AWARENESS AND USE OF RADIO-AGRICULTURAL RURAL FARMER PROGRAMME IN TECHNOLOGY TRANSFER TO RURAL FARMERS IN IMO STATE, NIGERIA

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ABSTRACT
This study was conducted in Imo State 2015 to assess the awareness and use of radio-agricultural farmer programme in technology transfer to rural farmers. The specific objectives of the study were to; describe the socio-economic characteristics of rural farmers and identify different improved technologies transferred. Multi-stage random sampling technique was used to select sample. Structured questionnaire containing information on the variables was used to elicit information from the three hundred and sixty (360) respondents. Data obtained were analyzed using descriptive statistics of frequency distribution, percentage and mean, as well as inferential statistics of simple regression analysis. Results on Awareness and Use of Radio-Agricultural Rural Farmer Programme indicate that there was high level of awareness of radio-agricultural farmer programme among farmers. Results on socio-economic characteristics indicate that most of the farmers were middle-aged, male and they were married.
Keywords: Awareness, Radio-farmer programme, technology, transfer, farmers.

Introduction

The role of agriculture in economic development has long been recognized and plays an important role in reducing poverty and serve as an engine for economic growth in developing countries (Foster and Rosenzweig, 2010). Today technology, creativity and information constitute the key driving force in social and economic progress of every nation; while in the past economic growth was underpinned by traditional factors of production. The critical drivers of global economic trends today are technology, creativity and information (Eboh, 2009). It is important that these technologies are transferred to rural farmers through the appropriate channels of communication such as radio-agricultural farmer programme.

The aim of transferring improved agricultural technologies to farmers is to bring about increased output and income. Adoption of improved agricultural technology is a function of good economic return or social standard (Mgbada, 2010). Technology transfer refers to the dissemination of improved technologies to farmers in a codified and understandable message through appropriate channel (Mgbada, 2002). Dissemination of agricultural technology is the process of informing and teaching farmers of the new technologies and helping them to figure out how to integrate it into their system (Ekwe and Onuka, 2007).

Use of radio-agricultural farmer programme was considered appropriate to create awareness of new ideas and reach large number of farmers quickly and alerting them of sudden emergencies. Radio-agricultural farmer programme was designed by ADP to facilitate the teaching and transfer of improved agriculture technologies to large number of farmers at the same time. Radio-agricultural farmer programmes are broadcast in local languages for effective communication. Farmers constitute the greater proportion of population in rural areas and need information fast in emergency situation in an economical way as large audience is covered at the same time in different locations (Agun, 2013).Radio-agricultural farmer programme acts as a substitute to school in air and performs extension roles. Radio-agricultural farmer programme has the potential to disseminate improved agricultural technologies to farmers as it offers both the reach and relevance to its listeners when the programmes are generated in a community based and participatory fashion.

Awareness is one of the five steps of innovation decision model designed by Roger. Awareness refers to the first time a person hears about the existence of a new idea. Despite, the potential role of agriculture in economic growth; agricultural production and yields have lagged far behind those in developing countries over the past few decades. Empirical evidence indicate that changes in output over change in input between 2002 – 2012; showed that food crop yield per hectare of land over the years remained on the decrease over a given period of time indicating poor yield (Njoku and Meremikwu, 2014). It is a reality that less attention is paid to rural farmers in the area of technology. There is a wide gap in awareness on the use of radio-agricultural farmer programme on agricultural production (Ango, *et al* 2013). Radio-agricultural farmer programme have received less attention due to poor financing by government and non-governmental organization.

