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Competency Level and Training Needs of Poultry (Layers) Farm Attendants in Delta State, Nigeria

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Abstract

The study investigates the competency level of poultry layer farm attendants in Delta state, Nigeria. The specific objectives of the study are to: describe the socio-economic characteristics of the respondents, determine the competency level of poultry farmers in various aspects of management and to identify the areas where poultry farmers need training. A multi-stage sampling procedure was used to compose a sample size of 225 respondents. The instruments for primary data collection also included a four point Likert-type scale with values: 1= not competent, 2= little competence, 3= competent and 4=very competent. Descriptive and inferential statistical methods were used in data analysis. Results were presented using tables and simple percentages. The results showed that the attendants were competent in only three of the twelve tasks examined. The attendants were competent in these tasks: care of poultry equipment (mean = 4.48), identification of sick birds for culling (mean = 4.46) and identification of poultry breeds (mean = 4.90). Thus the poultry farm attendants were incompetent generally speaking. It was therefore strongly recommended that training workshop on the other nine tasks be organized to train the poultry farm attendants in Delta State in order to improve their level of competent.

Keywords: competency, training needs, attendants, poultry farm, Delta state

1. Introduction

The food and agricultural organisation of the United Nations (FAO) stipulates a daily requirement of 65gm to75gm of total protein out of which 40% or 36gms should be obtained from animal sources. Currently, the estimated per caput animal protein consumption is about 17gm which indicates a shortfall (Ike, 2011). According to Ike (2011)poultry offers the greatest scope of increasing the quantity and quality of animal protein in Nigeria as poultry meat and eggs account for about 30% of total livestock output of which eggs account for over 80% (Evbuomowan, 2005). Commercial poultry is well established in Nigeria with substantial infrastructure on ground (Ike, 2011). Thus poultry meat and eggs are capable of providing animal protein in terms of quantity and quality and can narrow down the animal protein supply gap in a minimum possible time as compared to other sources of animal protein. However, this study focuses on farmers involved in egg production (layers' farmers) since egg production is more prevalent in the poultry industry of Delta state.

More than 50 billion chickens are reared annually all over the world as a source of food (Wikipedia, 2011). This is attributed to the importance of poultry products in terms of nutritional values such as quality protein, lipids, carbohydrate, multitude of vitamins, cholesterols and pigments (Izunobi, 2002).

Despite this potential of the poultry industry, it is bedevilled by numerous problems in areas like rearing, housing disease management, feeding and medication. Research has shown that in Nigeria poultry as a source of meat supplies about 20% of the total meat needs of the nation. This is grossly inadequate when compared with that in developed countries like United States. Research has also pointed out that in most parts of Nigeria, poultry farms operate in less equipped poultry houses under the care of less competent poultry farmers that are less concerned about recent technologies that are relevant for the improvement of their management skills. This is one of the major reasons why most developed countries in the world produce and consume more poultry products than Nigeria. In the United States for instance, statistics has it that the estimated egg consumption is 250-300 eggs per head per annum, whereas that for Nigeria is 20-25 eggs per head per annum (Oluyemi and Robert, 2000).

A number of challenges are associated with poultry production in Delta State in particular and Nigeria in general. For instance, Newcastle disease is a major constraint in the production of village chicken (Alders and Spradbrow, 2001). Many developing countries suffer high mortality in unprotected flock due to new castle disease. According to Eekere, et al (1990), insufficiency of clean fresh water can seriously retard the growth of chicks, impair egg production and sometimes lead to the mortality of young chicks. Other challenges include poorly equipped poultry houses, improper way of administering drugs and poor management techniques. Given this scenario the following research questions arise: what are the socio-economic characteristics of poultry

farmers? What are the major tasks performed by poultry farmers on their farms? What level of competence is required of poultry farmers? What is the current competent level of poultry farmers? Which areas are they not competent thus necessitating training? This study addresses these issues.

Therefore, there is the need to assess the competency level of poultry farmers in order to identify which areas they are likely to need training. The objectives of the study are to: describe the socio-economic characteristics of the respondents, determine the competency level of poultry farmers in various aspects of management and to identify the areas where farmers need training mostly. The study tested the following null hypothesis: there is no significant difference between poultry farmers' socio-economic characteristics and their competency level.

