



## Farmers' Perception of Effectiveness of Agricultural Extension Agents in Anambra State, Nigeria

Nwaleji, H and Nnabueze, N

Department of Agricultural Economics & Extension, Faculty of Agriculture, Chukwuemeka Odumegwu Ojukwu

University (Former Anambra State University), Igbariam Campus, Anambra State, Nigeria

Corresponding Author Email: [nwaleji73@yahoo.com](mailto:nwaleji73@yahoo.com)

### Abstract

The study assessed farmers' perception of effectiveness of agricultural extension agents in Anambra State, Nigeria. The population of the study comprised all contact farmers and extension agents in Anambra State. Multi-stage, purposive and simple random sampling techniques were used to select 200 respondents comprising 160 farmers and 40 extension agents. Data for the study were collected through the use of interview schedule and questionnaire. Descriptive statistics such as frequency count, percentage and mean score were used in presenting and analyzing the data. The findings revealed that majority of the farmers were women, literate and the mean age was 54.27 years with an average farming experience of 18.98 years. Farmers' number of contact with extension agents and level of education were found to make significant contribution to farmers' perception of agricultural extension agents' quality. The level of adoption of new technologies by farmer was generally high (5.58). Agricultural extension service in Anambra State was not effective, which implies that extension service in the State was poor and weak. The identified constraints that hinder the performance of agricultural extension agents included inadequate vehicles for transportation, poor office accommodation, poor remuneration, poor funding, high level of farmers' illiteracy, and insufficient motivation of extension agents among others. The need for regular training of extension agents so as to develop more skills and technicalities in disseminating farm technologies to farmers was recommended.

#### Keywords:

Effectiveness,  
Agricultural  
Extension  
Agents

### 1. Introduction

In Nigeria, the need for self-sufficiency in food production cannot be overemphasized. The production of food in sufficient quantity and quality is the prime objective of the nation's agricultural sector. Nigeria being a sub-Saharan African country has agriculture as its main economic bedrock, employing about 70 percent of the population, mainly on a subsistence level (Asiabaka and Owens, 2002). In spite of the pivotal role agriculture plays in the economy of the nation, the greatest challenges, which face developing countries including Nigeria today, is how to eliminate hunger and overcome poverty (Chukwuji, 2006).

As a result of the food situation in many developing societies which are predominantly

agricultural, finding solution to raise productivity among the rural poor in these countries has become one of the most urgent questions confronting the international development communities (Agbam, 2005). The task of increasing agricultural production which involves the use of improved high yielding varieties of crops and species of livestock/fisheries is now being made popular among farmers through extension activities of Agricultural Development Programmes. Peasant farmers can achieve higher farm yields if they adopt recommended scientific farming techniques in place of their traditional practices. Obinne and Anyanwu (1991) and Rogers (1996) opined that successful adoption of improve farming techniques was predicated upon rural farmers acquiring the required knowledge and understanding

of these technologies, a process more effectively accomplished by agricultural extension service. The final measure of success in extension work is adoption and until resulting new technologies were diffused and adopted by the local farmers, the resources used will be a wasted investment. Amalu (1998) noted that, since the accomplishment of extension service goals depend primarily on the effectiveness of its staff, the task of extension agents in the ADP therefore, is to improve farmers' efficiency. Once extension agents are effective, farmers will adopt new innovations and this will lead to food sufficiency and poverty reduction.

Agricultural extension is acknowledged as information and knowledge sharing whereby innovations and improved methods and techniques of planting crops and rearing animals are made available to the farmers in their settlements. This is done through service inform of advice and assistance given to them to help them improve their methods of production, marketing and processing activities (Tologbonse, 2005). The overreacting objective of agricultural extension service globally remains the development of rural populaces and raising the standard of living of the farmers through increased farm production and income generation. Agricultural extension relays farmers' problems and information needs to researchers who in turn transfer technical information to farmers for implementation or formation of sound opinions which help them take good decision in selecting possible solution from alternatives (Adebowale, 2009).

The extension strategy of the Agricultural Development Programme (ADP) was based on the premise that same factors which include right technology, effective extension, access to physical production – enhancing inputs, adequate market and other infrastructural facilities are essential ingredients to get agriculture moving and to improve productivity in order to raise the living standards of rural dwellers (Braimah, 1992). The central feature of the ADP strategy is the reliance on the small-scale farmer as the pivot of an increased food production. The system has its main component a re-organized agricultural extension system that integrates extension workers; training and farm visit, and ensures a – two-way communication between farmers and researchers. The main point of the strategy, according to Oyaide (1990) is the encouragement of rapid uptake of improved technique that can only be done through programmed and monitored extension staff and farmer education.

