

# Motivational Factors that led to Soybean Farmers' Participation and Non-Participation in the Agricultural Development Programme in Zamfara State Nigeria.

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**Abstract:** The significant of any development programme is to transform the lives of people and their living standard as intended. Crop production is the major farming activities of rural household therefore the drivers of participation is determined by how the programme designed to motivate farmers as people participate in activities that address their various felt needs. The study thus analysed the Motivational Factors that led to Soybean Farmers' Participation and Non-Participation in the Agricultural Development Programme in Zamfara State. Multistage random sampling techniques were used in the selection of 600 respondents out of 2034 population sample frame that provide data for the analysis. The data collected was analyzed using logit regression. The study has shown Motivational factors that rose from the development programme were found related to farmers' participation were Input support, Technology, support, mechanization, market access. Results on motivational factors that led to participation in the programme found to be significant were; improved seeds, farm size, and price at 1% level respectively. The study recommends that training that includes group dynamics and Farm input subsidy should be provided for soybean producers as a motivational mechanism for participation.

**Keywords;** Motivational Factors, Soybean Farmers, Non-Participation, Participation, programme

## I. Introduction

Among motivational issues raised by the researchers which are related to farmers' participation and performance are creation of farmers' awareness at the on-set of agricultural development programmes; credibility of extension agent; timely supply of agricultural inputs and provision of physiological needs of farmers as motivating incentive.

The primary goal in each programme was the attainment of self-sufficiency in food production, supply of raw materials to industries as well as to increase the level of farmers' income and standard of living. State Government struggle was to provide sufficient food, and cash to the peasant farmers. That what led to the creation of Zamfara Comprehensive Agricultural Revolution Programme (ZACAREP) the programme was designed to intervene thus; through the farmer's group/association and Focus on the adoption of bottom up participatory approach [18]. Membership of cooperative organizations is expected to have a positive influence on a locative efficiency [12]; [17].

Farmers who belong to cooperatives are better informed on resource use and farm planning which enable them to utilize resources more efficiently. Farmer's participation in agricultural projects has a direct bearing on livelihoods, environment, poverty, malnutrition and cater for rapid population growth. Farmers are willing to participate in future agricultural projects when they aware of benefits that they can get by participating in the projects such as capacity building, exposure to new techniques and empowerment which may help them increase their production and eliminate hunger and poverty [10].

Association or group were formed for many number of reasons; viewed to be instrumental to Agricultural transformation and boosting productivity in the sector. Have been playing remarkable roles towards the growth and development of the national economy. Promoting a common interest as factors of making them responsible, effective, viable and efficient.

[3] Stated that Motivation is driven by both internal factors such as co-values referred to as ‘intrinsic’ and external factors such as rewards or benefits, referred to as ‘extrinsic’. However, findings by [5] established that though the former is stronger than the latter, the latter can easily act to displace the former. Research findings reveal that people participate in activities that address their various felt needs, goals and benefits [8]; [4] and [9].

Farmers who have access to credit are more likely to participate in an agricultural project. It is not uncommon for agricultural projects to either provide production credit to farmers or implement activities that are aimed at linking farmers to production credit. Some agricultural projects serve as guarantors for farmers to access credit while others have guaranteed funds. Farmers are therefore more likely to participate in these projects in order to be able to apply for such credit facilities. [13] [2] asserted that money remains the most significant motivational strategy. According to him, he said that money possesses significant motivating power in accomplishing a task. [15] Asserted that it is motivations that make farmers to contribute effectively to the progress of agriculture, thereby enhancing food security. Among motivational issues raised by the researchers which are related to farmers’ participation and performance are creation of farmers’ awareness at the on-set of agricultural development programmes; credibility of extension agent; timely supply of agricultural inputs and provision of physiological needs of farmers as motivating incentive.

One of the rationales for improving women participation in agriculture is that when a woman is educated, her children tend to be better fed and healthier. As a woman earns income, she is more likely than the man to spend it on improving the well-being of the family. This scenario can build women self-esteem and lead to a more participatory role in both public and family decision making [7].

Objectives; the purpose of the study was to examine Motivational Factors that led to Soybean Farmers’ Participation and Non-Participation in the Programme

**Research Hypothesis;** there is no significant relationship between participation and motivational factors.

## II. Methodology

The study was conducted in four of the fourteen Local Government Areas (LGAs) with the highest level of soybean production in Zamfara State. The selected LGAs were: Tsafe, Gusau, Maru and Bungudu. Zamfara State is located between latitude 10<sup>0</sup>40<sup>1</sup>N – 13<sup>0</sup>40<sup>1</sup>N and longitude 4<sup>0</sup>30<sup>1</sup>E – 7<sup>0</sup>06<sup>1</sup>E. The state has an estimated area of about 38,000 km<sup>2</sup>, about 50% of which is cultivated. It shares boundary with Sokoto state and the republic of Niger to the north, Kebbi and Niger States to the west, Katsina State to the east, and Kaduna State to the South [19]; [20].

