IASET: International Journal of Agricultural & Bio-Chemical Science (IASET: IJABS) ISSN(P): Applied; ISSN(E): Applied
Vol. 11, Issue 2, Jul–Dec 2022; 9–16

International Academy of Science, Engineering and Technology
Connecting Researchers; Nurturing Innovations

LEVEL OF USE OF EXTENSION TRAINING RECOMMENDATIONS AMONG MAIZE FARMERS IN SURULERE LOCAL GOVERNMENT AREA OF OYO STATE, NIGERIA

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ABSTRACT

The application and utilization of extension recommendations would reflect the effectiveness of learning on the part of beneficiaries. Hence, the study assessed the level of use of extension training recommendations among maize farmers in Surulere Local Government Area of Oyo State, Nigeria. The study employed multistage sampling techniques to select 113 respondents. Validated instrument was used to collect data and analyzed with descriptive tools such as frequency counts, distribution, mean and rank, while Pearson product moment correlation and Chi-square inferential tools were used to make inference between variables.

*The mean age of respondents was 49 years, vast majority of the respondents were married with different educational background. The mean household size was 6 while and majority operate on small scale level with mean farm size of 2 acres. The result further revealed that pesticide application had the highest WMS of 3.32 and was rated first on the level of use of extension training recommendations, closely followed by herbicide application (WMS=3.30; 2nd), fertilizer application (WMS=3.17; 3rd), cultivation of improved seed variety (WMS=2.70; 4th).The age (r=0.724**; p≤0.000), level of education (r=0.316**; p≤0.000), household size (r=0.276***; p≤0.000), farming experience (r=0.840; p≤0.000), marital status (X^2=14.0357; p≤0.001), extension contact (X^2=7.442; p≤0.006) and primary occupation (X^2=59.566; p≤0.000) recorded a significant relationship with the level of use of extension training recommendations.*

The study recommends the need to encourage effective use of extension training recommendations through the provision of necessary supports to village extension agents inform of incentives and materials supports required for extension training; and the government at all levels should encourage maize production through subsidy support services to ease procurement of required maize production inputs and provision of soft loan to local farmers through the Bank of Agriculture and other related financial institutions.

***KEYWORDS**: Extension Training/Recommendations, Level of Use, Maize Farmers*

INTRODUCTION

The role of agriculture in national development cannot be overemphasized. Despite the recent growth of industries and trade systems for different commodities, agriculture maintains the lead in employment generation, especially in most agrarian communities in Africa. In Nigeria, the situation is peculiar in the rural areas where the people's means of living revolve around agricultural activities. The country is facing the problem of food shortages and relies on importation of most staple foods. Hence, the nation is faced with mounting bills as a result of importation. This scenario necessitates the need for scientific information that could help in increasing food production so as to meet the growing demand for food. In Nigeria, Agricultural Development Programme (ADP) plays the role of extension and input delivery services in the

agricultural sector. ADP liaises with the research institutes for improved technologies in order to effectively deliver services to the farmers. Village extension agents (VEAs) identify problems in agriculture at the grass roots level and then refer them to scientists for possible solutions (Umeh and Ekwengene, 2017). The scientists then work on them to provide solutions in the form of improved technologies. These solutions (improved technologies) are disseminated to the farmers for implementation. Standard agricultural advisory services and the supply of modern inputs such as seed, fertilizer, and other associated inputs are important for the promotion of agro-based agriculture among millions of small-scale farmers in Nigeria (Ogunsumi andAbegunde (2011).The most fundamental challenge facing the world today and Nigeria as a country is food insecurity. The current economic recession being experienced in Nigeria has exasperated the situation. It is against this backdrop that the current drive of Nigeria's agricultural policy has been aimed at ensuring sufficient and sustainable agricultural production to feed the over 188 million Nigerians and provide some for export (Bulatovic, Mladenovic and Rajovic, 2011; Nehru, 2009). It is expected that an effective extension strategy will provide adequate capacity building to sufficiently empower farmers/producers to move to the next level of sustainable agricultural production to ameliorate the current food insecurity looming in the country, Umeh and Nwachukwu (2015).

