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USE OF TECHNICAL INFORMATION AMONG PIG FARMERS IN ABIA STATE, NIGERIA: EMPIRICAL ANALYSES

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Abstract
The study investigated the level of use of technical information among pig farmers in Abia State, Nigeria. Specifically, the study described the socioeconomic characteristics of the farmers, ascertained the level of use of technical information and determined the level of influence of some socioeconomic variables on the use of technical information among pig farmers in the area. Purposive and multistage random sampling techniques were used in drawing sixty (60) pig farmers for the study. Data collected were analysed using both inferential and descriptive statistics such as Ordinary Least Square Regression, frequency counts, percentages and mean scores. From the result, a grand mean score of 2.83 shows that the level of use of technical information among pig farmers is low in the area. At P<0.05, Stock size with a t-ratio of 1.878, Farming experience (-1.984**), Household size (2.251**) and Level of extension contact (-5.420**) all had significant influence on the use of technical information by the pig farmers. The study recommends formation of pig farmers into cooperative groups and conscious efforts at improving livestock extension by all extension agencies, to improve access to and use of innovations for enhanced prig production in the study area.

Keywords: Pig, Farmers, Technical Information, Assessment

Introduction

Over the years, there has been clarion call to improve the nutritional status of developing countries in the intake of animal protein. Food and Agricultural Organization (FAO) recommended an average of 200 grams of animal protein per day for healthy living in developing countries (FAO, 2016). Efforts are being made by developing countries to increase livestock production to meet demand. Efforts are also currently being made to address this deficit through the new national policy on agriculture. Pig is one of the sources of animal protein, it's production, which is both in the hands of government institutes and private individuals represents a fast way of increasing animal protein, since pigs grow at a faster rate and reproduce sooner with larger litter size than cattle, goats and sheep (Olowu and Oyedokun, 2010).

Some constraints to pig production as identified by Agbamu (2000) include; religion, peoples attitude, poor breeding, poor managerial expertise, lack of adequate information on pig production and lack of reliable database for national livestock planning (Agbamu, *ibid*). It has also been indicated by Nwachukwu (2014) that several socio-economic variables of farmers play important role in how they access and use technical information in their day to day farming activities. According to Kalu *et al.* (2019), there is a positive correlation between farmers' evaluation of the benefit of technical information and their subsequent use of the innovation communicated. They further observed access to credible technical information sources as a major constraint to the level of use of technical information among crop farmers in Abia State. Farmers are not generally alien to innovations, but would weigh the implications of such innovations before deciding on whether or not to use the innovations when effectively communicated to them (Nwachukwu, 2017; Kalu *et al.*, 2019). Nwachukwu (2017) noted that the major responsibility of extension service system is to provide technical information and ensure their effective utilization by farmers, but how extension services have fared over time in relation to pig farming in Abia State need to be ascertained. In most parts of Nigeria, especially in the Southeastern region, pork vendors are seen along the streets with queues indicating the rising demand for the meat in the region. Several studies have been carried out by researchers in the study to ascertain the level of production and determinants of pig production in the study area (Anyiro and Oriaku, 2011; Igwe, 2013). However, limited research efforts have been made to ascertain the implications of technical information sources and use in pig production. For profitable pig production, there must be access to research findings delivered as technical information to pig farmers through extension and other advisory services providers in Nigeria. There is currently dearth of information on the use of technical information by pig farmers and its sources for improved pig production in Abia State, Nigeria, hence, the need for this study.

Methodology

A multi-stage sampling procedure was used in the study in order to have a good spread selection of the respondents. Umuahia Agricultural zone was purposively selected out of the three zones in the State due to the high presence of pork vendors suggestive of the rising number of pig farms. Ten (10) pig farmers were drawn from all the six agricultural blocks which gave a total of 60 pig farmers used in the study. A well-structured questionnaire was used in generating responses from the farmers. Simple descriptive statistics such as frequency counts and mean scores were used in analyzing data generated. Pig farmers level of use of technical information in the study area was realized using a five-point rating scale of Always = 5; Sometimes = 4; Occasionally = 3; Rarely = 2; Never = 1. To determine the relationship between selected socio-economic characteristics of pig farmers and the level of use of technical information was realized using ordinary least square (OLS) regression analysis as used by Nwokocha *et al*. (2017). The explicit form is stated thus:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + + e$$

Y = index for level of utilization of technical information (obtained as mean responses of farmers' level of use of information)

β_0 = constant term

$\beta_1 - \beta_9$ = beta coefficient of explanatory variables

X_1 = age (in years)

X_2 = farming experience (in years)

X_3 = household size (number of persons in the household)