### Population and sampling design

600 soybean farmers out of 2034 were selected for the study at this stage 29% was taken, as large sample is reasonable enough to give accurate data. Multistage random sampling technique was employed for the study four local governments were purposively selected for this study because of the good physical conditions of the soils and high concentration soybean farmers in the area. Four district from each local government were selected randomly and three villages from each district.

### Analytical tools

Logit regression was used to identify motivational factors that led soybean farmers to participate or otherwise in the programme, [6] used inferential statistics to analyze the data on the relationship between the likelihood of adoption of improved soybean seed as production technology and the various factors affecting it.

Theoretically, the Logit model is expressed as..... (1)

Where:  $e = a + b + u$

$a = \text{intercept};$

$b = \text{slope of the logit regression}$

$x$ =independent variable included in the model

$u$ = error term

$p$ = parameter in exponential form.

$$\ln Y = \frac{1}{1} pe(x) \dots\dots\dots(2)$$

Logistic regression is the most preferred where the independent variables are categorical or mix of continuous and categorical. In this study, we will code  $y = 1$  (adopter) and  $y = 0$  (non- adaptor).Maximum likelihood estimation model

$$Y = \ln\left(\frac{p_i}{1-p_i}\right) = b_0 + b_1X_1 + b_2X_2 + \dots\dots\dots b_nX_n + e \dots\dots\dots(3)$$

$$\ln Y = b_0 + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + b_n X_n + e \dots\dots\dots(4)$$

Where:  $e$  = Error term

$x_1$  =Loan from ZACAREP (N) this is the access to sources of credit by soybean farmers for the purpose of production. This was measured in Naira amount of credit obtained

$x_2$  =Farm Size (FSz) (ha.)

$x_3$  = current income (N) this is the amount of money realised from the sales of soybean in 2016 by the farmer within the season of the study. This was measured in Naira (₦)

$x_4$  = yield (Qty) this is the total quantity (output) of cotton harvested by the farmers measured in kilogrammes, divided by the total hectares.

$x_5$  = access to Market (1= access and 0 -not access) access to Market to the farmers for their excess produce.

$x_6$  = Improved seed (kg) = access of certified seed provided by the programme to the farmers.

$x_7$  = amount of Loan repayment (N) this is the amount of money or total equivalent of grains paid by the farmers at the end of harvesting period. This was measured in Naira amount of credit obtained

$x_8$  = Farmer training= Number of training attended by the farmer organised by the programme

$x_9$  = Access to tractor hiring = tractor hiring services benefited by the farmer organized by the programme.

$x_{10}$  = Access processing = knowledge and access to Processing of soybean crop by the farmer in the programme.

$x_{11}$ =Farm implement = this is the access to other farm implements to the farmer by the programme.

$x_{12}$ =Work bull = this is the access to ox and plough loan to the farmer by the programme.

$x_{13}$ = Insurance cover = this is the premium paid by the farmer/ha cost of production.

$x_{14}$ = Field days = this is the number of farmers' field days attended in the programme

$x_{15}$ = Agro chemical = this is the access to the Agro chemicals used by the farmer on soybean production.

$x_{16}$ = Price= price of the soybean/ 100kg bag in the study during production period.

$x_{17}$ = Loan access = this is the access to bank loan to the farmers other than ZACAREP loan package.

$x_{18}$  = Radio programme = this is the access to ZACAREP Radio programme in the study area.

$x_{19}$ = Cosmopolitaness = international field visit that a farmer attended, which was sponsored by the programme.