The ADP therefore operates a systematic extension delivery using the training, visit and demonstration (T, V&D) extension approach to enhance agents' and farmers' efficiencies.

Incidentally, there seems to be a gap existing between these strategies and the utilization of the many research results at the production end, hence no appreciable impact has been recorded on the overall agricultural production. It appears that farmers' productivity is low as a result of the low efficiency of the extension agents. The task of the extension agents in the ADPs is to improve the farmers' efficiency but many of them are not result oriented (Amalu, 1998). The conditions for extension agents to be effective include:- ability to communicate, attitude of extension work, frequency of contact with farmers, and field responsibility. These are examined from the view – point of the farmers. The accomplishment of Agricultural Development Programme (ADP) extension service goals depends on the effectiveness of the extension agents achieving the programmes objectives.

Unfortunately, agricultural extension in Nigeria is facing several problems, which makes the sub sector more or less inefficient. Such problems include: financing, managerial issues, inappropriate technologies, extension quality and intensity, extension programming, coordinating with other agencies and policy instability (Lawal, 2000). It is therefore doubtful, if effective extension services will be provided to the rural population in view of the fact that extension services in the various states have not performed satisfactorily in the recent past especially in Nigeria. The study therefore aimed at finding out the effectiveness of extension agents in Anambra State as being perceived by farmers which the services are meant for. Specifically, the study was to: identify socio – economic characteristics of farmers; determine the level of adoption of agricultural innovations; ascertain farmers' perception of extension agents' characteristics and its relation to their adoption of agricultural innovation; ascertain the frequency of contact between agricultural extension agents and farmers; and identify the constraints to extension agents' effectiveness.

## 2. Materials and methods

The study was carried out in Anambra State Nigeria. The State is located between latitude 60451 and 50441N and longitude 60361 and 70291E. It has an estimated population of 4,182,032, with the male population of 50.9% and female 49.1% (National Population Commission (N.P.C.), 2006). The state occupies an area of 4,416 square kilometers. About 70% of the total land mass is arable lands; which is under cultivation while the remaining 30% is residential areas. Agricultural is the predominant occupation in the rural areas engaging more than 70% of the rural population. The State consists of twenty – one (21) Local Government Areas (L.G.A.) and four

agricultural zones- *Aguata, Anambra, Awka and Onitsha*. Virtually, all the zones have similar physical features in terms of topography, vegetation, soil type as well as the type and nature of agricultural activities carried out.

Survey design was adopted. Contact farmers and extension agents in Anambra State formed the population from which sample for the study was drawn. Multi-stage, purposive and simple random sampling techniques were used to select two hundred (200) respondents comprising one hundred and sixty (160) farmers and forty (40) extension agents. Stage 1 involved the random selection of two(2) extension blocks (local government areas) from each of the four(4) agricultural zones in the State; this gave eight(8) extension blocks. In Stage 2, Five(5) extension circles were randomly selected from each of the eight(8) selected extension blocks; this gave a total of forty(40) extension circles. Stage 3 involved the random selection of four (4) contact farmers from each of the selected circles; this gave a total of one hundred and sixty (160) farmers. The forty (40) extension agents covering the selected circles were purposively selected for the study.

Primary data were used to collect data for the study. The primary data for the study were collected through validated interview schedule for farmers and questionnaire for extension agents. The interview schedule and questionnaire comprised structured questions and were divided into sections according to the objectives of the study. The instruments for data collection were validated by three academic staff in the Department of Agricultural Economics and Extension, Chukwuemeka Odumegwu Ojukwu University, Igbariam Campus. The instruments were administered by the researcher and three trained enumerators.

To measure adoption level of selected technologies, respondents were asked to indicate 'yes' or 'no' against the farm technologies they have adopted or not adopted as a result of the message of agricultural extension agents. The sigma method of scoring to calculate adoption index as was used by Agbamu (2006) was adopted in calculating adopted scores. This method involves a process of standardizing ordinary frequency numbers by mathematical procedures in order to obtain normalized standard scores. For example, 85% of farmers that adopted the application of fertilizers was calculated thus:  $100 - (85/.2) 57.5$ . Using the statistical table of normal deviates, 57 in the vertical row under column 5 gave 0.189. A constant 2 was added to the result and multiplied by the same constant in order to increase the magnitude of the value from the table of normal deviates. The sigma

score for adoption of fertilizer is  $(0.189 + 2) 2 = 4.378$ . In this study, a score of 5.5 – 10.0 was regarded as high level of adoption, 4.1 – 5.4 as medium level while 0.00 – 4.0 as low level of adoption.

