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Willingness of Farmers to Pay for Agricultural Extension Services in Ondo State, Nigeria

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ABSTRACT

The study was carried out in Ondo States, Nigeria to assess the willingness of farmers to pay for Agricultural extension services. Specifically, it ascertained the socio-economic characteristics of the farmers, ascertained willingness of the farmers to pay for agricultural extension services, identified agricultural extension services farmers are willing to pay for based on priority and how much farmers are willing to pay for such services were determined. A multi-stage technique was used in selecting 120 farmers. Primary data were collected using interview schedule, the instrument was subjected to face validity and reliability test. Data were analysed using descriptive statistical techniques such as frequency counts, percentages, mean statistics and Chi-square. Results indicated that the mean age of farmer was 52 years, majority (72.5%) were male, married (82.5%). The average household size was 6 persons and the mean farm size was 3 hectares. The average farming experience was 15 years while the farmers mean income was ₦149,458.00. The results further revealed that 57% of the respondents are not willing to pay for specified extension services due to low income from farming and Inconsistency in government policies, Only 43.0% are willing to pay for some services like personal visit to farmers, information on how and where to source for fund. Test of hypothesis shows that there was no significant association ($P > 0.05$) between the socio-economic characteristics and the willingness of farmers to pay for extension services. Therefore the possibility of economic return from a particular service is the major criteria of willingness of farmers to pay for these services. Hence extension services have to be professionally and competently delivered so that the farmers will be motivated to pay.

KEYWORDS: willingness to pay, farmers, agricultural extension services, Nigeria.

1.0 Introduction

Nigeria probably has the most elaborate research and extension institution in sub-Saharan Africa, with a population of over 140 million and 71 million hectare of arable land. The system comprises of 17 commodity – based research institutes and a special national extension institute, over 45 faculties of agriculture in conventional federal, state and private universities, 3 universities of agriculture, several colleges of agriculture/polytechnics and 3 international agricultural research centers (Okwu and Ejembi, 2001), and yet Nigeria is still categorized among the food-deficit or food insecure nations in Africa. All these institutions collectively and individually ought to serve as the fountain of agricultural innovation for both public and private agricultural extension service providers. The agricultural extension service is one of the institutional support services that have a central role to play in the transformation process (Berhanu*et al.*, 2006).

In Nigeria, agricultural extension has been providing extension services as a public sector. Currently the major provider of public sector agricultural extension services, is the Agricultural Development Programmes (ADPs) in each of the 36 states of Nigeria including Federal Capital Territory (FCT.) (Saliu*et al.*, 2009). Public sector extension activities in Nigeria were concentrated in the Agricultural Development Programmes (ADP's) (Okoye, 2002). The main focus of ADP is technology dissemination. In pursuance of this, the ADPs employs the training and visit system (T & V) which provides comprehensive agricultural extension services within a single line of command (Bindlish and Everson, 1997). The most difficult and challenging policy issue facing the agricultural extension

service today is to secure a stable source of funding. Since the 1980's funding of agro-technology generation and transfer became an increasingly important policy issue. This is because of progressive decline in financial support for extension.

The World Bank, Federal and State governments funded the ADP jointly. World Bank contributed 66% of funds while Federal and State governments contributed 20% and 14% respectively (Amalu, 1998). The ADPs have been a very successful development initiative, the programme, especially since 1995, have suffered serious setbacks due to poor funding and funding instability, following the expiration of the World Bank's component of the funding arrangement in 1996. Contributions from state and federal governments always fall, grossly, short of budget, hence hindering the proper implementation of extension programmes in the ADPs.

Both tiers of government have found it difficult to meet their funding obligations especially due to macro-economic instability. Macro-economic instability has been manifested in the persistent declines in per capita income, high rate of inflation, widening fiscal imbalances, external payment deficits and accumulating debts and debt arrears (ADB, 1997). As a result, competition for resources from the national budget among the different sectors is getting fiercer than it used to be in the past, with the government responding by effecting cut backs in social spending with the effect that the quality of publicly provided services has suffered (Jacques, 1995). Umali (1997) noted that fiscal crises and economy-wide budget cut backs have forced governments to make sharp reductions in the budgets of public extension programmes.

