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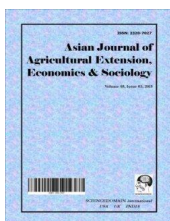
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Measuring Managerial Efficiency of Table Egg Producers in Akwa Ibom State, Nigeria

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Authors' contributions

This work was carried out in collaboration between all authors. Author MNE designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors SBO and ICI managed the analyses of the study. Author ICI managed the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

This study measured the managerial efficiency of table egg producers in Akwa Ibom State. The specific objectives were to ; determine the levels of managerial efficiency of table-egg producers in the study area; analyse the factors that affect the managerial efficiency of table egg producers in the study area and examine table egg producers' perceptions on the severity of challenges of the business environment in table egg production in the State. Structured questionnaires were used to gather information from 210 table egg producers selected through simple random sampling technique. Data Envelopment Analysis (DEA) was used to analyse table egg producers' managerial efficiency while the factors affecting managerial efficiency were examined using Tobit regression model. Findings from the study showed that table egg producers were managerially inefficient with a mean managerial efficiency level of 12.6% and standard deviation of 16.1. Years of experience, marital status, sex and income were significant factors that affected the managerial efficiency of table egg producers in the study area. Non- availability of credit facilities, irregular extension contacts, epileptic public power supply high cost of feeds and high cost of labour were ranked as very severe challenges of the business environment in table egg production. The study emphasises

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the need for government to collaborate with relevant stakeholders in the private sector to fund and organise capacity building programmes for table egg producers. Also, Table egg producers in the State should be encouraged to collaborate with their counterparts to form partnerships. This would definitely improve their decision-making process or managerial capacities and consequently their managerial efficiency levels.

Keywords: *Managerial efficiency; table egg; business environment.*

1. INTRODUCTION

Nigeria has the highest number of poultry farms as well as the highest participation of people in the poultry industry in Africa, but in spite of this, various research outcomes have shown that most of these farmers run their farms at very unsustainable profit margins due to lack of technical experience, poor production methods as well as poor management which have caused most farmers to quit the industry Food and Agricultural Organization [1]. Consequently, Nigerian agriculture has not been able to feed the ever-increasing population with adequate calorie and protein [2] and [3].

To augment the shortfall in local supply, the Federal Government of Nigeria (FGN) tried to offset the huge deficit in animal protein consumption by embarking on massive importation of chilled beef and chickens which caused an increase in import bills for food and live animals from NGN 178.745.4b in 2004 to NGN 351.507.68b in 2009 [4]. For many reasons, this policy was counter-productive; hence, the ban on importation of frozen poultry products in 2003. The ban of poultry products by the Federal Government of Nigeria caused a turn-around in poultry farming which grew by 10.3 percent in 2011 as compared with 0.3 percent in 2003. Apart from the ban, this growth was also due to improvement in the provision of veterinary and extension services to poultry farmers [5]. Consequently, Nigerian hen-egg production expanded rapidly from 185,300 metric tons in 2001 to 268,000 metric tons in 2011 representing 30.9 percent and was valued at \$527.49 million, ranking 19th in world hen-egg production and the top producer in Africa.

However, this still falls short of the country's aim of self-sufficiency in animal protein consumption which is put at 5 gm/caput per day, a far cry from the Food and Agriculture Organization's recommended level of 35 gm/caput per day [6]. This has been attributed largely to the high cost of feeds which constitutes about 50 per cent of total production cost [7,8]. Okike [9] observed that the potential for egg consumption was

enormous in the country but most people eat less than 40 eggs in a year. On the other side, Ebong [10] and Uchendu [11] identified the problem of low or inadequate skills, knowledge, and non-scientific approaches to agricultural production as significant impediments to agricultural productivity in Nigeria. They attributed the persistent low productivity to inefficient use of resources and poor managerial skills. It is reported that farmers in developing countries fail to explore the full potential of technology and make allocative errors [12,13,14,15,16,17,18].

