EFFECT OF ROAD TRANSPORT ON INCOME OF POULTRY FARMERS IN SELECTED L.G.A OF KWARA STATE, NIGERIA

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ABSTRACT

The study analyzed the effect of road transport on income of poultry farmers in selected local Government Areas of Kwara State, Nigeria. Primary data were obtained from 120 poultry farmers through the use of questionnaire. Data were analyzed through the use of descriptive statistics, such as frequency, percentages and tables, while regression analysis was used to determine the effect of road transport on income of poultry farmers. The study found out that majority (65%) of the respondents were male and the use of car was the most (48%) common mode of transportation. The result of the regression showed that 65% of variation in income of poultry farmers was as a result of variables included in the model. Also, gender ($p<0.05$), age ($p<0.01$), education ($p<0.01$), extension contact ($p<0.01$), quantity of produce transported ($p<0.01$), and use of car as a mode of transport ($p<0.01$) were the factors that influenced the income of poultry farmers positively in the study area. On the other hand, household size ($p<0.01$), layer production ($p<0.01$) and credit ($p<0.05$) had negative influence on the income of poultry farmers in the study area. Based on the findings, the study concluded that the use of motor car was the most effective means of transportation in the study area thus, the study recommended that Government, NGOs, and Stakeholders should ensure that access roads are put in good shape so as to ease transportation of poultry produce since cars were the best means of transportation in the study area.

Keywords: Road transport, poultry, income, Nigeria

INTRODUCTION

Globally, transportation has become a factor necessary for agricultural development (Tunde and Adeniyi 2012). It is an inseparable part of any society as it exhibits a very close relation to the style of life, the range and location of activities and the goods and services which will be available for consumption (Ajiboye & Afolayan, 2009). It is therefore a major factor in all economic activities. As an economic factor of production of goods and services; transportation provides access to the market by linking producers and consumers. An efficient transport system offering cost, time and reliability advantage permits goods to be conveyed quickly from one location to the other (Tunde & Adeniyi, 2012; Rodrigue *et al*., 2013). According to Crossley *et al*, (2009)

transport operations are a basic component of agricultural input and produce supply chains and it could be a key factor for the success of a farm a constraint that makes costs exorbitant or renders a project economically non-viable. More so, rural road network has significant effect on the distribution of facilities in rural areas and has the potential of reducing poverty (Aderamo *and* Magaji, 2010).

Poultry farming has been recognised as one of the important agribusiness enterprise because it provides an avenue for wealth creation to our farming communities and it also serves as a means of self-employment for our educated unemployed persons in the rural areas **(**Ohajianya *et al.*, 2013). Although poultry production is one of the important sub-sectors in the Nigerian economy, its facilities are a source of odour, it attracts flies, rodents and other pests that create local nuisances and carry disease. Odour emissions from poultry farms adversely affect the life of people living in the vicinity. Hence, it becomes pertinent to site poultry farms some distances away from home. In Nigeria, the Federal Environmental Protection Agency (FEPA) stated that poultry farms should be located at least 500 metres away from residential areas so as to manage the nuisance created by the poultry farms (FEPA, 2007). However, for this to be very effective, there is a need for an efficient transport system.

The issue of rural transportation development has continued to be of national importance. For instance, most of the rural roads are in poor condition, and this has imposed significant cost on the national economy especially to the agricultural activities due to increased vehicle operating cost and travel times (Akintola, 2007). Poor transportation in the rural areas has resulted in low productivity, low income and a fall in the standard of living of rural residents and high poverty. Long distance and bad road can lead to destruction of perishable crops and farmer may run at loss. The demand for commercial properties itself is affected by changes in population, planning and development schemes, legislation, and availability of good road networks (Adeleye and Oduwaye, 2006). According to Jayaprakash *et al* (2016), a long duration of transportation of poultry by road across various ecological and climatic zones imposes many stressors upon the transported birds. During transit birds may be exposed to a variety of stressors such as thermal changes, acceleration, motion, vibration, fasting, withdrawal of water, social disruption, noise and internal vehicle thermal microenvironment (Abeyesinghe *et al.*, 2001). Burkholder *et al.* (2009) suggested that stressors such as feed withdrawal, temperature fluctuations and confinement during transportation disturbed the normal micro flora and increased susceptible pathogens such as Salmonella bind and

colonize the intestinal epithelium in poultry would increase the risk of carcass contamination during processing. Transportation also induced changes in blood composition as well as heart rate, electrolyte concentration, hormone levels, metabolites enzymes, live weight and meat quality.

