EFFECT OF THE NATIONAL SPECIAL PROGRAMME ON FOOD SECURITY (NSPFS) ON THE FOOD SECURITY STATUS OF RURAL HOUSEHOLDS IN NORTH-CENTRAL NIGERIA.

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ABSTRACT

The study determined the food security status and analyzed the influence of the National Special Programme on Food security (NSPFS) on the food security status of rural households in North-central Nigeria. Multistage sampling techniques were used. Data were collected using structured questionnaire. Data obtained were analyzed using Foster, Greer, and thorbecke index (food expenditure approach) and probit model. The mean age of the participants and non-participants were 43 years and 47 years respectively. The majority of the participants (95%) and non-participants (87%) were male and married. The average household size of the participants was 8.14 and 5.51 for non-participants. The result of the probit model analysis showed that non-farm income (P<0.01), Farming experience (P<0.05), participation (P< 0.01) and household size (p< 0.01) were significant factors affecting the food security status in the study area. The severity of food insecurity among the participants of NSPFS was 0.05 for participants and 0.07 for non-participants. In conclusion, participation in NSPFS had a positive and significant influence on food security. Therefore, farmers should be encouraged to participant in more agricultural development projects to improve the level of food security in Nigeria.

KeyWords

Agriculture, Development, Food security, NSPFS, Participation, Probit model, Rural Households.

INTRODUCTION

Regardless of ethnicity, color, or religion, food is everyone's fundamental need. As a result of this, agriculture is essential to maintaining life and serves as the bedrock of economic development in a country. Eboh (2008) pointed out that most of Nigeria's poor people live in rural areas and rely directly or indirectly on agriculture and its related sectors while owning or controlling few physical productive assets. In other words, the assertion above shows that agriculture (farming, forestry, fishing, and animal husbandry) serves as the main source of livelihood for most rural dwellers in Nigeria. The food security situation in Nigeria is awful because more than 7% of rural households are extremely poor and lack consistent access to the right quantity and quality of food needed to live a healthy and productive life (Babatunde et al., 2007). According to statistics, the percentage of Nigerians living in poverty rose from 54.7% in 2004 to 60.9 percent in 2011 (NBS, 2012). Furthermore, Sanusi et al. (2006) discovered that the incidence of food insecurity among rural households in Nigeria increased rapidly from 18% in 1986 to 40% in 2005. According to Kurwonu et al. (2013), the lack of access to the food needed for a healthy existence is the major cause of food insecurity in rural areas. In order to effectively reduce food

insecurity, sustainable agriculture and rural development projects and programs must continue to be the primary goals of the government and all stakeholder groups at all levels (Obisesan et al., 2016).

Over the years, the Nigerian federal government has implemented a number of agricultural projects (Metu et al., 2016). A small number of these programs are still active, but a great number of them have ended. These programs attempt to improve the food security situation of most rural households by raising farmers' incomes and means of livelihood (Oriola, 2009). According to Tiri et al. (2014), some of the agricultural programs include the National Accelerated Food Production Programme (1972–1976), the River Basin Development Authority (1975), Operation Feed the Nation (1976–1979), the Green Revolution (1980–1984), the Agricultural Development Programmes (1985), the National Directorate of Employment (1986–1993), the National Fadama Development Project (1992–2019), and the Root and Tuber Expansion Programme (2001–2010). Due to their inability to effectively target the poor rural farmers who are the main actors in Nigeria's agricultural sector, the majority of these agricultural development programs have suffered from persistent failure. In addition to the growing population and rising food demand, these programs have not been able to completely eliminate the problem of food insecurity. Moreover, the majority of agricultural development programs and projects were linked to particular administrations, and each gave way to a new one as frequently as governments shifted power or changed hands (Adebayo, 2004).

