COMMUNICATION FACTORS AFFECTING THE ADOPTION OF INNOVATION AT THE GRASSROOTS LEVEL IN OGUN STATE, NIGERIA

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ABSTRACT

The study investigates communication factors affecting the adoption of innovation at the grassroots level in Ogun State. Two hundred farmers and twenty-five extension agents were selected using a multi – stage sampling technique, and were interviewed for the purpose of the study. Data collected were analyzed using both descriptive and inferential statistical tools.

The study revealed that the majority of the farmers are male (58.0%) while 12.0% were below 30 years, 36.0% are married while 20.0% had no formal education. However, 49.8% strongly agreed that noise, waning attention, feedback, incorrect message content affects the adoption of innovation. Also, among the agents enumerated, 56.0% were male while 20.0% were below 30 years, and 88.0% were married, 56.0% had B.Sc. / M.Sc. degree, 62.9% agreed with the method used in delivering innovation (radio, television, audiotapes, posters, group discussion, shows and exhibitions) while 57.0% strongly agreed that the factors considered by the farmers do affects adoption of innovation.

Finally, at P – value ≤ 0.05, significant relationships were found to exist between communication factors and (i) age ($\chi^2 = 46.48$), (ii) marital status ($\chi^2 = 56.32$), (iii) the problem of transportation (r = -0.023) and (iv) financial problems (r = 0.013). Also the uses of posters (r = -0.194) and group discussion (r = -0.135) as channels through which innovations are disseminated to the farmers have a significant relationship with communication factors. Thus, the study recommends an effective communication linkage between change agents and the farmers as well as the improvement of the road network and provision of transportation facilities to the change agents for easy accessibility to the farmers.

KEY WORDS: Communication, grassroots, innovation, dissemination and Farmers

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INTRODUCTION

The body of knowledge amassed from research as well as indigenous technology in the contemporary world is immense. However, communication impacts on the course of human development lag behind this enormous body of knowledge. This is even more true in the field of agriculture where the systems that form the entity are stratified into a highly educated technology generation system (researchers), a relatively well educated technology dissemination system (extensionists) and a mass of technology utilization system (farmers) who have little or no formal education [3]. Communication therefore, is conceptualized as a process of information flow by which ideas are transferred from a source to a receiver with the intent to change his/her knowledge, attitude and skill [2].

However, two groups of actors (the source – extension agents and the utilization group – farmers) are needed in the diffusion of innovation, which is the basis of the agricultural extension system.

The usefulness of a communication medium for a farmer will vary according to the adoption phase in which a potential adopter of an innovation passes. It is of great importance to know that the complexity of human behaviour often leads to many problems in the communication process. Yahaya [8] posited that in term of extraneous differences in perception or lack of interest by the target audience, interference on smooth operation of communication channels might be defined as any undesirable element in the communication process or that, which may interfere with communication signals between sender and receiver. He further stressed that the audience and equally the sender may lack fundamental knowledge about the subject matter or existing circumstances of the target audience. Similarly, variables like emotion (jealousy, hatred, love, sentiments, and sadness) may set in. The personality of the key players in communication may also affect coding and decoding processes in communication. Appearance or modes of dressing or non – verbal cues (NVC) are likely to send wrong signals, which in addition to original concepts could cause undesirable distractions. All these elements are crucial for effective communication. Also, the message component is critical since the sender and receivers' interaction are contingent upon what the message content is all about, e.g. message could be performance – oriented, improvement in practices, awareness creation about new technologies and how to achieve output. The world is rapidly changing and agriculture has become more complex, more intensive and demanding. The outcome of research has greatly been transferred from research institutes to the farmers through extension agents.

Adoption of innovation among the grassroots farmers is very low. According to Yahaya [3], the coverage of farm families is still limited, the quality of Extension Programmes is seriously questioned, and the transfer of potentially beneficial new and underutilized technologies continues to lag. Also, the grassroots farmers see the change agent as government agents that have come to spy on them so that their land can be taken. All these contribute to low agricultural output since the farmers are still making use of old information coupled with the use of crude implements. In addition, the use of communication skills, media and methodologies is typically abhorred and fragmented. Too often, these are poorly integrated into the total extension programme.