Sustainable agricultural development is purely based on the transfer of innovation and technologies. These innovations are regarded as new ideas, methods, practices, or techniques that influence active achievement and sustainably increase farm productivity and income. These innovations may be technical or social innovations. This innovation ranges from simple modified farm practice to completely new technology. Adequate access to information sources is a pre-requisite for an efficient educational programme because messages that go unheard or unseen cannot lead to change. Therefore, the study assessed the level of use of agricultural training recommendations among the maize farmers in Surulere Local Government Area of Oyo State, Nigeria. Specifically, the study described the socio-economic characteristics of maize farmers; identified extension training recommendations available to maize farmers; examined the extension training recommendations used by the maize farmers and determined the level of used of identified extension training recommendations by the maize farmers. The study further test for the relationship between independent and dependent variables

METHODOLOGY

The study was carried out in Surulere Local Government Area (LGA) of Oyo State,Nigeria. Oyo State is one of the major States that constituted South-western zone in Nigeria. The population of the study comprised both male and female maize famers in the study area.Multistage sampling technique were used for the selection of the respondents in this study. Firstly, 1% of the villages were selected. During the second stage, 60% of the registered maize farmers were randomly selected which amounted to a total of 113 respondents that constituted the sample size of the study. Validated interview schedule was used to elicit information from the sampled respondents. Both descriptive and inferential statistical tools were used for this study. The descriptive tools include frequency distributions, counts, mean and ranking; while Pearson product moment correlation and Chi-square analysis as inferential tool were used to make inference between the independent and dependent variables. The dependent variable was level of used of extension training recommendations and was measured on Likertscale of Very high (5), High (4), Moderate (3), Low (2) and Very low (1). Thereafter composite score of each determined level of used was employed to re-categorized level of used into 3-level of High (3), Moderate (2) and Low (1) with mean (x) ±SD.

RESULTS AND DISCUSSIONS

Socio-Economic Characteristics

The results on socio-economic characteristics was discussed in Table 1 and 30.8% of the respondents were between age 41-50 years, 26.9% and 22.9% were between 51-60 years and 31-40 years of age, while 19.7% indicated 60 and above years of age. The mean age of the respondents was 49 years. The result implies that respondents are still in their active and productive age, having the strength and the energy to cope with the energy demands of farming as well as capability to seek productive information. This result is in line with the findings of Tologbonse, Mesini and Tsado (2006) and Aromolaran (2013) who reported that most farmers in their studies were middle aged and young adults who are still very agile to seek innovation.

Table 1 further revealed that more than half (62.9%) of the respondents were male, while only 27.1% were female. The result implies that males involves in maize production than female counterpart. This result conforms to Mohammed and Danita (2012) who reported that menare always in the frontline, ever ready and willing to undergo training that could improve cassava production. Majority (95.6%) of the maize farmers were married andonly 5.4% were single. The result implies that the majority of the respondents were married. This status suggests that the respondents would exhibit a certain level of maturity and ability to identify needs for adequate use of extension training recommendations. On account of educational attainment, Table 1 shows that 46.0% of respondents had secondary school education, 31.8% had primary education, 20.4% had no formal education, and only 1.8% had tertiary education. The result shows that the majority of the respondents had formal education, which is expected to influence the farmers on the appropriate application of different extension training recommendations. This corroborated the finding of Aromolaran et al. (2017), who opined that the educational level of the respondents could influence their attitude towards training, thereby affecting their readiness to adopt and utilize innovation.

Furthermore, on household size, 46.0% had less than or equal to five households, while 56.0% had more than five. The mean household size was 6. This implies that most respondents have a large family size, which can also be used to argue for farm labor, especially in this season of limited farm labour availability. This result is supported by Asiabaka (2002), who also noted that large family size has a positive relationship with the rate of utilization of agricultural technologies. In respect to farm size, 62.5% cultivated less than 2 acres while 37.5% had above 2 acres. The mean farm size was 2 acres. This implies that the respondents were small-scale farmers, which is the nature of sub-Saharan African farmers generally, where the majority of the farmers operate on a small-scale at a subsistence level. The mean number of years of farming experience was 23. The result suggests that the respondents are experienced farmers. Asiabaka (2002) also listed farming experience as one of the factors that motivate farmers to accept new ideas and practices. The majority (69.0%) of the respondents have had contact with extension agents. The maize farmers' contact with extension agents is expected to increase their level of use of different extension training recommendations on maize production.

Table 1: Distribution of Respondents According to Their Socio-Economic Characteristics] N = 113

Socio-economic characteristics	Frequency	Percentage	Mean
Age (years)			
31-40	26	22.9	
41- 50	35	30.8	
51 -60	30	26.6	
> 60	22	19.7	
Sex			49
Male	71	62.8	
Female	42	37.2	
Marital status			
Single	6	5.4	
Married	107	95.6	
Educational status			
Primary education	36	31.8	
Secondary education	52	46.0	
Tertiary duration	2	1.8	
No formal education	23	20.4	
Household size			
≤ 5	52	46.0	
>5	61	54	
Farm size			
≤2	71	62.5	
> 2	42	37.5	6
Farming experience			
<10	37	36.3	
11-20	69	61.0	2
>20	7	2.7	
Extension agent			
Yes	78	69.0	23
No	35	31:0	
Primary occupation			
Civil servant	9	8.1	
Farming	75	67.8	
Trading	20	18.0	
Artisan	9	8.1	

Source: Field survey, 2022.

