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FARMERS' PERCEIVED EFFECTIVENESS OF SERVICES RENDERED BY PUBLIC EXTENSION ORGANIZATIONS IN KWARA STATE NIGERIA

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ABSTRACT

This study investigated the perceived effectiveness of public extension services among maize based farmers in Kwara State, Nigeria. The study employed descriptive research design. An interview schedule was used to collect data. Content validity was used to validate the instrument while reliability was ascertained through test retest method having gotten a correlation coefficient of 72% reliable. Four stage sampling was employed to select respondents. Firstly stage involved a purposive selection of 3 ADP zones namely: Zone B, C and D. Second stage involved the selection of eight blocks, and third stage involved random selection of 10 prominent maize farming communities. Total population of ADP contact maize based farmers in the selected communities was 695 where 36.5% was selected at the fourth stage to give 254 respondents. Collected data were analysed with the use of frequency counts, percentages, mean score, standard deviation, linear regression and chi-square statistical tools. Findings showed that maize based farmers were mainly male (93.3%), married (87.8%), and educated (86.2%). Many (63.0%) of the respondents perceived the effectiveness of services provided by public extension organizations was moderate. Multiple linear regression analysis showed that the socio-economic factors (years of schooling and access to extension services) predicted 22.2 percent of farmers' perception of the effectiveness of extension services provided by public extension organizations. The study concluded that farmers perceived extension services provided by public extension organizations were moderately effective. This study recommends a functional public-private extension approach for effective extension services to farmers in Kwara State.

Keywords: Public Extension, Kwadp, Effectiveness, Years Of Schooling, Access To Extension.

1. INTRODUCTION

Agriculture in Nigeria is significantly under-productive. Currently, agriculture contributes approximately 40% of the country's Gross Domestic Product (GDP). However, it accounts for only a fraction of Nigeria's total budgetary allocation of 1.37%. This is far below the Food and Agricultural Organization [FAO] recommended level of 10% of each nation's budget for agriculture (FAO, 2021). The practice in some developing countries like Kenya and Brazil had reached 6% and 18% respectively (Food and Agricultural Organization [FAO], 2021). This also indicates that funding of public extension services will be hampered as limited numbers of farmers could be reached with innovations.

In Nigeria, the majority of food production is still managed by smallholder farmers, accounting for 85 percent of total production by applying crude technologies with limited resources and savings to procure and adopt innovations that are peddled by extension services agencies (Onagwa, Abah & Jegede, 2017). Improper design of public extension programmes and messages to satisfy needs and interest of these farmers especially when top-down approach was

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employed in the development and dissemination of the services have been identified as some of the challenges confronting effective extension delivery in many developing countries (Anang, Bäckman & Sipiläinen, 2020).

Recently, In 2021, Nigeria's maize production was approximately 11 million metric tons (Amaza, Mailumo & Silong, 2021). However, the current yields are not sufficient to meet domestic demand, which is estimated to be between 12 and 15 million tonnes per annum. As a result, there is a supply gap of approximately 4 million tonnes per year. This shortage necessitated the implementation of an export prohibition on maize in Nigeria in order to stimulate domestic production and supply (PWC, 2021; FAO, 2022) and the urgent need have empirical data on the effectiveness of public extension organizations agents who render advisory services to majority of smallholder farmers who are largely into maize cultivation in Nigeria. This is important to urgently address the current challenges facing maize farmers in Kwara State and Nigeria at large.

The perception of the farmers on the effectiveness of extension services need to be regularly monitored and documented in order to provide a feedback to the sponsors and organizations responsible for innovation development and dissemination in Kwara State. Available studies have assessed leadership effectiveness of zonal extension officers (Abdulrahman et al. 2022), the effectiveness of public agricultural extension service delivery in Irepodun LGA (Ajala et al., 2018), and impact of agricultural extension services on food production Ilorin East Local Government of Kwara State (Noah & Abidoye, 2019). It is important to note that none of these studies have provided empirical information on the state of the effectiveness of public extension organisations to maize farmers in Kwara State. Thus, effectiveness of public extension services among maize based farmers in Kwara State in literature is scarce and therefore need to be investigated.

The general objective of this study is to investigate perceived effectiveness of public extension services among maize based farmers in Kwara State, Nigeria. Furthermore, the study determined socio-economic attributes of farmers affecting their perceived effectiveness of extension services provided by public extension organizations in Kwara State.

2. METHODOLOGY

The study was carried out in Kwara State. Kwara State is situated between parallels 8Â° and 10Â° North latitudes and 3Â° and 6Â° East longitudes. The state has many State and Federal agricultural institutions with their extension departments. These include the Kwara State Agricultural Development Project, Fadama, State Ministry of Agriculture and Local Government Department for Agriculture while federal government owned institutions are Federal Ministry of Agriculture & Rural Development (FMARD), Agricultural Rural Management Training Institute (ARMTI), National Centre for Agricultural Mechanization (NCAM), Nigerian Stored Products Research Institute (NSPRI), Lower Niger River Basin Authority (LNRBN), KWASU Faculty of Agriculture, and Unilorin Faculty of Agriculture.