Imo State Agricultural Development Programme (ADP) has through the radio-agricultural farmer programme transferred improved technologies to farmers in order to alleviate the problem of food shortage within the area. Despite efforts aimed at increasing food production in the

area, there is still very low food production in the area. Despite the awareness of radio-farmer programme on improved technologies, farmers still lack adequate adoption levels to increase their production. The study therefore assessthe level of awareness and use of radio-agricultural farmer programme in technology transfer. In order to address these problems some improved technologies are available to be disseminated to farmers via radio-agricultural farmer programme. These improved technologies if adopted would assist farmers to improve on their production practices. It is based on this background that this study was carried out to assess the awareness and use of radio-agricultural farmer programme in Imo State, Nigeria. The specific objectives of the study were to; describe the socio-economic characteristics of the farmers and determined level of adoption of technologies transferred. The study assumed that there was no significant relationship between the farmers socio-economic characteristic of radio and awareness and use of improved technologies transferred via radio-agricultural farmer programme.

Methods and Materials

This study was conducted in Imo State in 2015. Imo state is located in the Southeastern agro -ecological zone of Nigeria. It is bounded in the east by Abia State, North West by Anambra State, South South west by Rivers state. The state lies between latitude 5^0 45^1N and 6^0 35^1E of the Greenwich meridian.Imo state has a population of 3,934,899 persons, with a total area of 5,530km^2 (Kilometer square) (NPC, 2006). The state has a population density of 710 persons per square kilometer and the population is predominantly rural. The state is an agrarian state and lies within the tropical rainforest ecological zone. It experiences two major seasons, dry and rainy seasons and a short dry spell in August.

The major food crops produced include cassava, yam, cocoyam, maize and melon. Cash crops produced in Imo State include oil palm, rubbers and forest trees like iroko mahogany and obecho. The state is also endowed with mineral resources such as petroleum, kaolin, limestone, etc. The agricultural zones namely: Owerri agricultural zone with (12) twelve extension blocks, Okigwe agricultural zone with (6) six-extension block and Orlu with (9) ten extension blocks. The study locations for this study consisted of six (6) extension blocks of which two (2) each were purposively selected from each of the three agricultural zones in Imo State. The six (6) extension blocks namely; Ngor-Okpala, Ohaji/Egbema, Orlu, Oru-East, Obowo and Onuimo and (30) thirty extension circles namely; Nworie, Imerienwe, Umukaabia, Ohekelem, Orishaeze, AmalaNtu, Umuohiagu, Mbutu-Okahia, Obosima, Obasieke, Oloshi, Awara, Umunwabu and Ohoba-Ikwerede from Owerri agricultural zone, Others are Omuma, Mgbidi, Awomanma, Umuezela, IhiteOwerri, OwerreEbeiri, Umuowa, Ihioma, and Amaifeke from Orlu agricultural zone. The rest are Umuariam, Umulogho, Alike-Obowo, Umuna, Okwe and Okwelle from Okigwe agricultural zone.

The population for the study consisted of all the smallscale farmers in Imo State. Multi-stage random sampling and purposive techniques were adopted for the study. The population of farmers who were radio-agricultural farmer programme listeners were sampled. There was three thousand six hundred (3600) ADP-registered farmers who were radio-agricultural farmer programme listeners from the zones as documented by their ADP zonal extension agents. The first stage involved a random selection of two extension blocks from each of the three agricultural zones of Imo State, giving a total of six (6) selected extension blocks.The second stage consists of a proportional sampling of (30) thirty circles from the six selected extension blocks. The third stage involved a purposive selection of (12) twelve farmers from each of the twelve (30) circles making a total of (360) three hundred and sixty farmers. Which formed the sample size of the study.The main instrument of primary data collection was a structured questionnaire which was validated and tested for reliability.

The primary data obtained were analyzed using descriptive statistics of frequency distribution, percentage and mean, while regression analysis was used. Socio-economic characteristics of respondents were analyzed using frequency distribution, percentage and mean.

Statistical analysis of different improved technologies transferred via radio-agricultural farmer programme was achieved using frequency, distribution and mean. A 3-point likert scale was used to get the mean. Based on the mean score, decision rule any mean score greater than or equal to 2.00, implied that technology was transferred.

On the level of awareness of the use of radio-agricultural farmer programme in technology transfer. This was achieved using frequency distribution, percentage and mean. A 5-point likert type scale was used to get the mean.

