PERFORMANCE ANALYSIS OF NATIONAL DIRECTORATE OF EMPLOYMENT GRADUATE POULTRY FARMERS IN IMO STATE, NIGERIA

Nwaobiala, C. U., Nnamdi, U. S. and Ekumankama, O. O.
Department of Rural Sociology and Extension, Michael Okpara University of Agriculture, Umudike
Abia State, Nigeria
Correspondence contact details: cunwaobiala@gmail.com

ABSTRACT
The study assessed performance of graduates of the poultry training programme under the Rural Agricultural Development and Graduate Training Scheme of National Directorate of Employment (NDE) in Imo State, Nigeria. Simple random sampling technique was used to select 90 NDE beneficiaries. Data were collected with a structured questionnaire and analyzed with descriptive statistics, Return on Investment (ROI) and multiple regression analysis. The result showed that farmers had mean age, household size, flock size and annual farm income of 43.4 years, 6 persons, 91 birds andN325, 500.00 respectively. The farmers had favourable perception ($\bar{X}$=3.2) of the programme. Poultry production enterprise was a lucrative business with a Return on Investment (ROI) of 138.40%. The multiple regression analysis result revealed that age (2.93***), marital status (2.00**), household size (-2.97***), farming experience (1.88*), flock size (2.98***) and poultry output (1.10*) influenced beneficiaries' performance on the programme. Sustenance of the programme is advocated to encourage unemployed youth's participation in the scheme.
Keywords: Performance, Poultry, Graduates, Farmers, NDE

INTRODUCTION

A major concern of the Federal Government of Nigeria is how to tackle the problem of unemployment in the country. Various regions in Nigeria have designed and executed several self-empowerment programmes to enhance the economic empowerment of the unemployed through training on different agricultural entrepreneurial skills (Nwaobiala and Nzeakor, 2016). In the past, successive governments, non-governmental organizations (NGOs), cooperatives and individuals through private initiatives as well as international organizations embarked on several programmes targeted at rural development. Most of these programmes had good objectives but due to some constraints such as wrong approaches and strategies employed, the issue of lack of development continues to affect the rural areas. There is no doubt that a number of rural development projects have been embarked upon to stimulate and create employment for the unemployed especially the youths. These programmes were seen to be neglected, ignored, underutilised or abandoned thereby making it impossible for government to achieve its aim of creating employment, which in turn will lead to development (Nwachukwu and Obineze, 2013; Ikoro, 2016). However, agricultural productivity will not increase if the capacity of farms and other actors in the agricultural value chain remain low, preventing them from innovating in agriculture which include new knowledge, processing and commercialization (Goni, Usman, Jaliya and Barma, 2013).

The National Planning Commission (2013) reported that in 2012 about 11.1 million people consisting the youths were unemployed in Nigeria. This enormous figure means that a great and dominant group of human resource must be harnessed and utilised in order to advance agricultural intensification and development. National Bureau of Statistics (2013) affirmed that education for a large number of people in the rural areas is crucial for achieving sustainable development. The youths in both urban and rural areas need to be mobilized for proper impact to be felt in their communities (Adesope, 2007). Dike (2009) observed that vocational education and job training programmes have been an integral part of national development strategies in many societies because of its impact on human resource development, productivity and economic growth. According to Coombs (2003), training is generally through practical exposure, either informally as practical exposure to job, or in formal institutions established for the purpose of providing exposure to required skills (Nwaobiala, Ndukwe and Ekumankama, 2016).

One of the ways of bringing about improvement in poultry production in Nigeria is the provision of right information through appropriate channel and trainings that is accessible to farmers. Poultry production in Nigeria has undergone tremendous changes over the past decades genotype, management and technological advancement (Olaniyi, 2013).It has become one of the most important aspects of farming through creating business opportunities for entrepreneurs and employment (Ayande, 2015). The population of Nigeria poultry is about 150,682 million, out of which 25% are commercially farmed, 15% semi – commercially and 60% in backyards or small scale (Onwualu, 2011). This shows that small scale poultry producers dominate the industries and are responsible for the bulk of production in Nigeria. Arowolo, Ogunrombi, Apantaku and Adeogun (2017) report that poultry farming suddenly became the cheapest and easiest sector of animal

production that attracts the influx of many elites, civil servants and unemployed graduates into the practice of backyard poultry production as a way of supplementing the inadequate income, protein needs as well as overwhelming growth in the agricultural sector.