In recent past, many private extension agencies, NGOs are entering in the agricultural sector to influence different categories of farmers. This existing climate will change the elements of extension process such as; objectives, target group, offerings, organization, methods and also redefines the roles of public and private extension system. The prime objective of private extension mainly concern with maximum possible profit to the clients through advisory services, their remuneration obviously linked with increased income of the farmers. Private agencies survival depends upon nature of their performance, so, they try to become more efficient and effective in providing services. The foremost participants in private extension services are United African Company (UAC), John Holt, Nigerian Tobacco Company (NTC) and Diocesan Agricultural Development Programme of the Catholic Diocese of Ijebu-Ode, among several others who became involved in agricultural production, processing and marketing some decades ago Adedoyin, 1995). About ten years ago, Green River Project of the Agip Oil Company, Ciba Geigy Agro-Chemical extension outfit, Olam Nigeria Limited, formally Agro-Millers at Makurdi, have been found to inject positive changes in the life of the communities where the programmes are located (Akele and Chukwu, 2004; Isife and Madukwe, 1999). Nigerian government has no guidelines regulating activities of private extension service providers at the moment.

1.1 Objectives of the study

The general objective of this study was to determine farmers' willingness to pay for agricultural extension services in Ondo state, Nigeria.

Specifically, the study sought to;

1. ascertain the socio-economic characteristics of the farmers;
2. ascertain willingness of the farmers to pay for agricultural extension services;
3. identify agricultural extension services farmers are willing to pay for based on priority;
4. determine how much farmers are willing to pay for each of those agricultural extension services.

1.2 Hypothesis of the study

Ho_1; There is no significant association between the socio-economic status of farmers and the willingness of farmers to pay for extension services

2.0 Methodology

The study was carried out in Ondo State, Nigeria. Ondo state, popularly referred to as the "Sunshine State", was created from the Western State on **3rd** February, 1976, located in the southwestern zone of Nigeria, with its administrative capital at Akure. The state lies between Latitude 7° 10" North and longitude 5° 05" East. It occupies a land area of 14,793 square kilometres with a population of 3,441,024 (National Population Commission, 2006).

The State is made up of 18 Local Government Areas. The people of the state are predominantly Yorubas who speak various dialects of the Yoruba language such as the Akoko, Akure, Idanre, Ijaw, Ikale, Ilaje, Ondo, Owo among others. The economy of Ondo state is basically agrarian with strong bias in farming, fishing, lumbering and trading.

A multi-stage random sampling technique was used in the selection of the respondents. The first stage involved purposive selection of two (2) Local Government Areas (LGAs) from each of the three (3) senatorial zones, making a total of six (6) LGAs. The second stage involved selection of two (2) communities from each of the LGAs selected, making a total of twelve (12) communities. The third stage involved purposive selection of ten (10) farmers per community, because of their visitation by extension agents, making a total of twenty (20) farmers per LGA. The total sample size was 120 respondents.The data was collected with a well structured and pre-tested interview schedule guide consisting of both open and close ended questions.

To ascertain willingness of the farmers to pay for agricultural extension services. The respondents were asked if they were willing to pay for extension services or not on (Yes = 1 or No = 0), if No a list of reasons why they won't

be able to pay for agricultural extension services was provided and if yes a list of some extension services was provided for the respondents to tick those services they were willing to pay for and the amount they were willing to pay for such services in Naira.

To identify agricultural extension services farmers are willing to pay for based on priority. A list of thirty four (34) agricultural extension services was provided for the respondents to choose from, the once they are willing to pay for.

To determine how much farmers are willing to pay for each of those agricultural extension services. The respondents were asked to state the amount they were willing to pay per month for the extension services chosen from the list of agricultural extension services provided. Descriptive statistical techniques such as frequency counts, percentages and mean statistics were used in analysing the data.

