AN EVALUATION OF EXTENSION TECHNOLOGY PACKAGES ON RICE PRODUCTION IN OGOJA LOCAL GOVERNMENT AREA OF CROSS RIVER STATE, NIGERIA.

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ABSTRACT
The study was designed to evaluate extension technology packages meant for rice production with the aim of assessing the rice production in Ogoja L.G.A. To identify various improved rice production packages recommended to farmers in the area, to determine methods of delivery to farmers adopted by extension assess degree of improved farmers to the rice production packages, to determine the effect of extension recommendations on rice production and identify variables influencing adoption of extension rice production programmes. Data was collected from 90 sampled rice farmers and 15 extension agents with the aid of semi-structured questionnaire. Analysis of data was done using percentages, frequencies and Chi-square statistics. The result shows lack of incentives, inadequate funding and irregular visitation which brought more serious constraints to the rice farmer. There is no significant relationship between improved technology packages and selected variable like (degree of extension contacts and farm size). Adoption of improved technology package is not significantly related to the level of education age and family size of the farmer. The adoption of improved technology package depends significantly on the source of information. Finally, it was recommended that the programme should be well funded and extension agents enlightened more on how to handle new programmes for better acceptance by rural farmers.
Keywords: Evaluation, Technology, packages, production, Rice, Adoption, socio-economic

INTRODUCTION

Government in attempt to pursue its' policy of self sufficiency in food production is paying particular attempt to the development and transformation of rural sector, so that it can make significant contribution to the overall economic growth while fulfilling its traditional governing function and providing raw materials for the industrial sector Cernea (1995). Rice is a staple crop in most countries of the world but meeting the desired need for the growing of rice in good quality in Nigeria has remained a major task for the Nigeria farmers who are mostly involved in small scale farming Abun (2005). Self sufficiency in food production to cater for the ever-increasing population of the country could be achieved through efficient information research dissemination by agricultural extension and the integration of relevant findings for production and higher rural income serve as production and higher rural income serve as the hallmark of agricultural development, which is a plight from traditional methods of farming to new science – based methods Campbell (1990) the shift, however implies farmers willingness to adopt new technologies successfully. This ensures the development of more intensive and improved farming systems with ultimate objectives of meeting the technological and related need of the various client groups in rural countries which amount for the bulk of the good consumed in Nigeria and other countries. The quality of resources used in primary production activities in most rural countries in Nigeria is characterized by old technique and drag forms that result in low output Uchendu, (1995). Most of our rural farmers are so attached to their fore-fathers,' laid-down methods of farming that it takes patient and courage to "win their minds" back to new/modern farming techniques Adie (2016).

Generally, technological utilization in Nigeria could be said to be faced with the problem of under capacity and over-capacity. Some of the common features of this challenges according to Osuala 2009 are one associated with low returns labour resources, a situation which is absolute for lender capacity.

The structure of technology of whether modern or traditional may be perceived as the framework of institutional behavioural and technological relationship which determines resources employments output efficiency and income in rural primary production of crops and output resulting from technology utilization.

Production of food in contemporary Nigeria has not been able to match population growth mainly due to the ways which faming activities are carried out especially in the rural areas. Olayide 2010 stated in quantitative terms this the demand for food in Nigeria exceed available supply in both nutrition and economic sense thereby creating deficits in the food balance sheets. However, it is evident that the situation is unlikely to change in the nearest future unless some positive steps are taken to reverse this.

The need for structural transformation of rural activities therefore calls for the introduction of improved farming technologies and programmes in the cultivation of food crops by farmers in the rural communities of Nigeria and Cross River State in particular it is usually assumed uplifting of the welfare and standard of living of the masses of rural people is a desirable goal any society must achieve, but one way of achieving this accordingly is to maximize income earning and

employment generating opportunities through better farming techniques. The adoption of agricultural innovation has constantly, been regardas a major step, in ameliorating farmers educational, economic and social needs Farinde (1996). This study however seeks to evaluate the impact of extension production programms with respect to rice production in Ogoja Local Government Area. Hence, the study sort to answer the following questions.