In order to curb the problem of unemployment in Nigeria and in recognition of the role agriculture can play as a spring board for employment generation and self-sufficiency in food production, the National Directorate of Employment was established in 1987to awaken the interest of unemployed youth in agriculture and to explore the tremendous opportunities for employment and wealth creation in the agricultural sector and consequently, stem the rural-urban drift of the youth in agriculture(National Directorate of Employment, 2012).. The agricultural training programme covers modern agricultural practices in the area of crop production, crop processing and preservation, livestock production and management. The scheme seeks to train the unemployed, especially the youths in various off-farm income-generating activities in the production and marketing of handicraft using cheap and easily sourced local raw materials. Graduates of these schemes are further empowered financially to set up a micro farm of their learnt skills (National Directorate of Employment, 2014). Since the establishment of the programme, it is not certain whether there is any empirical evidence on the performance of poultry farming among NDE graduates in the state. It is against this backdrop that the paper was undertaken to assess the performance of graduate poultry farmers' in National Directorate of Employment Agricultural Training Scheme in Imo state, Nigeria.

The specific objectives are to:

i. describe the socioeconomic characteristics of poultry farmers in the study area.
ii. ascertain farmers perception about the trainings received ; and
iii. determine the performance of poultry NDE agricultural graduates in the scheme.

The hypothesis stated for the study, in null form, is that there is no significant relationship between selected socioeconomic characteristics of respondents and their performance in the scheme.

METHODOLOGY

The study was carried out in Imo State. The state lies within latitudes 4^o 45'N and 7^o 15'N, and longitude 6^o 50'E and 7^o 25'E. It occupies the area between the lower River Niger and the upper and middle Imo River. The State is bounded on the east by AbiaState, on the west by River Niger and Delta State; and on the north by Anambra State, while Rivers State lies to the south. The State is located within the rainforest belt of Nigeria, and the temperature ranges between 20^o C and 30^o C. Agriculture is the major occupation of the people. Imo State is made up of 27 Local Government Areas (LGAs) and three Agricultural zones of Okigwe, Owerri and Orlu.

The NDE beneficiaries were chosen from the list of trained beneficiaries of Rural Agricultural Development and Training Graduates of NDE. A multistage random sampling technique was used to select LGAs and respondents. First, six (6) local government areas namely Owerri North, Owerri West, Isiala Mbano, Orlu, Ezinihitte Mbaise and Ohaji/Egbema, out of twelve (12) LGAs where the programme was located were randomly selected for the study. From the list, fifteen (15) practicing agricultural graduate trainees were randomly selected from six (6) Local government Areas giving a total of ninety (90) respondents. Data were analyzed using of descriptive statistics such as frequency distribution, percentages, mean scores, return on investment and inferential statistics (multiple regression analysis).

Measurement of variables

In order to assess perception of NDE poultry graduates on trainings received, eight (8) item perception statements were measured on 4 – point Likert-type rating scale of strongly agree = 4, agree = 3, disagree = 2, strongly disagree = 1. Respondents mean scores were computed for each of perception statements by adding the weights of 4, 3, 2, 1. A midpoint was obtained thus; 4+3+2+1 =10/4 = 2.5. Mean score greater than or equal to 2.5 implied perception and otherwise, unfavourable perception.

Model specification

The Return on Investment was used as proxy for performance of the trainees. The R.O.I. model gives profitability as a measure of the Rate of Investment. It expresses net revenue as a percentage of total investment.

Return on Investment (R.O.I) =

$$\frac{\text{Net Revenue per annum}}{\text{Total cost incurred per annum}} \times \frac{100}{1}$$

Net revenue is given by Total revenue – Total cost

Where:

Total cost = Total variable cost + Total fixed cost

Beneficiaries with ROI higher than 50% were considered to be performing well. Those with ROI below 50% were considered poor performers.

Multiple regression analysis was used in determining factors influencing the performance of poultry beneficiaries in the programme(hypothesis). The four functional forms of regression model viz: linear, semi-log, exponential and 16ei-Douglas were tried. The best fit was chosen as the lead equation based on its conformity with econometric and statistical criteria such as the magnitude of R^2, F-ratio and number of significant variables.