3.0 Results and Discussion

3.1 Socio-economic characteristics

The result of the socio-economic analysis shows that respondents in the study area had mean age of 52years with large percentage of the population falling between 31 and 50, This implies that verse majority of the farmers are strong enough for farming activities. Majority of the respondents were males (87; 72.5%). Majority of them were married (99; 82.5%) This implies that most farmers in the study area were responsible for the welfares of their family and will need the services of extension services to boost their earnings. (35; 29.2%) of the farmers had no formal education with an average household size of 6 and an average income of 149,458.00 naira, This is an indication that most of the farmers were moderately literate while those with no formal education might not be willing to pay for extension services because they might not be able to attach any benefit to paying for extension services as they see it as the sole responsibility of the Government.

Majority (71.7%) of the farmers had a household size of 5-8 persons, about 18% had a household size of between 1 and 4 persons while 10% had a household size of 9-12 persons with an average household size of 6. This implies that the respondents had a fairly large household size.

About 51% of the farmers had a farm size that is less than 3 hectares of land which means significant percentage of the respondents are small farm holders with 3 hectares as the average farm size. This is an indication of subsistence oriented farming, farmers may not be able to pay for extension services since vast majority were small farm holders.

38.3% of the farmers had a farming experience of 5-10 years, about 3% of them had an experience less than 5 years with an average farming experience of 15years. This shows that most of the farmers have not been farming for a long period of time. This is an indication that they have not benefitted much from public extension system hence they might be willing to try a new concept, their experience with the public extension services could influence their altitude towards paying for extension services.

The result of this findings showed that 57% of the farmers were not willing to pay while 43% of the farmers were willing to pay for some specified extension services and amount.

The average amount to be paid for each of the services monthly ranges from a minimum of ₦300 for Information on climate change to ₦2,160 for Personal visit to farmers' farm to diagnose a particular problem.

Table 1: Percentage Distribution of Respondents by Socio-economic characteristics

Socio-economic characteristics	Frequency	Percentage (%)	Mean
Age (years)			
≤ 30	3	2.5	
31-40	28	20.8	
41-50	29	24.2	52
51-60	35	29.2	
>60	28	23.3	
Sex			
Female	33	27.5	
Male	87	72.5	
Marital status			
Single	3	2.5	
Married	99	82.5	
Divorced	1	0.8	
Seperated	8	6.7	
Widowed	9	7.5	
Educational level			
No formal education	35	29.2	
Attempted primary school	-	-	
Completed primary school	12	10.0	

Attempted secondary school	20	16.7	
Completed secondary school	25	20.8	
Attempted tertiary education	6	5.0	
NCE/OND	17	14.2	
HND/BSC	5	4.2	
Household size			
1 – 4	22	18.3	
5 – 8	86	71.7	6
9 – 12	12	10.0	
Farm size (hectare)			
<3	61	50.9	
3 – 5	55	45.9	3
>5	4	3.2	
Farming experience (years)			
<5	3	2.5	
5-10	46	38.3	
11-16	31	25.8	15
17-22	18	15.0	
23-28	12	10.0	
>28	10	8.4	
Income realized 2016 (Naira)			
<50,000	9	7.5	
50,000 - 100,000	35	29.2	
100,001-150,000	31	26.8	149,458
150,001-200,000	28	22.3	
>200,000	17	14.2	

Source: Field Survey

3.2 Extension agents visit to respondents

Figure 1 showed extension agents visit to the farmers in the study area. Majority (76%) of the farmers were visited by extension agents, this improvement was confirmed to be as a result of the recent Federal Governments N-power program, which has been empowering Nigeria youths for prosperity. This has led to the training and employment of unemployed youth and graduates as extension agents which has improved extension agents visit to farmers.