According to the Resources Inventory and Management Limited [19], the livestock industry is dominated by poor-resource farmers who have a very low level of education, poor capital base and inability to manage resources efficiently. He further stated that production targets can only be achieved if farmers are properly educated to enable them to manage farm inputs, adopt and properly apply innovations from research institutes. Afolabi, [2], Iyangbe & Orewa, [20] and Adepoju [21] also attributed the problem of underperformance in the livestock sector and particularly in poultry to inefficiency in resource use.

Several studies have been conducted on efficiency in the poultry industry. Most of these studies which include; Ashagidigbi *et al.* [22], Binuomote *et al.* [23], Adepoju [21], Yusuf and Malomo [24], Ojo *et al.* [25,26,27,28] and Udo *et al.* (2010) are on efficiency in resource use and focus only on the technical or allocative or economic efficiencies. However, researchers and scholars in the field of farm management agree that the farmer is one of the most important elements affecting farm performance [29,30,31]. The importance of competent management is also emphasised when the farmer's managerial capacity is seen as the fourth production factor or when the managerial input is seen as a major resource with nature, labour and capital [32,31]. Managerial skills are believed to determine the important portion of a farm's economic returns because of its overall influence in the planning, organising, directing,

coordinating and controlling of all activities relating to table egg production namely: input suppliers, production, processing/storage and marketing or distribution [33]. Also, Punjabi, [34] asserts business environment is a significant factor in determining the performance of the business. This study is therefore conceptualised to fill this research gap. The broad objective of this study was to measure the managerial efficiency of table-egg producers in Akwa Ibom State.

The specific objectives of the study were to:

- (i) Determine the levels of managerial efficiency of table-egg producers in the study area.
- (ii) Analyse the factors that affect managerial efficiency of table egg entrepreneurs in the study area.
- (iii) Examine Table egg producers' perceptions of the severity of challenges of the business environment in table egg production in the state.

1.1 Research of Hypotheses

The hypotheses stated below in its null form were tested in this study:

- Ho₁ Table egg producers in Akwa Ibom State are not managerially efficient.
- Ho₂ Some socioeconomic variables have no significant effect on managerial efficiency of table egg producers in the State.

2. LITERATURE REVIEW

2.1 Managerial Efficiency

Managerial efficiency within the context of this study is defined as the capacity of table egg entrepreneurs to harness and efficiently utilise scarce resources in the production of table egg [30]. Farmers play managerial functions in organising efficiently the transformation of inputs into productive outputs. The difference between the productivity of two managers in the same place and facing similar environmental condition lies in their managerial efficiencies. The managerial efficiency of an entrepreneur can be influenced by socioeconomic factors such as level of education (formal and informal), experience, access to extension services and personal ability and traits [35].

Historically, commentators argued that managerial skill is determined by genetic traits of a manager's personality, a predominantly

intrinsic orientation too difficult to alter [36]. Psychologists later detected that gene determines only a little of (33 to 34%) personality traits. Rather, social settings and trainings reshape personality [37,38]. Being aware of this, agricultural economists have argued that necessary trainings should be provided to less-skilled farm managers to help enhance managerial skills [39]. For example, he stated that "individual (social) behaviour and learning are related to managerial ability". Thus, it is critical to appreciate farm managers' psychological aspects and develop necessary programs to aid learning. Behavior reflects attitudes and objectives. And on the farm, managerial behaviour can be assumed to reflect entrepreneurial goals [40].

Resources involved in the production process are limited in supply and therefore demands that these scarce resources should be efficiently utilised. Efficient utilisation of resources depends basically on the managerial ability of farm managers [30]. The difference between the productivity of two managers in the same place and facing similar environmental condition lies in their managerial abilities.

The 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 [35]. Ford and Shonkwiler [41] stated that managerial ability is defined through a set of demographic variables or proxies of production methods. Since management is difficult to measure, it has often been handled as a black box represented by limiting factors such as age, education, and drivers or motivations of the farmers [42].

