RESEARCH ARTICLE

Determining Women Interest in Poultry egg Farming in Ilorin, Kwara State

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ARTICLE INFO

ABSTRACT

For policies to solve women problems, their interest, determinant and level of their participation in agriculture have to be understood. This study was conducted in Ilorin, Kwara state, Nigeria, to identify the factors motivating the interest of women in poultry egg farming. A stratified random sampling technique was adopted in selecting 60 registered women poultry egg farmers and 60 registered women non-poultry egg farmers respectively making a total of 120 respondents. Data was collected by administering a structured questionnaire to the sampled women. Analysis was done with binary Logit regression. The result revealed that years of education, number of children, poultry experience, farm size and participation in cooperative are the significant factors that influenced women poultry farmers' interest in egg production. It was predicted from Logit estimate that the rate at which the significant factors in the model influence women interest in egg production was 50.4%.

INTRODUCTION

Women form the majority of rural areas and are responsible for about 80% of all food items produced (Awotide, 2012). When focusing on agriculture as an economic activity the role of women cannot be undervalued as they account for 49.6% percent of Nigeria population (NPC, 2007). Even though women play a dominant role in agriculture, they are hardly trained and reached by extension agents with improved technologies (Rahman and Alamu, 2003). Many women believe that the agricultural industry is mostly for men. However, what most women do not realize is that the percentage of women in the agricultural industry continues to increase almost every day (Kirk, 2012). Along with raising children and tending to duties inside the home such as cooking and laundry, women also tend to chores outside. Some duties include feeding animals, scooping manure and driving grain truck, these jobs are no longer seen only for a man. Understanding women interest in agriculture most especially poultry egg farming seems to be difficult for the fact that women might be unwilling to participate because of traditions or customs that restrict women from feeding the family. This has caused inadequate information necessary to predict the level of preference in poultry egg farming in presence of other non agricultural business. In other to address women problems in respect of their participation in egg farming and their level of interest have to be properly understood. Toward this end a study has been conducted to identify factors that determine the interest of women in poultry egg farming and predict the rate at which the factors explain the variation in women using binary Logit regression as related to socio and institutional variables.

MATERIALS AND METHODS

The study was conducted in Ilorin and was divided into three: Ilorin south, Ilorin east and Ilorin west, chosen based on predominance of registered poultry farmers. A stratified random sampling technique was adopted in selecting 20 registered women poultry egg farmers and 20 registered women non-poultry egg farmers respectively from each division to make up a sample size of 60 registered women

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poultry egg farmers and 60 registered women non-poultry egg farmers respectively making a total of 120 respondents. Data was collected by administering a structured questionnaire to the sampled women. The information includes farm size, age, poultry farming experience, income, participation in cooperatives, educational status, credit and number of children. Analysis was done with binary Logit regression.

Binary Logit model specification

Probability

$$Y_1 = 1 \Big/ X_{ij}, j = 1-8 = F(Z_i) = \frac{1}{1+\ell^{z_i}} = \frac{\ell^{z_i}}{\ell^{z_i}+1}; i = 1-n$$

Where, $\quad z_i = \alpha + \beta_1 X_{i1} + \beta_2 X_{i2} + \cdots + \beta_8 X_{i8} + U$

F (.)= cumulative logistic distribution.

Z_i is an unobservable variable in the sense that X's are generated from the field; β's are not observable. In order to obtain the value of Z_i the likelihood of observing the sample needs to be formed by introducing a dichotomous response variable Yi:

$$Y_i = \begin{cases} 1 & \text{if } y^* > 0 \\ 0 & \text{otherwise} \end{cases}$$

1= women poultry egg farmers
0= women poultry non egg farmers
i=Number of women poultry egg farmers
j=1-8 are the socio economic characteristic of ith poultry egg farmers defined as:
X_1=Poultry Farming experience (yrs)
X_2=Education (yrs)
X_3=Farm size (number of birds)
X_4=Age (yrs)

X_5= Income (₦)
X_6= Children (number)
X_7= Participation in cooperative society (years)
X_8= credit (₦)
β_1- β_8 = Logit coefficient
α= Constant term.
U= error term which will be assumed to be normally distributed with zero mean and constant.

The marginal probability of factor determines the interest of poultry egg farmers and was estimated based on derived expression from the Logit models as:

$$\frac{d\hat{p}}{dx} = bj\left[\hat{p}\left(1 - \hat{p}\right)\right]$$

In order to determine the responsiveness of the probability with respect to jth factor elasticity of probability of poultry egg farmers; which can be defined as the ration of percentage change in magnitude of factor determining poultry egg farmer's interest as:

$$\text{E}p = bj\,\overline{\times}_j\left(1 - \hat{p}\right)$$

Where

bj =estimate of Logit regression coefficient,

$\overline{\times}_j$ =arithmetic mean of poultry egg farmer's jth factor,

$\left(1 - \hat{p}\right)$ =estimated probability of poultry egg farmer's interest in egg production,

$\text{E}p$ =elasticity of probability.