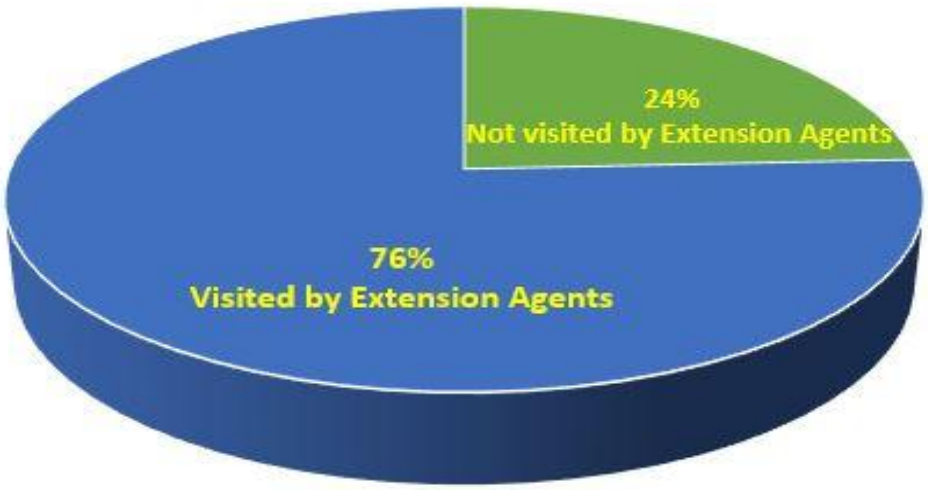

Figure 1: Extension agents visit to farmers

3.2.1 Frequency of Extension Agents visit

Results in Table 2 further indicates the frequency of extension agents visit to the farmers in the study area. Majority (67%) of the farmers were visited by extension agents once in a month, about 2% of the farmers were visited twice in a month while 30.8% of the farmers were

visited once in two months by extension agents. This implies that extension agents have not been up and doing in the study area since they could not keep to the forthnight training recommended. Hence, the farmers might be willing to pay for extension services provided the service will be stable, efficient and effective.

Table 2: Frequency of extension agents' visit

Frequency of extension agents	Frequency	Percentage
Once in a month	61	67.0
Twice in a month	2	2.2
Once in two months	28	30.8
Twice in a year	-	-
Once in a year	-	-
Total	91	100.0

Source: Field Survey

3.3 Agricultural Extension Services Farmers are willing to Pay for and Amount

Results in Table 3 showed the extension services farmers are willing to pay for. The top extension services farmers are willing to pay for includes, personal visit to farmers' farm to diagnose a particular problem and technical advice on farm (crop and livestock) establishment (94.1%), Information on how and where to source for fund (92.2%), Information on how and where to access subsidized farm input (90.2%), about 84% are willing to pay for technical advice on handling and application of herbicides, about 82% are willing to pay for technical knowledge on how to raise nursery for different crops and training on skill acquisition and improvement, about 69% were willing to pay for information on how to treat pest and disease infestation, 56.9% are willing to pay for Information on how to access improved crop variety while 51.0% are willing to pay for providing solutions to reported problems encountered. Some of the services farmers are less willing to pay for includes, Advice on quality analysis of soil 90.2%, Information on Bio-fertilizers (vermin composting) 86.5%, Information on how to process farm produce into semi-finished and finished product 88.2%, Training on health improvement and Home Economics 84.3%, Training on proper harvesting techniques 86.3%, Training on the use of personal protective equipment for safety 88.2%. This unwillingness to pay may be because they are not their desired or felt need, it can also be because of possible initial high capital requirement for their establishment.

The average amount to be paid for each of the services monthly ranges from a minimum of ₦300 for Information on climate change to ₦2,160 for Personal visit to farmers' farm to diagnose a particular problem.

Hence, Figure 2 showed that 43% of the farmers (51 out of 120) were willing to pay for extension services in, it should be noted that none of the farmers was willing to pay for all of the listed services, they picked the services they needed the most and indicated the amount they were willing to pay for such services, while 57% (69 out of 120) were not willing to pay for extension services with reasons highlighted in Table 4.

