

YOUNG FARMERS' WILLINGNESS TO PAY FOR AGRICULTURAL EXTENSION SERVICES IN OYO STATE

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Abstract

The sustainability of agriculture calls for effective agricultural extension service delivery. However, the public agricultural extension system is grossly ineffective owing to diverse challenges including lack of funding, therefore in searching for new funding and delivery alternatives in addition to government's input, issues such as willingness of farmers to pay are extremely important. This study assessed the willingness of young farmers to pay for agricultural extension services in Ibarapa Areas of Oyo State. The population of the study consisted of all young farmers in Ibarapa Zone of Oyo State i.e. Ibarapa East, Ibarapa Central and Ibarapa North Local Government Area. Multi-stage sampling procedure was used to select one hundred and twenty young farmers. Data were collected with the aid of interview schedule. Frequency and percentages were used to describe the dependent and independent variables of the study while Pearson Product Moment Correlation (PPMC) and Chi-square were employed for hypotheses testing. The result of the findings revealed that the mean age was 32 ± 2.8 years, majority (80.8%) were male, married (80.8%) with household size of 1-4. More than half of the respondents (54.2%) had tertiary education. Friends and family (1.85) ranked 1st as respondents' source of information on agricultural practices. Information on credit sources (0.87) ranked 1st as the preferred agricultural service the respondents were willing to pay for. Also, less than half (47.5%) of the respondents had favourable attitude towards public extension services. However, willingness of young farmers to pay for extension services was high (51.7%). The results also revealed that there was a significant relationship between household size ($\chi^2=9.498$, $p=0.023$), level of education ($\chi^2=17.454$, $p=0.002$) and

willingness to pay for extension services. Nevertheless, there was no significant relationship between respondents' attitude towards public extension service ($r=-0.150$, $p=0.102$) and willingness to pay for extension services. The study concluded that young farmers in the study area were willing to pay for extension service.

Keywords: Public extension service, private extension service, willingness to pay, young farmers.

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Introduction

Agriculture undoubtedly is the mainstay of Nigeria's economy. A large proportion of the population engages in agriculture directly or otherwise. The key role played by agriculture can be inferred from its contribution to the nation's economy. Commendably, Nigerian government is striving hard to diversify the nation's economy by investing in agriculture. Effort of the government to follow this path stems from the fact that agriculture can provide employment for the teeming population, provide raw materials for local agro-allied industries, generate foreign earnings, among other benefits. Effort to diversify the nation's economy by investing in agriculture is laudable, nevertheless to achieve success, farmers need to be technically supported and exposed to agricultural best practices, market information and so on. The only system that can successfully fill this gap is Agricultural extension.

In developing countries like Nigeria, agricultural development is hinged on extension services by helping farmers to identify, analyze and link up with research

on their production problems, for improvement of farm yields leading to increased income and better standard of living (Van den ban and Hawking, 1998). Agbamu (2005) maintained that agricultural extension services afford farmers the opportunities to get relevant information on agricultural technologies, improved practices, capacity building opportunities and others. The provision of extension service to farmers in Nigeria has largely been regarded as a public good that should be rendered without payment and has been publicly funded since the Nigerian independence (Babalola and Ipadeola, 2015). Unfortunately, the public extension has been criticized for its lack of purpose and effectiveness in delivering extension services to the farmers (Adejo, Okwu and Ibrahim, 2012). Agbamu (2005) affirmed that the public agricultural extension system is grossly ineffective owing to problems such as inadequate funding, inadequate staffing, unacceptable farmer/ extension ratio, among others. Of all these problems, inadequate funding is a major problem. With the withdrawal of

the financial support of the World Bank, agricultural extension service delivery received a major blow. The situation has since worsened, leading to other problems. For instance, the extension/farmer ratio in Nigeria is beyond what is acceptable—one extension officer to three thousand farm families (1:3000), as against FAO recommendation of one extension officer to eight hundred farm families (1:800) (International Institute of Tropical Agriculture, 2015).