The Food and Agriculture Organization (FAO) launched the National Special Program on Food Security (NSPFS) to combat food insecurity around the world. The National Special Programme for Food Security (NSPFS) helps countries, especially but not solely low-income food-deficit countries (LIFDC), to increase food security in most rural and low-income households. The initiative was first implemented as a pilot phase in 1998 in Kano, the northern part of the country. The success of the pilot phase prompted the Nigerian government to create a 45 million USD Unilateral Trust Fund in 2002, which is jointly managed by the FAO and the Nigerian government. This fund was used to launch concurrent activities of NSPFS in 109 sites throughout all 36 states of the Federation and the Federal Capital Territory. The NSPFS aims to raise the financial status and standard of living of rural poor farmers by giving them loans and operational inputs to increase the production of their food crops and livestock (Agwu and Ugwu, 2008). The program also aims to improve the efficiency of research and extension services in bringing technology and new farming practices developed by research institutes to farmers. Farmers will be trained and educated on how to effectively utilize the land, water, and other resources, inputs, and facilities to produce food and create employment on a sustainable basis. (FAO,2002; FMARD, 2006; and Obiora, 2003).

Several studies have been carried out on NSPFS in several states in Nigeria. These studies focused mainly on the challenges involved in NSPFS implementation, the level of adoption of the program at the individual, group, or organization level, the impact of the program on the income of the beneficiaries, and rural infrastructural development in the participating communities. (Abdulhamid et al.,2014; Nwanyanwa,2018; Panwal et al.,2018). Based on the above premises, this study examined the food security status of participants and non-participants of the program and also analyzed the effect of participation in the NSPFS on households' food security status in the area of study.

METHODOLOGY

The study was conducted in the North-central region of Nigeria, which is composed of the six states of Benue, Kogi, Kwara, Nasarawa, Niger, and Plateau. It covers a 242,425 km2 human geographic area (MPWH, 2016). There are about 25.4 million people living in the region, according to NACETEM (2012). Farming is the primary industry in the area, which serves as the nation's agricultural hub. Crops grown in the area include groundnuts, citrus, oil palm, rice, sorghum, yam, and maize. A multistage sampling method was applied for this study. The initial stage will only include three of the six states in the zones. Because of their substantial agricultural populations, states like Nasarawa, Kogi, and Benue were chosen. The second stage involved the purposive selection of two local government areas and five communities from each local government based on the significant number of rural communities engaged in NSPFS. The third stage involved the stratification of participants and non-participants in NSPFS. The fourth stage involved the simple random selection of five (5) farmers from each start-up. 150 participants and 150 non-participants were selected, making a total of 300 respondents for the study. Primary data was used for the study. The data collected was analyzed using descriptive statistics, the Foster, Greer, and Thorcbecke index, and the probit model.

FOSTER, GREER, AND THORCBECKE INDEX (HOUSEHOLD FOOD EXPENDITURE APPROACH)

Using the Foster, Greer, and Thorcbecke index, the household food security index was utilized to identify the level of food security. According to Adepoju and Adejare (2013), the model calculated indicators such as the food insecurity gap (FIG), incidence, and severity of food insecurity among households.

Explicitly, $\text{FSI} = \frac{1}{n} \sum_{i=1}^{q} \left(\frac{T-S}{T}\right)^a$

Where;

FSI = Food security index; S = Per-capita food expenditure for all households (₦); T= Food security line represented as be 2/3 of the mean per capita food expenditure; q =number of household who falls below the food security line; n = total number of households in the sample; α = the aversion parameter taking the values of 0, 1 or 2.

PROBIT MODEL

The probit regression model was used to determine the food security status. The dependent variable was the probability of whether a household is food secure or not, and the explanatory variables include socioeconomic, demographic, institutional, and participatory variables assumed to influence the food security status. The estimated model was specified explicitly as follows:

YI =β0 + β1 AGEHD + β2 HHSIZ +β3FARMEXP + β4 MEMOASS + β5NONFARMINC+ β6PARTNSPFS + β7ACCEXT +£i

Where;

YI = food security status (1=food secure, 0=otherwise); AGEH = age of household head (years); HHSIZ = household size; FARMEXP = farming experience (years); MEMOASS= membership of other associations (1 = yes, 0 = otherwise); NONFARMINC = non-farm income (N); PARTNSPFS = participation in NSPFS (1=yes, 0=otherwise); ACCEXT = access to extension services (1=yes, 0=otherwise); £i = error term.

