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Productivity Effects of Occupational Hazards among Poultry Farmers and Farm Workers in Osogbo Local Government Area of Osun State

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Abstract: The study investigates the productivity effects of occupational hazards on the productivity of poultry farmers and farm workers in Osogbo local government area of Osun State. A well structured interview schedule was administered to a sample of 60 poultry farmers randomly selected in the study areas using a multistage sampling technique. Data was analyzed using frequency distribution, percentage and means as descriptive statistical tools while regression model was used as inferential statistical tool. The study also revealed some preventive measures on the farms and ways of reducing the occupational hazards among poultry farmers and farm worker at low cost. Result showed that age, preventive measure and drug used were statistical significant as 5% level of significance while farm size significant at 1% level of significance.

Key words: Productivity effects, occupational hazards, preventive measures

INTRODUCTION

Poultry farming is one of the leading enterprises in Nigeria Agricultural sector. It has gained acceptance among the citizens of almost all the regions in Nigeria due to the prolific instinct and short-term rate of returns in form of cash and kind benefits (Igene, 1997).

Unfortunately, traditionally managed stock is over 86% for all species while commercially managed stock is only significant for poultry at 23.8% (Poultry International, 2004).

In Nigeria, the demand for poultry products like eggs, chicks, chicken etc. is relatively huge. These are sources of balance protein, cholesterol and other essential amino acids. Eggs supply the most nearly perfect protein that has a biological value of 1.0 rich in protein, thiamin, riboflavin and vitamin A and D, good dietary source of iron which is a precursor of red blood cell formation, rich in fat. Eggs also serve important roles in many food products because of their functional properties such as coagulation, emulsification and foaming (Odunsi *et al.*, 2005). Chicken belongs to white meat category. Chickens are rich sources of high quality protein (amino acids), vitamin (B-complex), minerals Fe and Cu, essential fatty acids (Lunoleic, linolenic and arachidonic acids) and posses high social and therapeutic value.

Apart from providing man with all these, Odunsi *et al.* (2005) indicated that consumption of poultry products is lower in developing countries than advanced countries. Larry (1993) observed that the current acute shortage of animal protein in Nigeria and rapidly increasing demand for livestock products could partly be alleviated through

poultry and piggery productions. Despite the fact that poultry have the greatest potential contribution to increase the supply of animal protein within the short-run (i.e. short gestation interval), occupational hazards contribute immensely to the set back (backwardness) of poultry production in Nigeria and these debarred many people from engaging in poultry production services.

The public health implication of zoonoses, Fasanmi (1997) are considerable those involved in agriculture, livestock industry, meat inspection and in the handling of foods of animals' origin are specifically much more prone to zoonotic infections than other individuals.

Back-pain and other musculoskeletal problems resulting from over exertion and wrong postures during lifting and moving of animal and feed bags, shovelling of waste etc. (ILO/CIS, 1999). Other occupational hazards that prevent people from poultry production include accident, physical, chemical, biological hazards, ergonomic, psychological and organizational factors.

Though, some people in Nigeria are very rich yet the masses are very poor, even these poor people can not afford to register with poultry farms for survival due to the hazards attached with poultry job.

It is obvious that productivity in poultry farms is impaired and it is very important and necessary to examine the factors that are responsible for these occurrences and defects. This study is aimed at examining the causes of low productivity and causes of variation in production and quality of poultry output as a result of occupational hazards among farmers and farm workers in the study area.

However, this study will provide accurate answers to the following questions: what are the common occupational hazards among farmers and farm workers in the study area? How do these occupational hazards affect productivity? What are the ways of finding solution to these hazards in favour of productivity?

There is need to educate farmers and farm workers to improve on the types of safety practices adopted.

MATERIALS AND METHODS

This study was carried out in Osogbo Local Government Area of Osun State, which has its secretariat at Oke-bale in Osogbo town. It is the trade centre for a farming region of Yam, Cassava, Maize, Corn and Cash crop like Cocoa. Agriculture is the traditional occupation of the people in Osogbo. It is located on a raised land, which is well over 500m above the sea level.

The sample size is sixty (60), purposive sampling method was used to select wards that have poultry farms. The data were collected by means of well structured questionnaires of open and close ended type. Interview schedule was used for the semi-literate and illiterate respondents. The reluctance of the poultry farmers and farm workers involved was one of the hindrances encountered during the course of study this project. This could be due to business insecurity, fear of exposing business secrets.

The dependent variable for this study is income of the poultry farmers and farm workers. It was measured by asking the respondents to indicate the kind of occupational hazards they encountered in comparison with the cost of prevention while the independent variables consist of socio-economic characteristics, which are age, marital status, educational level, farm size, number of enterprises etc.

Both descriptive and inferential statistics was used for data analyses. The descriptive statistics used includes, frequency counts and percentages while inferential statistic used to test for significant relationship was regression model.