Data generated from the study were achieved using descriptive and inferential statistics. Descriptive statistics such as frequency count, percentage and mean score were used in presenting and analyzing the data.

### 3. Results and discussion

3.1 Socio- economic characteristics of respondents

Table 1 shows that majority (53.12%) of the farmers were female, while greater proportions (55.00%) of the extension agents were female. This implies that agricultural activities and contact farmers in the area under study are dominated by female. Table1 reveals that greater proportion (53.75%) of the farmers were within the age range of 50- 59 years and the mean age was 54 years. The table further shows that majority (50.00%) of the extension agents were between 40-49 years of age and their mean age was 46.63 years. This implies that the respondents were middle aged and are at their productive years. The finding is in line with that of Obinne and Anyanwu (1991) who mentioned that age is very important in farming as primary occupation since it requires people of age group that have energy to farm and are independent. Entries in Table 1 show that majority (49.38%) of the farmers were married, while majority (90.00%) of the staff were married. The finding is in conformation with Onwubuya, et, al (2008) who noted in their study that married people have the responsibility for provision of household needs of the families.

Data in Table1 show that greater proportion (33.0%) of the farmers had no formal education, while all the extension agents attended tertiary education. This finding implies that reading of extension guides, bulletin and technical papers may not be very effective as a result of the low education of farmers. Education is important in creating positive mental attitude towards adoption of farming innovations (Benor, Harrison and Barter, 1997). Table1 shows that the mean farming experience of farmers was 18.98years while the mean work experience of the extension agents was 19.25 years. The result showed that most farmers were highly experienced and the extension agents had spent a reasonable years in the ADP, thereby expected to have acquired a reasonable experience to impart on the farmers. According to Yusuf (2000), experience is the determination of profitability, with

more experience; a farmer can become more or less averse to the risk implied by adopting a new technology. This also supports the findings of Okoye (2006) who stated that more experienced farmers are expected to have higher levels of technical efficiency. The table also indicates that the average farm size of the farmers was 1.86 hectares. This implies that the farmers are generally relatively small holders. Small scale producers are those cultivate up to a maximum of 5 hectares, irrespective of the system employed. The majority of individual farmers in this category

manage 0.5 to 1.5 hectares. This is in line with Olayideet al (1980) who classified scale farmers as those that had between 0.1-5.99 hectares. Table 1 also reveals the mean income of N48, 570 per annum in the study area, which indicated that respondents were mainly subsistence farmers. The results in Table 1 show that 58.13% of the respondents belonged to various cooperative societies while 41.87% did not belong to cooperative societies.

Table 1. Distribution of respondents by socio-economic characteristics (n= 160)

Socio-economic characteristics	Farmers (n=160)		Extension Agent (n=40)	
	%	Mean (M)	%	Mean (M)
Gender				
Male	46.88		45.00	
Female	53.12		55.00	
Age(years)				
20-29	0.63		10.00	
30-39	3.75		30.00	
40-49	22.50	54.27	50.00	46.63
50-59	53.75		10.00	
60-69	13.13		-	
70-79	6.25		-	
Marital status				
Married	49.38		90.00	
Single	18.75		10.00	
Widowed	23.12		-	
Divorced	8.75		-	
Farming/work experience				
1-10	13.12		12.50	
11-20	12.50		45.00	
21-30	49.38	18.98	35.00	19.25
31-40	25.00		7.50	
Educational level				
No formal education	33.12		-	
Primary education	22.50		-	
Secondary education	20.63	8.25	-	
Tertiary education	23.75		100.00	
Farm size (ha)				
0.5-1.5	31.25		-	
1.6-2.5	55.00		-	
2.6-3.5	7.50	1.95	-	
3.6-4.5	3.13		-	
4.6-5.5	3.13		-	
Annual income(N)				
10,000-30,000	16.25		-	
31,000-50,000	52.50		-	
51,000-70,000	28.12	41,793.75	-	
71,000-90,000	1.88		-	
91,000-110,000	1.25		-	
Membership of cooperative				
Yes	58.13		-	
no	41.87		-	