Typically, managers are responsible for organising 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 maximised for a given set of inputs), profit maximisation will result [43].

2.2 Empirical Studies on Managerial Efficiency

Nwachukwu *et al.* [44] assessed the managerial efficiency among agribusiness firms in Abia state, Nigeria with specific interest in analysing

their socioeconomic characteristics, managerial efficiency levels and its determinants. Purposive sampling technique was used in the selection of locations and firms. Aba and Umuahia were selected where most of the commercial firms are located. The study employed 50 firms on the basis of their investment value (less than ₦5m). Descriptive statistics and stochastic frontier model were the analytical tools for the study. The result showed that the 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 of managers, income, and 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 training and capacity building programs be organised for the managers to enhance their expertise and managerial competence.

Makinen [45] studied how farmers' managerial thinking and management process effectiveness contribute to profitability of farming. A structured equation model of these two elements of management capacity and financial performance was applied on survey data and book-keeping results from 117 dairy farms. The model explained one-fourth of the varying profitability of sample farms. The result showed that farmers' managerial thinking is connected to farm profitability, but management process effectiveness is not. It was concluded that it is essential for good performance that the farmer should have a clear vision of developing farming with business and investment plans. Successful farmers also have a firm confidence on their managerial skills, a strong emphasis on instrumental and intrinsic values, and a high appreciation of farming as an occupation. They also see the farm as an entrepreneurial business unit and intend to follow the corresponding principles of management.

3. RESEARCH METHODOLOGY

3.1 Study Area

The study area for this research is Akwa Ibom State. The State was created as a geographical entity among the 36 states of the Federal Republic of Nigeria on September 23, 1987 under Decree No. 24 of the Federal Republic of Nigeria. It was carved out of the former Cross

River State and lies between Latitude 4°32' and 5°32' North and Longitude 7°25' and 8°25' east of the equator. The state shares borders with River State in the West, Abia and Imo State in the North, Cross River State in the East and Atlantic Ocean forming its southern boundary. The State occupies an area of 8,412 square kilometers with a population of 3.9 million based on the national census figure of year 2006 and an average population density of 350 inhabitants per square kilometer with 85 percent of the population living in rural areas [46]. The State has thirty-one Local Government areas with Uyo as the capital. Akwa Ibom State has three distinguishable vegetation; the saline water swamp forest, the fresh water swamp forest and the rainforest. It has a mean annual rainfall of 2,200mm in the north of the state and 3,500mm in the southern part with sunshine of between 1,400 to 1,500 hours per year. The rich land mass and all year-round clement weather offer a favourable environment for wildlife conservation, the production of food and tree crops, fish and livestock farming. The State is known for the cultivation of cassava, yam, cocoyam, maize, rice, cowpea, oil palm, coconut, raffia palm, kola and vegetable like okro, pepper and tomatoes. It also produces livestock such as sheep, goats, rabbits, snails and has a comparative advantage in poultry production.

3.2 Sampling Procedure and Data Collection

There are six agricultural zones in Akwa Ibom State Oron, Abak, Ikot Ekpene, Etinan, Eket and Uyo. For the purpose of this research, a sampling frame showing total population of 1,051 table egg firms in the 6 agricultural zones in Akwa Ibom State was obtained from the Livestock Department of Ministry of Agriculture, & Natural resources, Akwa Ibom State (Table 1). Simple random sampling technique was adopted in the selection of 20% table egg firms from each agricultural zone to constitute a sample of 210 table egg firms. Structured questionnaire was used to obtain information from the selected firm owners/managers/producers. Information collected was on the socio-economic characteristics, access to credit, access to extension services by table egg producers, membership in cooperatives, factors that affect managerial efficiency of table egg producers, costs of table egg production and revenue from production. Out of the 210 questionnaires distributed, 180 were retrieved and used for analysis.