The population of the study involves all the maize-based farmers in Kwara State. Four-stage sampling procedure was used to select the respondents. In the first stage, Zone B, C and D were purposively selected because maize production is prominent in these zones (Ayinde et al., 2018). In the second stage, eight extension blocks where maize farming is prominent were purposively selected. The selected blocks were Igbaja Block (Zone D); Oloru and Temidire Blocks (Zone C) and Lade, Lafiagi, Kpada, Shonga and Bacita Blocks (Zone B). In the third stage, a total of 10

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prominent maize farming communities were randomly selected in the chosen extension blocks. The communities are Idofia, Jimba-Oja, and Ganmo (Igbaja Block); Malete (Oloru Block); Ile-Apa (Temidire Block); Lade (Lade Block), Tsaragi (Lafiagi Block), Godiwa (Kpada Block), Shonga (Shonga Block), and Bacita (Bacita Block). The fourth stage involved a proportionate random selection of 36.5% of the total population of all registered maize farmers in each community selected (695). This gives a total of 254 maize farmers that were eventually used as respondents.

A structured questionnaire was used to collect data from the respondents. The instrument was subjected to content face-to-face validity by expert in the field of agricultural extension and economics. Farmers' perceived effectiveness of 10 possible extension services provided were measured on three-point Likert type self-rating scale - very effective, effective, less effective with a score of 3, 2 and 1 respectively. To group each respondent into categories of perceived effectiveness of public extension services, obtained scores with considered as respondents were grouped into 3 equally as follows: 10.0 to 16.7 – low effectiveness, 17.0 to 23.9 – moderate effectiveness and 24.0 to 30.0 – high effectiveness.

Statistical tools used in this were frequency, percentage, mean, standard deviation and Linear regression analysis. Ordinary Least square model of linear regression analysis was employed to test hypothesis to establish the significant relationship between socio-economic characteristics of farmers and their perceived effectiveness on public extension services. The model according to Bolarin et al. (2022) is specified as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 + \ldots . + e_i \ldots \ldots \text{(Equation 3)}$$

Where,

Y= farmers' perceived effectiveness score

(X) = Independent variables

X_1 = Age (in years)

X_2 = sex (dummy male=1, otherwise 0)

X_3 = Marital status (married=1, otherwise 0)

X_4 = Household size (in numbers)

X_5 = Educational status (in years of schooling)

X_6 = Years of experience (in years)

X_7 = Extension services accessed (dummy public=1, otherwise 0)

X_8 = Income (in naira)

ei = Error term

3. RESULTS AND DISCUSSION

Respondents' Membership of Group and Access to Extension Services

Information provided in Table 1 shows that many (64.6%) of the respondents belong to a farmers' group. Furthermore, 89.8% had access to public extension services while 10.2% access both public and private extension service providers. This implies that public extension organizations dominated extension service delivery to maize based farmers in the study area. With percentage of membership of farmers group and access to public extension agents, maize based farmers in the study area are likely have high access to necessary information such as loan and other extension services at economic price. Unfortunately, below half of the respondents (46.9%) further indicated that the frequency of extension visit was once monthly, while 40.9%

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were visited quarterly. This show that maize based farmers in the study area do not frequently receive extension services as at when required.

Table 1: Socioeconomic characteristics of respondents

Variables	Mean (Std Dev.)	Frequency	Percentage
Age in years	61.4 (13.58)		
Years of schooling	9.6 (5.13)		
Household size (persons)	8.9 (3.49)		
Farming experience	35.1 (14.95)		
Farm size (Ha)	2.7 (1.29)		
Yearly income (₦)	102,7692.91		
Sex			
Male		237	93.3
Female		17	6.7
Marital status			
Married		223	87.8
Unmarried		31	12.2
Membership of farmers group			
Yes		164	64.6
No		90	35.4
Extension service accessed			
Public only		228	89.8
Private only		0	0.0
Both public & private		26	10.2
Frequency of public extension contact			
Weekly		9	3.5
Monthly		119	46.9
Quarterly		104	40.9
Half yearly		20	7.9
Yearly		2	0.8

Source: Field survey, 2022

Farmers' perceived effectiveness of services provided by public extension organizations

Table 2 showed that services including technical advice ($\bar{x}$=2.24), Supply of farm inputs/machineries or linkage to source of quality inputs or services ($\bar{x}$=2.06), and provision of up-to-date innovation as at when required by farmers ($\bar{x}$=2.00) were the foremost effective public extension services received by maize based farmers in the study area. The least on the table of extension services received by farmers was linking farmers to sources of credit ($\bar{x}$=1.27) and marketing channels ($\bar{x}$=1.10). These findings indicated that public extension organization has effectively contributed to provision of technical advice, supplying of farm inputs/machineries or linkage to source of quality inputs or services, and provision of up-to-date innovation as at when required to maize based farming in the study area but least contributed to linking farmers with market channels and farm credit providers.