In order to meet the increased demand for food by the population, modern ways of farming have to be developed and the use of multi – media strategies integrated into extension programmes will increase their impact [7]. The current trend in agricultural communication in developing countries is towards emphasizing the message and the social dynamics of its transmission. Unfortunately, most of the research results do not get to the farmers and could neither be interpreted nor digested due to language barriers. It has also been found out that lack of interaction between the change agents and the farmers impede the adoption of innovation. Hence, change agents and farmers must relate as friends and co – workers [2;6].

According to FAO [4], this interaction requires the development of a special communication strategy capable of linking research personnel and all other stakeholders in agriculture to ensure their participation in agricultural development. Also, diffusionists should try to modify communication strategies to meet the needs of various types of farmers (innovators, early adopters, early majority, late majority and laggards) [5].

Persuasion attempts to influence people by way of intended and unintended messages or direct experience which results in behaviour modification and the urge to be responsive to peoples' plight out of altruistic motive precipitated the decision to carryout this study.

Thus, the study was carried out to assess the communication factors affecting the adoption of innovation at the grassroots level in Ogun State with a view of assessing the personal characteristics of the farmers and change agents; factors and problems encountered in dissemination and adoption of innovations and finally make recommendation based on the findings.

Methodology

The study was carried out in Ogun State. The population for the study comprises the extension agents and farmers. A multi – stage sampling technique was

employed for the purpose of sample selection. The four agricultural zones within the State as operated by the Ogun State Agricultural Development Programme (OGADEP) were used. The zones consist of various numbers of extension blocks and cells. From each zone, 20% of extension agents were selected making a total of 25 extension agents. Also, 2% of contact farmers in each zone were selected making a total of 200 contact farmers (see Table 1). Thus, the total number of respondents used for the study was 225.
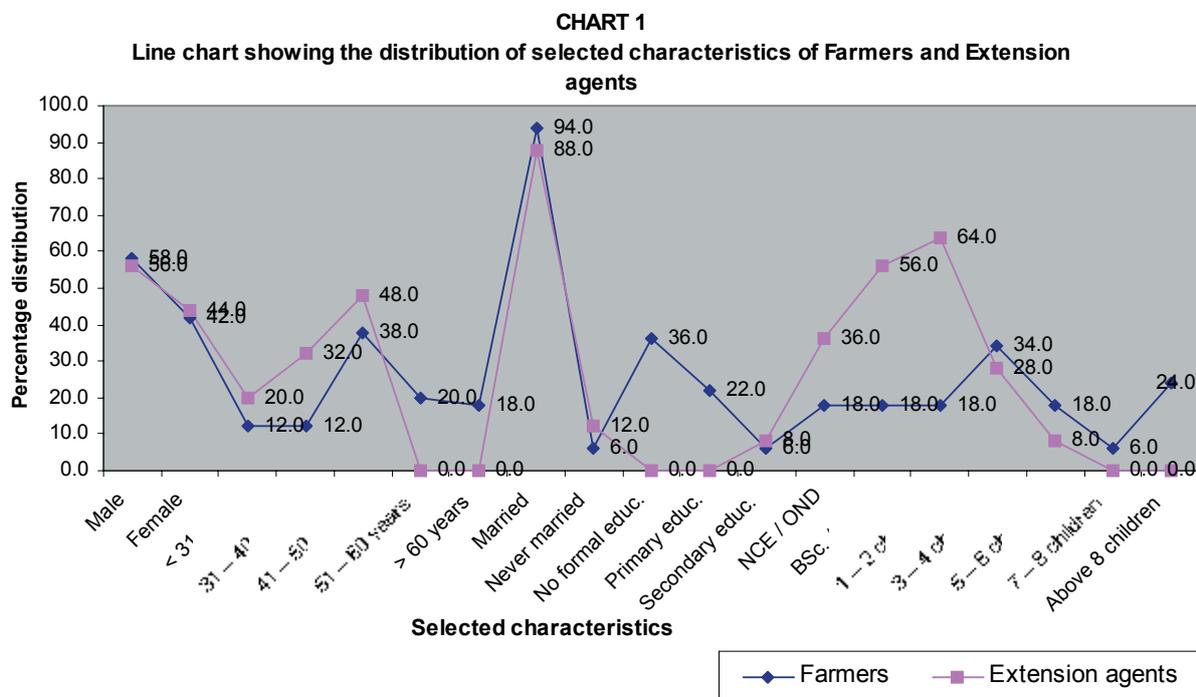
RESULTS AND DISCUSSIONS

The findings in Chart 1 revealed that majority of the farmers were male (58.0%), between the age category of 31 – 50 years (50.0%), married (94.0%) and have no formal education (36.0%) with 3 – 4 dependants (34.0%). Also, the table revealed that 56.0% of the agents were male, 48.0% are between 41 – 50 years age range, 88.0% were married with 56.0% having either BSc or MSc degree and having 1 – 2 dependants (64.0%).