3.3 Data Analysis

Two Data Envelopment Analysis (DEA) models developed by Charnes *et al.* [47] namely: the Charnes, Cooper and Rhodes (CCR) model which consider constant returns to scale (CRS) and the Banker, Charnes and Cooper (BCC) model which considers variable return to scale (VRS) were used to calculate the managerial efficiency of table-egg producers in the area of study. Tobit regression model was used to analyse the factors that affect the managerial efficiency of table egg producers. The perception of table egg producers on the severity of challenges facing the business environment was captured using a four point likert scale (Very severe, moderately severe, severe and not severe) and analysed using descriptive statistics.

3.3.1 Determination of managerial efficiency

The CCR model is given as;

$$\begin{aligned} \max W_p &= \sum_{r=1}^s u_r y_{rp} \\ \text{s.t.} \quad &\sum_{i=1}^m v_i x_{ip} = 1 \end{aligned}$$

Model 1

$$\begin{aligned} \sum_{r=1}^s u_r y_{rj} - \sum_{i=1}^m v_i x_{ij} &\leq 0 \quad \forall j, \\ u_r, v_i &\geq 0 \quad \forall i, r. \end{aligned}$$

Likewise, the BCC model is formulated as follows (Model 2):

$$\max W_p = \sum_{r=1}^s u_r y_{rp}$$

s.t : Model 2

$$\begin{aligned} \sum_{r=1}^s u_r y_{rj} - \sum_{i=1}^m v_i x_{ij} &\leq 0 \quad \forall j, \\ u_r, v_i &\geq 0 \quad \forall i, r. \end{aligned}$$

Model 1 (input oriented CCR model) allowed table-egg farms [otherwise referred to as Decision Making Units (DMUs) in DEA terminology] that had low inputs to come up with increasing returns to scale whereas model 2 (BCC model- output oriented model) allowed DMUs that had high inputs would come up with decreasing returns to scale.

Input-oriented model focuses on reducing inputs in order to have a 100% efficient DMU while the output-oriented model focuses on increasing outputs to have an efficient DMU.

n= Number of table egg farms otherwise called decision-making units (DMUs)

m= Socioeconomic factors that can influence managerial efficiency of table egg producers namely: age of the manager (yrs), access to extension services, (dummy, yes =1; No = 0); years of experience (yrs); access to credit (dummy, yes =1; No = 0); household size (No); educational qualification of table egg producers (years of schooling), estimated per production cycle (N), etc to produce table egg.

s= Quantity of outputs (table-egg) produced by each DMU.

Specifically, DMU_j consumes amounts x_{ij} ($i = 1, \dots, m$) from inputs to produce amounts y_{rj} ($r = 1, \dots, s$) of outputs (table-eggs).

In the model formulation, x_{ip} ($i = 1, \dots, m$) and y_{rp} ($r = 1, \dots, s$) denote the nonnegative crisp vectors of input and output values for DMU p and v and u symbolise input and output weights, respectively.

Table 1. Sampling frame and sample size of Table egg producers in Akwa Ibom State by Agricultural Zones

| S/N | Agricultural Zones/LGAs | Population of Egg Firms (Sampling Frame)* | Number of Egg firms selected for the study (20%) | No of Questionnaires Retrieved | Retrieval Rate (%) |
|-----|-------------------------|---|--|--------------------------------|--------------------|
| 1 | Eket | 150 | 30 | 30 | 100.0 |
| 2 | Uyo | 301 | 60 | 48 | 80.0 |
| 3 | Ikot Ekpene | 288 | 58 | 44 | 75.9 |
| 4 | Abak | 102 | 20 | 20 | 100.0 |
| 5 | Etinan | 130 | 26 | 26 | 100.0 |
| 6 | Oron | 80 | 16 | 12 | 75.0 |
| | Total | 1051 | 210 | 180 | 85.7 |

* Livestock Department, Ministry of Agriculture & Natural Resources, Akwa Ibom State

In solving an optimisation problem, each DMUj sets its own weights to maximise its efficiency subject to the condition that all efficiencies of other DMUs remain less than or equal to (1) and the values of the weights are greater than or equal to (0) [48]. The above mentioned linear programming (LP) problem would result in the managerial efficiency score of DMUs (table-egg producers). For the best situations, an efficiency value of (1) indicates an efficient unit [49].