X_4 = Regularity of extension contact (proxied as frequency of famers' contact with extension)

X_5 = Stock size (number of animals owned)

e = error term

Results and Discussion

Socioeconomic Characteristic of Respondents

The result on the age of the respondents presented in Table1 shows that 55.0% of the respondents were within the age range of 31 - 40 years, while 26.6% were within 41-50 years. it can also be realized from the table that a mean age of 38.0 was recorded among the respondents. This result implies that young people are economically active and dominate the piggery enterprise in the study area, probably due to the energy demand of the enterprise. The results of the analysis shows that the Piggery farming experience from 5 years and below is 76.7%, while, 13.3% had an experience between 6 – 10 years. Also, 6.7% of the respondents have had experiences of 11 – 15 years. Mazza *et al.* (2017) noted that years of farming experience could be an indicator of the practical knowledge acquired in farming. The result presented a mean years of experience of about 4.88years implying that greater number of the respondents have not been into Piggery business for a long time. A farmer's years of experience in any enterprise has a direct relationship with his/her knowledge and skills in the enterprise (Ekwe *et. al.*, 2017). The result shows that majority (58.3%) of the respondents' rear above 21 Pigs, while 26.7% have between 11-20 Pigs. Only 15.0% rear 1 – 10 pigs. A mean stock size of 26.95 pigs was recorded in the study area which shows that most of the farmers in the area are not large scale producers. The result shows that many (31.7%) respondents have never had contact with extension, this is followed by 26.7% others who rarely had contact with extension. Also, 20.0% of the respondent had occasional extension visit, whereas, 13.3% often had extension contacts. The result is an indication of poor level of extension service delivery in the State, which in turn will negatively affect farmer's access to technical information from extension and its utilization. The Results show that a larger proportion (76.7%) of the respondents has household size of 1-5 persons, whereas, 23.3% have between 6-10 persons. The mean household size was about 4 persons. This is an indication that Piggery farmers have a relatively small household sizes which could probably not meet the farm labour demand of the enterprise.

Table1: Distribution of the Respondents Based on Selected Socio-economic Characteristics (n=60)

Variable	Frequency	Percentage (%)
Age		
≤30	7	11.7
31 – 40	33	55.0
41 – 50	16	26.6
51 – 60	4	6.7
Mean	38.0	
Years of Experience (years)		
≤ 5	46	76.7
6 – 10	8	13.3
11 – 15	4	6.7
≤ 16	2	3.3
Mean	4.88	
Stock Size (number of pigs)		
1 – 10	9	15.0
11 – 20	16	26.7
≥ 21	35	58.3
Mean	26.95	
Frequency of Extension Contact		
Often	8	13.3
Regularly	5	8.3
Occasionally	12	20.0
Rarely	16	26.7
Never	19	31.7
Household Size		
1 – 5	46	76.7
6 – 10	14	23.3
Mean	4.13	

Source: Field Survey Data, 2019

Level of Use of Technical Information among Pig Farmers

Table 2 shows the level of use of advisory services among Piggery farmers which shows that housing of pigs has the mean score of 3.35, feed formulation ($\bar{x}$= 2.95), feeding of Pigs ($\bar{x}$ = 3.05), sanitation of Piggery environment ($\bar{x}$ = 2.75), Piggery vaccination ($\bar{x}$ = 2.65), Piggery disease and pest management ($\bar{x}$ = 2.63), Piggery Waste management ($\bar{x}$ = 2.45), and marketing of Piggery products ($\bar{x}$ = 2.78). The decision point was 3.05 and a grand mean of 2.83 which was below the cut-off point shows that the level of use of Technical Information from extension is low in the study area. This finding agrees with the work of Kalu *et al*. (2019) that the farmers use of technical information, especially from the government's extension service delivery agency is low.

Table 2: Distribution of Respondents Based on Level of Use of Technical Information among Piggery Farmers

Area of Technical Advice	A 5	S4	O 3	R 2	N 1	Mean	Remark
Housing of Piggery	8(13.3)	29(48.3)	8(13.3)	6(10.0)	9(15.0)	3.35	High
Feed formulation	9(15.0)	14(23.3)	17(28.3)	5(8.3)	15(25.0)	2.95	Low
Feeding of Pigs	9(15.0)	17(28.3)	15(25.0)	6(10.0)	13(21.7)	3.05	High
Sanitation of Pig Environment	5(8.3)	14(23.3)	16(26.7)	11(18.3)	14(23.3)	2.75	Low
Pig Vaccination	6(10.0)	13(21.7)	14(23.3)	8(13.3)	19(31.7)	2.65	Low
Pig diseases management	4(6.7)	16(26.7)	14(23.3)	6(10.0)	20(33.3)	2.63	Low
Marketing of Piglets	3(5.0)	16(26.7)	20(33.3)	7(11.7)	14(23.3)	2.78	Low
Piggery Waste Management	4(6.7)	10(16.7)	14(23.3)	13(21.7)	19(31.7)	2.45	Low
Grand Mean						**2.83**	**Low**