Based on the mean score, decision rule, any mean score greater than or equal to 3.00 indicates awareness.

The study assumed that there was no significant relationship between the farmers socio-economic characteristics and the level of awareness and use of radio-agricultural farmer programme. The study was analyzed using a multiple regression analysis.

This multiple regression model is implicitly specified as follows:

$Y = f(x_1, x_2, \ldots\ldots x_{15,} + e)$

Where,

Y = awareness of agricultural technologies transferred

X_1= cost of technology transferred to farmers (in naira)
X_2= availability of technology to be transferred (available=1 otherwise=0)
X_3= number of farmers that adopted transferred technology
X_4= accessibility of the radio-farmer programme (accessible=1, otherwise=0)
X_5= quality of technology transferred to farmers (high=1, otherwise =0)
X_6= nature of technology transfer to farmer (satisfactory=1, otherwise=0)
X_7= age of respondents in years (years)
X_8= sex of respondent (male =1, female= 0) dummy
X_9= level of education of respondent in years spent in school (No formal education = 0, primary = 6, secondary 12, tertiary = 14).
X_{10}= marital status (single=1, married =2, widow =3)
X_{11}= level of income of respondents (in naira)
X_{12}= household size (number of person living in household)
X_{13}= ownership of radio set (yes 1, otherwise 0)
X_{14}= adequacy of radio agricultural convenience of programme (convenient 1, otherwise 0)
X_{15}= provision of agricultural information/technology by radio-farmer programme to farmers (yes 1, otherwise0)
ei= error term
The multiple regression analysis is explicitly specified as:
The four functional forms are expressed as fellows
i. linear function $y= b_0+ b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4+ b_5x_5+ ei$
ii. semi log function $y = lnb_0+b_1lnx_1+b_2lnx_2$
iii. exponential function lny: $b_0+ b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4+ b_5x_5+ ei$
iv. double logfn or logbo- Douglas function $Lny= Lnb_0+b_1Lnx_1+b_2Lnx_2 +b_3Lnx_3 + ei$
Where
Y = Awareness level (index), $X_1 – X_6$ = Parameter/estimates
Intercept $b_1 – b_6$ – estimate

Results and Discussion

Socioeconomic factors of the Rural Farmers in Imo State

Data in the Table 1 show that large proportion (48.9%) of the farmers belonged to the age bracket of 40-49 years, while 9.2% and 19.4% of them belonged to the age groups of 30-39 years and 50-59 years respectively. Only 2.2% of the farmers were below 20 years of age, while 14.4% of the farmers were in the age group of 60 and above years. The mean age of the farmers was 46.0 years which implies that the farmers were at the active stage of life and have the advantage of increased investment and improved agricultural technology utilization and hence innovativeness.

The finding on mean age of the farmers agreed with those of Kolawale*et.al* (2003) and those of Agwu*et.al* (2008) that most farmers in Nigeria are at the active stage of life and not relatively old. This result differed from those of Akinola (2003) and Agba (2000) that there was a relatively high proportion of old farmers in Nigeria. The table shows that most (78.9%) of the rural farmers were males, while 21.1% of them were females.This finding implies that farmers that use radio-farmer programme to obtain information on agricultural technology transfer was dominated by the male farmers. This is in line with apriori expectation and support earlier findings (Akintayo, 2011, Otitoju and Arene, 2010) which showed that Nigerian Agriculture is still male dominated. The table indicated that majority (83.9%) of the farmers were married, while only 7.8%, 5.8%, and 2.5% of them were widowed, single, and divorced/separated respectively. This finding implies that most of the farmers have more family responsibilities and therefore would be eager to obtain information through radio-farmer programme and other sources on recent technologies that would improve their farm income.

The distribution of farmers according to household size is presented in Table 1. Data in the table indicates that most (56.7%) of the farmers had 5-8 persons in their households, while 19.2% and 11.9% of them had 9-12 persons and 1-4 persons in their households respectively. The mean household size was 8 persons. The implication of this result is that more family labor since relatively large household size is an obvious advantage with respect to farm labour supply. Also, there may likely be opportunities of enough technology information spread since every member of a household is a potential source of information.