3.3.2 Factors affecting managerial efficiency of table egg entrepreneurs

Managerial efficiency of table egg producers depends on both social and economic factors. Tobit regression model was used to investigate the effect of these factors. The efficiency or inefficiency scores were regressed against farm specific variables. Managerial efficiency scores that were below 0.5 were adjudged inefficient and thus given the value zero. The socio-economic characteristic of the respondents that could affect managerial efficiency levels were considered as stated in the model below:

$$MEff = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \beta_6 X_{6i} + \beta_7 X_{7i} + \beta_8 X_{8i} + \beta_9 X_{9i} + \mu_i$$

Where,

MEff = managerial efficiency score for each production unit or respondent

Where:

X_{1i} = Age of the farm manager (years)

X_{2i} = Sex of the manager (Dummy: Male =1; Female 0)

X_{3i} = Marital Status of the ith farm manager/producer

X_{4i} = the education level of the ith farm manager/producer (years of schooling)

X_{5i} = Years of Experience (years)

X_{6i} = Membership of a Cooperative Society (No=0, Yes=1)

X_{7i} = Number of Extension contacts

X_{8i} = Credit use by the ith farm unit (No=0, Yes=1)

X_{9i} = Income of the ith farm in number.

μ_i = the error term.

4. RESULTS AND DISCUSSION

4.1 Managerial Efficiency of Table Egg Producers

Findings of the study show that 89.4% of the respondents had managerial efficiency score of less than 26% while 2.2% of respondents accounted for managerial efficiency score of 76 –

100. The minimum managerial efficiency of table egg firms was 2% while the maximum was 100%. The average managerial efficiency score was 12.6%, with standard deviation of 16.1%. This result validates the null hypothesis (H_{01}) that table egg producers in the study area were not managerially efficient (Table 2).

Table 2. Managerial efficiency levels of table egg producers

| Managerial efficiency scores | Frequency | Percentage |
|------------------------------|-------------|------------|
| 0 - 0.25 | 161 | 89.4 |
| 0.26 - 0.5 | 12 | 6.7 |
| 0.51 - 0.75 | 3 | 1.7 |
| 0.76 - 1.0 | 4 | 2.2 |
| Total | 180 | 100 |
| Mean | 12.6 (16.1) | |

Source: Field Survey (2016) Note: Figures in parentheses are std. deviations

4.2 Factors Affecting Managerial Efficiency of Table Egg Producers

The results of the factors affecting the managerial efficiency of entrepreneurs in the study area show that managerial efficiency of table egg producers depended on socioeconomic factors such as marital status, sex of the farmer, years of experience and income. The coefficient of years of experience was positive and significant at the 5 percent level. It implies that years of experience of a table egg farmer, significantly explained variations in managerial efficiency. From the results, farmers with less than 11 years of experience are less efficient compared to managers with more than 30 years of experience. More so, farmers with less than 10 years of experience were 0.147 times less efficient compared to managers with more than 30 years of experiences. For managers with (11-20) years of experience and (21-30) years of experience, managerial efficiency was lower by 0.128 and 0.396 compared to managers who had years of experience above 30 years Table 3). This result is consistent with our apriori expectation and agrees with the findings of previous studies by Ojo and Ajibefun [7].

Ekaette et al. [50] also described the business environment of egg producing enterprises as hostile due to: high cost of feed, poor management, diseases and pests, poor extension and training facilities, marketing problems, lack of credit facilities, poor logistics and lack of regulatory institutions to ensure that farmers comply with established rules for quality, products safety and standard.