- What are the various improved rice packages recommended to farmers in the area.
- What are the methods of delivery adopted by extension agents to achieves effectiveness
- What is the degree of response by rural/Ogoja farmers in improved rice production packages?
- What are the impacts of extension recommendation on rice production in the area
- What are the farmers and extension related variable influencing adoption of technology packages in study area?

Ogoja Local Government Area of Cross River State is made up of four, major communities? Namely Ekajuk, Mbube, Nkim and Nkum, it is Located between latitude 06° 40' North and Longitude 08° 48' East of the equator. It has a total land mass of about 50 square kilometers (50km^2) CRADP (2002),Ogoja LGA has two major commercial towns which are Igoli and Abakpa towns where a lot of commercial activities take place.

Ogoja has a population density of about 1500 persons per square kilometer. Most people in Ogoja are farmers ranging from crop farmers, fisherman and palm wine tapers amidst

petty traders. The vegetation is derived guinea savannah characterized by tall shrubs and grasses. The soil type is sandy loam containing little amounts of organic matter which experiences a lot of bush burning during the dry season. The area possesses some form of mostly swamps scattered all over the places with a few streams and rivers. There is fairly distributed mean annual rainfall of about 1100mm beginning from May with a dry spell around August. The relative humidity is about 60% and mean sun - shine of 5 hours per day? The areas mean monthly temperature ranges from 25 - 35°c and may rise to as high as 40°c during the dry season CRADP, (2002).

POPULATTON AND SAMPLE SIZE

All farmers engaged in rice production whether contact or non - contact with extension in the area constituted the population for this study. However, using appropriate technique, a representative sample of the farmers were drawn for this research.

SAMPLE TECHNIQUE

On the basis of Cross River Agricultural Development Programme (CRADP) classification, of Ogoja Local Government Area is made up of four Agricultural communities. Using random sampling technique five Agricultural villages were selected from each community, given a total of 20 villages. From each of the selected villages a random sampling of 6 families was selected giving a total sample size of 120 farmers in the area.

Table 1: Summary of Farmers Response from selected Villages in the zone

COMMUNITIES	VILLAGES	SURVEYED NUMBER	NUMBER RETURNED	PERCENTAGE RETURNED
Ekajuk	Ekauk (1)	6	5	83,3
''	Egnun	6	4	
''	Onwa	6	5	
"	Ekpogarinya	6	6	
"	Mbok	6	5	
Mbube	Mbube West	6	4	76.7
	EgbeMbube	6	5	
	EkrntakMbube	6	4	
	EdumMbube	6	5	
	OdajiMbube	6	5	
Nkum	Nkurn– Era	6	3	73.3
	Bansara 1	6	5	
	Otutwe	6	4	
	Bansara 11	6	5	
	Bansara 111	6	5	
Nkim	Nkim (1)	6	5	66.7
	Alok	6	4	
	Nkim (11)	6	4	
	Ebunsara	6	3	
	Agbo	6	4	

A total of 120 farmers were given the opportunity to respond to the questions. Data collected and presented in table 1 above reveals that only 90 farmers representing 75.2%

responded accurately to the questionnaire and thus formed the study sample size.

INSTRUMENTS USED FOR DATA COLLECTION

The instruments used for the data collection was the questionnaire. The researcher developed one set of questionnaire which was administered to the farmers. Questions were formulated using the study objectives as a guide to obtain relevant information from the farmers. The instrument is protested to ensure validity and reliability of the information.

