

Full Length Research Paper

Socio-economic traits of small-scale poultry farmers and level of adoption of poultry management practices before and after training

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Accepted 16 September, 2014

The study examined the impact of entrepreneurship training on rural poultry farmers' adoption of improved management practices in Enugu State, Nigeria. Data were collected from two hundreds randomly selected rural poultry farmers that were trained on entrepreneurship by use of questionnaire. Data were analyzed with both descriptive and inferential statistics. Results showed that before the training, majority (70%) of the rural poultry farmers were unaware of some of the improved management practices like record-keeping, consulting veterinary doctors, vaccination, debeaking, etc. However, after the training, all the farmers (100%) were aware of the management practices and majority (85%) of poultry farmers adopted these practices. Educational level ($t=3.3501$), farming experience ($t=2.9511$), income level ($t=2.6188$) as well as farm size ($t=2.8183$) were found highly significant and positively related to farmers adoption of the improved poultry management practices. Constraints identified were high cost of inputs (80%), low capital outlay (95%), difficulty in obtaining loan (80%) and poor extension (75%) visits. Government should organize more entrepreneurial training and provide soft loan to farmers as to facilitate adoption of the improved management practices thereby improving poultry meat supply and ensuring food security.

Key words: Entrepreneurial training, rural poultry farmers, improved management practices, adoption, meat supply and food security.

INTRODUCTION

Poultry production is an important part of farming in Nigeria agriculture. People depend on poultry for food and it serves as an additional occupation to supplement the income of small and marginal farm families. The poultry sector has developed such that large scale production is being practiced and a lot of people derive

their means of livelihood from poultry and its associated industries. Oluyemi and Robert (2000) stressed the importance of poultry industry in Nigeria as producing two main products, egg and meat to meet up with the protein demand of the populace. Poultry occupies an essential position because of its vast potential to bring about rapid

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economic growth especially to the weaker section. Further, it needs low capital investment and yet assumes quick returns within weeks and months in case of broilers and layers respectively (Ojo, 2002).

In spite of the increased productivity of the industry in recent years, the industry has been faced with challenges which results in the loss of major market. Oladiro et al. (2006) reported that the downward trend of this industry has been attributed to two factors namely, high cost of feed, and poor knowledge of or experience in the management of the enterprise. These have resulted to risks such as low productivity and heavy disease infestation. These result in dwindling profits to producers, hence many farmers have been forced to fold up.

Cheeke (2002) stressed the need for improved poultry technologies that are capable of raising the farmers' agricultural production. According to him, poultry technology development is necessitated by population growth, changing climate, markets and needs. He further opined that these technologies are innovations and skills in selection of strains, brooding techniques, vaccination, handling, feed and feed techniques. There remains a wide discrepancy between what research findings show to be feasible or available and what the farmers know and use to increase their poultry production in Nigeria (Herbert, 2002). In this regard, Sherief (2005) opined that entrepreneurship training/education that exposes farmers to life applicable issues is capable of helping the farmers in adoption of new management practices and strengthen their confidence and ability to risk and accept a new technology. To buttress more on this, Badi and Badi (2006) ascertains that entrepreneurship education/training provides cultural, social and technological awareness. Responding to this, Kuratko (2005) opined that farmers will venture into new technologies if they are taught the likely

pitfall they are probable to face and the possible strategy to curb them. This makes entrepreneurship training of great importance in adoption of new technologies. The Centre for Entrepreneurship and Development Research, University of Nigeria, Nsukka is currently carrying out a project where rural farmers in Enugu State are receiving training in Animal Husbandry which includes poultry production. This has encouraged innovative and new development initiatives and ideas among the rural farmers of the state. Through the training expositions, a better understanding of their challenges and more imaginative strategies for resolving these challenges has been achieved.

Therefore, it becomes necessary to assess the impact of entrepreneurship training on rural poultry farmers level of adoption of improved poultry management practices in Enugu State Nigeria, with a view to making appropriate policy recommendations that will promote agricultural development in the state and the nation. The study sought to examine the socio-economic characteristics of small scale poultry farmers; ascertain the level of adoption of improved poultry management practices before and after the training

identify constraints; and determine the influence of socio-economic characteristics on adoption of improved management practices.