The condition of rural transportation has frustrated rural development efforts in the country and this has resulted into series of challenges such as the cutting off of many rural areas in the country from neighboring larger settlements from which they could access higher order socio-economic services, low productivity, low income and a fall in the standard of living of rural residents and high rate of poverty (Aderamo and Magaji, 2010). Long distance with a bad road which is also the existing situation in the study area. Thus poor road transportation leads to the death of poultry produce on the road. Thus, the study sought to examine the effect of road transport on the income of poultry farmers in selected local government areas of Kwara state.

METHODOLOGY

Study Area

The study area for this research is Kwara State. The State is located within the North central geopolitical zone, commonly referred to as the Middle Belt. The State is bounded in the North by Niger State, in the south by Oyo, Osun and Ekiti States, in the east by Kogi state and in the west by Benin Republic. Because of its unique geographical position, the state is referred to as the "gateway" between the north and the south of the country.

The state is situated between latitudes 7º45` and 9º30` and longitude 2º30`and 16º25`. The state covers a total land of 36,825 making it the 9thlargest state in Nigeria. The annual rainfall ranges between 1,000mm and 1,500mm. The average temperature ranges between 30ºC and 35ºC.According to the population census of 2006, Kwara State had a total population of 2,365,353. It has an estimated figure of 203,833 farm families with majority living in rural areas.

Kwara state Agricultural Development Project divide the state into four zones in consonance with ecological characteristics, cultural practices and project`s administrative convenience. These are: Zone A: Baruteen and Kaima Local Government Areas; Zone B; Edu and Patigi local government areas. Zone C; Asa, Ilorin east, Ilorin south, Ilorin west and Moro local government area. Zone D; Ekiti, Ifelodun, Irepodun, Offa, Oyun, Isin and Oke-ero local government areas (KWADP, 1996).

Sampling Technique

A multi-staged sampling procedure was used to select the respondents of the study. In the first stage, 2 zones were randomly selected, in the second stage, 1 local government was randomly selected from each of the zone (Ekiti and Ilorin east). In the third stage, 3 villages were randomly selected from each of the LGAs and in the fourth stage, 40 poultry farmers were selected from each of the villages through the use of systematic sampling making a total of 120 poultry farmers.

Method of Data Collection

Primary data were collected through the administration of questionnaire. Information concerning the socio-economic characteristics (gender, age, marital status, level of education, farming experience, farm size, household size, main occupation and farm production were elicited from the respondents

Method of data analysis

Descriptive Statistics

Descriptive statistics such as frequency, percentages and means were used to describe the socio-economic characteristics of the poultry farmers, mode of transportation of poultry produce and quantity of poultry produce transported.

Regression Analysis

Regression analysis was used to determine the effect of road transport on the income of the poultry farmers and the model is expressed as;

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 \ldots\ldots\ldots\ldots\ldots\ldots + \beta_{11} X_{11} +$ e

Where:

Y= Income (₦),

X_1 = Gender

X_2 = Age (years)

X_3= Marital Status (1= married and 0 otherwise)

X_4= Household size (number of persons)

X_5 = Education (years)

X_6 = Credit

X_7 = Distance to market (Km)

X_8 = Extension contacts (number of visits)

X_9 = Type of poultry transported (cockerel =1 and 0 = otherwise (the reference category), broiler = 1 and 0 = otherwise, layers =1 and 0 = otherwise)

X_{10} = Quantity of poultry birds transported

X_{11} = Mode of road transport (Head porterage =1 and 0 = otherwise (reference category), Bicycle =1 and 0 = otherwise, Motorcycle =1 and 0 = otherwise, car =1 and 0 = otherwise, tricycle =1 and 0 = otherwise, Lorry =1 and 0 = otherwise