In searching for new funding and delivery alternatives in addition to government's input, issues such as willingness of farmers to pay, for which services and how much they are willing to pay are extremely important. Efforts should therefore be directed at making farmers recognize the relevance of agricultural extension service. It is when the relevance of the service is appreciated that recipients can be persuaded to pay.

Furthermore, the call to revitalize agriculture no doubt calls for young involvement in agriculture. The present labor force engaged in agriculture which comprise of old rural

farmers cannot meet the present food demand of the populace. In addition, old farmers are usually reluctant to adopt innovation as a result of mentality based on age (Adekoya and Tijani, 2015). The call for youth involvement in agriculture is not only timely but imperative. Although the involvement of youths in agriculture is not without its challenges as they lack sufficient knowledge on agricultural production. It is therefore crucial that they are trained by extension officers on techniques involved in agricultural production. Given the challenges facing public agricultural extension service in Nigeria however, young farmers' willingness to pay for extension service comes to the fore.

There is therefore need to assess the willingness of farmers especially the young farmers to pay for extension services. Though, several studies have investigated the farmers' willingness to pay for agricultural extension services for instance; Ajayi (2017) examined farmers' willingness to participate in the financing of agricultural extension services, Oladele and Obuh (2008) analyzed perceived effect of

privatization of extension services, nevertheless limited studies exist on the willingness of young farmers to pay for extension services, which this study therefore addressed. Specifically, the study;

1. described the socio-economic characteristics of the respondents;
2. identified enterprise characteristics of the respondents;
3. determined the agricultural services that respondents are willing to pay for;
4. ascertained the attitude of respondents towards public extension service;
5. examine the effectiveness of information sources;
6. determined the willingness of respondents to pay for extension service.

Hypotheses

Ho₁: There is no significant relationship between farmer's socio-economic characteristic and willingness to pay for agricultural extension services.

Ho₂: There is no significant relationship between farmer's attitude to public extension service and willingness to pay for agricultural extension services.

Methodology

The study was carried out in Ibarapa zone of Oyo state. Ibarapa zone is made up of three local government areas, namely: Ibarapa East, Ibarapa Central and Ibarapa North. Majority of the inhabitants are farmer who engage in cultivation of food crops such as maize, melon, yam, cassava, vegetables and fruits. The population of the study consisted of all young farmers in Ibarapa Zone of Oyo State i.e. Ibarapa East, Ibarapa Central and Ibarapa North Local Government Area who are within the age range of 18 and 35 according to National Youth Policy of Nigeria. The list of registered farmers was obtained from Agricultural Development Programme Ibadan-Ibarapa zone and stratified by age. Multi-stage sampling procedure was employed for selecting respondents for the study. First stage include simple random sampling of two wards from each of the three LGAs that made up Ibadan-Ibarapa zone in the area to give a total of six wards; Anko, Isale-Baale, Okeserin, Oke-Odo, Imofin and Iki. In the second stage, one community was purposively selected from

each of the ward due to large number of young farmers. Twenty respondents were randomly selected from each of the communities to provide for a sample size of 120 respondents. Relevant data for this study were collected using interview schedule.

Agricultural services respondents were willing to pay for was determined by asking respond to indicate from a list of agricultural services the services they are willing to pay for and the extent to which they are willing to pay using 3-point rating scale of 'to a large extent (2), 'to some extent' (1) and 'not at all'(0).

Sources of information and the frequency of acquiring such information was measured by exposing respondents to a list of sources of information and asked them to indicate how frequent they source for information using 3 points scale of always (2), occasionally (1) and never (0).

Effectiveness of sources of information was measured using response options of very effective (2), effective (1) and not effective (0).

Attitude of respondents towards public agricultural extension services was measured on a 5-

point likert type scale of strongly agree, agree, undecided, disagree and strongly disagree with assigned scores of 5,4,3,2 and 1 respectively for positive statements while it was in reverse order for negative statements. Mean score was obtained and was used to categorize into favourable and unfavourable attitude towards public agricultural extension services.

The dependent variable of the study is willingness to pay for extension service and it was measured on a 5-point rating scale of strongly agree, agree, undecided, disagree and strongly disagree with assigned score of 5,4,3,2 and 1 respectively for positive statements while it was in reverse order for negative statements. Mean score was generated and was used to categorize into high and low willingness to pay for extension services.