Considering the marital status of respondents, the result showed that table egg producers who were married as well as the singles were more efficient than the widowed.

The positive relationship between marital status and managerial efficiency is in line with the work of Ashagidigbi et al. [22]. Managerial efficiency increases by 0.387 when a farm manager is married compared to when he/she was widowed, while, managerial efficiency increases by 0.592 if a

manager is single compared to when he/she is married.

The result further shows that sex is a significant factor that affects managerial efficiency. As shown in the Table 2, female managers were less productive compare to their male counterparts. This is plausible given their level of commitment in the business. Managerial efficiency fell by 0.118 if the manager is a female compared with farms managed by males (Table 3). This is in line with the findings of Ashagidigbi et al. [22].

Table 3. Tobit regression showing the determinants of managerial efficiency of table-egg producers in Akwa Ibom State

| Variable | Coefficient | Std. Err. | T | P> t |
|---------------------------------|--------------|-----------|-------|-------|
| Years of experience: below 10 | -0.147* | 0.08 | -1.84 | 0.067 |
| Years of experience: 11 to 20 | -0.128* | 0.066 | -1.94 | 0.054 |
| Years of experience: 21 to 30 | -0.396*** | 0.113 | -3.49 | 0.001 |
| Marital status: Married | 0.387*** | 0.065 | 5.96 | 0.000 |
| Marital status: single | 0.592*** | 0.145 | 4.07 | 0.000 |
| Sex: Female | -0.118** | 0.056 | -2.09 | 0.038 |
| Income: High | -0.582 | 0.327 | -1.78 | 0.076 |
| Income: Average | -0.09** | 0.039 | -2.3 | 0.022 |
| Income: Low | -0.058* | 0.033 | -1.78 | 0.076 |
| Access to credit | -0.029 | 0.068 | -0.42 | 0.675 |
| Years of schooling | -0.047 | 0.068 | -0.68 | 0.495 |
| Age: 21 to 30 | 0.201 | 0.131 | 1.54 | 0.126 |
| Age: 31 to 40 | 0.054 | 0.13 | 0.42 | 0.678 |
| Age: 41 to 50 | 0.043 | 0.057 | 0.75 | 0.452 |
| Frequency of extension contacts | -0.1 | 0.061 | -1.64 | 0.103 |
| Constant | -0.282 | 0.172 | -1.64 | 0.103 |
| Number of obs | 180 | | | |
| F stat (P-Value) | 7.66 | | | |
| Log likelihood | -65.145656 | | | |
| Sigma | 0.2757183*** | | | |

Source: Author's computation (2016)

Note: *, ** and *** represents statistical significance at 10%, 5% and 1%

Table 4. Perceptions by respondents on severity of the challenges facing business environment of table egg producers in Akwa Ibom State

| Nos. | Factors affecting the business environment of table egg producers | VS (4) % | % | S (3) % | % | FS (2) % | % | NS (1) % | % | Total |
|------|---|----------|------|---------|------|----------|------|----------|------|-------|
| | | Freq | | Freq | | Freq | | Freq | | |
| 1 | Non availability of Credit facilities | 168 | 95.5 | 8 | 4.5 | - | - | 3 | 1.7 | 176 |
| 2 | Irregular extension contacts | 151 | 88.3 | 10 | 5.8 | 6 | 3.5 | 4 | 2.3 | 171 |
| 3 | Availability of modern equipment | 90 | 78.3 | 15 | 13.0 | 5 | 4.3 | 5 | 4.3 | 115 |
| 4 | Cost of modern equipment | 140 | 82.4 | 15 | 8.8 | 10 | 5.8 | 5 | 2.9 | 170 |
| 5 | Multiple taxation | 10 | 5.7 | 34 | 19.5 | 20 | 11.5 | 110 | 63.2 | 174 |
| 6 | Poor Water supply | 97 | 58.4 | 34 | 20.5 | 25 | 15.1 | 10 | 6.0 | 166 |
| 7 | High Cost of labour | 153 | 86.0 | 15 | 8.4 | 5 | 2.8 | 5 | 2.8 | 178 |
| 8 | Epileptic Public power supply | 152 | 87.9 | 10 | 5.8 | 8 | 4.6 | 3 | 1.7 | 173 |
| 9 | High Cost of feeds | 109 | 77.3 | 25 | 17.7 | 12 | 8.5 | 5 | 3.5 | 141 |
| 10 | Diseases and Pest | 141 | 79.7 | 20 | 11.3 | 10 | 5.6 | 6 | 3.4 | 177 |
| 11 | High cost of transportation | 3 | 1.8 | 7 | 4.1 | 40 | 23.4 | 121 | 70.8 | 171 |
| 12 | Poor returns on investment | 1 | 0.6 | 2 | 1.1 | 2 | 1.1 | 169 | 97.1 | 174 |
| 13 | Poor quality of feeds | 157 | 94.0 | 5 | 3.0 | 3 | 1.8 | 2 | 1.2 | 167 |