The table shows that most (60.8%) of the farmer spent 7-12 years in formal education, while 21.9%, and 11.4% of them spent 1-6years and 13-18 years in school respectively.The mean level of education was 8.5 years. This result implies that most of the farmers were literate and this is an advantage of adoption and utilization of agricultural technologies as education has been shown to be a factor in the adoption of high yielding modern farm practices (Obinne, 1991). Also, education is a means of facilitating farmers' use of written information sources and increasing their knowledge and comprehension of new farm practices (Asiabaka, 2002; Rogers, 2003; Mathews-Njoku, 2005). The result further implies that the high level of education among the rural farmers would likely make them more responsive to many agricultural extension programmes and policies since education provides individuals with a tool to accept positive changes. According to Agwu and Anyanwu

(1996), increase in education of farmers positively influencing adoption of improved technologies.

The distribution of farmers according to farming experience is presented in Table 1. Data in the table show that large proportion (43.9%) of the farmers had 11-15 years of farming experience, while 28.6% and 11.9% of them had 6-10 years and 16-20 years of farming experience respectively.The mean farming experience was 11.6 years which is long enough. Long farming experience is an advantage for increase in agricultural production since it encourages rapid adoption of improved technologies (Obinne, 1991). According to Nwaru (2004), improvement in a farmers production activities because of the number of years a farmer spent in the farming business may give an indication of the practical knowledge he/she has acquired on how to overcome certain inherent problems at reduced cost.The distribution of the farmers according to farm size is presented in Table 1. The table shows that most (54.4%) of the farmers cultivated 1.1-1.6 hectares of farmland, while 29.4% and 10.8% of them had farm sizes of 0.5-1.0 hectares and 1.7-2.2 hectares respectively.The mean farm size was 1.3 hectares. This result implies that the study area comprised of small scale farmers. This finding is consistent with that of Akinola (2003) that Nigerian farmers are majority smallholders that cultivated small areas of farm land. The relatively small farm sizes of the subsistence farming which never encourages commercial agriculture (Agwu*et.al*, 2008). Previous researches. Agwu*et.al*, 2008; Perrin and Winkelman, 2004) have shown that relatively small farm holding could constitute a major constraint to technology adoption in agriculture.

The table shows that majority (88.6%) of the farmers belonged to farmers' associations, while 46.7%, 40.6%, 34.7%, and 30% of them belonged to church association, age grade, village group, and cooperative society respectively.Also, 25.6% and 15.8% of the farmers belonged to thrift association and woman group respectively. This high level of farmers' association membership implied high innovativeness among the farmers due to the presence of group dynamic effects. According to Agwu etal (2008), social association is an avenue where experience and information are shared among members. The table indicates that most (56.9%) of the farmers had annual farm income of ₦151,000 – ₦200,000, while 17.5% and 15.6% of them earned annual farm incomes of ₦201,000 and above, and ₦101,000 – ₦150,000 respectively. The mean annual farm income was ₦161,623.61 which implied that the farmers through operating on a small scale earned reasonable farm income after producing most of their family food consumption needs.The result further indicated that the farmers are capable of eking out living from their farm production activities, and also adopt improved farm innovations. The table shows that majority (87.2%) of the farmers sourced their funds through personal savings, while 52.5% of them sourced their funds through relatives/friends. Also, 19.2%, 8.9% and 6.4% of the farmers sourced their funds through microfinance banks, money lenders and commercial banks respectively. This result implies that farmers sourced their funds from various sources but the informal source were more prominent in the study area.The table indicates that most (53.6%) of the farmers had 1-2 extension visits, while 31.7% and 11.4% of them had no extension visit, and 3-4 extension visits respectively. The mean extension contact was 1.4 visits which implied low extension contact. This low extension contact does not augur well for technology adoption and transfer. The low level of extension contact appears to mean that the extension service/agents are not discharging their functions well in promoting agriculture in Imo State.