RESULTS AND DISCUSSION
SOCIO ECONOMICS CHARACTERISTICS OF THE RESPONDENTS

The analysis of the socioeconomic characteristics of the respondents showed that the mean average age of the participants and non-participants was 43 years and 47 years respectively. The majority of both participants (95%) and non-participants (87%) were male, and the majority of the participants (85%) and 82% of non-participants were married. The results revealed that the average farm size of both participants and non-participants was 6.01 and 2.39, respectively. The average household size was 8.14 and 5.51 for participants and non-participants, respectively. In terms of the number of years spent in school, participants spent an average of 14.78 years, while non-participants spent only 7.51 years in school; this shows that participants in the NSPFS were more educated than non-participants. The average annual income of participants in the NSPFS and that of non-participants was 768,300 and 675,800, respectively, with 89%, 62%, and 65% of the farmers having access to loans, extension services, and membership in farm associations, while 29%, 11% and 23% of non-participants had access to loans, extension services, and membership in farm associations.

TABLE 1; SOCIOECONOMICS CHARACTERITICS OF RESPONDENTS

Variables	participants (% or mean)	Non- participants (% or mean)
Age	42.55	46.83
Farm size (ha)	6.01	2.39
Farming experience (years)	15.66	17.98
Educational years	14.78	7.51
Household size (mean)	8.14	5.51
Gender		
Male	95	87
Female	54	63
Marital status		
Single	22	19
Married	85	82
Widowed	25	20
Divorced	22	26
Total amount of income (₦)	768,300	675,800
Access to loans	89	29
Access to extension service	62	11
Farm association membership	65	23

Source; field survey 2023

FOOD SECURITY STATUS OF RESPONDENTS

The food security status of the respondent, as displayed in Table 2 below, indicates that the mean per capita food expenditure for all households was 4759.95 (food security line). The result showed that 35% of the farming households were food insecure, while 65% were food secure. This implied that 65% of the respondents had per capita monthly food expenditure equal to or above two-thirds of the mean per capita food expenditure of the entire population, while 35% had per capita monthly expenditure. This study agreed with Abdulhamid et al. (2014) and Okeh et al. (2014) that the majority of farming households are food secure. The mean food security index for the participants in NSPFS was 1.72, while that of non-participants was 1.65. This implied that participants in NSPFS were more food-secured. Furthermore, the incidence of food insecurity among participants in the NSPFS project was 0.39, while that among non-participants was 0.43. This implied that 39% of the participants in the NSPFS had per capita food expenditure below the food security line, compared to 43% of the non-participants. This result suggested that participants in the project were more food secure compared to NSPFS non-participants. This corroborated Abdulhamid et al. (2014), who found out that beneficiaries of NSPFS were less poor after the project. The food insecurity gap of the participant NSPFS was 0.10, while it was 0.12 for the non-participants. This implied that the total mean expenditure needed to bring the food insecure participants of NSPFS at least to the food security line was 10% compared to the food insecure non-participants, who were 12%. These results suggested that participants in NSPFS were closer to the food security line than non-participants. This study corroborated Panwal's (2015) discovery that participants in NSPFS in the plateau have increased farm productivity and income compared to non-participants. The severity of food insecurity among NSPFS participants was 0.05, while it was 0.07 for non-participants. This implied that there was about 5% relative food deficiency among the participants of the NSPFS compared to 7% among the non-participants. This result suggested that participants in NSPFS had a low food deficiency compared to non-participants.

Table 2; Household food security status

Food security status	participants			Non-participants		
Mean food security indices	1.72			1.65		
Food security indices	Incidences	Gap	Severity	Incidences	Gap	Severity
Estimates	0.39	0.10	0.05	0.43	0.12	0.07
Standard error	0.05	0.02	0.01	0.05	0.02	0.02
Percentage	39	10	5	43	12	7

Source; field survey 2023, food security line; ₦4759.95

RESULT OF THE EFFECT OF PARTICIPATION IN NSPFS ON FOOD SECURITY STATUS

The probit model was used to determine the effect of participation on the food security status of the farming households in the study area. The result of the probit model is given in Table 3 below. Results revealed that the age of the household head, membership in other associations, and extension services were statistically non-significant factors influencing food security status. Although age had a positive coefficient, it was not statistically significant. This implies that age, membership in other associations, and extension services did not influence the food security status of the farming households in the study area. Farming experience had a positive coefficient and was statistically significant at the 10% level of significance. This implied that, with an increase in farming experience, the probability of the household being food secure increased in the study area. This was in line with Adeyemi et al.'s (2020) finding that food security is assured with an increase in farming experience.