ANALYSIS OF DATA TECHNIQUE

Simple frequency distribution and percentages were used in presenting the data in some of the variables associated with rice production. However, the chi - square statistics was used to test the Hypothesis. The formular is presented as follows.

$$x^2 = \Sigma \frac{(observed - Expected)^2}{Expected}$$

$$x^2 = \Sigma \frac{(O - E)^2}{E}$$

$$Expected = \frac{Row\ Total \times Column\ Total}{Sample\ Size}$$

Degree of freedom d.f

$$= (Column - 1)(Row - 1)$$

$$= (C - 1)\ (R - 1)$$

PERSONAL AND DEMOGRAPHIC DATA OF RESPONDENCE

Table 2: Distribution of Farmers by Age

AGE	NO	PERCENTAGE
20 years	7	7.8
21-30 years	19	21.1
31-40 years	21	23.3
41-50 year	21	23, .3
51-60 above	22	24.4
Total	90	100.0

The data in table 2 shows that 23.3% of the farmers were within the age brackets of 31 - 40 years while 23.3% were between 41 - 50 years. And only 24,4% respondent were 51 - 60 years and above the result revealed that majority of farmers in Ogoja Local Government Area were in their middle age of 31 - 50 years.

Table 3: Distribution of Farmers by Sex

SEX	NO	PERCENTAGE
Male	67	74.5%
Female	23	25.5%
Total	90	100.0

Table 3 shows that 74.5% of the respondents were male while 25.5% we female respondents. This result shows that more males were engaged in rice production than females. This is in consonant with the popular traditional law in parts of Ogoja which forbids females from planting rice.

Table 5: Distribution of Respondents based on Marital Status

MARITAL STATUS	NO	PERCENTAGE
Single	16	17.8
Married	45	50.0
Separated	24	26.7
Widowed	5	5,6
Total	90	100

The data in table 4 shows chat 50% of the farmers were married while 17,8% were single. The result equally showed that majority of the respondents were married and had families. But for one reason or the other 32.3% of the respondents were not living with their spouses. The implication of this finding is that majority of the respondents would have additional family responsibilities to cope with their farming responsibilities.

Table 5: Distribution of Respondents based on Educational Status

EDUCATION STATUS	NO	PERCENTAGE
FSLC	21	23.3
SSCE/WASC	16	17.8
NCE	18	8.9
ND/OND	7	7 8
HND	4	4.4
B.SC	2	2.2
NO SCHOOL AT ALL	2	35.6
TOTAL	90	100.0

Table 5 shows that 35.6% of the respondents did not go to school at all while 23.3% of them had only FSLC, Whereas

17.8% had their SSCE / WAEC. The results showed that only very few educated people were involved in farming in Ogoja. The corollary is that the bulk of the rice farmers in the area are illiterates and this could constitute a major militating factor to the adoption of technology.

Table 6: The Distribution of Respondents based on Family Size:

| FAMILY SIZE | RESPONDENTS | TOTAL |
PERCENTAGE		
1-3	32	35.6
3-6	32	35,6
7 and above	26	28.8
Total	90	100.0

Table 6 above shows that majority of the respondents had family sizes range between one and six while 28% of them had family sizes more than 7 showing that most of the farmers in Ogoja agricultural zone had large family sizes.

TABLE 7: Distribution of Extension Agents according to Mode of Communication of Technologies Utilized.

MODE	RESPONDENT	PERCENTAGE
Personal/home/ Farm visits	10	66.67
Group meeting	15	100.00
Demonstration	12	80.00
Mass media	2	13.33
Poster	4	26.67

Table 7 shows that all workers (100%) utilized group meeting as a means of communicating information to the rice farmers while 80% of them used demonstration. Whereas

(66.67%) of the agent used personal visit as their means of reaching out and communicating ideas to the farmers, only (26.67%) used poster. The result the result also showed that the most widely used means of communication were group meeting, demonstration and persona! visits. Mode of communication is a very vita! tool for rice production, in that: if well applied, it will go a long way to solving the problem of lack of communication between the extension agents and the rice farmers in Ogoja local government area

Table 8: Distribution of Respondents According to Source of Information-Percentage

Friends and relatives	46	51,1
Extension agent	23	25.5
Cooperatives	12	2,2
.	15	13.3
Publication		
Radio/TV	4	4.4

The table shows that most rice farmers got their information from friends and relative (51.1%) while (25.5%) of the respondents got their information through extension agent, whereas (13.3% of the farmers got information through publication i.e. Newspapers/bulletins. Only 4.4% got their information from radio and TV. However2.2 got their information from cooperatives. This reveals that the most common and effective means of obtaining information by the rice framers was through friends and relatives.