Table 1: Distribution of Rural Farmers according to socio-economic characteristics (n = 360)

Variables	Frequency	Percentage	Mean
Age (years)			
< 20	8	2.2	
20-29	21	5.8	
30-39	33	9.2	
40-49	176	48.9	**46.0 yrs**
50-59	70	19.4	
60 and above	52	14.4	
Sex			
Male	284	78.9	
Female	76	21.1	
Total			
Marital Status			
Married	302	83.9	
Single	21	5.8	
Divorced/Separated	9	2.5	
Widowed	28	7.8	
Household Size	1-4	43	11.9

5-8	204	56.9	
9-12	69	19.2	
13-16	27	7.5	
17 and above	17	4.7	8 persons
Level of Education			
0 (No formal Education)	18	5.0	
1-6	79	21.9	
7-12	219	60.8	
13-18	41	11.4	
19 and above	3	0.83	8.5yrs
Farming Experience			
1-5	37	10.3	
6-10	103	28.6	
11-15	158	43.9	
16-20	43	11.9	
21 and above	19	5.3	11.6 yrs
Farm Size			
0.5-1.0	106	29.4	
1.1-1.6	196	54.4	
1.7-2.2	39	10.8	
2.3-2.8	13	3.6	
2.9-3.4	6	1.6	1.3hect
Membership of social organisation			
Cooperative Society	108	30.0	
Farmer's Association	319	88.6	
Age Grade	146	40.6	
Village Group	125	34.7	
Women Group	57	15.8	
Thrift Association	92	25.6	
Church Association	168	46.7	
Annual Income			
≤ 50	4	1.1	
51-100	32	8.9	
101-150	56	15.6	
151-200	205	56.9	
201 and above	63	17.5	₦161,623.61
Primary Occupation			
Farming	251	69.7	
Trading	52	14.5	
Civil Servant	43	11.9	
Artisan	14	3.9	
Sources of fund			
Personal Savings	314	87.2	
Money Lenders	32	8.9	
Relatives/Friends	189	52.5	
Commercial Banks	23	6.4	
Microfinance Banks	69	19.2	
Extension Contact			
0 (No Visits)	114	31.7	
1-2	193	53.6	
3-4	41	11.4	
5 and above	12	3.3	1.4 visits

Source: Field Data, 2015

Agricultural Technologies Disseminated through Radio- Agricultural Farmer Programme

The data in table 2 shows that all the technologies had mean scores 2.0 and above, which implied that all the technologies listed were disseminated to the farmers via the radio-agricultural farmer programme of Imo State.

Table 2: Distribution of farmers by agricultural technologies disseminated via radio-agricultural farmer programme

Technologies	Farmers' Responses						
	Yes (3)		No (2)		Don't Know (1)		Mean
	Freq	%	Freq	%	Freq	%	($\bar{X}$)
Practical tips towards crop production	316	87.8	41	11.4	3	0.8	2.9*
Catchment pit construction	258	71.7	72	20.0	30	8.3	2.6*
Fertilizer and fertilizer application	324	90.0	33	9.2	3	0.8	2.8*
Dry season vegetable production technique	297	82.5	45	12.5	18	5.0	2.8*
Cassava processing techniques	285	79.2	61	16.9	14	3.9	2.8*
Soil conservation methods/mulching	263	73.1	59	16.3	38	10.6	2.6*
Cassava/yam/maize/ intercrop	271	75.3	52	14.4	37	10.3	2.7*
Yam minisett production techniques	253	70.3	64	17.8	43	11.9	2.6*
Cassava/yam/melon/intercrop	258	71.7	65	18.1	37	10.2	2.6*
Plantain/Banana/production techniques	189	52.5	73	20.3	98	27.2	2.3*
Timely harvesting of yam/maize and its proper storage	303	84.2	48	13.3	9	2.5	2.8*
Weed and its control	285	79.2	53	14.7	22	6.1	2.7*
Staking of yam and vine trimming	274	76.1	69	19.2	17	4.7	2.7*

* Agricultural Technologies disseminated via radio agricultural programme

Source: Field Data, 2015

Level of Awareness of the Radio-Agricultural Farmer Programme to the Rural Farmers

The level of awareness of the radio-farmer agricultural technology transfer programme to the rural farmers was computed using a five-point likert type scale of strongly not aware to strongly aware.

