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<u>ISSN (Print): 2651-6144; ISSN (Online): 2651-6365</u><u>Website: http://www.jasd.daee.atbu.edu.ng</u> FACTORS AFFECTING ADOPTION OF RECOMMENDED MANAGEMENT PRACTICES ON SESAME PRODUCTION IN TAFAWA BALEWA LOCAL GOVERNMENT AREA OF BAUCHI STATE NIGERIA

¹Ladan, Y. M., ²Rabiu, D. and ³Usman, I.

¹Federal Road Safety Commission RS 3.3 Taraba Sector Command Jalingo, Taraba State Nigeria ²Third National Fadama Development Project, Taraba Agricultural Development Programme Jalingo, Taraba State Nigeria

³ Department of Agricultural Economics, Federal University Wukari, Taraba State Nigeria Corresponding Authors' Email: <u>abuahmadjahuni@gmail.com</u> GSM: +2348034538906

ABSTRACT

The study was conducted to analyze the factors affecting adoption of recommended Sesame production practices among Farmers in Tafawa Balewa Local Government Area of Bauchi State, Nigeria A random sampling technique was used to generate data from 120 respondents. Data generated were subjected to multiple regression analysis. The findings of the regression analysis revealed that 88.27% of the variations in the number of recommended practices by the respondents were explained by the independent variables included in the models. Sex, age, household size, farm size, farming experience, access to farm credit and number of extension visits were found to be significant. Non-availability of improved seeds, high cost of improved seeds, high cost of labour and inadequate credit facilities was identified as the major constraints to Sesame production technologies by the respondents. The study recommends provision of training to sesame farmers, adequate supply of improved short time sesame varieties at affordable price, strengthening the existing extension services, fair price for sesame as well as provision of credit facilities to boost adoption of recommended sesame production practices by the respondents **Key Words**: Adoption, Factors, Practices, Production and Recommended.

INTRODUCTION

Adoption of technology is the decision to make full use of a new idea as the best course of action available and involves a change in the orientation and behavior of the farmer from the time he/she becomes aware of the technology to its adoption (Pannel *et al.*, 2006). One major problem facing farmers in Nigeria is over-dependence on traditional technologies characterized by poor yield and inefficiency. Transformation of traditional farming system for increase food production calls for the adoption of improved recommended practices. It requires transforming agricultural activities from one dependent on traditional inputs to one with higher productivity (Onu, 2003).

However, sesame production has been an integral part of agricultural production in Bauchi State. A large number of households in the state engage in the production of the crop. There is growing concern for the provision of effective and sustainable agricultural extension services to the majority of smallholder farmers in whose hands the bulk of agricultural production lies. The smallholder farmers are constrained by many problems including those of poor access to modern inputs and credit, poor infrastructure, inadequate access to markets, land and environmental degradation, and inadequate research and extension services. These problems have caused low agricultural production and a continuous rise in the country's import bill on food items over the years of the food needs of the people (Egwemi and Odo, 2013).

Studies on improved agricultural technology adoption decisions have received attention of researchers and policymakers with the overall expectation that the adoption of agricultural innovation is a function of improved production capacity of the rural resource poor farmers, Saleh *et al.* (2015) in the study on the factors influencing adoption of SASAkawa Global 2000



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(SG2000)'s recommended maize production technologies in selected communities of Kaduna State, Nigeria, employed the t regression model to determine the factors influencing adoption of recommended technologies and found farmers education access to farm inputs, access to credit facilities and awareness of information source were significant at 1% level of probability. On the other hand, extension contacts, farming experience, membership of association and farm size were found to positively influence adoption of the recommended production technologies at 5% level of probability.

MATERIALS AND METHODS

The population of this study consists of sesame farmers of Tafawa Balewa Local Government Area of Bauchi State. All the eleven wards in the Local Government Area were considered for the study (Bununu (A), Bununu (B), Ball, Dull, Dajin, Kardam (A), Kardam (B), Lere north, Lere south, Wai and Tafshin). The list of the registered Sesame farmers was obtained from the Local Government Area., from the list; a total of 120 Sesame Farmers was randomly selected proportioned to the registered Farmers (Table 1).

District	Wards	Registered Farmers	Sample Size
Bula	Bununu (A)	138	14
	Bununu (B)	101	10
	Ball	114	12
	Dull	131	13
	Dajin	133	13
Lere	Kardam (A)	126	12
	Kardam (B)	117	12
	Lere (South)	95	09
	Lere (North)	98	10
	Wai	92	09
	Tafsin	61	06
Total		1206	120

Table 1: Distribution of Sample Size from the Study Area

RESULTS AND DISCUSSION

Factors affecting the adoption of recommended sesame Management Practices

The determinants of number of Sesame recommended practice adopted by the respondents in Table 3 were analyzed using multiple regression. The diagnostic test (F-value) shows that the model was fits the data analysis. The coefficient of multiple determinations revealed that 88.27% of the variations in the number of Sesame improved practices adopted by the respondents were explained by the independent variables included in the model. Seven variables namely; sex, age, household size, farm size, farming experience, access to credit and number of extension visits were significant.