Hypothesis

- 1) There is no significant difference on the level of adoption of improved poultry management practiced before and after the training.
- 2) The socio-economic characteristics of the farmers have no significant relationship with their level of adoption of the management practices.

METHODOLOGY

The present study was conducted in Enugu State Nigeria. The selection of study area was based on the fact that the entrepreneurship training is going on in Centre for Entrepreneurship and Development Research (CEDR), (2003) University of Nigeria, Nsukka which involved rural farmers from Enugu State. The training was imparted in two phases with an interval of six months. The data were collected at the end of the second training. The sample frame comprised of a list of rural poultry farmers in Enugu State supplied by CEDR. From the list 200 rural poultry farmers were selected and used for the study, using simple random sampling technique.

Questionnaire was used for data collection. To ascertain the adoption level of management practices by farmers before and after the training, adoption scale was provided with a list of technologies for farmers to tick on, thereby indicating the level they were in the adoption scale. To identify constraints militating against adoption of improve management practices by farmers a list of constraints was provided for farmers to tick the constraints affecting adoption level adversely. Data were analyzed with both descriptive and inferential statistics. Hypothesis 1 was analysed using students' t-test while objective 2 was analyzed using regression analysis. All analysis was done at 5% probability level.

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, e)$$

Where Y = Level of adoption of improved poultry management practices

X₁ = Age (years)

X₂ = Sex (dummy variable, 1 for Male, 0 for female.)

X₃ = Level of Education (years spent in school).

X₄ = Farming experience (years)

X₅ = Source of finance (3 point scale of personal savings - 1, money lenders - 2, and financial institution - 3).

X₆ = Level of income (naira)

X₇ = Farm size (No. of birds reared)

E = error term.

Four functional forms namely: the linear, semi-log, double-log and exponential were fitted and the linear functional form was selected on the basis of having the highest values of R², F-ratio and significant variables.

RESULTS AND DISCUSSION

Majority of the respondents were male (79%) with an average of 12 years farming experience (Table 1). The mean age of the farmers was 42.5 years showing that

Table 1. Distribution of respondent based on socio-economic characteristics of the poultry farmers.

Characteristics	Frequency	Percentage	Mean
Age (years)			
20 – 30	35	17.5	
31 - 40	40	20.0	
41 – 50	90	45.0	42.5
>50	35	17.5	
Sex			
Male	158	79.0	
Female	42	21.0	
Educational level			
No formal education	5	2.5	
Primary	75	37.5	
Secondary	95	47.5	
Tertiary	25	12.5	
Farm experience (years)			
1 – 10	55	27.5	
11 – 20	75	37.5	
21 – 30	40	20.0	
>30	30	15.0	
Source of finance			
Personal savings	75	87.5	
Money lender	25	12.5	
Financial institution	-	-	
Income level per annum			
Less than ₦200,000	20	10.0	
₦200,000 – ₦ 400,000	143	71.5	
₦400,001 – ₦ 600,000	25	12.5	
>₦600,000	12	6.0	
Farm size			
Less than 50 birds	9	4.5	
51 – 100 birds	83	41.5	
101 – 150 birds	62	31.0	
151 – 200	31	15.5	
>200	15	7.5	

Source: Field Data (2011).

they were in their productive age. About 98% had some form of formal education. This shows that the occupation is taken up by people who can read and write and more so read manuscript and labels on poultry feeds, poultry drugs and medication. If more educated farmers would continue to take up poultry production as a business in the future, then the production of meat and eggs will sustain the provision of meat protein to the teeming

population in the third world in general and Nigeria in particular. Their major source of finance was from personal savings (87.5%). The average annual income was ₦301,665. It was also observed that majority (41.5%) had stock size ranging from 51 to 100 birds. The small stock size may be attributed to lack of fund, sales level or even high mortality rate due to low adoption of improve management poultry technologies by farmers before the

Table 2. Distribution of farmers by level of adoption of improved management practices before and after the training (n = 200).

