

Effects Of Extension Service On The Income Of Arable Farmers In Nigeria

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Abstract: The study examined effects of extension services on income of arable farmers in Nigeria. The specific objectives were to identify the extension organizations, ascertain the frequency of extension contact among participants farmers and disaggregate income of participant arable farmers by enterprise. Simple random sampling done in stages was used to compose the sample. The sample consist of three hundred and sixty six (366) participants arable farmers. Data were collected by means of structured questionnaire. Data were analyzed with simple percentage, mean, standard deviation and t-test. The commonest crop grown by participants arable farmers was cassava with a mean income value of 142282.1918. The result indicates that DARDA (65.0%0 was the most available extension organization in the study area. The result indicates that participants arable farmers had extension contact mostly every six (6) months (17.8%). The results indicates that there was a significant relationship between contact and income of participants farmers in the study area ($t=45.668$, $p<0.05$); it was recommend that extension contact with participants farmers should be made more frequent in other to improve farmers income and livelihood.

Keywords: Extension, Contact, Income, Organization, Arable

1. Introduction

According to Bashasha, Manghemi, and Nkoya (2011), agricultural extension and advisory services are crucial to the growth of agriculture and enhance the welfare of farmers and other rural residents. According to Anaeto, Asiabaka, Nnadi, Ajaero, Aji, Ugwoke, Ukpongson, and Onwegba (2012), basic agricultural education—especially non-formal and extension—is the only way Nigeria can increase agricultural productivity at the rural farm level and assist millions of farmers in transitioning from traditional to progressive farming, thus enhancing the general quality of rural life.

Harrison and Oguntude (2021) assert that agricultural extension services are necessary for the best possible agricultural productions. Farmers are informed about new agricultural policies and practices through the employment of agricultural extension services (Nwaobiala, 2017). One of the most popular methods for providing farmers with information, knowledge, and skills to help them apply those things to the real world of work is the agricultural extension service (Lee, An, and Kim, 2017).

Arable crop production, processing, storage, and marketing are all likely to be significantly impacted by the efficient provision of agricultural extension services to rural arable farmers. Policy makers, the government, and arable farmers will all benefit from this study's information on the consequences of agricultural extension services delivery on farmers' incomes. In their research, Lee, An, and Kim (2017) discovered that crop yield, gross farm revenue, and profit were all considerably enhanced by agricultural extension services. Farmers are informed about new agricultural policies and practices through the employment of agricultural extension services (Nwaobiala, 2017). Lawal, Torimiro, and Makanyuola (2008) assert that agricultural extension, by interacting with farmers and providing education, plays a vital role in encouraging the adoption of new technologies and innovation.

Agricultural extension was founded with the intention of enhancing the attitudes, knowledge, abilities, and practices of rural residents, farmers, purchasers, and suppliers of agricultural goods, as well as many other individuals involved in activities that have an impact on rural communities (Oyegbami, 2014). Farmers can still obtain the majority of their practical and educational information from agricultural extension. Agricultural extension, according to Bonye, Alfred, and Jasaw (2012), gives farming communities access to information about new technologies that, when implemented, can raise output, incomes, and living standards. Extension service providers inform farm households about innovations, act as a catalyst to increase adoption rates, manage change, and try to keep certain system users from quitting adoption (Alemu, Macteus, Deckers, Bayer, and Mattijs, 2016). Extension is a kind of non-formal education where community needs are addressed through programming. Fundamentally, it involves distributing knowledge based on research to individuals who can benefit from it. It serves as a conduit between the public and research (McFeaters and Lauritzen, 2023).

Agricultural extension and advisory services, according to Agwu et al. (2023), are a system that helps farmers or their organizations gain access to new knowledge, information, and technologies and encourages interaction with agribusiness, research,

education, and other relevant institutions to help them develop their own organizational, management, and technical skills and practices.

Since agricultural extension services can transfer technology, support adult learning in rural areas, help farmers solve problems, and engage farmers in the agricultural knowledge and information system, they have been a key strategy in combating rural poverty and food insecurity (Christophos and Kidd, 2022). As stated by Jasaw, Bonye, and Alfred (2012). Extension has been acknowledged as a vital component of technology transfer because its primary goal is to increase farmers' knowledge for rural development. Because it is so important to agricultural and rural development, agricultural extension is a key element in helping to assist development. Certainly, one of the most important ways to improve the agricultural sector in many regions of the world is through agricultural extension services for the benefit of small farmers, sustainability and income of arable farmers (Umar and Mahmoud, 2007, Noah and Abidoye, 2019).

According to Ragasa and Mazunda (2018), farmers' income and agricultural production both rise as a result of using extension services. Anaetor, Asiabaka, Nanadi, Ajaero, Aja, Ugwoke, Ukpongson, and Onweagba (2012) discovered that the extension services method can lead to the complete eradication of agricultural problems. The knowledge of extension services to farmers will help farmers to improve their farm productivity and income, and a better understanding of the above will in turn be projected to improve the income and livelihood of rural arable farmers in Delta State. This information will guide the creation of policies that will enhance the delivery of extension services to farmers in the study area.