Table 9: Distribution of Respondents based on Level of Awareness

Technologies	Level of awareness			
	Aware		Non Aware	
	No	%	No	%
1. Improved rice variety	80	88.9	10	11. 1
2. Fertilizer	75	83.3	15	16 7
3. Herbicide Insecticides	25	27.3	65	72 2
4. Machines	39	43.3	51	56 7
5. Direct Seeding in row on ploughed and harrowed land	70	72.8	20	22 2

	No	%	No	%
6. Broadcasting in planed and harrowed land	79	87.7	11	12.3
7. Use of chemicals (Granular 2, 4-D) to kill weeds	20	22.2	70	77.8
8. Use of urea in paddy to control stern borer.	-	-	90	100

The data in table 9 shows that the highest level of awareness by respondents was in "improved rice variety", (88.9%) This was followed by broadcasting in ploughed and harrowed land(87.79%) most of the respondent were not aware of the use of urea on paddy, hence their level of awareness was very low. The result of the findings showed that farmers in the study area were more familiar with fertilizer compared to chemicals.

Table 9B: Distribution of Respondents based on Level of Adoption of Rice Technologies

Technologies	Adoption		Non-Adoption	
	No	%	No	%
1. Improved rice variety	60	66.7	30	33.3
2. Fertilizer	28	31.1	62	63.9
3. Herbicide /insecticides	13	14.4	77	85.6
4. Machines	36	40.0	54	60.0
5. Direct Seeding in row on Plowed and harrowed land	20	22.2	70	77.8
6. Broadcasting in plowed and harrowed land	55	61.1	35	38.9
7. Use of chemicals (Granular 2, 4--D) to kill weeds	-	-	90	100
8. Use of urea in paddy to Control stem borer	-	-	90	100

From table 9b majority of the respondents adopted more of improved rice variety 66,7% as highest and fertilizer 31.1%, machines 40.0% direct seed in row on plowed and harrowed land 22.2, Broadcasting in ploughed and harrowed land. The results reveal that improved rice variety, Broadcasting in ploughed and harrowed land and fertilizer where adopted more than other meaning farmers in the area were more familiar with improved rice variety, broadcasting in plowed and harrowed land, fertilizer were adopted and no much knowledge of the others.

Table 10: Respondent's Reasons for Non Adoption of New Practices.

S/N	REASONS	NO	PERCENTAGE
1.	Too complex practice	45	50.0
2.	Small farm holdings	55	61.1
3	High cost of practices	75	83.3
4	Practices with local idea	2.5	27.8
5	Lack of interest in practices	27	30.0
6	No information/poor extension contact	30	33.3

Table 10 shows that 83.3% of the respondents did not adopt rice production practices as a result of high cost while more than 61% did not adopt because they considered the farm holding while their operating too small. However, 50% attributed their failure to adopt to complexity of the practices and as such showed no interest. About 27.3% of them believed that the practices were not common and compactable to the focal customer/practices. This reactions and reasons of farmers were characteristic of mainly small-scale farmers and support the study of (Carr& Sandhu (1992). Which revealed that the benefits of technologies

recommended to farmers have tended to always favour large scales farm generators than small scale farm generators, therefore technologies must be appropriate to a particular life situation for it to work and various factor which influence their adoption should be considered in the design of the technologies.