RESULTS AND DISCUSSION

Demographic characteristics of the respondents:

Table 1 reveals that 55% of the respondents are within the age range of 21-40 years who are considered to the young agile and active poultry farmers. On the average the respondent were 30.6 years old. This implies that youths are mostly engaged in poultry farming in the study area and this conformed to the finding of Agbamu (1993), which reported, that there was a predominance of medium aged people between farming population. It also shows that most of the respondents were male (88.39%) while others were female (11.7%).

The table further revealed that all the respondents were educated, 8.4% had primary education, 41.6% had

Table 1: Frequency and percentage distribution of respondents by their personal characteristics

Personal characteristics	Frequency	Percentage
Age group (Years)		
<20	17	28.3
21-40	33	55.0
41-60	10	16.6
Mean age	30.6	
Sex		
Male	53	88.3
Female	07	11.7
Education level		
Primary	05	8.4
Secondary	25	46.1
Tertiary	30	50.0
Family size		
1-5	31	51.6
6-10	17	28.3
11-15	09	15.0
16-20	02	3.3
21-25	01	1.6
Farm size		
Small	34	56.6
Medium	10	16.6
Large	16	26.6
Total	60	100.0

Source: Field Survey, 2011

secondary education while 50% had tertiary education, and it shows that education helps farmers to respond to challenges, innovation and other poultry technology, which results to high productivity.

It also showed that 51.6% of the respondent had 1-5 dependents, about 28.3% of them had 6-10 dependents and 15% respondents have 10-15 dependents while 1.6% respondent had 21-25 dependents. It is obscured that larger percentage of them has reasonable family size.

The table further revealed that the farm size of the respondents was based on the following categories: small, medium and large scale. It was seen that 56.6% of the respondents have small farms, 16.6% have medium sized farms while 26.6% have large farms. It could be observed that a greater percentage of poultry farmers were still on small scale production.

Table 2 revealed "Accident Hazard (X₁)" as one of the major hazards associated with the poultry farmers in the study area according to the respondents. The categories of these hazards were represented as follow. "0" represents no hazard. "1" represents fall when carrying heavy load on the farm, "2" represents Eye and Skin irritation and "3" represents burn from the exposure to different surfaces (e.g. debeaking tools and incubator). 10% of the respondents have no case of accident hazard, 75% experienced fall when carrying heavy loads, 8.50% experienced eye and skin irritation while only 6.70% experienced burn from exposure to hot surfaces. Table 2 further showed "physical hazards (X₂)" as the most prevailing hazards commonly associated with

Table 2: Frequency and percentage distribution of respondents based on the types of occupational hazards sustained on farm

Personal characteristics	Frequency	Percentage
Accident hazard sustained		
0	04	10.00
1	45	75.00
2	05	8.50
3	06	6.70
Physical hazards sustained		
0	02	8.30
1	25	42.00
2	01	1.70
3	07	11.60
4	12	20.00
5	10	16.70
Chemical hazard sustained		
0	10	16.60
1	28	46.70
2	20	38.30
3	01	1.66
4	01	1.66
Total	60	100.00
*Types of safety practices used		
Quality drug	45	79.00
Nose cover	42	74.00
Rubber boot	22	46.00
Gloves	20	43.00
First aid box	13	33.00

Source: Field Survey, 2011. *Multiple responses

poultry farms in the study area. These were categorized into 5. "0" represents no case of any hazard, "1" represents exposure to high noise levels, "2" represents heat exhaustion, heat-induced dermatosis, "3" represents cold, "4" represents fatigue and restlessness, "5" represents black pain (ergonomic hazards). It revealed that 8.3% of the respondents have no case of physical hazard, 42% experienced exposure to high noise, 1.7% experienced heat exhaustion and heat-induced dermatosis, 11.6% experienced cold, 20% experienced fatigue and restlessness while 16.7% experienced black pain. This shows that physical hazards were most common hazards sustained by poultry farmers.

Table 2 revealed "chemical hazard (X₃)" as one of the hazard commonly associated with poultry farms in the study area according to the respondents. These were classified as follows: "0" represents no hazards, "1" represents disease from exposure to agricultural dusty materials, "2" represents acute and chronic respiratory irritation, "3" represents exposure to disinfectant of diseases and pests while "4" represents immunological mediated diseases. 16.6% of the respondents have no case of chemical hazard, 46.7% experienced exposure to disease experienced acute and chemical respiratory irritation, 38.3% experienced exposure to disinfectant while about 1.66% experienced immunological mediated diseases.

Table 2 showed that quality drug and first aid box were the most used safety parameter and protective measures used on the poultry farms in the study area. It revealed that respondents wear protective materials such as nose cover, gloves to prevent dirties and reduce minor injuries while working on the farms.