Also in Chart 2, the findings revealed that majority of the farmers (at least 60.0%) indicated that; radio, television, audiotapes, group discussions/meetings,

shows/exhibition, SPAT, OFAR, result demonstration, and method demonstration were used in delivering innovations to them with only 42.0% indicating the use of posters. Moreover, majority of the agents gave the same assertion about the use of the method except for audiotapes, which is used by only 36.0% of the agents.

Table 2 also revealed that among the various innovations that extension agent have been equipped with for onward dissemination to farmers, the farmers claimed to be aware of most of these innovations except bee production and processing, while only few (15.0%) are aware of fish pond construction techniques, feed formulation and fish feeding and fish breeding. Though they are aware of these innovations, some of the innovations were fully adopted e.g. cassava flour and crop rotation, while some are near full adoption, these include: seed treatment before planting (95.0%), herbicides / insecticides application (85.0%) and fertilizer application (60.0%). However, the farmers are aware of vaccination Programmes (12.5%) and fish breeding (15.0%), yet none have adopted these innovations.

Table 3 revealed farmers' level of adoption of the innovation introduced to them by the extension agents. It shows that 57.6% of the farmers did not adopt the
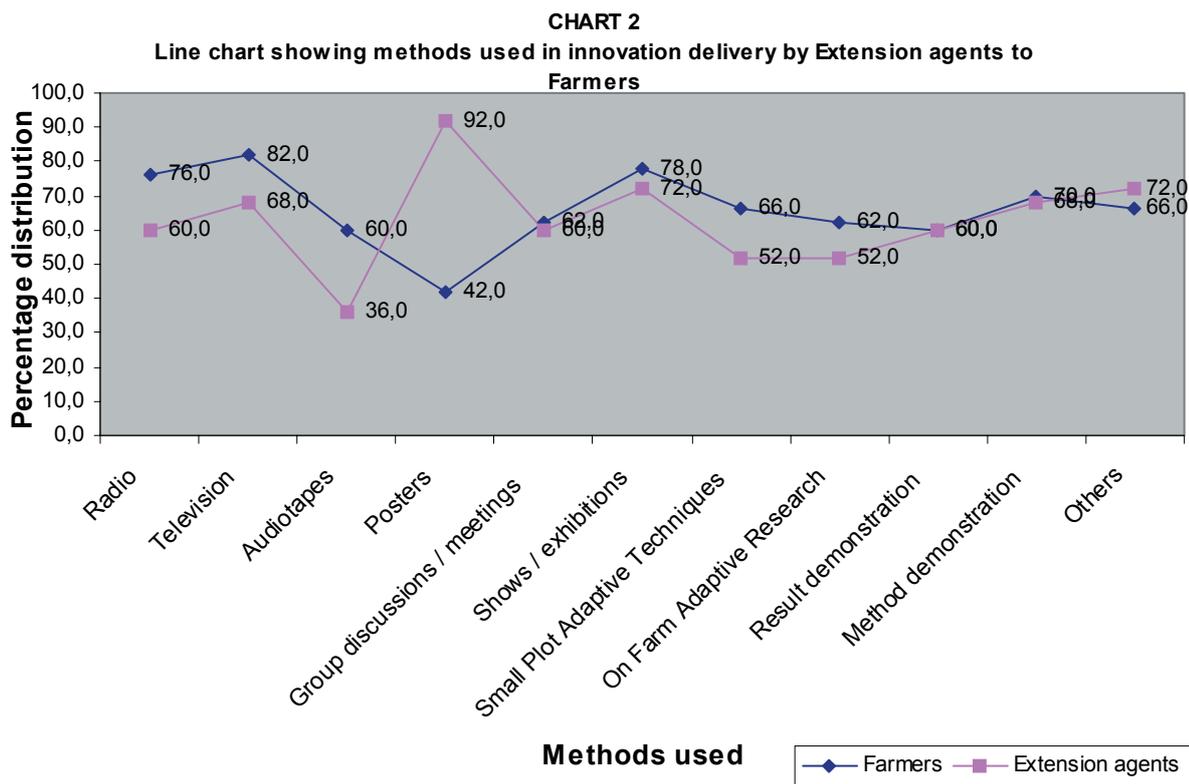
CHART 1
Line chart showing the distribution of selected characteristics of Farmers and Extension agents