Table 11: Response of Farmers on Percieved Constraint TO Rice Production

S/N 1	PROBLEMS	NO OF FARMERS	PERCENTAGE
1.	Inadequate land	66	73.3
2.	No labour availability	70	77.7
3.	Lack of money	74	82.2
4.	Inadequate seed	12	13.2
5.	Limited markets	19	21.1
6.	Lack of storage facilities	29	30,0
7.	Effect of traditional laws and beliefs	7	7.9
8.	Poor extension services	14	15.6
9.	High cost of technologies	50	55.6

According to data on table 11 lack of money (32,2%) and unavailability of labour (77.7%) were identified as the greatest constraints. While and (73.3%) and high cost of technologies (55.6%) were also identified. This means that the total production of farmer is a product of the interaction of a number of factors. Identification of these factors could be used as a guide in rendering assistance to the farmers by the government or other agencies.

Table 12: Distribution of Respondents based on Farm Sizes.

FARM SIZE	NO	PERCENTAGE
<.0.55	8	8.9
0.51-1.0	22	24.4
1.01-1.5	34	37.8
1,51-2.0	22	24.4
2.01-3.0	4	4.4
	90	99.9

The date presented on table 12 above shows that 37.8% had farm size ranging between 1.01-1.1.5 has while 24.4% of them had farm size of 0.51-10 ha and 1.51-2.0ha the study reveals that most farmers in the study area had farm size of below 1.5 ha put together. Over 80% of the entire farmers in the area had their farms scattered at different location.

Table 13. Distribution of Respondents based on Estimated Output

OUTPUT	NO	PERCENTAGES
1 - 1499Kg bag of rice	34	34.8
1,500 - 2,000kg of rice	42	46.6
2001kg + of rice above	14	15.6
	90	100

The data presented in table 13 shows that (34.8%) of the respondents have out puts of about l-1499kg and 46.6% had outputs of about 1.500-2000kg and 15.6% had 2001kg and above, revealing that farmers in the area are not well informed about extension programmes or new ideas.

Table 14: Distribution of Respondents based on Estimated   Income from Sales of Rice

ESTIMATE OF INCOME LEVEL/YEARS		ADOPTION		NON ADOPTION		TOTAL	
		No	%	No	%	No	%
Small N10,000	N5,000	8	8.9	5	5.6	13	24.4
Average 20,000	N11,000	38	42	28	31.1	66	73.4
Large above	N21,000 and	7	7.3	4	4.4	11	12.2
Total		53	55.5	37	41.1	90	100

The data presented in table 14 above reveals that (73.4%) of the respondents have earnings ranging between N10,000 - N20,000, where 14.4% of them earned between N5,000 - N10,000. Only 12.2% of them earned above 20,000, in a year. This means that rice farmers in Ogoja have generally, easy mega income of between N11,000 - N20,000 as a result of low output from farms.

Table 15: Distribution of Respondents by Frequency of Extension Contact

S/no	No of Extension Visits		No	%	No	%	No	%
1	No fixed	Time	18	4			22	24.4
2	Once in	a month	13	1			14	15.6
3	Once in	2 weeks	10	14			14	15.6
4	Once in	9 months	-	-				
5	None		22	18			40	44. 4
			63	27			90	100.0

The data presented in the 15 above shows that 44.4% of the respondents had no extension contact at all as they had never been visited by extension agent/ while 24.4% of the respondents were visited but at no fixed time of visit by their extension agent. Only 15% of the respondents were visited at least once a month. The result revealed that extension agent - farmer contact in the area was very poor and as such adoption of improved technology could be greatly hampered by in inefficient and lack of extension services.

Table16: Distribution of Respondent by Estimated Annual Income

Annual Income	No of Respondents	Percentage
<10,000	25	27.8
10,001-20,000	30	33.3
20,001-30,000	25	27,8,
30,000-50,000	-	-
Above	10	11.1
	90	100

The table shows that majority of the respondents received an estimated annual income of N10,000 - N20,000 i.e (33.3%) while (27.8%) of the farmers had average annual income of 21,001 -30,000. This shows that most of the farmers income is depended upon earnings, however this implies that a farmers' income is depended upon the scale of production and management practices adopted upon. Those that have small turnover. The annual income of respondent who were involved in fulltime farming or production of rice were seen to have better harvest.