Hypothesis testing: The result of analysis of variance of occupational hazards sustained by poultry farmers presented in Table 3 revealed that F tab > F cal, therefore null hypothesis is accepted i.e. there is no significant difference in accident hazard experienced by the poultry farmers.

The regression model result presented in Table 4 revealed, that age, preventive measures, farm size and drugs are statistically significant. Since the decision rule stated as follows:

- T-value < 1.69 not significant
- 1.70-1.96 significant at 10% (*)
- 1.97-2.50 significant at 5% (**)
- > 2.5 significant at 1% (***)

Therefore age, preventive measures and drug used were statistically significant at 5% level while farm size is statistically significant of 1% level respectively, therefore null hypothesis is rejected and alternative hypothesis is accepted. This implies that all significant variables have decisive effects on the income of the farmers (poultry).

Table 3: Analysis of variance of occupational hazards sustained by poultry farmers

Source of variable	Sum of squares	df	Mean square	F Cal.	F tab.	Sig.
Physical hazards (X₁)						
X ₁ : Treatment	8.224	20	0.211	0.821	1.84	0.683
Error	21.219	39	0.421			
Total	29.443	59				
Accidental hazards (X₂)						
X ₂ : Treatment	61.463	20	3.252	1.140	1.84	0.340
Error	137.820	39	2.880			
Total	99.283	59				
Chemical hazards (X₃)						
X ₃ : Treatment	17.112	20	0.644	1.360	1.84	0.175
Error	23.276	39	0.648			
Total	40.388	59				

Source: Field Survey, 2011

Table 4: Analysis of regression model using t-distribution

Variables	β_0	Std. Error	t-value
Constants	6217.902	1926.874	3.268
Enterprise number	-448.291	434.340	-1.406
Age	90.025	26.413	2.373**
Prevention measures	-2776.832	723.201	-2.447**
Educational level	-176.128	0.082	-0.382
Labour	1.032	0.062	0.136
Sex	-6.560	0.086	-0.070
Farm size	4.730	0.001	3.000***
Machine	-5.994	0.309	-0.249
First aid	-6.655	0.065	-0.948
Drug	-1.659	0.010	-2.270**
Family size	-106.692	116.521	-0.821

Source: Field Survey, 2011. Significant at 10% (*), 5% (**), 1% (***)

Regression model:

$$Y = \beta_0 + \beta_4 X_4 + \dots + \beta_{14} X_{14}$$

6217.902 (1926.874)	-106.692X ₄ (116.521)	-6.655X ₅ (0.065)	-2776.832X ₆ (723.201)
(3.268)	(-0.821)	(-0.948)	(-2.447**)
-176.128X ₇ (0.082)	-1.659X ₈ (0.010)	-5.994X ₉ (0.309)	-6.560X ₁₀ (0.086)
(-0.382)	(-2.270**)	(-0.249)	(-0.070)
1.032X ₁₁ (0.062)	-448.291X ₁₂ (434.340)	+90.025X ₁₃ (26.413)	+4.73X ₁₄ (0.001)
(0.136)	(-1.406)	(2.373**)	(3.000***)

Where:

- | | |
|-----------------------------------------|----------------------------|
| Y = Income | β_0 = Constant |
| X ₄ = Family size | X ₅ = First aid |
| X ₆ = Preventive measure | X ₇ = Education |
| X ₈ = Drugs | X ₉ = Machine |
| X ₁₀ = Sex | X ₁₁ = Labour |
| X ₁₂ = Number of enterprises | X ₁₃ = Age |
| X ₁₄ = Farm size | |

Conclusion: This study has empirically examined the productivity effects of occupational hazards among poultry farmers and farm workers in Osogbo Local Government Area of Osun State. The following conclusions were drawn based on the major finding of this study. Youths engaged mainly in poultry business. Majority of poultry farmers were educated to at least primary school certificate. Physical hazards occurred mostly, followed by accident hazards, while chemical hazards was the least.

Age, preventive measures, farm size and drug have a great impact on the income of the poultry farmer in the study area. Occupational hazards on the poultry farms can be maximized by using preventive measure at the maximum.

Therefore, there is need for good consistent research on occupational hazards and safety practices to be adopted and the findings of the research should be passing across to the poultry farmers. Good programme of work on poultry farm safety practices should be develop annually by the extension agents. Nigeria government should subsidize poultry farm equipments and raised law against sitting poultry houses away from residential environment. Protective materials such as rubber boot, gloves, nose cover and rain coat should be encouraged in poultry farming. Good medical facilities should be attached to poultry farming, as well as proper sanitation of the poultry environment should be mandated to poultry farmers by the government. Proper handling of chemical such as germicides, vaccines etc and using of wheel barrow for carriage of heavy loads and poultry waste should be encourage by the poultry formers. Nigeria government should provide a squared for inspecting and monitoring the poultry house regularly to adjust anything hazardous to poultry farmers.

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