RESULTS AND DISCUSSION

Results of socioeconomic characteristics of the respondents is shown in Table 1. Majority (80.8%) of the respondents were between the age range of 19 and 35 years with a mean age of 33 years. This is an indication that the youths in the study area are involved in poultry production and this could be a means of self-employment in an economy where majority of the youths are unemployed. This result corroborates the findings of Matanmi *et al* (2012) and Adisa *et al* (2017) who reported that, poultry farmers in Kwara state were youths aged between 31 and 50 years. 65% of the poultry farmers in the study area were males. More so, the high number of males might be attributed to hard task (such as building the poultry house, changing of poultry litters etc.) carry out in the poultry production process. This in line with Adesiji *et al* (2017) who reported that poultry farming in Kwara State was carried out mostly by my men. Men accounted for 58% while female were about 43%. Contrary to the findings of Adisa (2017) and Adesiji (2017), who found out that most of the poultry farmers in kwara State were married, this study revealed that poultry farming was an activity carried out by both the single (47.5%) and married (46.7%) with household size of about 5 persons. Household size in conventional agriculture decides the ease of use of labour and production level of the farmer (Ani, 2004). Hence, household size of 5 persons could imply that household labour may be available especially when there is scarcity of farm labour. Majority (79.2%) of respondents in the study area has between 1 and 9 years of farming experience, while 10 years and above account for 20.8% in the study area.

.***Table 1: Socio-economic characteristics of the respondents,n=120***

Variable	**Frequency**	**Percentage**
Age		
≤25	28	23.33
26-30	43	35.83
31-35	26	21.67
36-40	20	16.67
>40	3	2.50
Mean	**33**	
Sex		
Male	78	65
Female	42	35
Marital Status	57	47.50
Single		
Married	56	46.67
Divorced	4	3.33
Widowed	3	2.50
Household Size		
1-5	74	61.67
6-10	33	27.50
>10	13	10.83
Mean	**5**	
Farming Experience		
1-9	95	79.17
>10	25	20.83
Mean	6	
Number of Birds		
≤1000	58	48.3
1001-3000	48	40
≥3000	14	11.7
Mean	**1512**	
Distance from Farm to Market	**Frequency**	**Percentage**
1-10	67	55.83
11-20	42	35.00
>20	11	9.17

Source: Data from Field Survey 2018

This points to the fact that most of the farmers sampled had enough farming experience and they should be able to make the right decision concerning the best mode of transportation for their inputs and outputs. The study also revealed that 48.3% of respondents in the study area keep between 500 and 1000 birds which is classified as small scale poultry production. Han average poultry farmer in the study area is a medium scaled farmer according to the classification of Olasunkanmi (2008) who classified fewer than 1000 birds as small scale farms, 1000 -3000 birds

as medium scale farms while those having 3000 and above as large scale farms. Also, the results in Table 1 revealed that, the mean distance from the farm to the market was about 10km. This is an indication that road transport may just be a sufficient means of transport for the poultry farmers.

The result in Table 2 shows the mode of transportation in poultry production. It was revealed that 44.2% of the respondents in the study area used car for their mode of transportation of poultry produce from farm to the market. The reason may not be farfetched because most of the poultry farmers in the study area were small scaled poultry farmers and the distance from their farms to the market was minimal. Furthermore the result in Table 2 showed that 11.7% of the respondents made use of head porterage as mode of transportation and these according to Tunde and Adeniyi (2012) had limited the potential level of production because they can only carry certain quantity at a time.

Table 2: Mode of Transportation in Poultry Production

Type	Frequency	Percentage (%)
Motorcycle	17	14.2
Car	53	44.2
Tricycle	14	11.7
Lorry	17	14.2
Car and lorry	2	1.7
Trunk	1	0.8
Head porterage	14	11.7
Bus	2	1.7

Source: Data from Field Survey 2018

Table 3 shows the type of poultry managed by the respondents. It was revealed that majority (62.5%) of the respondents were more engaged in the production of broiler and layers, while 10.8% of the respondents were produced Cockerel in the study area. This could be because, the rate of turnover is higher for broilers and layers production than for cockerels even though the sales of cockerel usually yields more returns when compared to broilers and layers on the long run.