Results and Discussion Socio-economic characteristic of the respondents

Result in Table 1 reveals that 50.8% of the respondents were between 32-35 years with a mean age of 32 ± 2.8 . This implies that respondents were within their

productive economic life. Studies have revealed that younger people are likely to be more receptive to innovations which may positively influence their need for extension service and their willingness to pay for it. Majority (80.8%) were male, married (80.8%) and educated (61.7%). Education makes farmers better managers of resources and more receptive to innovations offered by extension service as affirmed by Onuche, Adejoh and Adah (2015). About 80.0% of respondents had a household size of 1-4 which is the national recommended household size in Nigeria. Having dependants that one is directly responsible for may necessitate increased production in order to increase income which could influence yearning for extension service.

Respondents' enterprise characteristics

Result in Table 2 shows that majority (64.2%) of the respondents cultivated cassava, 25.8% cultivated maize, while about 10.0 per cent cultivated yam, tomato and cowpea. Furthermore, 69.2% of the respondents acquire their

farmland through inheritance. On source of credit facilities, majority (71.7%) of the respondents use their personal savings for farming operation, while 8.3% obtain bank loan and credit facilities from cooperative society. Result in Table 2 further shows that majority (61.7%) of the respondents were visited by extension agents while 38.3% of them were not visited. Also, 31.7% of the respondents were visited by extension agents fortnightly while very few (7.5%) were visited daily.

Agricultural extension service respondents are willing to pay for

As shown in Table 3, prominent extension service respondents were willing to pay for was information on credit sources (0.87). This was followed by information on storage methods and techniques (0.80) and improved planting materials (0.77) ranked 3rd. The least agricultural service the respondents were willing to pay for is linkage with market (0.50) which ranked 10th. This suggests that respondents in the study area have need of access to credit facilities such as offered by

financial institutions as most of their farming operations cost was from their personal savings which may not be sufficient to enhance their production. According to Ololade and Olagunju (2013) agricultural credit is critical to sustainable agricultural development, it enhances productivity and promotes standard of living by breaking vicious cycle of poverty of small scale farmers.

Sources of agricultural information

Result in Table 4 reveals that friends and family (1.85) ranked 1st as the source respondents acquire agricultural information, fellow farmers (1.73) ranked 2nd while radio (1.51) ranked 3rd. The least utilized source of agricultural information was agricultural journal (0.66). This implies that respondents lack access to direct information from extension agents who are saddled with responsibilities of delivering latest agricultural information that can enhance farmers's production. (Adio, Abu, Yusuf, Sheriff and Nansoh , 2016) asserted that through agricultural information farmers can adopt new technologies or farming

systems, know when to plant and harvest, which crop to produce and which animal to rear and where to sell. It is also through agricultural information that farmers can know where to acquire bank loans and other farming inputs, as well as how to control pests and diseases. Such information can be adequately obtained from extension agents.

Effectiveness of sources of information

Result on Table 5 shows that information from friends and family (1.48) ranked 1st as the most effective source of information to the respondents followed by fellow farmers (1.45) which ranked 2nd. Television (1.07) ranked 3rd as the most effective source of information for the young farmers, in the study area. However, extension agents ranked 7th in effectiveness, this suggests that the extension agents have not been able to justify their responsibility of providing adequate and timely information to farmers in the study area. This may be as a result of several challenges being encountered by extension agents as expressed by Agbamu (2005) that public

agricultural extension system is grossly ineffective owing to problems such as inadequate funding, inadequate staffing, unacceptable farmer/extension ratio, among others.

Attitude of respondents towards public agricultural extension services

The finding in Table 6 reveals the attitude of respondents towards public agricultural extension services. A larger percentage of the respondents (62.4%) agreed that they rarely benefit from government extension agents in their communities, more than half (55.8%) asserted that government extension agents do not always provide them with current agricultural information. Also, 55.0% agreed that the services rendered are not sufficient to increase their production. As regards climate change, majority (72.5%) agreed that public extension services have not helped to reduce risk, 58.3% agreed that there is no proper monitoring and evaluation by public extension agents. However more respondents 64.1% agreed that government extension service are not time

consuming, 63.3% also agreed that training giving by public extension agents are useful and understandable. Babalola and Ipadeola (2015) opined that the public extension has been criticized for its lack of purpose and effectiveness in delivering extension services to the farmers.