2.Objectives of the Study

The main objective of this study is to examine the effects of extension contact on the incomes of arable farmers in Delta State. The specific objectives are to:

- i. elicit information on the extension organization in the study area,
- ii. ascertain the frequency of extension contact with farmers in Delta State,
- iii. disaggregate the income of arable farmers by enterprise the study are

3. Hypothesis

Ho: There is no significant difference between extension contact and income of participants farmers.

4. Methodology

The study was conducted in Delta State Nigeria. Delta State was created out of the former Bendel State on August 27th 1991. It lies within approximately longitude 5°00' and 6°45' East and latitude 5°00' and 6°30' North of the equator. Its borders are as follows: Edo State to the north; Anambra State to the east; Bayelsa State to the southeast; and the Bight of Benin, which stretches across around 160 kilometers of the state's coastline, to the south. The state has a wide coastal belt interlaced with rivulets and streams, which formed part of the Niger Delta. The state has a total land area of 18,050km². The state has a population of Six million, Thirty Seven thousand, and six hundred and sixty seven (6,037,667) people (NIPC, 2024).

The state has a tropical climate marked by two distinct seasons, dry and wet season. The dry season occurs between December and March while the wet season occurs between March and November. The annual rainfall in the coastal areas is about 266.5cm and 190cm in the Northern fringes of the state. The temperature is between 20°C and 34°C, with average temperature of 30°C (80°F). The natural vegetation of the state varies from the mangrove swamps along the coast to evergreen forest in the fresh water forest zone and derived Savannah in the North. The major tribes in the state are Urhobo, Igbo, Itsekiri, Ijaw and Isoko. The seaward part is inhabited by the Itsekiri and Ijaw. It is swampier than the landward area and is characterised by extensive creeks, on account of which fishery replaces food crop farming as the dominant aspect of the rural economy (Aweto, 2002).

Simple random sampling done on multi-stage basis was used to compose the sample for the study. The list of arable farmers was taken from DARDA. Fifty (50) percent of the extension blocks was randomly selected from each agricultural zone. This gave five (5) extension blocks from Delta North, six (6) extension blocks from Delta Central and three (3) extension blocks from Delta South.

The second stage involved the selection of twenty (20) extension cells randomly from the three agricultural zone. The third stage involve the selection of twenty percent (20%) of participants arable farmers were randomly selected from the cells thus bringing

the total number of the respondents to three hundred and sixty-six (366) farmers from the three agricultural zones. Questionnaire was use in data collection. Data generated was analysed using both descriptive and inferential statistics.

5. Results and Discussion

5.1 Extension organisation

The extension organisation available to farmers were shown in Table 4.2. The extension organisation that was most available to farmers was DARDA (65.0%), NGOs (51.4%), and Private Organisation (63.7%). why FADAMA (38.8%) and Cooperate Organisation (36.9%) were the least available extension Organisation. This implies that DARDA, private Organisation and NGO were the most available extension organisations that provides extension services to arable farmers in the study areas. This outcome is consistent with the findings of Alemu, Mactues, Deckers, Baver, and Matti (2016), who claimed that extension services give farm households access to innovations, act as a catalyst to increase adoption rates, regulate changes, and try to keep some individuals in the system from stopping the diffusion process. Ijogu (2016) who found that farmers' have high preference for private extension system as is more relevant in addressing their problems. The participation of NGOs in extension delivery in Nigeria is a major feature in recent time. These NGOs in the agricultural and rural development sector provide a wide range of extension education and technical support services, including micro-credit financing and supply of essential inputs in several communities in the country (Malabe et al., 2019).

Table 5.1: Distribution according to extension organisation (=366)

S/N	Types of extension organization	Yes	No	Remarks
1.	FADAMA	142 (38.8%)	224 (61.2%)	Least available
2.	DARDA	238 (65.0%)	128 (35.0%)	Most Available
3.	Private Organization	233 (63.7%)	133 (36.3%)	Available
4.	Corporate Organization	135 (36.9%)	231 (63.1%)	Least Available
5.	NGOs	188 (51.4%)	178 (48.6%)	Available

Sources: Field survey, 2023

Responses on the frequency of extension contact with farmers

The frequency of extension contact with farmers were presented in Table 4.4. The Extension contact indicated that every two weeks (0.8%), every month (7.1%), every two months (4.4%), every three months (10.7%), every four months (4.1%), every five months (6.8%), every six months (17.8%), every seven months (8.7%), every eight months (9.3%), every nine months (7.7%), once in a year (15.8%) and more than a year (6.8%). This indicates that extension contact with farmers in the study area were mostly every six months (17.8%). The above results is considered to be too low for the desired results expected from arable farmers to improve their productivity and income level. This suggests that the more extension interactions farmers have, the better equipped they will be to comprehend and choose an innovation that will boost their income and productivity on the farm. Agricultural extension, according to Bonye, Alfred, and Jasaw (2012), gives farming communities access to information about new technology that, if accepted, can raise output, incomes, and living standards. Extension service providers inform farm households about

innovations, act as a catalyst to increase adoption rates, manage change, and try to keep certain system users from quitting adoption (Alemu, Macteus, Deckers, Baver, and Mattijs, 2016).