VS = Very Severe; (4) S = Severe; (3); FS = Fairly Severe (2); and NS = Not Severe. (1)

Also, the result shows that income was positively related to managerial efficiency. This implies that income was a significant determinant of managerial efficiency as reported by Amaza, [51] and Ashagidigbi et al. [22]. The result shows that Managers with high income will be 0.09 times more efficient compared with managers with average income. More so, managers with high income will be 0.058 times more efficient than managers with low income (Table 3). This is convincing as income will serve as a motivation to achieve higher performance and efficiency.

4.3 Table Egg Producers' Perceptions on the Severity of Challenges of Business Environment in Table Egg Production in the State

From Table 4, factors which were considered as having the most severe effects on the firms were: non- availability of credit facilities with 95.5%, irregular Extension contacts (88.3%), epileptic public power supply (87.9%) and high cost of feeds (86.0%) while high cost of labour accounted for a share of 82.4%.

5. POLICY IMPLICATIONS

Table egg producers in Akwa Ibom State were managerially inefficient. This is evident in the result of this study which shows that 89% of the table egg firms in the study area had managerial efficiency scores of less than 26% and the mean managerial efficiency score of 12.6% and standard deviation of 16.1. The coefficients of years of experience, marital status, sex, income were positive and significant determinants of managerial efficiency while years of education was negative although all respondents had formal education and the mean years of schooling was 10.7 with standard deviation of 4.87. This implies that the possession of formal education by table egg producer without adequate skill about the business does not guarantee that the producer will perform the managerial functions of the firm efficiently. Similarly, acquisition of more of years of experience in the business without any value addition on the capacity of the operators coupled with poor extension services cannot guarantee efficiency. In the same vein, being a member of a cooperative society which do not build the skills of members on best management practices in the business does not guarantee efficiency. Also, access to credit by table egg producers without utilising the funds in the business will definitely have a negative effect on efficiency. Findings

from this study emphasis the need for government to partner with other non-government stakeholders through Public Private Partnership (PPP) in order to address the challenges and create a conducive or enabling business environment that would raise the reported low managerial efficiency levels of table egg producers in the State.

There is a need for government to collaborate with relevant stakeholders in the private sector to fund and organise capacity building programmes for table egg producers. Such programmes should also be extended to other players in the value chain in order to strengthen the marketing chains thereby facilitating inter and intra-industrial linkages. Also, Table egg producers in the State should be encouraged to collaborate with their counterparts to form partnerships. This would definitely improve their decision making process or managerial capacities and consequently their managerial efficiency levels.

6. CONCLUSION

The present study determined the need for government to collaborate with relevant stakeholders in the private sector to fund and organise capacity building programmes for table egg producers. Also, Table egg producers in the State should be encouraged to collaborate with their counterparts to form partnerships. This would definitely improve their decision-making process or managerial capacities and consequently their managerial efficiency levels.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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