Key: A = Always, S = Sometimes, O = Occasionally, Rarely = 2, Never 1; Decision point = 3.05

Influence of selected socio-economic characteristics of pig farmers on the level of use of technical information

The objective was realized using the ordinary least square regression model where the four functional forms were tried and result presented in Table 3. The Exponential model selected as the lead equation due to the highest number of significant variables and a significant F-value of 7.134 at P<0.05 which shows the overall significance of the regression line and R^2 value of 0.45 which implies that 45% of the total variation in the dependent variable was accounted for by the explanatory variables

Table 3: Ordinary Least Square Regression Table of the test of relationship between selected socio-economic factors and respondents use of Technical Information

Variables	Linear	Exponential +	Semi-log	Double-log
Constant	2.970	1.151	1.505	0.176
	(5.848)***	(3.819)***	$(0.799)^{ns}$	$(0.154)^{ns}$
Age	0.013	-0.001	0.290	0.111
	$(-0.146)^{ns}$	$(-0.175)^{ns}$	$(0.499)^{ns}$	$(0.316)^{ns}$
Years of Experience	0.022	-0.019	-0.359	-0.155
	(-1.826)*	$(-1.984)^{*}$	(-1.781)*	$(-1.267)^{ns}$
Household Size	0.086	0.046	0.393	0.238
	(2.506)**	(2.251)**	$(1.598)^{ns}$	$(1.598)^{ns}$
Extension Contact	0.345	0.201	1.020	0.616
	(5.512)***	(5.420)***	(4.659)***	(4.640)***
Stock Size	0.007	0.006	0.207	0.205
	$(1.279)^{ns}$	(1.878)*	$(1.093)^{ns}$	(1.783)*
R^2	0.443	0.447	0.414	0.411
Adjusted R^2	0.380	0.384	0.332	0.329
F-ratio	7.028***	7.134***	5.083***	5.028***

Computed from field survey data, 2019

Key: ns = not significant; * = 10% significant; ** = 5% significant; *** = 1% significant; ( ) = t-ratios

From the result presented in Table 3, Stock size with a t-ratio of 1.878 was significant at 10% level and positively related to the use of technical information by the respondents, this implies that an increase in stock size will result in an increase in the use of advisory services since farmers with larger stock size may be more concerned with acquisition of technical information whose application may result in increased farm output. The assumption is that farmers with larger stock size will most probably go for innovations and take associated risks that will bring about positive results in their enterprise and this corroborates the findings of Kalu *et al*. (2019), that farmers who operate at a larger scale are most likely to adopt innovations, since they may even have more money to pay for the innovation. Farming experience was also significant but negatively related to the use of technical information at 10% level with a t-ratio of -1.984. The result implies that a fewer years of experience in Piggery production will result in reduced use of technical information.

Household size also was significant and positively related to the use of advisory services at 5% level with a t-ratio of 2.251. The result implies that an increase in the household size will automatically lead to increase in the use of technical information. It has been observed by some authors that a larger household size provides a platform for sharing of knowledge by all members of the family where there are higher chances of individual members bringing innovations based on level of social interaction (Nwachukwu and Apu, 2008; Ekwe, *et al*, 2017). Level of extension contact was significant at 1% and positively related to the use of advisory services with a t-ratio of -5.420 which implies that increase in the level of contact with extension will result in more exposure to innovation and use of technical information. Several authors (Ekwe *et al*., 2017; Nwokocha, *et al*, 2017; Nwachukwu and Apu, 2008) have observed that when farmers do not make contact with extension they will not be open to innovations. From the foregoing, we therefore conclude that there is a significant relationship between the selected socio-economic factors and the use of technical information among Pig farmers in the study area.

Conclusion

The level of use of technical information among pig farmers in the study area is low. This low level of use of technical information is partly due to poor extension services provided in the area of livestock extension in the study area. Certain socioeconomic variables such as stock size, years of experience, extension contact and household size have significant influence on the use of technical information among pig farmers in the study area. The study therefore recommends the formation of cooperative groups by the farmers and a conscious attempt by the ADP and indeed private advisory service providers to reach out to pig farmers given its place in meeting the animal protein requirement of the people in the area.

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