The table shows that farmers had high level of awareness of the radio-agricultural farmer programme in the study area. The response are you aware of any radio agricultural-farmer programme in your area had the highest level of awareness (X = 4.7), followed by do you know that visiting/listening to the radio-farmer agricultural programme would help you to increase your output (X = 4.4).

The other responses that had high level of awareness were; are you aware of the benefits you stand to gain by listening to radio regularly (X = 4.2), and do you know that it was created by the government through ADP/IBC to transfer agricultural technologies to farmers (X = 4.0).

The implication of this finding is that farmers in the study area are aware of the radio-agricultural farmer programme in their area.

Table 3 Distribution of Farmers by Level of Awareness of Radio-Agricultural Farmer Programme.

Awareness of Radio-agriculturalfarmer programme	Strongly Not Aware (1)		Not Aware (2)		Undecided (3)		Aware (4)		Strongly (5)		Mean (X)
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	
Are you aware of any radio-agricultural Programme in your area	0	0	0	0	0	0	116	32.2	244	67.8	4.7*
Do you know that it was created by the government through ADP/IBC to transfer agricultural technologies to farmers	14	3.9	37	10.3	48	13.3	103	28.6	158	43.9	4.0*
Do you know the ADP extension agent or his/her office in your area	9	2.5	19	5.3	2.3	6.3	192	53.3	117	32.6	4.1*
Are you aware of the benefits you stand to again by listening to radio regularly	8	2.2	27	7.5	28	7.8	129	35.8	168	46.7	4.2*
Do you know that visiting/listening to the radio agricultural-farmer programme would help you to increase your output	5	1.3	18	5.0	21	5.8	115	31.9	201	56.0	4.4*

*Awareness of radio agricultural-farmer programme
Source: Field Survey, 2015

The assume study stated that, there was no significant relationship between the farmers' socioeconomic characteristics and the awareness and use of radio-farmer agricultural programme in the study area.

The results showed that the double-log function produced the highest value of coefficient of multiple determination (R^2), highest number of significant variables, and conformed to a priori expectations. The double-log function was therefore chosen as the lead equation.

The value of coefficient of multiple determination (R^2) was 0.7628, which implies that about 76% of the radio agricultural technology transfer programme was accounted for by the joint action of the independent variables included in the multiple regression model.

The coefficients of cost of technology transferred (x_1), availability of technology transferred (x_2), accessibility of the radio programme (x_4), quality of technology transferred (x_5), nature of technology transferred (x_6), level of education (x_9), level of income (x_{11}), and household size (x_{12}) were significant at 0.01 level, while the coefficients of number of food crop farmers that adopted transferred technology (x_3), age of farmer (x_7), sex of farmer (x_8), marital status (x_{10}), ownership of radio set (x_{13}), adequacy of radio agricultural convenience of programme (x_{14}), and provision of agricultural technology (x_{15}) were not significant at 0.05 level. The f-ratio is statistically significant at 1 percent which indicate that it is adequate for use in further analysis. Ango, *et al* (2013) also obtained a similar result in role of socio – economic parameter in determining the efficiency of urban agricultural in providing food security in Benin Kebbi metropolitan area Kebbi State, Nigerian. This is the line with apriori expectations that socio economic characteristics positively after awareness and use of radio-agricultural farmer programme.