2. Literature review and theoretical framework

Igwua (1987) recognized training need as an aberration that needs to be corrected. Kogan (1993) refers to training need as a condition in which there is a difference between job done by current ability of job holder and job done excellently. This difference could be in terms of knowledge attitude or skills a trainee requires to perform his job effectively. Omole (1983) sees training need as a gap between current job competence and requirements. Training need therefore exist when an individual or an employee lacks the knowledge and skills to perform an assigned task satisfactorily. Hence, training need is a performance problem (Laird, 1990). Training need is a condition where there is a gap between 'what is' and 'what should be' in terms of incumbent knowledge, skills, attitude and behaviour for a particular situation at a particular time (Solomon, 2008). Halim and Ali (1997) refer to the gap as a problem which usually occurs when a difference exists between desired performance and actual performance. The first stage in any training process is the identification of the training gap, the gap between requirements of a job and the deficiencies in skill of the trainee. Training can only be effective if serious attempt has been made to decide exactly what kind of training is required. There must be a complete understanding of the job requirement, what tasks, skills knowledge and attitudes the worker has to perform a job satisfactorily. Training need thus identifies knowledge and skill gap between what is and what ought to be in the execution of specific tasks toward the achievement of set objectives and goals.

Youdeowei and Kwarteng (1995) defined training need as the difference between the required level of individual competence and his current level of competence. They further expressed training need mathematically as:

M-I =Dk

Where M = Standard job performance
I =inventory or actual performance

Dk =Potential deficiency

The word potential is used because it is not always certain that fall in standard is only due to training need, that is, difference in knowledge and skill is not always only due to training need. Laird (1990) observed that the difference between the "must do" and "is doing" stems from other causes which he called "deficiency of execution". This kind of deficiency could be lack of feedback, badly engineered jobs or punishing consequences.

There are different types of training needs. Jaiswal (1998) identified two types of training needs-organizational and individual needs. The two are independent since corporate achievement of a group or a whole organisation ultimately depends on collective performance of the individual or individual employee. Both types of training needs are relevant to the poultry industry depending on the scale of operation. Laird (1990) similarly classified training needs into two- micro- and macro training needs. A micro training need exists for just one person or a very small population, for example when a new technology is introduced on a specific livestock in a particular area. Macro training need on the other hand exists in a large group of people, or frequently in the entire population with same job classification. Examples are when all farmers must be trained in a new procedure as in the case control of the avian flu by poultry farmers or all managers in a new policy.

There are several reasons for conducting a training need assessment which can be summarized into five points (Swist, 2001) as follows:

- To determine what training is relevant to workers/trainees
- To determine what training will improve performance
- To determine if training will make a difference in performance

- To separate training needs from other organisational problems
- To link improved job performance with organisation's goals and objectives.

There are several methods of conducting training needs assessments Sabyasachi (2001) developed a three point likert-type of most needed = 2 points, needed = 1 point and not needed = 0 point for recording responses of respondents in assessing training needs. Thereafter, training need was determined after taking into consideration respective obtainable scores. Measurement of major areas as well as overall training needs was done by the formula:

Total obtained scores/Number of statements..... (1)

To measure the extent of training needs, Training Need Index (TNI) was calculated by using the formula:

TNI = (Total Obtained Score/Total Obtainable Score) 100..... (2)

Vijaragavan et al (2005) assessed training needs based on combined findings of task analysis and self-assessment. Task analysis was conducted based on importance of task and the frequency of task performance. Frequency of performance was measured using a five point continuum of seldom, occasional, monthly, weekly and daily with assigned scores of 1, 2, 3, 4 and 5 respectively.

Agbamu (2004) assessed training need through perceived level of competence and level of importance placed on selected professional skills of agricultural media practitioners. To achieve this, he developed a four category Likert-type scale with values: not competent = 1, little competent = 2, competent = 3 and very competent = 4 to measure level of competence ;and unimportant = 1, little importance = 2, important = 3 and very important = 4 to measure level of importance. From this it is obvious that there is a relationship between training need and the level of competence. In fact the need for training arises when the farmer or trainee is assumed to be incompetent.

3. Methodology

3.1 Study Area

The study was carried out in Delta State. Delta state was created from the then Bendel state on August 27, 1991 by the then regime of General Ibrahim Babangida. Delta state shares common boundaries with Edo and Ondo States to the North-West, Imo and Anambra States to the North-East, Rivers and Bayelsa to the South-East. In the South and South-West it has approximately 122 kilometres of coast line bounded by the Bight of Benin on the Atlantic Ocean. The Major ethnic groups are Urhobo, Igbo, Ezon, Isoko and Itsekiri. Major crops grown include cassava, yam, coco yam, potato, plantain/banana, oil palm, rubber and pepper. Animal husbandry and fishing activities are also prevalent in the state. Delta state lies approximately between longitude $5^{o}00'$ and $6^{o}45'$ East and latitude $5^{o}00'$ and $6^{o}30'$ North (Nwajei,1993). It has an estimated population of 4098291 (NPC, 2006) and total land area of 18,050 square kilometres, and about one-third of this is swampy and waterlogged. It experiences average rainfall of about 2000mm per annum with an average monthly temperature of 30.4-36.4^{o}C and a relative humidly varying room 56-86 percent per annum. Delta state is divided into three agricultural zones namely, Delta South, Delta North and Delta North.