Available Extension Training Recommendations on Maize Production

The results on available extension training recommendations revealed that 92.9% indicated pest/disease control, fertilizer application (87.6%), herbicide application (85.8%), and pesticide application (84.1%). Other available extension training recommendations include cultivation of improved varieties (69.9%), improved water management (65.5%), planting space (50.4%), and post-harvest processing (46.9%). The result suggests that different extension training recommendations on maize production are available in the area. TShe disparity in the respondents' responses may be due to the type of recommendations adopted and used by the individuals. Farmers need information and technologies that will increase their level of income, but this trend points to an uneven level of usage of recommendations by the farmers in the study area. This is consistent with Adesope, Asiabaka and Agumagu (2007) findings, who reported that there are sufficient recommendation packages on the shelves and that the key to distributing and encouraging their usage is a strong agricultural extension system.

Table 2: Distribution Of Respondents by Available Extension Training Recommendations

Extension training recommendations	Frequency	Percentage
Planting cultivation of improved varieties	79	69.9
Improved water management	74	65.5
Post-harvest processing	53	46.9
Pest/disease control	105	92.9
Plant spacing	57	50.4
Fertilizer application	99	87.6
Herbicide application	97	85.8
Pesticide application	95	84.1

Source: Field survey, 2022 Multiple responses.

Level of use of Extension Training Recommendations on Maize Production

Extension training recommendations on maize production were identified and measured on a Likert scale of very high (VH), high (H), moderate (M), low (L) and very low (VL) (Table 3). Thereafter, the mean was computed and ranked accordingly. The result revealed that pesticide application had the highest weighted mean score, ranking first with a WMS of 3.32. This is closely followed by herbicide application, which ranked second with a WMS of 3.30. Next is fertilizer application, with a WMS of 3.17 (3^{rd}). Others are in the following order: plantation or cultivation of improved varieties (WMS = 2.70; 4^{th}), pest/disease control (WMS = 2.64; 5^{th}), improved water management (WMS = 2.59; 6^{th}), post-harvest processing (WMS = 2.07; 7^{th}), and plant spacing (WMS = 1.96; 8^{th}). The result implies that pesticide application was the most utilized recommended technology among the respondents. The variation in the level of use of different recommendations may be due to differences in their access to maize production inputs. This also highlights the importance of farmer training in the proper application of its recommendations, particularly pesticide application. This study supports Gutierez, Kogan, and Stinner (2003) and Rajotte, Norton, Luther, Barrera and Heong (2005) findings that pesticide and pest management training for farmers in Sub-Saharan Africa is generally lacking in extension systems. Erbaugh, Kibwika and Donnermeyer (2007) ascertain that limited and/or ineffective transfer of knowledge on pesticide and pest management strategies to farmers is connected to lack of understanding of different pest management strategies by the extension agents. Therefore, the exposure to and the training on pesticide application will help in bridging the gap that exists in that area and will lead to increased returns from maize production among the respondents.

Table 3: Distribution of Respondents According to Level of Use of Available Extension Training Recommendations

Extension training recommendations	Very High	High	Moderate	Low	Very low	WMS	Rank
Cultivation of improved varieties	12(10.6)	10(8.8)	57(50.4)	-	34(30,1)	2.70	4^{th}
Improved water management	119.7)	15(13.3)	42(37.2)	6(5.3)	39(34.5)	.59	6^{th}
Post-harvest processing	1(0.9)	14(12.4)	37(32.7)	1(0.9)	60(53.1)	2.07	7^{th}
Pest/disease control	3(2.7)	7(6.2)	50(44.2)	45(39.8)	S(7:1)	2.64	5^{th}
Plant spacing	1(0.9)	5(4.4)	38(33.6)	13(11.5)	5649.6)	1.96	8^{th}
Fertilizer application	3(2.7)	44(38.9)	49(43.4)	3(2.7)	14(12.4)	3.17	3^{rd}
Herbicide application	5(4.4)	56(49.6)	36(31.9)	-	16(14.2)	3.30	2^{nd}
Pesticide application	4(3.5)	64(56.6)	27(23.9)	-	18(15.9)	3.32	1^{st}

Source: Field survey, 2022; WMS: Weighted mean score.