The function is specified as $Y = f(X_I, X_2, X_3 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots X_{8+} e_I)$.

The four functional forms are expressed as follows:

Linear Function

$Y=b_0+b_1X_1+b_2X_2+b_3X_3+b_4X_4+b_5X_5+b_6X_6+b_7X_7+b_8X_8+b_8X_8+ei$

Semi – log function

$Y=L_nb_0+b_1L_nx_1+b_2L_nx_2+b_3L_nx_3+b_4L_nx_4+b_5L_nx_5+b_6Lnx_6+b_7Lnx_7+b_8Lnx_8+ei$

Exponential function

$LnY=b_0+b_1X_1+b_2X_2+b_3X_3+b_4X_4+b_5X_5+b_6X_6+b_7X_7+b_8X_8+ei$

Cobb Douglas Function

$LnY=L_nb_0+b_1L_nx_1+b_2L_nx_2+b_3L_nx_3+b_4L_nx_4+b_5L_nx_5+b_6Lnx_6+b_7Lnx_7+b_8Lnx_{8+}ei$

Where,

Y = Performance (Return on Investment) (N)

X_1= Gender (male = 1, female = 0)

X_2=Age (years)

X_3= Marital status (married =1, otherwise=0)

X_4 = Education level (number of years spent in school)

X_5= Household size (number of persons eating from the same pot)

X_6 = Farming experience (years)

X_8= flock size (number)

X_{10}= poultry Output (N)

e_i = error term

RESULTS AND DISCUSSIONS

Socioeconomic characteristics of respondents

Table 1 shows that 57.78% of graduate NDE farmers were males. This implies that poultry farming is mostly practiced by males in the study area. The result is in consonance with Owoladee, Adebisi, Alonge, Adamu and Lawal (2017) as they obtained a similar result among poultry farmers in Oyo state, Nigeria. The mean ages for the beneficiaries were 43.40 years. This implies that the respondents were at the middle age signifying that they were within the agricultural production age range of 30 – 50 years quoted by Food and Agricultural Organization (2005). The mean household size of the farmers was 6 persons. This indicates that they had medium household size, which has implication on labour availability in poultry production. This result is in tandem with Abdullahi, Atala, Akpoko, Sami and Hara (2016) that household size play complementary role in any farming activity.Half (51.11%) of the respondents had secondary education. This implies that they are literates and aware of the importance of training which in turn affect their performance in the acquired skills. Again, the mean flock size of farmers was 91 birds. Flock size is an indication of economic strength of the farm which is likely to influence income that will support other aspects of the farm (Corsi, 2004; Augustine, 2010). The annual mean income derived from sales of poultry was N325,500.00. Onwuali, (2011) reported that income realized from the production of birds enhances competitiveness through value addition.

Table 1: Distribution of socioeconomic characteristics of respondents in the study area (n = 90)

Variables	Frequency	Percentage
Gender		
Male	52	57.78
Female	38	42.22
Age (years)		
21-30	13	14.43
31-40	30	33.33
41-50	25	27.77
51-60	20	22.22
61-70	2	2.22
Mean	**43.40**	
Standard Deviation	**10.93**	
Household Size (numbers)		
1-5	36	40.00
6-10	52	57.78
11-15	2	2.22
Mean	**6**	
Standard Deviation	**2.7**	
Education (years)		
No formal education	1	1.10
Primary education	15	16.67
Secondary education	46	51.11
Tertiary education	43	47.78
Poultry Flock Size (numbers)		
1 – 20	5	5.55
21 – 40	12	13.33

Variables	Frequency	Percentage
41 – 60	11	12.22
61 – 80	9	10.00
81 – 100	53	58.90
Mean	**91 birds**	
Standard Deviation	**79.44**	
Poultry Income (N)		
100,000 – 300,000	12	13.33
301,000 – 350,000	10	11.11
351,000 – 400,000	19	21.11
401,000 – 450,000	41	45.56
451,000 – 500,000	8	8.89
Mean	**N325,500**	
Standard Deviation	**N232,114**	

Source: Field Survey, 2014

Perception of farmers about the scheme

Data in figure 1 shows that respondents agreed that the scheme was not gender sensitive ($\bar{X}$=2.8), grants disbursed was adequate ($\bar{X}$=2.7), while the training received increased their poultry skills and output and were satisfied with the whole poultry packages taught ($\bar{X}$=2.6). Again, the respondents affirmed that the scheme enhanced their felt needs ($\bar{X}$=2.5) and increased processing skills ($\bar{X}$=2.4). The mean perception score was 2.6 indicating that the farmers had favourable perception about the scheme. This result is in consonance with Innih and Dimelu, (2013) that perception and attitude of farmers to donor sponsored programmes enhances their performance.