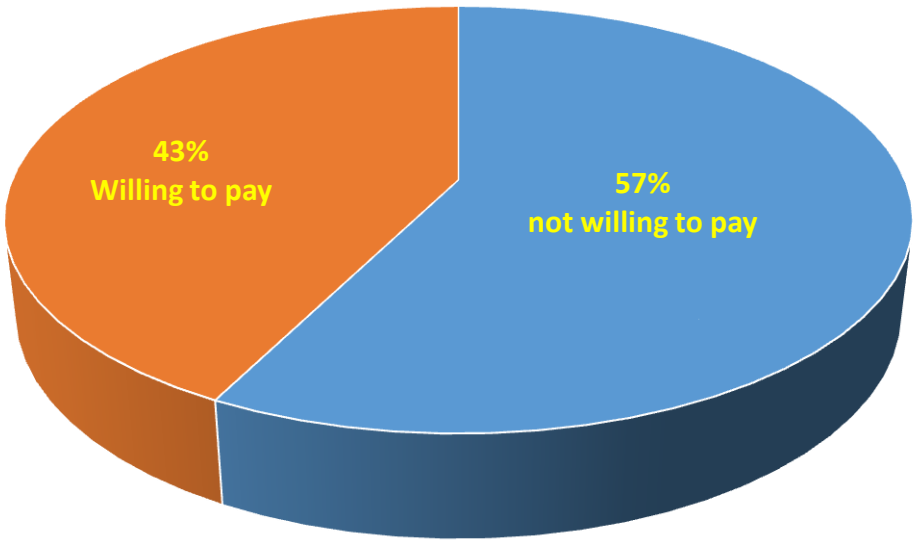

Figure 2: Willingness of farmers to pay for extension services
Source: Field Survey

Table 3: Agricultural extension services farmers are willing to pay for and amount (n=51)

Extension services	Willing to pay	Not willing to pay	Average Amount willing to pay (₦) per month
Information on climate change	8(15.7)	43(84.3)	300.00
Information on how to access improved crop variety	29(56.9)*	22(43.1)	360.00
Information on how to treat pest and disease infestation	35(68.6)*	16(31.4)	360.00
Information on how and where to market agricultural products	18(35.3)	33(64.7)	440.00
Technical advice on crop protection measures	20(39.2)	31(60.8)	400.00
Information on animal health and husbandry management	9(17.6)	42(82.4)	550.00
Technical knowledge on how to raise nursery for different crops	42(82.4)*	9(17.6)	490.00
Information on sources and the price to hire agricultural implement and machinery	20(39.2)	31(60.8)	330.00
Advice on weed management practices	14(27.5)	37(72.5)	450.00
Advice on quality analysis of soil.	5(9.8)	46(90.2)	530.00
Information on how to improve soil fertility	9(17.6)	42(82.4)	510.00
Training on seed production technique	8(15.7)	43(84.3)	670.00
Information on Bio-fertilizers (vermin composting)	7(13.7)	44(86.3)	530.00
Personal visit to farmers farm to diagnose a particular problem	48(94.1)*	3(5.9)	2160.00
Farm Demonstration on a particular method	8(15.7)	43(84.3)	840.00
Training on value addition of agricultural products	10(19.6)	41(80.4)	850.00
Organizing Exhibition and display	9(17.6)	42(82.4)	750.00
Providing solutions to reported problems encountered	26(51.0)*	25(49.0)	620.00
Training on record keeping and farm diary	24(47.1)	27(52.9)	420.00
Information on how and where to source for fund	47(92.2)*	4(7.8)	360.00
Information on how and where to access subsidized farm input	46(90.2)*	5(9.8)	350.00
Information on how to store and preserve excess farm produce	20(39.2)	31(60.8)	480.00
Information on how to process farm produce into semi-finished and finished product	6(11.8)	45(88.2)	620.00
Information on fertilizer handling and application	13(25.5)	38(74.5)	530.00
Technical advice on pruning practices	9(17.6)	42(82.4)	350.00
Technical advice on handling and application of herbicides	43(84.3)*	8(15.7)	410.00
Training on prompt decision making on farm	9(17.6)	42(82.4)	410.00
Training on how farmers should evaluate their progress	9(17.6)	42(82.4)	580.00
Information on prevalence of disease and disease outbreak	20(39.2)	31(60.8)	540.00
Training on skill acquisition and improvement	42(82.4)*	9(17.6)	850.00
Training on health improvement and Home Economics	8(15.7)	43(84.3)	560.00
Training on proper harvesting techniques	7(13.7)	44(86.3)	710.00
Training on the use of personal protective equipment for safety	6(11.8)	45(88.2)	530.00
Technical advice on farm (crop and livestock) establishment	48(94.1)*	3(5.9)	1300.00