Table 2: Farmers' perceived effectiveness of services provided by public extension organizations

Public extension services	Mean	SD

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Provision of technical advice	2.24	0.67
Supply of farm inputs/machineries or linkage to source of quality inputs and services	2.06	0.78
Provide up-to-date innovation as at when required by farmers	2.00	0.61
Training by extension agents to update the knowledge and skill of farmers	1.82	0.59
Training farmers on processing	1.44	0.49
Training farmers on storage	1.43	0.49
Training farmers on packaging	1.40	0.49
Provision of improved seeds/seedlings	1.39	0.57
Linking farmers with sources of credit	1.27	0.50
Linking farmers with marketing channels	1.10	0.29

Source: Field survey, 2022

Table 3 summarized the level of the perceived effectiveness of services provided by public extension organizations, many (65.0%) of the respondents perceived the effectiveness of services provided by public extension organizations as being moderate. Only 8.3% perceived the extension services as high while 28.7% perceived the effectiveness of services provided by public extension organizations in the study area as low. These findings show that gap exist for public extension organizations to improve its services among maize based farmers in the study area. Similarly, Aderinto, Agbelemoge, and Dada (2017) concluded in a study that public extension agencies were not effectively meeting the aspirations of farmers in south west Nigeria. Similarly, Kumaran's (2012) research revealed that aquaculture farmers' perception of public extension services in the two Indian states of Andhra Pradesh (AP) and Tamil Nadu (TN) indicated a need for improvement, while private agricultural extension proved to be successful. Consequently, they recommended public-private extension services in order to meet the needs of the small scale farmers.

Table 3: Level of farmers' perceived effectiveness of services provided by public extension organizations

Obtained score range	Level of effectiveness	Frequency	Percentage
10.0 – 16.9	Low	73	28.7
17.0 – 23.9	Moderate	165	65.0
24.0 – 30.0	High	16	8.3

Minimum to maximum possible score ranges from 10 – 30

Relationship between socio-economic characteristics of farmers and perceived effectiveness of public extension organizations in Kwara State

Multiple linear regression analysis was applied to assess the relation and detailed results were presented in Table 4. The result showed that some socio-economic characteristics of farmers significantly influenced their perception on the effectiveness of public extension organizations ($p < 0.01$). On the whole, the socio-economic factors predicted 22.2% of farmers' perception on the effectiveness of extension services provided by public extension organizations.

The coefficient of years of schooling/educational qualification (0.012, $p < 0.05$) of the farmers was positive and significant. This indicated that there was positive relationship between educational qualification of farmers and their perception on the effectiveness of extension services provided by public extension organizations. An increase in the farmers' level of education will lead to a marginal increase in their perception on the effectiveness of extension services provided by public extension organizations by 0.012 unit. This conforms to *a priori*

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expectation; given that an increase in farmers' educational qualification will enhance their information seeking behavior and search for best agronomic practices. This quest may be satisfactory by the educated farmers through extension services provided by public extension organizations.

Results further showed that farmers' access to extension services ($\beta = 0.308$, $p < 0.01$) showed ZCpositive and significant relationship with their perceived effectiveness level of services provided by public extension organizations. This implies that farmers' increased access to extension services will positively increase their perception of effectiveness of extension services provided by public extension organizations by 0.308 unit. In this case, the null hypothesis is rejected while the alternative is accepted. That is, there is significant relationship between socio-economic characteristics of the farmers and perceived effectiveness of public extension organizations.

Table 4: Farmers' socio-economic predictors of the effectiveness of public extension organizations

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t-stat.	Sig.
(Constant)	1.495	.290		5.155	.000
Sex	-.078	.098	-.061	-.799	.425
Marital status	.094	.071	.113	1.329	.185
Age	-.001	.004	-.035	-.199	.843
Years of schooling	.012	.007	.190	1.812*	.017
Household size	-.006	.011	-.068	-.590	.556
Years of experience	-.001	.003	-.063	-.401	.689
Farm size	.004	.023	.017	.183	.855
Yearly income	4.145E-8	.000	.095	1.184	.238
Membership of group	.016	.044	.029	.367	.714
Access to extension	.308	.052	.435	5.968**	.000
Frequency of extension visit	.017	.020	.058	.862	.390

R= .471

R-square = .222

Adjusted R square = .180

F = 5.274; Sig. 0.000

R= 0.471; R-square = 0.222; Adjusted R square = 0.180; F = 5.274; Sig. 0.000

4.CONCLUSION AND RECOMMENDATIONS

Public extension organizations dominate extension service provision to maize based farmers in the state. These farmers perceived that extension services provided by public extension organizations were moderately effective. Kwara State Agricultural Development Project (KWADP) is the leading known public extension organization in Kwara State. Factors responsible for farmers' perception of effectiveness of extension services provided by public extension organizations were farmers' years of schooling, access to extension and constraints faced by the extension organization in disseminating extension services. This study recommends more functional public-private extension approach for effective extension services to farmers in Kwara State.

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