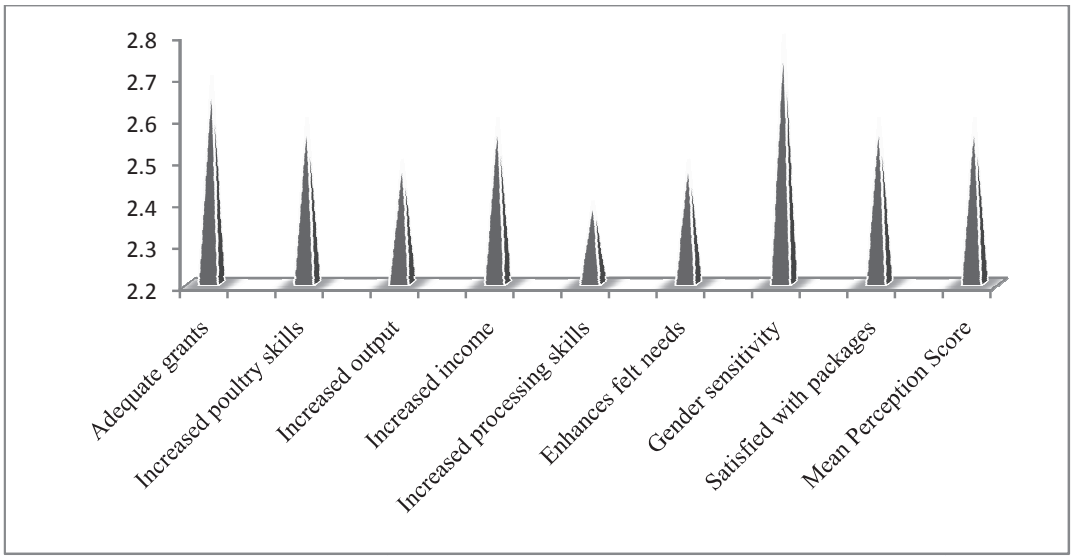

Fig. 1: Showing perception responses of farmers about the scheme's training

Return on investment analysis of poultry farming among NDE beneficiaries

The result in Table 2 indicate that the total revenue realized from poultry farming among beneficiary farmers was N703, 800.00, with total variable and fixed costs of N256, 100.00, and N 39,148.32respectively as well as, Gross margin of N447, 700.00 and a Net Income N 408,551.68. The Return on Naira invested in poultry farming was N 1.52 indicating that any N1 invested by a farmer in poultry farming in Imo State amounts to N1.52. The result also indicates that the NDE beneficiaries had a high Return on Investment of 138.40% which is above 50% stated as the performance bench mark. This result is in conformity with the findings of Mbah (2013), where the return on investment on poultry production in Anambra State was 147%.

Table 2: Return on Investment in Poultry Farming among farmers in the Study Area

Items	Poultry Production (N)
Revenue	703,800.00
Total variable cost	256,100.00
Total fixed cost	39,148.32
Gross Margin	447,700.00
Net farm income	408,551.68
Return on Naira Invested	**1.52**
Return on Naira (%)	138.40

Source: Field Survey, 2014
Performance Decision: 50% and above = High Performers
Less than 50% = Low Performers

Factors influencing performance of NDE poultry graduate farmers in the study area

The result in Table 3showed the Ordinary Least Square (OLS) multiple regression estimates of the determinants of NDE poultry farmers in the study area. The Linear functional form was chosen as the lead equation because of a high R^2value, number of significant factors and agreement with a *priori expectation*. The R^2 value of 0.5228 indicates 52.28% variability in farm income was explained by the independent variables. The Z value of 4.71 was highly significant at 1% level of probability indicating that the regression was a good fit.