The variable sex (X_1) has a positive coefficient (0.2356) and significant at 1%. This shows that male farmers adopt more Sesame improved technology than females which could be attributed to more involvement of males than females in most economic activities in the study area. The value of the coefficient revealed that if the number of males farmers increase by 1 unit the likelihood of adoption of more improved Sesame technology will increase by 23.56% all other things being equal. This agree with the findings of Mignouna *et al.* (2011) who stress that gender affects technology adoption since the head of the household is the primary decision maker and

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<u>ISSN (Print): 2651-6144; ISSN (Online): 2651-6365</u> <u>Website: http://www.jasd.daee.atbu.edu.ng</u> men have more access to and control over vital production resources than women due to sociocultural values and norms.

The result further indicated that age (X_2) of the farmers has negative coefficient (-0.5961) and significant at 10% meaning that, as age of farmers increase the less the number of improved Sesame technologies to be adopted. This could be expected because as farmers get older, they are likely to be more suspicious in adoption of improved farm technology thereby affecting its adoption. The value of the coefficient indicates that, for every 1 unit increase in the age of the farmers. There will be 59.61% decrease in the likelihood of adoption number of improved technologies.

The household size (X_4) of the respondent's has positive coefficient (1.6416) and significant at 5%. This shows that, a unit increase in farmers household size will lead to increase in likelihood of adoption of improved Sesame technologies by 164.16%. Large household size stimulates the adoption of Sesame production technology in the study area.

Farm size (X_6) has positive coefficient (2.2565) and significant at 1%. this indicates that a unit increase in farmers farm size will lead to increase in the number of improved Sesame technologies to be adopted by 225.65%. This could be expected because as farmers' farm size increases, they are likely to adopt new farming techniques that will boost their productivity and increase in farm income. Lavison (2013) stated that Farm size plays a critical role in the adoption process of a new technology. However, farming experience (X_7) has a positive coefficient (3.4148) and is significant at 1%. This shows that an increase in farmer's farming experience will lead to increase in the number of improved Sesame technologies to be adopted by 341.48%.

Access to credit (X_8) has positive coefficients (1.5515) and is significant at 1%. However, increase in access to credit by farmers will increase the likelihood of adoption of improved Sesame technology by 155.15%. This is obvious since credit serves as an incentive to the production and adoption of farm technologies. Also, most farm technologies are costly to acquire, farmers can only adopt them when they have access to credit from relevant financial institutions. This agrees with the findings of Ojiako *et al.* (2007) that access to credit has been reported to stimulate technology adoption. However, the results also clearly show that the coefficients of maturity period have a negative and significant relationship on intensity of use of the improved sesame seed varieties.

Variables	Coefficient	Standard error	t-ratios
$Sex(X_1)$	0.2352	0.0679	3.46***
$Age(X_2)$	-0.5961	0.3488	-1.71*
Marital status(X ₃)	-0.1883	0.1584	-1.19
Household size(X_4)	1.6416	0.5679	2.89^{**}
Education(X_5)	0.0564	0.0554	1.02
Farm size(X_6)	2.2565	0.3786	5.96***
Farming experience(X ₇)	3.4148	0.5657	6.04***
Access to credit(X_8)	1.5515	0.5666	2.74**
Number of Extension contact(X ₉)	0.5382	0.0702	7.66***
Constant	3.5964	0.9496	3.79***
Number of Obs=120, F-Statistic=91.96*			
F>Probability=0.0000, R ² =0.8827			
R ² Adjusted=0.8731			

Table 3: Factors influencing Adoption of Sesame Technology

*, **, ***=Significant @10%, 5% and 1% respectively

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Number of extensions contact (X_9) to farmers has positive coefficient (0.5382) and is significant at 1%. The result shows that a unit increase in extension agents contact with farmers will lead to increase in the adoption of improved Sesame technologies by 53.82%.

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Ojiako *et al.* (2007) stated that contact with extension agents has the potential to facilitate technology transfer and management at a low cost to the farmers and can also relay farmer's need to innovators and policy makers to ensure that innovation meets local needs.

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CONCLUSION AND RECOMMENDATIONS

The study concluded that most Farmer's decision to adopt more recommended Sesame production practices is influenced by their sex, age, household size, farming experience, access to credit and number of extensions visits to farmer as well.

The following recommendations are hereby made;

- i. Government and relevant agencies should provide training to the sesame farmers on improved sesame cultivation and crop management practices. This should also be enhanced by educating farmers to form a cooperative society, ensuring gender balance, and equitable distribution of land to ensure the adoption of improved Sesame technologies.
- ii. Ensure the adequate supply of improved and short-duration sesame variety seeds at the farmers' level and at affordable prices so that more improved sesame production techniques can be adopted by the farmers.
- iii. Existing extension services should be strengthened for higher adoption of sesame technologies. This can only be achieved if government and relevant agencies employ and deploy more extension personnel to rural areas to assist farmers in solving complex farming operations associated with Sesame production.
- iv. Ensure affordable price of the inputs and fair price of the output (sesame) for the farmers. This can be achieved by establishment of sesame marketing.

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