Constraints to Effective Utilization of Extension Training Recommendations

Constraints to effective utilization of extension training recommendations were identified and measured on three rating scales of very severe (VS), severe (S) and not severe (NS) (Table 4). Thereafter, the mean was computed and ranked accordingly. Financial constraint had the highest weighted mean score (WMS) of 2.73 and was ranked first (1st), closely followed by the high cost of required production inputs (WMS= 2.67; 2nd), while inadequate/no access to bank loans was ranked third with a WMS of 2.65. In addition, inadequate farmland ranked fourth with a WMS of 2.43, unavailability of farm inputs ranked fifth with a WMS of 2.40, poor pest and disease ranked sixth with a WMS of 2.34, and climatic problems had the least ranking with a WMS of 1.86. The result implies that financial constraints were the major challenge militating against the effective utilization of extension training recommendations among the arable crop farmers in the study area. This finding corroborates Sutton (2009), who reiterated that utilization of recommended agricultural extension practices has been greatly constrained by financial limitations, lack of awareness of what can be achieved, and inadequate private sector and government advice and services.

Table 4: Distribution of Respondents According to Constraints to Effective Utilization of Extension Training Recommendation in the Study Area

Perceived constraints	VS	S	NS	WMS	Rank
Inadequate farm land	48(42.5)	65(57.5)	-	2.43	4th
Inadequate/no access to bank loan	74(65.5)	38(33.6)	1(0.9)	2.65	3rd
High cost of production inputs	76(67.3)	37(32.7)	-	2.67	2nd
Unavailability of farm inputs	60(53.1)	38(33.6)	15(13.3)	2.40	5th
Financial constraint	82(72.6)	31(27.4)	-	2.73	1st
Poor pest and disease	38(33.6)	75(66.4)	-	2.34	6th
Climatic problem (e.g poor rainfall)	14(12.4)	69(61.1)	30(26.5)	186	7th

Source: Field survey, 2022; WMS: Weighted mean score.

TEST OF HYPOTHESIS

The hypothesis was stated in the null form as follows:

H_0: There is no significant relationship between the selected socio-economic characteristics of maize farmers and their level of use of identified extension training recommendations.

For this hypothesis, Pearson product moment correlation (PPMC) and Chi-square analysis were employed to test the relationship between both dependent and independent variables. The result of PPMC (Table 5) revealed that some of the selected socio-economic characteristics of maize farmers, such as age (r= 0.724**; p≤ 0.000), level of education (r= 0.316**; p≤0.000), household size (r= 0.276***; p≤ 0.000) and farming experience (r= 0.840; p≤ 0.000), respectively, exhibited a significant relationship with the level of use of extension training recommendations. In the same vein, the result of Chi-square analysis (Table 6) also revealed that marital status (X^2= 14.0357; p≤ 0.001), extension contact (X^2= 7.442; p≤ 0.006), and primary occupation (X^2= 59.566; p≤ 0.0001) recorded a significant relationship with the level of use of extension training recommendations.

The above results implies that, all the aforementioned socio-economic variable have decisive influence on the use of extension training recommendations among the maize farmers in the study area.

Table 5: Test of Significant Relationship Between the Selected Socio-Economic Characteristics and Their Level of Use of Extension Training Recommendations Using PPMC Analysis

Variables	Correlation Coefficient (r)	P-value	Decision	
Age	0.724**	0.000	S	
Level of education	0.316**	0.000	S	
Household size	0.276**	0.000	S	
Farm size	0.039	0.612	NS	
Years of farming exp. (yrs)	0.840**	0.000	S	

Source: Data Analysis, 2022; Correlation is significant at 0.01 level; S: Significant; NS: Not significant.

Table 6: Test of Significant Relationship between the Selected Socio-Economic Characteristics and Their Level of use of Extension Training Recommendations Using Chi-Square Analysis

Variables	X^2-Value	Df	P-value	Decision
Sex	0.080	1	0.778	NS
Marital status	14.035	2	0.001	S
Pry occupation	59.566	3	0.000	S
Extension contact	7.442	1	0.006	S

Source: Data Analysis, 2022; X2: Chi-square; Df: Degree of freedom; S: Significant; Not Significant.

CONCLUSION AND RECOMMENDATIONS

Conclusively, the maize farmers have access to different extension training recommendations on maize production, though the usage is at different levels, and this may be attributed to differences in their access to required maize production inputs like fertilizers, improved seeds, herbicides, pesticides, etc. Socio-economic variables such as age, marital status, educational level, household size, and years of farming experience influence the level of use of extension training recommendations. The study therefore recommends the need to encourage effective use of extension training recommendations through the provision of necessary support to village extension agents, such as incentives and materials support required for extension training activities. The government at national, state, and local levels should encourage maize production through subsidy support services to ease procurement of required maize production inputs and the provision of soft loans to local farmers through the Bank of Agriculture and other related financial institutions. It is also important that extension agencies and non-governmental organizations take cognizance of the socio-economic factors of farmers in the designing and execution of extension training activities in order to ensure effective learning of its recommendations.

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