The coefficient for age was positive and significant at 1%. This implies that any increase in age is expected to lead to a corresponding increase in performance. This is against *a priori expectation* probably because the aged farmers seem to be more credible thereby making more sales than their younger counterparts. The result is in tandem with Ezeh and Okudu (2008)that adult farmers had more production efficiency and productivity than their younger counterpart. The coefficient for marital status was negative and significant at 10% level of significance. This also implies that the poultry farmers who were single made more income than their married counterparts. This may be because they do not have overwhelming responsibilities affecting their production of livestock in the area. The coefficient for household size was negative and highly significant at 1% level. This is against *a priori expectation* probably because large household sizes bring about huge consumption needs thereby leading to a decrease in the level of performance among the poultry farmers. Nwaobiala (2016) reported that even when members of such large household sizes are available for farming activities, there is high possibility of underutilisation of labour as most of the farmers rear small herds of animals or cultivate small areas of farm land. The coefficient for farming experience was positive and significant at 10% level of probability. This implies that experienced farmers performed better than their counterparts who had no or little poultry experience. This result is in agreement with Ibitoye, Shaibu and Akwu, (2014) that the more farmers remained in any farming business, the more they got acquainted with risk elements and ways of militating possible losses through them. The coefficient for flock size was positive and highly significant at 1% level of probability. This implies that any increase in flock size will lead to a corresponding increase in poultry performance. This is expected and in accordance with *a priori* expectation. The coefficient for poultry output was positive and significant at 10% level of probability, this is expected and in agreement with *a priori* expectation. This implies that the increase in poultry output will lead to a corresponding increase in performance of the beneficiaries in the enterprise.

Table 3: Regression estimates of the determinants of performance of NDE poultry farming beneficiaries in the study area

Variables	Linear+	Exponential	Cobb-Douglas	Semi-log
Constant	409481.70	25200	10.2124	-424239.20
	(1.46*)	(12.16***)	(4.42***)	(-0.64)
Gender	-2503.59	0.0802	0.1028	-1957.24
	(-0.04)	(0.31)	(0.40)	(-0.03)
Age	12444.99	0.0235	0.7626	348923.50
	(2.93***)	(1.52*)	(1.27*)	(2.02**)
Marital Status	-67769.41	-0.0725	-0.1265	-78757.80
	(2.00**)	(-0.56)	(-1.03*)	(-2.22**)
Education	-80542.95	-0.2126	-0.6448	-222673.30
	(-1.47*)	(-1.06*)	(-1.66*)	(-1.88*)
Household Size	-355509.86	-0.1222	-0.4458	-117319.90

Variables	Linear+	Exponential	Cobb-Douglas	Semi-log
	(-2.97***)	(-2.80**)	(-2.75**)	(-2.50**)
Farming Experience	6323.10	0.0038	0.1323	30137.67
	(1.88*)	(0.32)	(0.80)	(0.63)
Flock Size	324.21	0.0025	0.2946	6886.34
	(2.98**)	(2.55**)	(2.36**)	(1.90*)
Poultry Output	341.97	0.0008	-0.1673	-44814.17
	(1.10*)	(-0.78)	(-1.30)	(-1.20*)
R^2	0.5228	0.3412	0.3001	0.40441
R Adjusted	0.4142	0.2644	0.2211	0.3255
Z	4.71***	3.14***	2.53**	2.60**

Source: Field Survey, 2014
Variables in parentheses are Z-values
+ = lead equation
P≤ 10, ** P≤ 0.5 and *** P≤ 0.1

CONCLUSION AND RECOMMENDATIONS

The result from this study revealed that the poultry farmers had favourable perception of the trainings received from the scheme. The result indicates that the NDE graduate farmers had a high Return on Investment of 138.40% from poultry farming. Factors such as age, marital status, household size farming experience, flock size and poultry output influenced performance of the poultry farmers' in the scheme.

The study therefore recommends;

i. Adequate funding of the scheme in order to sustain the scheme.
ii. Since poultry farming is profitable, the programme should sensitize the public on its benefit. This will encourage more unemployed youthsto participate in the scheme.
iii. Follow – up and monitoring of graduated farmers to ensure that they judiciously utilise incentives and grants provided by the scheme.

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