Table 5.2: Responses according to frequency of extension contact with farmers (N=366)

S	Frequency of extension contact	Frequency	Percentage	Rank
1.	Every six months	65	17.8%	1st
2.	Once a year	58	15.8%	2nd
3.	Every three months	39	10.7%	3rd
4.	Every eight months	34	9.3%	4th
5	Every seven months	32	8.7%	5 th
6	Every nine months	28	7.7%	6 th
7	Every month	26	7.1%	7th
8	More than a year	25	6.8%	8 th
9	Every five months	25	6.8%	8 th
10	Every four months	16	4.4%	9 th
11	Every four months	15	4.1%	10 nd
12	Every two weeks	3	0.8%	11 th

Source: Field survey, 2023

The results indicates that majority of the registered farmers engaged in the different enterprise with cassava having a mean value of (142282.1918) yam ($\bar{x}$ =127171.9457), melon ($\bar{x}$ =42539.1304), maize ($\bar{x}$ =74220.06406), groundnut ($\bar{x}$ =66750.0001), okra ($\bar{x}$ =46459.6774), tomatoes ($\bar{x}$ =30000.0000), leafy vegetable ($\bar{x}$ =62142.3611), sweet potato ($\bar{x}$ =215621.6216), pumpkin ($\bar{x}$ =64938.7097), pepper ($\bar{x}$ =34000.0000) and cucumber ($\bar{x}$ =44566.6667). The result indicates that most farmers are engaged in cassava farm enterprise ($\bar{x}$ =142282.1918)

Table 5.3: Distribution of respondents according to farm income by enterprises for registered farmers

S/N	Enterprise	Registered farmers (N=366)	Mean (Income per year)	Std. Deviation
1.	Cassava	365	142282.1918	39119.63667
2.	Yam	221	12717.9557	55581.61346
3.	Melon	115	42539.1304	11541.90455
4.	Maize	281	74220.6406	30552.66649
5.	Groundnut	20	66750.0000	27399.33730

6.	Okra	248	46459.6774	15558.89903
7.	Tomatoes	3	30000.0000	26457.51311
8.	Leafy vegetable	288	62142.3611	20563.58908
9.	Sweet potato	74	215621.6216	120276.4741
10.	Pumpkin	310	64938.7097	22579.87157
11.	Pepper	19	34000.0000	17876.11690
12.	Cucumber	90	44566.6667	14269.51650
Total			69686.58	

Source: field survey, 2023

5.6: Difference between extension contact and income of Participants farmers

Data on hypothesis were tested by use of t-test for correlated sample .The results indicates that there was a difference relationship between extension contact with mean value $\bar{x}=6.9570$ and farm income of Participants farmers with mean value of $\bar{x}=484401.6393$

($t=.45.668$, $p<0.05$). The null hypothesis was therefore rejected. This implies that if adequate extension services is provided to arable farmers it will help to improve their income and standard of living .This means that Agricultural extension services play a vital role in increasing the agricultural productivity and income of arable farmers. The result agrees with Akira (2013) who found that increase in household income of farmers come through participation in extension programmes.

The results agrees with Danso-Abbeam, Ehiakpor and Aidoo (2018) who stated that extension services programmes are critical in enhancing farm productivity and income of farmers by identifying the markets and pre-negotiating the farm produce.

Table 5.7: Difference between extension contact and income of Participants farmers

	$\bar{x}$	SD	t	df	Sig.
Extension contact	6.9570	3.41005	.45.668	365	.000
Income	484401.6393	202922.5371			

($t=.45.668$, $p<0.05$)

Source: field survey, 2023

Discussion

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6: Conclusion and Recommendation

Nigeria cannot increase agricultural productivity at the rural farm level unless basic agricultural education is made available, especially in the non-formal form, which is the extension type that will assist in converting millions of farmers from traditional to progressive farming, thus enhancing the general standard of living in rural areas. Fisher (2013) defined extension as a family-wide educational program that reaches out beyond the classroom to those living on farms. Fisher therefore examined extension through the lens of the family approach system, which plans extension programs with input from all family members. Agricultural extension services are necessary for the best possible agricultural output. A group of organizations known as agricultural extension services assist those involved in agricultural production by helping them solve issues, connect with markets and other stakeholders in the agricultural value chain, and acquire knowledge, expertise, and technology to enhance their standard of living (Kristin, 2009). It was suggested that in order to increase the revenue and standard of living for arable farmers, regular Extension interactions be strengthened.

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