Furthermore, the result on Table 7 shows that less than half (47.5%) of the respondents had favourable attitude towards public extension services while (52.5%) had unfavourable attitude. The type of services obtained by farmers from extension agents and constraint encountered in receiving such services could influence their attitude towards services rendered. Ayansina, Adekunle, Oyeyinka and Ayandiji (2013) observed that extension services rendered by extension agents are weakened by excessive cost of input delivery, bureaucratic inefficiencies leading to poor formulation and implementation of extension programmes and failure to address the peculiar needs of farmers.

Respondents' willingness to pay for extension services

Result in Table 8 shows that most of the respondents (78.3%) agreed to pay for extension services if it is relevant to their farming experience, and if it will increase their knowledge about farm management (78.3%). Also, majority (79.1%) of the respondents agreed to pay for extension service if it is not too expensive, majority (81.7%) were willing to pay for extension services if the organization that will render it have qualified and trained personnel and more than half (54.2%) of them agreed to pay for extension services if the service will be more reliable and efficient than public extension service. As evident on the table, majority (69.2%) of the respondents agreed to pay for extension services if the service will provide information on reduction on risks of climate change. This implies that respondents are willing to pay for extension service if the service will be better than what the public extension service offers and if it will be relevant to their farming businesses and eventually increase their production.

In addition, result in Table 9 reveals high level of willingness (51.7%) to pay for extension service. This is in tandem with the findings of Adamu (2014) who reported that majority of small scale farmers are willing to pay for extension services if the service will improve their farming activities. This further corroborates Ajayi (2006) who maintained that some farmers would be willing to pay for extension services if it would profit them and if it would not be financially more than what they can bear.

Test of Hypotheses

Ho₁: There is no significant relationship between socio-economic characteristics and willingness to pay for agricultural extension service.

Table 10 showed that there is a significant relationship between household size ($\chi^2=9.498$, $p=0.023$), level of education ($\chi^2=17.454$, $p=0.002$) and willingness to pay for extension services. Thus, the null hypothesis is rejected. However, there exists no significant relationship between sex ($\chi^2=0.764$, $p=0.382$), religion

($\chi^2=5.976$, $p=0.050$) marital status ($\chi^2=0.458$, $p=0.795$) and their willingness to pay for extension services. Thus, the null hypothesis is accepted. This implies that household size and level of education may influence respondents' willingness to pay for extension services. Young farmers in the study area had small household size which is an indication that they have minimum financial responsibilities and could therefore afford to pay for relevant services that will enhance their production and increase profits. Also, education makes the adoption of innovation easier due to the exposure and the ability to decipher information it confers. Education is thought to create a favourable mental attitude towards for the acceptance of new practices (Onuche, Adejoh and Adah, 2015).

Ho₂: There is no significant relationship between farmer's attitude to public extension service and willingness to pay for agricultural extension services. Result in Table 11 shows that there was no significant relationship between

respondents' attitude to public extension ($r=-0.150$, $p=0.102$) and willingness to pay for extension services. Thus, the null hypothesis is accepted. This implies that the attitude of respondents towards public extension services does not influence their decision to pay for extension services or not.

Conclusion and recommendations

The study concluded that most of the respondents were male, Muslim, married, literate, had more than two or more people in their households and belong to a social group. Also, majority, acquire land through inheritance and cultivates cassava. The respondents had personal savings as source of finance and were visited by extension agent fortnightly. Friends and family was the information source most of the respondents seek information from and were willing to pay for information on credit sources. Young farmers in the study area had unfavourable attitude towards public extension services and were willing to pay for agricultural extension services.

It was recommended that private extension service should provide agricultural services that will increase agricultural production and meet the needs of farmers. Also government agencies should design programmes that is locally oriented and of benefit to farmers.