### 3.2 Farmers' adoption of selected agricultural innovations

Results in Table 2 show the adoption scores of selected innovations. There was a general high level of adoption of innovations by farmers except in the adoption of use of herbicides and pesticides and use of artificial insemination which have medium level of adoption. An overall mean adoption score of 5.58 indicated general high level of adoption of technologies in the study area. From the results, it could be deduced that the extension agents had been able to make the clientele adopt some of the innovations considering the overall mean adoption score. The findings on the adoption of herbicides, pesticides and artificial insemination agreed with the findings of Omotayo et al (2001) who reported that technologies related to pesticides use and artificial insemination requires high technique and were least adopted.

### 3.3 Farmers' perception on extension agents' characteristics and its relation to their adoption of agricultural innovation

Table 3 reveals the result of the ranking of the farmers' perception of the characteristics of extension agents in discharging their duty. The results showed a ranking order, which implies that the farmers had high perception of the agricultural extension agents on their characteristics in discharging their duty, hence the adoption of the technologies recommended. This confirmed the findings of Asiabaka and Owens (2002) and Bonmeke and Ajayi (2006) which asserted that farmers of all socio-economic background are more likely to use agricultural information efficient distribution of the needed inputs.

### 3.4 Frequency of extension contact

Information on Table 4 shows the distribution of respondents according to frequency of extension contact. Results indicated that the mean extension contact of the respondents were 2.86. This suggests a low extension contact when compared to the expected mean extension contact of 6 times per

year. Studies have shown that the more contact farmers had with extension the more they are likely to accept extension messages. This is because the farmers' trust and confidence in the extension are built up through regular contacts. Cleaver (1997) in a study found a positive and significant relationship between extension contact and adoption of agricultural innovations.

### 3.5 Effectiveness of agricultural extension agents in Anambra State

Data in Table 5 show the mean scores of indicators for effectiveness of extension agents. The cut off mean effectiveness score was 4.13. This was obtained by compiling the mean of all the cut off mean scores for the four indicators used in assessing the effectiveness of extension agents as follows: - Adoption of innovation (Cut-off mean = 5.5); frequency of extension contact (Cut-off mean 6); farmers perception of extension agents' characteristics (Cut-off mean = 2.5) and constraints to agents' effectiveness (Cut-off mean = 2.5). Entries in the table further reveal that the pooled mean score for data obtained on the various effectiveness indicators for the four agricultural zones in Anambra State was 3.35. This is lower than the cut-off effectiveness score of 4.13, suggesting that agricultural extension agents in Anambra State are ineffective. Ekpere (2014) also reported the ineffectiveness of extension services in Nigeria.

### 3.6 Constraints to agricultural extension agents' effectiveness

Table 6 shows fourteen (14) constraints to extension agents' effectiveness. Results from the analysis show that all the variables loaded high, hence are all important. The results therefore imply that agricultural extension agents are faced with challenges which hinder their effective performance. This seemed to agree with the assertion of Agbamu (2005), which identified poor remuneration, irregular training, poor office accommodation and others as problems of agricultural extension service in developing countries.

Table 2. Farmers' scores according to adoption levels of agricultural innovations ( n=160)

Selected Innovations	<i>f</i> of Adopters	% of Adopters	Adoption Scores
Use of Improved Varieties of crop	149	93.1	5.80
Use of herbicides and pesticides	116	72.5	5.30
Use of improved storage technique	148	92.5	5.79
Use of improved processing technique	141	88.0	5.70
Use of specified planting distance	136	85.0	5.62
Fertilizer application	136	85.0	5.62
Artificial insemination	113	70.6	5.25
Overall Mean =5.58			

Table 3. Ranking of farmers' perception of extension agents characteristics and its relation to their adoption of agricultural innovation