Table 4 Results of Four functional forms of multiple regression analysis on relationship between farmers' socioeconomic and technology related characteristics and level of awareness of radio- agricultural farmer programme (n = 360)

Explanatory variables	Linear	Semi-log	Double-log	Exponential
Constant	229.034	187.165	143.407	102.559
Cost of technology transferred (x_1)	10.316 (1.953)	3.094 (1.388)	0.075 (3.912)**	0.006 (2.714)**
Available of technology transferred (x_2)	12.007 (1.663)	4.117 (2.542)*	0.064 (2.912)**	0.009 (2.543)*
Number of food crop farmers that adopted transferred technology (x_3)	10.827 (1.385)	3.529 (1.416)	0.046 (1.529)	0.003 (1.702)
Accessibility of the radio programme (x_4)	11.209 (1.822)	2.802 (1.713)	0.052 (3.673)**	0.006 (2.912)**
Quality of technology transferred (x_5)	10.116 (1.911)	3.417 (1.882)	0.085 (3.112)**	0.007 (1.613)
Nature of technology transferred (x_6)	13.065 (2.557)*	4.726 (1.903)	0.044 (2.915)**	0.005 (1.802)
Age of farmer (x_7)	-14.316 (-1.818)	-3.119 (-2.467)*	-0.072 (-1.603)	-0.006 (-1.713)
Sex of farmer (x_8)	-10.244 (-1.642)	-3.008 (1.716)	-0.039 (-1.416)	-0.008 (-1.553)
Level of education (x_9)	12.847 (3.109)**	4.994 (3.072)**	0.073 (3.108)**	0.009 (3.016)**
Marital status (x_{10})	11.333 (1.564)	2.908 (1.656)	0.046 (1.829)	0.007 (1.4418)
Level of income (x_{11})	14.592 (2.914)**	3.115 (1.777)	0.066 (4.169)**	0.008 (3.413)**
Household size (x_{12})	-10.827 (-2.668)**	-4.089 (-1.365)	-0.091 (-3.094)**	-0.006 (-2.556)*
Ownership of radio set (x_{13})	11.387 (1.514)	2.692 (1.409)	0.053 (1.316)	0.007 (1.811)
Adequacy of radio agricultural convenience of programme (x_{14})	12.464 (1.391)	3.547 (1.825)	0.081 (1.922)	0.004 (1.397)
Provision of agricultural technology (x_{15})	13.829 (1.698)	4.663 (1.742)	0.055 (1.613)	0.009 (1.814)
R^2	0.4938	0.4125	0.7628	0.6123
F – Value	21.9467**	16.1765**	73.7005**	36.1239**

Source: Field Data 2015
Figures in parentheses are t – ratios * significant at 5%, ** Significant at 1%

CONCLUSION AND RECOMMENDATIONS

This study was conducted to assess the awareness and use of radio-agricultural farmer programme in technology transfer to rural farmers in Imo State, Nigeria. The farmers were mostly middle aged, male and married. All the technologies listed were disseminated to the farmers through the radio-farmer programme in Imo State.

The farmers had low level of adoption of technologies disseminated because only one out of the 13 technologies disseminated had been adopted and used hence generally low level of adoption by rural farmers in Imo State. There was high level of awareness of use of radio-agricultural farmer programme in technology transfer to rural farmers in Imo State.

Socio-economic characteristics of farmers significantly/positively affected the effectiveness of radio-agricultural farmer programme in technology transfer in the study area.The value of coefficient of multiple determination (R^2) was 0.76258, which implies that 76.3% of the variation in the level of awareness of radio-farmer agricultural programme. There was high variation in level of awareness of the radio-farmer agricultural programme.

- Farmers should form listener groups and arrange to listen to the radio-farmer programme together in order to avail themselves the opportunity to interact and discuss the contents of the broadcast.
- Government should ensure that her law enforcement agencies implement the communication policies that affects radio-farmer programmes.
- Agricultural farm radio stations should be established within the reach of the farmers.
- The public Non-Governmental Organizations (NGOs) and private good spirited individual should try to sponsor some agricultural technology transfer programmes especially those that have strong concern with the needs and interest of the farmers.

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