The coefficient of non-farm income was positive and statistically significant at the 1% level of significance, which implies that non-farm income had an influence on the food security status of the farmers in the study area. As the non-farm income of the farmers' increased, the probability of being food secure increased. The result suggested that households engaged in non-farm activities are endowed with additional income and are more likely to be food secure. This finding supported the study conducted by Mitiku and Legesse (2014), which found that in a situation of crop failure and inadequate sales of livestock and livestock products, income earned from off-farm or non-farm activities is an important means of acquiring food. The coefficient of participation was positive and statistically significant at the 10% level of significance. This implied that as farmers participated more in NSPFS, the probability of being food secure increased. This is so because NSPFS ensures access to productive resources to boost the productivity and income of its participants (Abdulhamid et al., 2014).

Household size had a negative coefficient and was statistically significant at the 1% level of significance. A priori, it is expected that household size will negatively influence food security status. This implies that as household size increased, the probability of being food secure decreased in the study area. These corroborated Oyebanjo et al.'s (2015) finding that households with larger sizes will influence food security negatively.

Effect of participating in NSPFS on food security status

Table 3; effect of participating in NSPFS on food security status

Variables	Coefficients	Standard error	Z	P>/Z/
Age of household head	0.0065	0.0089	0.74	0.478
Farming experience	0.0312	0.0137	1.88	0.072*
Non-farm income	0.0674	0.4291	3.26	0.003***
Household size	-0.1254	0.0486	-3.66	0.000***
Membership of association	-0.2441	0.3922	-0.12	0.375
Participation in NSPFS	0.4743	0.2957	1.80	0.098*
Extension services	0.3116	0.2769	-1.25	0.266
Constant	0.6381	0.5499	1.31	0.228
Log likelihood	-102.0631			
Number of observation	300			
LR chi^2(z)	43.30			
Prob>chi^2	0.0000			
Pseudo R$_2$	0.1838			

***, ** and * represent 1%,5% and 10% level of significance

CONSTRAINTS ASSOCIATED WITH THE NSPFS PROGRAMME

Some of the constraints associated with the NSPFS include the late disbursement of funds to the beneficiaries, inadequate extension services, and an emphasis mostly laid on a few large-scale farmers, respectively. Also, untimely distribution of inputs, illiteracy, and biased tendencies from leaders of associations were among the constraints affecting the adoption of the program by the participating farmers. Agwu and Ugwu (2008) also reported that late disbursement of loans and distribution of inputs are serious problems militating against the program. The implication of this is that, with the delay in the disbursement of funds to participants, they might have encountered losses or problems related to their farming activities since such activities are seasonal in nature. Also, inadequate extension services will affect the smooth implementation of extension packages, thereby limiting the scope of adoption. Okeh et al. (2014) advocated the active participation of farmers in planning, formulation, implementation, and simplicity of the technology as being responsible for the success of the agricultural program.

Table 4; Constraints Associated with the NSPFS Programme

Constraints	Frequency	Percentage
Late disbursement of funds	90	90%
Inadequate extension service	85	85%
Untimely distribution of inputs	76	76%
Illiteracy of participating farmers,	45	45%
Crop-biased technology	30	30%

Source; field survey, 2023

CONCLUSION

From the findings of the study, it has been possible to establish the fact that the food security status of the NSPFS project participants increased more than the non-participants during the project period; their output as well as their income increased significantly more than before the project and also more than the non-participants income and output; and that the National Special Programme for Food Security (NSPFS) had a significant impact on the lives of the participating farmers. The need for complementary efforts from both the government and non-governmental organizations cannot be overemphasized because a lack of food security affects not only the economy but also the health of the nation. Based on the findings of this study, the following recommendations are suggested as solutions to some constraints identified in the study area: The suggestions are as follows:

- Reduction of the bureaucracy associated with prompt disbursement of funds to enable the beneficiaries to use the funds timely.
- The government should help in providing adult literacy to the rural populace.
- Efficient extension services should be put in place to ensure smooth implementation and supervision of the extension packages.

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