3.2 Sampling Procedure and Sample Size

A multi-stage sampling procedure was used to compose a sample size of 225 respondents. This was done as follows: out of the three agricultural zones in the state, one local government area was randomly selected from each zone. Seventy-five (75) respondents were selected from each of the randomly selected local government areas, giving a total of two hundred and twenty five (225) respondents that were sampled and studied.

3.3 Method/instrument of data collection

Primary data were obtained from respondents with the use of structured and validated questionnaire. The instruments for primary data collection included a four point Likert-type scale with values: 1= not competent, 2= little competence, 3= competent and 4=very competent. From point 2.5 was regarded as competent while below 2.5 as not competent. Furthermore, data were collected from secondary sources such as journals, past research work, government records, documented statistics collected from the study area, internet and Library.

3.4 Method of Data Analysis

Descriptive and inferential statistical methods were used in data analysis. Results were presented using tables and simple percentages. Inferential statistics that was used in testing the stated hypothesis was the probit regression model.

Model Specification

Where relationships are established with a dependent variable that is dichotomous (i.e. with yes or no values) such models are referred to as qualitative or binary choice models (Capps and Kramer, 1985; Akinola, 1987). The probit model is a normal cumulative distribution function which has overcome the difficulty arising from the fact that predictions may be outside the (0, 1) interval. The obvious solution to the problem is to monotonically transform the original model in such a way that predictions will lie in the (0,1) interval for all explanatory variables, ω. (Bamire and Ola, 2004). The general form of the univariate dichotomous choice model (Pindyck and Rubinfeld, 1998) can be express as:

$$P_i = P_i (y_i = 1) = F (\omega_i, \varepsilon_i) = \int^{(w)}_{-a} {}^{1}/_{2\pi} e^{-1/2}/_{2}\, dt \quad (I = 1,2\ldots n) \ldots\ldots(1)$$

The equation means that probability of a respondent being competent, $P_i(y_i = 1)$ is a function of the vector of explanatory variables, ωi, and the unknown parameter vector, ε_i. P_i is the probability that the ith respondent is competent (y = 1), and y = 0, if otherwise. This is because individual poultry farmers vary over a range of competent levels. Tobin (1958) pointed out that the specifications for the expected values of the dependent variable are violated when ordinary least squares regression is used with a limited dependent variable. Probit analysis takes care of heteroscadasticity of the disturbance term as well as restricting predictions to values between 0 and 1.

4. Results and discussion

4.1 Socio-economic Characteristic of Respondents

Table 1 shows the socio-economic characteristics of the respondents. The result showed that most of the respondents (86.8) fall within the age range of 21-50 years. This indicates that majority of the poultry farm managers are still in the working population. About 75% of the respondents are males which is an indication that more males than females are involved in the poultry industry. One hundred and twelve (44.8%) of the respondents are married, an indication that most of the respondents are responsible people. Again, that 26% of the respondents are never married is a clear indication that young people are showing interest in the poultry industry. From Table 1, it was also obvious that most of the respondents (95.6%) had one form of formal education or the other. Moreover, the fact that 47.6% of the poultry had tertiary education is a clear indication that the poultry industry is no longer a sector for less literate people. Most of the respondents are less experienced in the poultry business. This is obvious from the table as about 51.6% of the respondents had less than 6 years experience in the poultry business. On the farm sizes, it could be observed that most of the poultry farm operators (76%) had less than 1001 birds to rear. This is an indication that they operate small/medium sized farms.

4.2 Competent level of poultry farm attendants

The competent level of the poultry farm attendants is presented in Table 2. The result in Table 2 showed that the attendants were competent in only three of the twelve tasks examined. The attendants were competent in these tasks: care of poultry equipment (mean = 4.48), identification of sick birds for culling (mean = 4.46) and identification of poultry breeds (mean = 4.90). From this result it could be deduced that the poultry farm attendants were incompetent in most of the tasks; their competency level was therefore low. For instance, the respondents were incompetent in the following tasks: identification of sex of chicks (mean = 2.67), de-beaking practices (mean = 2.65), identification of disease symptoms (mean = 2.89) and vaccination of birds (mean = 2.78).