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Table 1: Distribution of respondents' socio-economic characteristics

Socio-economic characteristics	Frequency	Percentage
Age		
23-25		
26-28	7	5.8
29-31	10	8.3
32-35	42	35.0
Mean=32	61	50.8
S.D=2.8		
Sex		
Male	97	80.8
Female	23	19.2
Marital status		
Single	20	16.7
Married	97	80.8
Divorced	3	2.5
Household size		
1-4	96	80.0
5-7	19	15.8
8-11	4	3.3
12 and above	1	0.8
Level of education		
Primary education	11	9.2
Secondary education	35	29.2
Tertiary education	74	61.7

Source: Field survey, 2016

Table 2: Distribution of respondents' enterprise characteristics

Enterprise characteristics	Frequency	Percentage
Crop cultivated		
Cassava	77	64.2
Maize	31	25.8
Yam	8	6.7
Tomato	3	2.5
Cowpea	1	0.8
Land acquisition		
Inheritance	83	69.2
Purchase	20	16.7
Rent	16	13.3
Lease	1	0.8
Source of credit facilities		
Personal savings	86	71.7
Family and friends	24	20.0
Bank loan	7	5.8
Cooperative society	3	2.5
Visit by extension agent		
Yes	74	61.7
No	46	38.3
Frequency of visit		
Daily	9	7.5
Weekly	6	5.0
Forth nightly	38	31.7
Monthly	14	11.7

Source: Field survey, 2016

Table 3: Distribution of agricultural extension service respondents are willing to pay for

Agricultural services	Not at all %	To some extent %	To a large extent %	Mean	Rank
Information credit sources	30.0	58.3	11.7	0.87	1 st
Information on storage methods and techniques	31.7	56.7	11.7	0.80	2 nd
Improved planting materials	37.5	48.3	14.2	0.77	3 rd
Advisory services on pest control	45.0	40.8	14.2	0.69	4 th
Advisory services on disease control	45.8	40.0	14.2	0.68	5 th
Education and training	42.5	47.5	10.0	0.67	6 th
Linkage with input sources	43.3	48.3	8.3	0.65	7 th
Farm management	50.0	38.3	11.7	0.62	8 th
Advisory services on crop	54.2	35.8	10.0	0.59	9 th
Linkage with market	54.2	41.7	4.2	0.50	10 th

Source: Field survey, 2016

Table 4: Distribution of sources of agricultural information

Sources	Always %	Occasional %	Never %	Mean	Rank
Fellow farmers	80.0	11.7	7.5	1.73	2 nd
Friends and family	88.3	8.3	3.3	1.85	1 st
Radio	55.8	40.0	4.2	1.51	3 rd
Television	17.5	53.3	29.2	0.91	5 th
Social groups	22.5	60.8	16.7	1.06	4 th
Extension agents	11.7	53.3	35.0	0.77	6 th
Internet	13.3	38.3	48.3	0.65	8 th
Watsapp/Facebook/twitter	11.7	41.7	46.7	0.66	7 th
Agric journal	10.0	43.3	46.7	0.63	9 th

Source: Field survey, 2016**Table 5: Distribution of effectiveness of the sources of information**

Sources	Very effective %	Effective %	Not effective %	Mean	Rank
Fellow farmers	60.8	24.2	15.0	1.45	2 nd
Friends and family	64.2	20.0	15.8	1.48	1 st
Television	32.5	41.7	25.8	1.07	3 rd
Social groups	23.3	56.7	20.0	1.03	4 th
Radio	13.3	64.2	22.5	0.91	5 th
Extension agents	3.3	50.0	46.7	0.57	7 th
Internet	9.2	37.5	53.3	0.56	8 th
Watsapp/Facebook/twitter	6.7	42.5	50.8	0.55	9 th
Agric journal	5.8	54.2	40.0	0.67	6 th

Source: Field survey, 2016

Table 6: Distribution of Attitude of respondents towards public extension service