RESULTS AND DISCUSSION

Table 1 showed the distribution of maximum likelihood estimate of women poultry egg farmer's level of participation in egg farming as related to their socio-economic and institutional variables in Ilorin, Kwara state. The table showed that Age, poultry experience, years of education, family size had negative coefficients. The farm size, participation in cooperative, credit and Income had positive coefficient. It is being noted that a positive sign on a parameter indicated that higher values of variables tends to increase the likelihood of poultry egg production. Similarly, a negative value of coefficient implied that higher values of the variables would reduce the probability of poultry egg production.

Table 1: Maximum likelihood estimate of women poultry egg farmer's level of participation in egg farming as related to their socio-economic and institutional variables in Ilorin, Kwara state.

	Coefficient	Std. error	Z	P
Constant	10.34	7.12	1.45	0.15
Age	-0.34	0.24	-1.43	0.15
Years of education	-0.52	0.30	-1.74	0.08*
Number of children	-1.10	0.48	-2.29	0.02**
Poultry experience	-1.33	0.64	-2.07	0.04**
Farm size	0.05	0.02	2.24	0.03**
Participation in cooperatives	2.39	1.00	2.38	0.02**
Credit	0.00	0.00	1.03	0.30
Income	0.00	0.00	0.62	0.54

Source: field survey 2012, *=10%, **=5%

The result indicated that years of education, number of children, poultry experience, farm size and participation in cooperative are the factors that influenced women poultry farmers' interest in egg production. All these factors have negative coefficient except farm size and participation in cooperatives which has positive coefficient but significant at 5% level. Considering the negative coefficients it implies that for every increase in years of education, family size and poultry experience it reduces the interest of women to participate in

egg farming. This may be due to the fact that women involved in education may not give them much concern on keeping poultry likewise their responsibility on the children may restrict them to be engaged in poultry egg farming. This finding agrees with Wainaina et al., (2012) that an increase in years of education by one year may reduce the likelihood of farmers to participate in contract farming. While for every one unit increase in number of farm size increase the likelihood of poultry egg farmer's participation in egg production. The implication of this is that increase in farm size is expected to increase the income of the women farmers. The result of participation in cooperative imply that a poultry egg farmer whose income has increase and who participate more in farmers cooperatives would be more involved in egg production.

Marginal and elasticity of probability

The predicted probability of poultry egg farmer's interest in egg production as related to the significant socio-economic and institutional variables is shown in Table 2. The Table showed that years of education have a negative marginal and elasticity of probability of 0.02 and 0.34 respectively. The family size showed a negative marginal and elasticity of probability of 0.09 and 0.63 respectively. Poultry experience also showed a negative marginal and elasticity of probability of 0.07 and 0.30 respectively. Farm size has a positive marginal and elasticity of probability of 0.002 and 0.80 respectively. Participation in cooperative society also revealed a positive marginal and elasticity of probability of 0.14 and 0.47 respectively.

Table 2: Predicted probability of poultry farmer's interest in egg production as related to the significant socio-economic and institutional variables

Variables	Marginal probability	Elasticity of probability
Years of education	-0.02	-0.34
Family size	-0.09	-0.63
Poultry experience	-0.07	-0.30
Farm size	0.002	0.80
Participation in cooperatives	0.14	0.47
Mean dependent variable	50.4%	

Source: field survey 2012

The result showed that years of education, family size and poultry experience may not necessary be a factor contributing to women poultry farmer's interest in egg production. Participation in cooperative society has the highest extent of influence to which a unit change increases the probability of the women poultry egg farmer's interest in egg production. The implication is that it increases the likelihood of more access to credit facilities, distribution of other benefits apart from loans and creates market power for members. However, the elasticity of probability which is the factor that predicts the level of women poultry egg farmer's interest in egg production shows that farm size is the main factor for their interest. The implication of this is that the more opportunity the women poultry egg farmers have access to credit through their participation in cooperatives; the more they tend to increase their farm size, with a tendency to increased income.

Conclusion

It can be deduced from the study that despite gender inequalities, women still have interest in egg production in the study area. In order to improve their interest, more women should be trained through workshops and let them know how important their interest in egg production will improve the firm and agricultural activities in general.

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