$a$ = Cons = Intercept

Odd ratio=  $\frac{p_i}{1-p_i}$

**III. Results and Discussion**

**Motivational Factors Influencing Participation in Soybean Production Project**

The factors influencing participation in ZACAREP Soybean production programme was examined using logit regression model the result was presented in Table1.The study found out that relationship exist between participation in ZACAREP. The pseudo-R square depicts the existence of linkages between the factors included in the model and participation. The Pseudo R-square predicted that 72.7% likelihood in participation or otherwise ZACAREP Soybean project was explained by all the factors

included in the model. Individually, farmers' farm size, provision of improved seed variety, price of soybean was found to be significant. The study established that farm size increase the likelihood of participation by 24.4% implying that a unit increase in farm size result in 24.4% increase in the likelihood of participation in the ZACAREP at (p<0.01). This result is supported by the report of [1] and [6] that Land size is also one of the indicators of the level of economic resources available to farmers

While provision of improved seed was found to increase the likelihood by 34.6%, unit increase in quantity of improved soybean provision farmer will result in 34.6% significant increase in the likelihood of participation in ZACAREP at p<0.01. The price of soybean also increase the likelihood of participation by a unit increase in price will result in 11.9% increase in the likelihood of participation. Similarly training also increase the likelihood by 7.98% coefficient at p<0.01 The farmers in this study perceived that motivation to participate in the programme is related to ambition to make profit, provision on of improved seed variety, price of soybean, market availability, improve standard of living, increase yield etc. This finding agreed with this finding is in agreement with [15] asserted that it is motivations that make farmers to contribute effectively to the progress of agriculture, thereby enhancing food security.

Although about 12 variables were found to decrease the likelihood of participation they fell below 1.96% coefficients, though they were not significant at different magnitude. The farmers in this study perceived that motivation to participate in the programme was related to ambition to make profit, provision on improved seed variety, price of soybean, market availability, improve standard of living, increase yield etc.

### Test of hypothesis

H<sub>0</sub>: There is no significant relationship between participation and motivational factors.

Motivational factors that rose from the ZACAREP development programme were found related to farmers' participation were Input support, Technology, support, mechanization, market access. Thus motivational factors are bounded on many factors as supported by [11] reported that [16] stated that human motivation is not unitary, but rather it is a configuration of many factors. There is no limit to the number of reasons why adults might want to learn something, as long as adults feel a sense of choice. Participation factors with respect to individual farmers' farm size, provision of improved seed variety, on price of soybean. From the result of the study which presumed that no relationship between participation and motivational factors. However, from the result above the study found that 72.7% variation indicated factors result in significant likelihood in participation, though the null hypothesis was rejected and the alternative hypothesis accepted.

**Table1.Motivational factors that led to participation in soybean production by the programme**

Variables	Co-ef.	Std. Err.	z-value	p>/z/
Intercept	-9.82	2.86	-3.44	0.001
Cash loan from ZACAREP (Naira)	-2.34	1.72	-1.36	0.174
Farm size under ZACAREP (hectares)	2.44	0.38	6.37	0.000***
Year started benefiting from ZACAREP	0.07	0.28	0.25	0.801
Changes in income (Naira)	-0.74	0.90	-0.82	0.411
Changes in yield (Kg per hectare)	-0.42	0.72	-0.59	0.556
Propensity to get market access (Yes/No)	-0.86	0.74	-1.17	0.243
Propensity to access improved seed (Yes/No)	3.46	0.63	5.51	0.000***
Loan repayment condition under ZACAREP (N)	-0.04	0.38	-0.1	0.920
Propensity to access training Yes/No	0.80	0.46	1.72	0.085
Access to tractor hiring services (Yes/No)	-0.26	0.42	-1.62	0.536

Access to processing equipment (Yes/No)	0.49	0.36	1.35	0.177
Access to other farm implement (Yes/No)	-0.16	0.45	-0.35	0.726
Accessed Work bulls support (Yes/No)	-0.13	0.51	-0.27	0.790
Premium cover =N=	0.23	0.25	0.93	0.352
Number of field days attended	-0.48	0.65	-0.75	0.455
Agro chemical in litres	1.32	0.83	1.59	0.113
Market Prize of Soybean (Naira per Kg )	1.19	0.52	2.3	0.021***
Access to loan outside ZACAREP	-0.87	0.96	-0.91	0.362
Number of Radio programme Listen to on ZACAREP Soybean Production	-1.37	0.96	-1.43	0.152
Pseudo R <sup>2</sup>	0.73			
LR chi 2 (22)	503.72			
Prob > chi 2	0.000			
number of obs	500			
Log likelihood	-94.72			

Source: Field survey, data, 2016. \*= P<0.10, \*\*=P<0.05 \*\*\*=P<0.01

#### IV. Conclusions and Recommendations

The study had uncovered several motivational factors that led to farmers participation among others were, easy access to improved seeds, fertilizer, insecticide, herbicides and marketing. The study revealed that, there was a great increase in soybean production level and income due to provision of inputs and adoption of extension production technologies.

##### Recommendations

The study recommends that training should include group dynamics and Farm input subsidy should be provided for soybean producers as a motivational mechanism for participation.

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