Key*= Extension services farmers are willing to pay for based on priority

Figures in parenthesis represents percentage (%), Source: Field Survey

3.3.1 Reasons why respondents would not pay for Extension Services

Table 4 showed the reasons why farmers would not pay for extension services. About 88% of the farmers are not willing to pay for extension services due to low income from farming, about 99% will not pay because of inconsistency in government policies, 88.4% will not pay due to lack of clearly defined institutional framework, 98.6% will not pay due to lack of anti-corruption measures to curb corrupt act and nepotism, 89.9% will not pay due to poor availability of basic infrastructure e.g (good road network), 73.9% will not pay due to poor enabling environment for farmers participation in extension funding, about 95.7% will not pay due to inadequacy of ready-made market to sell increased farm outputs resulting from improved extension services.

Table 4: Reasons why respondents would not pay for extension services (n = 69)

Respondents reasons for not willing to pay for extension services	Reason for not willing to pay	Not a reason for not willing to pay
Low income from farming	61(88.4)*	8(11.6)
Lack of interest in extension programme	7(10.1)	62(89.9)
Inconsistency in government policies	68(98.6)*	1(1.4)
Lack of clearly defined institutional framework	61(88.4)*	8(11.6)
Poor professional competence on the part of the extension agents	15(21.7)	54(78.3)
Lack of anti-corruption measures to curb corrupt act and nepotism	68(98.6)*	1(1.4)
Poor availability of basic infrastructure e.g (good road network)	62(89.9)*	7(10.1)
Poor enabling environment for farmers participation in extension funding	51(73.9)	18(26.1)
Lack of constituted bodies to monitor and evaluate the performances of extension agents	46(66.7)	23(33.3)
Inadequacy of ready-made market to sell increased farm outputs resulting from improved extension services	66(95.7)*	3(4.3)

Key*= Main reasons why farmers would not pay for extension services
Figures in parenthesis represents percentage (%), Source: Field Survey

3.4 Test of Hypothesis

Ho_1; There is no significant association between the socio-economic status of farmers and the willingness of farmers to pay for extension services.

The Chi-square analysis in Table 5 showed that there was no significant association between the socio-economic characteristics and the willingness of farmers to pay for extension services at 0.05 level of significance, hence the null hypothesis is accepted because Age, Sex, Level of education, Household size, farm size and farming experience had (P-value > 0.05) This implies that the tested socio-economic characteristics does not determine farmers' willingness to pay for extension services.

Table 5: Association between the socio-economic status of farmers and willingness of farmer to pay for extension services

Socio-economic characteristics	X^2	Df	P-value	Remark
Age	4.705	4	0.319	Not significant
Sex	0.001	1	0.992	Not significant
Level of education	12.261	6	0.056	Not significant
Household size	0.442	2	0.802	Not significant
Farm size	5.610	2	0.061	Not significant
Farming experience	5.882	5	0.318	Not significant

*Significant at ≤ 0.05 (Df = degree of freedom), Source: Field Survey

4.0 Conclusion and Recommendations

Majority of the farmers possessed low economic status showing their poor capacity to pay for extension services. However, about 36% of farmers were having better economic status showing their capacity to pay for input delivery and few extension services. The possibility of economic return from a particular service is the major criteria of willingness of farmers to pay for these services. The highest number of farmers agreed to pay for services such as Information on how to access improved crop variety, Information on how to treat pest and disease infestation, Technical knowledge on how to raise nursery for different crops, Personal visit to farmers farm to diagnose a particular problem, Providing solutions to reported problems encountered, Information on how and where to source for fund, Information on how and where to access subsidized farm input.

Based on the findings of this study, it is therefore recommended that:

- A workable fashion for the implementation of this policy should be designed for the expected impact

of improving extension services and farmers' productivity.

- Agricultural extension services have to be professionally and competently delivered so that the farmers will be motivated to pay.
- The concept of farmers paying for extension services should be experimented and implemented in a phased manner with utmost caution because many farmers in Nigeria operate on small scale and lack access to necessary resources that can enable them adopt this system easily.
- Farmers' access to credits is a function of their ability to sustainably pay for extension hence, provision of credit by both private and public at low interest rate to farmers is encouraged. As this will not only boost their agricultural production when invested wisely in enterprise, but can give them the financial power to pay for extension services.

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