Statements	Strongly Agree 4pts	Agree 3pts	Disagree 2pts	Strongly disagree 1pt	Total n= 160	Mean score	Rank
My extension agent has good ability to integrate practice and theory.	384 (96)	183(61)	6 (3)	-	573(160)	3.58	1 <sup>st</sup>
My extension agent has good personality trait such as dressing, comportment, respect to farmers.	392(98)	129(43)	26(13)	6(6)	553(160)	3.46	2 <sup>nd</sup>
My extension agent has welfare of farmers at heart	304(76)	240(80)	8(4)	-	552(160)	3.45	3 <sup>rd</sup>
My extension agent has good knowledge of the subject matter.	276(69)	261(87)	8(4)	-	545(160)	3.41	4 <sup>th</sup>
My extension agent is friendly with farmers & have good relationship with them.	252(63)	285(95)	-	2(2)	539(160)	3.37	5 <sup>th</sup>
My extension agent is credible & trust worthy	340(85)	162(54)	30(15)	6(6)	538(160)	3.36	6 <sup>th</sup>
My extension agent display good empathy towards farmers.	204(51)	291(97)	24(12)	-	519(160)	3.24	7 <sup>th</sup>
My extension agent obeys the culture of the farmers.	336(84)	53(51)	20(10)	5(5)	514(160)	3.21	8 <sup>th</sup>

Figures in parenthesis are frequency counts

Table 4. Distribution of respondents according to frequency of extension contact per year

No of contact	Frequency	Percentage(%)	Mean
1-6 contacts per year(1)	15 (15)	9	
7-12 contacts per year(2)	48 (96)	30	
13-18 contacts per year(3)	40 (120)	25	
14-24 contacts per year(4)	57 (228)	35	2.86

Figures in parenthesis are frequency counts

Table 5. Mean scores of indicators for effectiveness of agricultural extension agents

Agricultural Extension Block zone		Adoption level 5.5pts	Frequency of extension contact 6pts	Farmers' perception of extensionists 2.5pts	Constraints to effectiveness 2.5pts	Total	Mean score
Anambra	Anambra East	5.65	3.47	2.90	1.50	13.52	3.38
	Anambra West	5.45	3.30	2.90	1.20	12.85	3.21
Awka	Awka South	5.75	3.08	3.80	1.60	14.23	3.56
	Awka North	5.55	4.07	2.90	1.42	13.94	3.49
Onitsha	Idemili South	5.35	2.09	3.17	2.00	12.61	3.15
	Idemili North	5.70	3.13	2.30	2.01	13.14	3.29
Aguata	Orumba South	5.55	4.15	2.29	2.04	14.03	3.51
	Orumba North	5.60	3.08	2.30	1.95	12.93	3.23
Total= 26.82 ,		Pooled Mean=3.35					

Table 6. Distribution of respondents according to constraints to the extension agents' effectiveness

Constraint	Total Score	Mean Score	Rank
No vehicles, motorcycles for transportation	151	3.8	1st
Poor office accommodation	145	3.6	2nd
Poor remuneration	142	3.6	2nd
Poor funding	137	3.4	3rd
Language barriers	135	3.4	3rd
High level of farmers' illiteracy	130	3.3	4th
Inappropriate technology	129	3.2	5th
Poor technology adoption by farmers	118	3.0	6th
Insufficient motivation of extension agents	118	3.0	6th
Bureaucracy/bottlenecks	119	3.0	6th
Inadequate evaluation machinery	116	2.9	7th
Poor promotion system	113	2.8	8th
Irregular training	109	2.7	9th
Poor health services	99	2.5	10th
Total=44.2, pooled mean=3.2			

#### 4. Conclusion and recommendations

The age, level of agricultural extension contact and education level made significant contribution to the farmers' perception of agricultural extension agents' quality. As the farmer ages, he relies more on his experience and his perception of the quality of agricultural extension agents decreases. The farmers in Anambra State had high perception of the Agricultural extension agents on their characteristics in discharging their duties, hence the record of high level of adoption of improved technologies. Agricultural extension agents performed the roles they perceived to be theirs, although there are many constraints to their effectiveness such as inadequate number of vehicles/motorcycles for transportation, poor office accommodation, poor remuneration, poor funding, language barriers, high level of farmers' illiteracy and inappropriate technology dissemination among others.

Based on the findings, the following recommendations were made:

1. There is a need for regular training of extension agents so as to develop more skills and technicalities in disseminating farm technologies to farmers. Regular and periodic training of extension agents through seminars, workshops and in-service training are known to boost their knowledge of adult learning principles and update knowledge on trends and developments in agricultural extension worldwide.

2. Government should allocate more funds to ADPs to enhance their activities in terms of recruiting more extension agents, provision of regular transport and logistics as well as materials, so as to improve on their frequency of visits to farmers by

extension agents. There is a need for alternative financing mechanism for agricultural extension to be able to provide the desired results.

3. The ADP should undertake vigorous campaign and sponsoring of more field demonstrations to convince rural farmers on the profitability of adopting new farm innovations.

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