Table 17: Distribution of Respondent by Source of Finance

SOURCE	RESPONDENT	PERCENTAGE
Self		55.5
50		
Groups/cooperatives	15	16.7
Government/banks	25	27.8
	90	100

Table 17 reveals that (55.5%) of the respondents fund their farming business by themselves while (27.8%) of the respondents receive funding assistance from government. Only (16.7%) receive their own funding from where they belong e.g groups, age guides, cooperatives and Osusu contributions. This implies that the capital output and availability source would pose a major constraint to establishing a rice farm.

TESTING OF RESEARCH HYPOTHESES
Hypothesis 1
There is no significant relationship between improved technology package and selected variables like (degree of extension contact and farm size).

Table 18: Relationship between Adoption of Improved Technology, and Frequency of Extension Contact to Farmers.

Occasion	Once a month	None	Total	X^2 Level of significance	
Adoption	18(15.34)	13(9.76)	22(27.89)	53(9.18)	
Non adoption	4(6.66)	11(12.11)	18(15.62)	23(5.991)	(S)
Total	22	14	40	76	

Table 18 the X^2 -cal is greater than X^2 -tab (that is 9.18 against 5,991). Therefore, the alternative hypothesis (ha) is accepted while the null hypotheses (Ho) is rejected, meaning that there is a significant relationship between adoption and frequency of extension contact to fanners. Thus, the number of visits an extension agent makes to message delivered constantly resounded in the farmer thereby enhancing adoption.

TABLE 19: RELATIONSHIP BETWEEN ADOPTION AND INCOME LEVEL

The income groupings of farmers was done namely small, average and large thus farmers with income level of N5000-1000 were seen as small, while those with N10,000 - N20,000 are seen as average, and also N21,000 and above are seen as those with large income level.

Small	Average	Large	Total	X^2	Level of significance
Adoption	8(7.66)	38(38.87)	7(6.48)	53	0.19
Non adoption	4(5.34)	28(27.13)	4(4.53)	37	5.991
Total	12	66	11	90	

d.f = 2 at 5%

Result in table 19 reveals that X^2 - Cal is 0,19 and X^2 -tab is5,991 since X^2 -cal is less than X^2-tab, the null hypothesis (Ho) is accepted while the alternative hypothesis (ha) is rejected. This means that there is no significant relationship between adoption of technology and income level. In other words, the income status of a farmer has no bearing on his rate of adoption.

Tables 20: Relationship between Adoption and Farm Size

	Small	Average	Large	Total	X^2Level of significance	
		0.285<0.5	0.51-1.5	01.51	above	5
Adoption	14(17.67)	35(23.02)	4(2.36)	53	11.04	5%
Non adoption	16(12.33)	21(23.02)	0(1.64)	37	5.991	(S)
Total		30	56	4	90	

Data on table 20 show that X^2 –Cal (11.04) is greater than X^2 -tab (5.991). Since X^2 - Cal is (ha) is accepted meaning that there is significant relationship between adoption and farm size. This means that the size of farm which a farmer owns and control will influence his acceptance and use of appropriate technology; despite how economically and technically superior the technology may be.

Hypothesis 2

The adoption of improved technology package is not significantly related to the level of education, age and family size of the farmer.