Attitude statement	SA %	A %	U %	D %	SD %
The contact with government extension agents is more regular	28.3	18.3	3.3	35.0	15.0
The government extension agents do not always give current information on farming	20.0	35.8	3.3	23.3	17.5
The services rendered are not sufficient to increase agricultural productivity	25.8	29.2	5.0	26.7	13.3
Public extension services have not helped to reduce risk of climate change	20.8	51.7	5.8	13.3	8.3
We don't usually benefit from the government extension agents in our community	37.4	25.0	0.8	23.3	12.5
The information on improved technology provided by government extension agents is not reliable	22.5	42.5	4.2	12.5	18.3
Public extension services have helped to solve production problems	21.7	38.3	6.7	16.7	16.7
The services from public extension help increase income	13.3	40.8	8.3	22.5	15.0
The public extension services satisfy peoples' needs and interest	11.7	35.8	7.5	34.2	10.8
The training giving by public extension agents are useful and understandable	10.8	52.5	7.5	18.3	10.8
Result demonstrations conduct by government extension	8.3	40.8	8.3	25.0	17.5

agents is successful most of the time					
Government extension services are not time consuming	13.3	50.8	10.0	17.5	8.3
Public extension do not have proper monitoring	20.0	38.3	6.7	16.7	18.3

Source: Field survey, 2016

Table 7: Distribution of respondents' attitude level towards public extension services

Attitude level	Frequency	Percentage
Favourable (38-57)	57	47.5
Unfavourable (25-37)	63	52.5

Mean= 38, Minimum= 25, Maximum= 57

Source: Field survey, 2016

Table 8: Distribution respondents' willingness to pay for extension services

Willingness to pay	SA	A	U	D	SD
I will pay for extension services if it is relevant to my farming experience	40.0	38.3	2.5	13.3	5.8
There is no need to pay for extension services since I have good knowledge of agricultural practices	20.0	20.0	5.0	23.3	31.7
Paying for extension services amount to waste of money	15.0	14.2	4.2	38.3	28.3
I am willing to pay for extension service if my production will increase	40.0	38.3	3.3	14.2	4.2

I will pay for extension service if is not too expensive	18.3	60.8	5.0	12.5	3.3
I will pay for extension service if they have qualified and trained personnel	30.0	51.7	5.0	10.0	3.3
I will pay for extension service if it can help to control the effect of pest and diseases	22.5	60.8	5.8	10.0	0.8
Services render by extension agent do not improve my livelihood, therefore I cannot pay for it	14.2	24.2	8.3	20.0	33.3
I can pay for extension service if it will increase my knowledge about farm management	30.8	46.7	5.0	13.3	4.2
Even if extension service grants me access to credit facilities, I will not pay	5.0	23.3	7.5	22.5	41.7
I cannot pay for extension service that is time consuming even though useful	7.5	25.8	8.3	29.2	29.2
If there is no easy accessibility to extension personnel I will not pay for extension personnel	15.0	46.7	7.5	20.0	10.8
If extension service is more reliable and efficient, I will pay for the cost	28.3	54.2	5.8	10.0	1.7
If extension service provides information on reduction on risk of climate change	12.5	69.2	5.0	12.5	0.8
I will not pay for any advisory service render by extension agent because it is suppose to be free	9.2	24.2	6.7	25.0	35.0

I don't have to pay extension agent for information storage methods and techniques because extension services is meant to be a public good	11.7	13.3	7.5	34.2	33.3
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Source: Field survey, 2016

Table 9: Categorization of respondents' willingness level to pay for extension services

Willingness level	Frequency	Percentage
High (52-98)	62	51.7
Low (41-51)	58	48.3

Mean= 52, Minimum= 41, Maximum= 98

Source: Field survey, 2016

Table 10: Chi-square analysis of respondents' selected socioeconomic characteristics and willingness to pay for agricultural extension services

Variables	χ^2	df	p-value	decision
Sex	0.764	1	0.382	NS
Religion	5.976	2	0.050	NS
Marital status	0.458	2	0.795	NS
Household size	9.498	3	0.023	S
Level of Education	17.454	4	0.002	S

Source: Field Survey, 2016

Table 11 Correlation of farmers' attitude and willingness to pay for agricultural extension services

Variable	r-value	p-value	Decision
Attitude towards public extension service and willingness to pay	-0.150	0.102	NS

Source: Field Survey, 2016