Management practices	Aware		Interest		Evaluation		Trail		Adoption	
	Before	After	Before	After	Before	After	Before	After	Before	After
Vaccination	100	100	100	100	80	100	65	100	60	100
Brooding	100	100	100	100	80	100	75	100	50	80
Culling	100	100	100	100	100	100	100	100	100	100
Debeaking	60	100	45	100	35	100	20	10	10	60
Record keeping	50	100	40	100	35	100	30	100	20	100
Use of disinfectants	45	100	35	100	30	90	25	85	15	80
Consulting Vet doctors	50	100	35	100	30	80	20	75	10	70
Use of drugs	100	100	100	100	80	85	75	80	55	75

Source: Field Survey (2011).

Table 3. Difference of poultry farmer's level of adoption of improved management practices before and after the entrepreneurship training

Variable	X	N	SD	SE	t-value	Sign 2 Tailed	Critical value	Df	SL
Adoption level before the training	30	200	1081	67.284					
Adoption level after the training	70	200	2984	204	22.00	000.0	1.96	199	0.05

Source: Field Survey (2011).

training. However, with the training this may improve in future. Udoh (2010) noted that poultry farmers in Akwa Ibom State expanded their flock size due to adoption of improved poultry techniques.

About 72% of the respondents obtained an annual income of ₦200,000 to ₦400,000 in the poultry enterprise while 12.5% obtained ₦400,001 to ₦600,000 in their poultry business. However, 6% of the farmers obtained income of more than ₦600,000 from their business per annum. If farmers could increase production by adopting new technologies, they will increase their profit and income per year. The level of income realized from the venture even at small scale, may be the reason why farmers attended the entrepreneurship training in order to learn new and more techniques in poultry production that may enhance productivity.

Adoption of improved management practices by farmers before entrepreneurship training

All the farmers were aware of vaccination, brooding, culling of birds and use of drugs (Table 2); while 60% were aware of debeaking, followed by record keeping (50%), consulting of veterinary doctors (50%) and use of disinfectant (45%). However, low adoption was recorded in debeaking (10%), records keeping (20%), use of disinfectant (15%) and consulting of veterinary doctors (10%). The low adoption of improved management practices by the farmers before the entrepreneurship training was observed in the study area. However, culling was adopted by all the respondents. The poultry owners

sold their birds presuming that once the animals / birds get sick, there will be heavy loss to the farmers.

Adoption of improved management practices by farmers after the entrepreneurship training

All the farmers adopted culling, record keeping and vaccination of birds (Table 3). However, majority (75%) of farmers adopted use of drugs, use of disinfectants (80%) and consulting veterinary doctors (70%). These findings are in line with Iguisi (2002) who opined that entrepreneurship training/education that exposes farmers to life applicable issues is capable of helping the farmers in adoption of new improved management practices. The high adoption level of management practices after the training will definitely lead to improved and increase poultry production among the farmers.

Difference in adoption level before and after the entrepreneurship training

The t-test result reveals values for items 1 and 2 as well as t-calculated which is higher than actual t-value of 1.96 (Table 4). This indicates a significant ($p < 0.05$) difference in the adoption level before and after the training. This shows that farmers adopted improved poultry technologies more after the training. It is therefore important for farmers to be trained frequently on new poultry technologies as these will definitely increase production. Consequently, this may go a long way to

Table 4. Distribution of respondents by problems militating against increased poultry production in the area (n = 200).

Problems*	Frequency	Percentages
High cost of inputs	160	80
Scarcity of inputs	70	35
Sourcing of inputs	60	30
Poor extension visit	150	75
Poor market for products	80	40
Low capital outlay	190	95
Difficulty in obtaining loan	160	80

* Multiple responses recorded. Source: Field Survey (2011).

Table 5. Regression estimates for socio-economic factors influencing level of adoption of improved poultry management practices.

Explanatory variables	Coefficient	t-ratio
Age (X ₁)	-8.3287	-1.0832
Sex (X ₂)	4.7025	1.2369
Educational level (X ₃)	2.6818	3.3501**
Farm experience (X ₄)	3.8768	2.9511**
Sources of finance (X ₅)	4.3636	1.0511
Income level (X ₆)	4.3449	2.6188**
Farm size (X ₇)	5.3329	2.8183**

Constant = 10.2108; Std. Error = 0.9043; R² = 0.7108; F-ratio = 18.7099. ** Significant at 5% level. Source: Field Survey data (2011).

improve the socioeconomic status of farmers and protein intake of Nigerians.