Table 21: Relationship between Adoption Educational   Level of Farmer

Among the farmer, three educational level was redefined namely no formal education (illiterates) FSLC – OND (intermediate and HND – B.Sc(highly literate).

	illiterate (no formal education)	intermediate (FSLC-OND)	Highly Literate (HND-B.Sc)	Total	X^2Level of significance	
Adoption	25(31.21)	22(18.26)	6(3.53)	53	7.84	(S)
Non Adoption	28(21.79)	9(12.74)	0(2.47)	37	5.991	
Total	53	31	6	90		

The result in table 21 shows that X^2- cal is 7.84 while X^2 – tab is 5.991. Since X^2 –cal is greater than X^2– tab the alternative hypothesis (Ha) is accepted, meaning that there is significant relationship between adoption of improved technology and level of education.

Table 22: Relationship between Adoption, and Age of Farmer

See table 17 for detailed distribution of age farmers. However, three age groupings was redefined namely young 20 – 30 years, middle 31 – 50 years and 51 – 60 and above.

	Young	Middle	Old	Total	X^2Level of significance	
Adoption	19(11.19)	25(24.73)	9(17.08)	53	22.56	S
Non Adoption	0(7.81)	17(17.27)	20(11.92)	37	5.991	
Total	19	42	29	90		

From table 22 X^2–cal is 22.56 while X^2–tab is 5.991. SinceX^2cal is greater than X^2–tab, the alternative hypothesis (ha) is accepted. The means that there is significant relationship between adoption and age of farmer. That is age is an important factor that affects adoption of new technology.

Table 23: The Relationship between Adoption and Family Size of Farmer

Small	Average	Large	Total	X^2	Level of significance
Adoption 18(18.84)	22(18.84)	13(15.31)	53	22.23	N, S
Non 14(13.16) Adoption	10(13.16)	13(10.69)	37	5.991	
Total	32	32	26	90	

From table 23, X^2 –cal is 2,23 and X^2 –tab is 5.991. Since X^2-cal is less than (<) X^2-tab the null hypothesis (Ho) is accepted, meaning there is no significant relationship between adoption and family size of farmer. That is, it does not matters how money people are in a family. If a farmer finds a technology technically feasible and economically viable, he will adopt it.

Hypothesis 3
The adoption of improved technology package depends significantly on the source of information.

Table 24: Relationship between Adoption of Technology and the Source of Information

Friend Relatives	Mass media	Extension agent	Other	Total	X^2 Level of significance	
Adoption 5%	34(30.67)	0(2.67)	23(22)	3(4.67)	60	11.11
Non (S) adoption	12(15.33)	4(1.33)	10(11)	4(2.33)	30	7.815
	46	4	33	7	90	

Data on table 24 shows that X^2-cal is 11.11 while X^2-tab is 7.815. Since X^2-cal is greater than X^2–tab, the alternative hypothesis (ha) is accepted. The means that there is a significant relationship between adoption and source of information. Meaning that farmers with access to regular

source of information are likely to adopt new technologies than those that have no access to source of information.

CONCLUSION

Small-scale farmers are the centre piece of Nigeria's agricultural production strategy, but if their aggregate production is to meet the nation's rapidly increasing demand for food and agricultural products due to the nations presently uncontrolled population growth, the small-scale farmers must be encouraged to adopt improved and new technologies. The study also revealed that the extension services available to the people was sub-standard and ineffective, as a lot of things assumed were on paper not on ground as in not reaching the farmers the way they presume. It is therefore important that the government should strengthen the extension network in the area in order to curb the constraining factors to enable farmers gain more knowledge and to produce efficiently and adequately.

RECOMMENDATION

Base on the findings of the study, the following recommendations are made:

1. The technologies generated must be effectively and efficiently   disseminated to the farmers by creating sufficient awareness on them. Participatory involvement should come to play.
2. Farmers must be made willing and more importantly, able to adopt and use these improved technologies profitably on their farmers, through effective extension farmer contact.

3. To alleviate the problems of farmers, government should assist farmers by providing enough credit facilities and input to enhance adoption and growth,

4. Government through its land use act of 1978 should intervene to redress the issue of land tenure.

Government should provide more funding for rice farmers to enable them go through the huddles of capital in availability.

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