4.3 Relationship between Competency Level and Socioeconomic Characteristics of Respondents

The relationship between the competency level of the respondents and their socioeconomic characteristics is presented in Table 3. The result in Table 3 shows that apart from gender and marital status, all the other variables, namely, age, educational level, farming experience and farm size, were positively and significantly related to the competency level of the respondents. Education frees the farmer from ignorance and improves his knowledge and experience. Njoku (1991) observed that formal education has a positive influence on adoption of

innovation. Omoregbee, (1996) and van de Ban and Hawkins (1996) had similar observation. Adoption of innovation is likely to improve the competency levels of the attendants. Rahman, Ogungbile and Tabo (2002) indicated that length of time of farming business can be linked to the age of farmers, access to capital, and experience in farming may explain the tendency to adopt innovations and new technology. Thus, longer years of the respondents in the poultry business is likely to improve their competency.

5. Conclusion and Recommendation

The study assessed the competency level and training needs of poultry (layer) farm attendants. From the results of the study, it has been successfully established that the poultry farm attendants were incompetent in the following tasks in poultry farming: identification of sex of chicks (mean = 2.67), de-beaking practices (mean = 2.65), identification of disease symptoms (mean = 2.89) and vaccination of birds (mean = 2.78), optimal feeding of fowls (mean = 2.72), formulation of ration (mean = 2.68), identification of fertile eggs (mean = 2.56) and good record keeping practices (mean = 2.34). Generally speaking, there is need for the poultry layer farm attendants to be trained in these tasks. It is therefore strongly recommended that training workshop on these areas or tasks be organized to train the poultry farm attendants in Delta State in order to improve the competency level of the farm attendants. It is believed that if this is implemented, poultry (layers) farms in the study area will be well managed, and this will improve the nutritional status of the people of Delta state as more animal protein will be made available.

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Table 1: Socio-economic characteristics of respondents

Characteristic	Frequency	Percentage
Age (years)		
Less than 20	20	8
21-30	102	40.8
31-40	88	35.2
41-50	27	10.8
Greater than 50	13	5.2
Gender		
Male	187	74.8
Female	63	25.2
Marital status		
Never married	65	26.0
Married	112	44.8
Divorced	55	22.0
Widowed/widower	28	11.2
Educational level		
No formal	11	4.4
Primary	22	8.8
Secondary	98	39.2
Tertiary	119	47.6
Farming experience (yr)		
1-5	129	51.6
6-10	51	20.4
11-15	28	11.2
16-20	28	11.2
More than 20	14	5.6
Farm size (no of birds)		
Less than 100	52	20.8
101-500	68	27.2
501-1000	70	28.0
1001-1500	38	15.2
More than 1500	22	8.8

Source: survey data, 2012

Table 2: Competence level of poultry farm attendants in the various tasks in poultry farm

Task	Mean score	Standard deviation	Remark
Care of poultry equipment	4.48	0.97	Competent
Identification of poultry breed	4.46	0.87	Competent
Sexing of chicks	2.67	0.68	Not competent
De-beaking practices	2.65	0.75	Not competent
Identification of sick bird for culling	4.90	0.92	Competent
Identification of disease symptoms	2.89	0.69	Not competent
Vaccination of birds	2.78	0.74	Not competent
Culling of birds	2.74	0.58	Not competent
optimal feeding of birds	2.71	0.86	Not competent
Formulation of poultry ration	2.68	0.71	Not competent
Identification of fertile eggs	2.56	0.66	Not competent
Preparation of good farm records	2.34	0.94	Not competent

Source: Survey data, 2012

Table 3: Probit Regression Results of Determinant of Competency Level Respondents

Variable	Coefficient	STD.Error	Z.Statistics	Probability
Age (X_1)	0.03421	0.02162	2.97492	0.0075*
Gender (X_2)	0.44262	0.35563	1.67534	0.0728
M/ Status(X_3)	0.05521	0.06245	0.58588	0.5102
Education (X_4)	0.05311	0.00438	4.16829	0.0273*
Farming experience (X_5)	2.47633	0.58582	3.82313	0.0334*
Farm size (X_6)	2.89765	0.87544	3.46844	0.0145*

Source: Field Survey 2012

S.E of Regression 0.688952

Avg. Log Livelihood – 0.641541