Constraints militating against poultry production among farmers

Results in Table 5 show that 95% rural poultry farmers perceived low capital outlay as a constraint which affects the rate of adoption of poultry management practices adversely which in turn affects poultry production. This is because low capital will not allow the farmers to buy vaccines or pay veterinary doctors when consulted. This is in line with Krueger (2005) who reported that low capital affects expansion and improvement of small business. Other constraints include high cost of inputs (80%), difficulty in obtaining loan (80%) and poor extension visit (75%), scarcity of inputs (30%) and poor market for products (40%).

Small producers and processing firms are frequently eliminated from markets for failure to understand market dynamics or, because of their inability to meet new production, sanitary and quality standards. Because poultry production is strongly dependent upon knowledge and adoption of improved technologies, technical inputs must be provided if interventions and growth are to be

sustainable (Levie, 1999). Producers in developing regions often lack access to appropriate inputs and the necessary technical production skills due to inadequate input and credit markets as well as weak extension systems (USAID, 2005). Improving access to appropriate inputs and information resources can help farmers raise productivity and contribute to sound natural resource management (Ojo, 2002).

The absence of an effective, well-trained extension network is a significant constraint to the development of the poultry industry and the capacity of small producers in particular. Ineffective and inaccessible extension and education networks have resulted in inadequate human technical capacity and expertise throughout the poultry industry. Access to credit is of core importance to all aspects of the poultry industry as these may hinder expansion (Oluyemi et al., 2000).

Socio-economic factors influencing level of adoption of improved poultry management practices

The result of multiple regression analysis of socio-economic factors influencing level of adoption of improved poultry management practices is presented in Table 6. The socio-economic features were treated as

independent variables such as age, sex, educational level and farm size of the farmers. The results indicates that educational level, farming experience, income level as well as farm size are highly significant at 5% levels and positively related to the farmers' adoption of the improved poultry management practices. The implication is that any increase or improvement in any of these variables will result to increase or higher adoption of the management practices and vice versa. The result agrees with Adeyemi (1998) who reported that education can predispose an individual the liberation of the mind towards acceptance of change especially as they consider it to be same pathway to the liberation of the mind and basis for the improvement of other socio-economic statuses of the individual. The effect of income cannot be over stressed as it guarantees affordability thereby making adoption a pleasurable venture. Therefore the hypothesis which stated that socio-economic characteristics of the farmers have no significant relationship with their level of adoption of the management practices is rejected.

The coefficient of multiple determination (R^2) value (0.7158) indicates that about 71% of the sample variation was jointly explained by these seven variables towards adoption of improved poultry management practices.

The implication of the study is that the entrepreneurship training has a positive impact on the rural poultry farmers. It helped them to adopt improved poultry management practices thereby improving poultry meat supply and ensuring food security.

Conclusion

The study has shown that before the entrepreneurship training, only some of the improved management practices namely culling of birds, vaccination and brooding were adopted by the poultry farmers. However, after the training, practices such as record keeping, use of disinfectants, consulting veterinary doctors, and debeaking were adopted in addition to the previous practices. This indicates that the entrepreneurship training had a positive effect on the adoption level of improved management practices of the farmers. Educational level, farming experience, income level as well as farm sizes are important determinants of farmer's adoption of improved poultry management practices. The farmers were constrained by high cost of inputs, low capital outlay, difficulty in obtaining loan and poor extension visits.

The following recommendations are made:

- (1) Farmers should organize themselves into co-operative groups so as to facilitate loan procurement.
- (2) Government should provide soft loans to these farmers, so as to facilitate adoption of the improved

management practices thereby improving poultry meat supply and ensuring food security.

- (3) Government should help organize more entrepreneurial trainings to farmers in other states of the nation.

Conflict of Interests

The author(s) have not declared any conflict of interests.

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