Table 3: Types of poultry produced

Type	Frequency	Percentage (%)
Broilers	45	37.5
Layers	30	25.0
Cockerels	13	10.8
Broilers and layers	8	6.7
Broilers and cockerels	5	4.2
Layers and cockerels	2	1.7
Broilers, layers, and cockerels	17	14.2

Source: Data from Field Survey 2018

Effect of road transport on income of poultry farmers in the study area.

The result in Table 4 shows the summary of regression analysis used to test the effect of road transport on the income of the poultry farmers. The value of the R^2 implies that 65% of changes in income is accounted for by changes in the variables included in the model while 34 % is as a result of other factors not considered in this study.

Sex, age, education, extension contact, quantity of produce transported and use of car as a mode of transport were the factors that influenced the income of poultry farmers positively. That is, the male farmers had higher income than their female counterparts. Also, an increase in the age of the poultry farmer by 1 year, will lead to increase in the income of the farmer. This could be because older farmers tend to be more experienced in production and they may even be more informed of the happenings in the economy at large. In the same vein, an increase in the level of education and the number of extension visits will translate into an increase in the level of income. Education is a form of capacity building while extension provides current information pertaining to innovation emanating from research. Hence, higher level of education promotes the adoption and utilization of technologies which in turn leads to improved income. This finding is in line with Mabe *et al.* (2010) who also reported that livestock producers with higher level of education had higher income in North West province in South Africa. Matanmi *et al*. (2012) also reported that Kwara Agricultural Development Programme (KWADP) had positive impact on the productivity of poultry farmers in Kwara State. Also, the higher the quantity of produce transported, the higher the income obtained. This may be due to the fact that poultry farmers who transport large quantities may benefit from economies of scale. Also, higher quantity of produce transported to the market implies higher sales.

Table 4: Effects of road transport on income of poultry farmers

Variables	Coefficients	t-values
Constant	-24397.565	-2.424
Sex	0.408**	2.873
Age	0.99***	5.501
Marital Status	-1.91***	-6.371
Household size	-2.16***	-4.047
Education	1.52***	6.561
Credit	-0.39**	-2.223
Distance to Market	1.53	0.549
Extension Contacts	0.71***	3.859
Broiler	-0.08	-0.604
layers	-1.12***	-5.202
Quantity Transported	2.04***	3.738
Bicycle	-0.81***	-4.245
Motorcycle	-0.39**	-2.391
Car	1.44***	5.377
Tricycle	-0.80**	-2.264
Lorry	-1.09	-0.401
R-squared	0.70	
Adjusted R-squared	0.65	
F- statistics	13.82***	

Source: Data from Field Survey 2018

Poultry farmers who utilized cars in transporting their poultry produce to the market had higher income than their counterparts who used other means of road transports. The implication is that the use of motor cars is the best means of transportation for poultry farmers in the study area. This could be because the poultry farmers were small scale farmers and the quantity sold in the market may not be large enough to cover the cost associated with the use of Lorries and it may also be too large for the use of bicycles, tricycles and head porterage. On the other hand, household size and layer producers and credit influenced income negatively. Implying that an increase in the number

of persons in the house, a decrease in the income and vice versa. Also, farmers who reared layers had less income than their colleagues who reared cockerels. This could be because cockerels are easier to raise and its production is less capital intensive when compared to layers. In addition, the higher the credit assessed the lower the income. This could be because most of the farmers were small scale farmers and the credit obtained may be diverted to other uses.

CONCLUSION

The effect of transport on poultry farms cannot be underestimated as it results to waste of poultry product and reduction of farmers' income. Based on the findings, the study concluded that market located far away from the poultry farms influenced the income of the poultry farmers positively and the use of motor cars was the most effective means of transport based on income realized. In addition education and extension visits were significant factors that influenced the poultry farmers' income.

RECOMMENDATIONS

The study therefore recommends that Government, NGOs, and Stakeholders should ensure that access roads are put in good shape so as to ease transportation of poultry produce in the study area. Also, agencies involved with the provision of extension services should be strengthened and encouraged to organize trainings in order to build and enforce the capacity of the poultry farmers since extension contact and education influenced the income of the poultry farmers in the study area. In addition, extension agents should encourage the poultry farmers to target markets located away from their farms.

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