerial Efficiency

Table iii shows the factors that influence the managerial efficiency of the managers. Prior to the determinants, the production factors were subjected to the stochastic frontier analysis and it revealed that tax rate and depreciation had negative coefficients. This was not surprising because they are both cost items and they remain leakages in the micro economy of the agribusiness firms. On the other hand, investment possessed the expected positive sign despite its sparing significance status.

Among the factors subjected to the analysis, age of the firm and that of the manager alongside their household size, income and education were statistically significant at varied probability levels. In terms of significance, household size, income, education and age of manager are statistically significant at 1% level of probability while age of the firm was significant at 90% confidence level. With respect to their sign identity, age of firm, income and education of manager had positive coefficients while household size had a negative coefficient. Both ages of the managers and the firms had positive coefficients, which indicate that managerial efficiency increases as they get older. This is not consistent with Nwachukwu and Onyenweaku (2007) who had a negative coefficient for age. The line of difference in the outcomes is predicated on the research focus of the studies. Nwachukwu and Onyenweaku (2007) focused on economic efficiency while the present study is interested in managerial efficiency. Income was also found to have a similar effect given its positive sign. Of particular and enormous importance to this study is the coefficient of education which also possessed the expected positive sign. This is because education is the only variable that enhances the managerial potentials and capability of the managers. This is in line with (Latruffe et al., 2009) who opined that managerial efficiency increases with the level of education, exposure to extension services and experience, thereby resulting in higher levels of production.

The coefficient of total variance ($\sigma 2$) is 0.061 while the variance ratio is 0.999, which is the ratio of the variance of farm specific technical efficiency to the total variance. This would mean that 99.9% of the variation in output among the agribusiness firms is due to the disparities in managerial efficiency.

IV. Conclusion

Having considered the managerial efficiency among agribusiness firms and their determinants, it was observed that the efficiency level of the majority was 0.62, barely above average while implies that a cost saving of about 38.77% is needed to attain the maximum managerial efficiency limit in the area. The need to address the rising inefficiency of the firms by management becomes imperative. Based on findings, the study suggests that Periodic training and capacity building programs be organized for managers to enhance their skills and managerial expertise. More so, the use of appropriate and attractive incentives should be employed by the firms since income was found to exert a positive influence on managerial efficiency.

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