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CHART 2
Line chart showing methods used in innovation delivery by Extension agents to Farmers

Table 1: Sampling procedure and sample size

Zone	Blocks	Cells	Village agents (VEA)	Contact Farmers (CF)	20% VEA	2% CF
Ikenne	4	22	22	1760	4	34
Yewa	4	29	29	2800	7	56
Ijebu	6	35	35	2800	7	56
Abeokuta	6	40	40	3200	8	62
Total					25	200

innovations while 37.1% fully adopted the innovation. Also 3.7% and 1.6% of the farmers partially adopted and discontinued use respectively. This implies that awareness does not necessary lead to adoption, as the farmers were aware of the innovations yet they did not adopt all the innovations.

Table 4 revealed the level of agreement of the VEAs with listed communication factors that affects farmers' adoption of innovations. It shows that the VEAs strongly agree that power failure affects message flow and benefits of the broadcasted Programmes (64.0%) and farmer's inability to respond to broadcasted Programmes (80.0%). Also, dog barking and disturbances of other animals (Noise factors) was strongly believed to affect adoption of

innovations by 40.0% of the VEAs. Furthermore, 80.0% of the agents strongly agrees that their inaccessibility to farmers after introduction of innovations affects adoption of such innovations while 60.0%, 60.0% and 40.0% of the VEAs, agrees that incorrect message content, prior knowledge of agents (feed forward problem) and difficulty in understanding information passed across hinders the actuation of innovation respectively.

Table 5 shows the problems encountered by both farmers and VEAs with suggested solution to these problems. Majority of the farmers (70.0%) encountered transportation problem while majority of the VEAs (64.0%) are faced with financial problems. Also 66.0% of the farmers and 52.0% of the VEAs are faced with

Table 2: Awareness and Adoption of Innovations by Farmers

Innovations	Awareness Freq. (%)	Adoption Freq. (%)
Cassava flour from cassava tubers	200 (100.0)	200 (100.0)
Seed treatment before planting	200 (100.0)	190 (95.0)
Fertilizer application	200 (100.0)	120 (60.0)
Crop rotation	200 (100.0)	200 (100.0)
Herbicides/Insecticides application	170 (85.0)	170 (85.0)
Soymilk production	180 (90.0)	100 (50.0)
Pasture management for animals	40 (20.0)	30 (15.0)
Vaccination	25 (12.5)	-
Breed selection and breeding stock	40 (20.0)	35 (17.5)
Disease resistant crop varieties	110 (55.0)	100 (50.0)
Use of modern techniques for palm oil production	98 (49.0)	98 (49.0)
Bee production and processing	-	-
Construction of fish pond	30 (15.0)	10 (5.0)
Feed formulation and feeding	30 (15.0)	10 (5.0)
Fish breeding	30 (15.0)	-

Table 3: Level of adoption of innovation introduced to farmers

Innovations	Level of adoption			
	Full adoption Freq. (%)	Partial adoption Freq. (%)	Discontinued Freq. (%)	Not adopted Freq. (%)
Cassava flour from cassava tubers	200 (100.0)	-	-	-
Seed treatment before planting	200 (100.0)	-	-	-
Fertilizer application	170 (80.5)	10 (5.0)	10 (5.0)	10 (5.0)
Crop rotation	110 (55.0)	10 (5.0)	-	80 (40.0)
Herbicides/Insecticides application	190 (95.0)	10 (5.0)	-	-
Soymilk production	160 (80.0)	05 (2.5)	15 (7.5)	20 (10.0)
Pasture management for animals	60 (30.0)	40 (20.0)	-	100 (50.0)
Vaccination	14 (7.0)	06 (3.0)	10 (5.0)	170 (80.5)
Breed selection and breeding stock	-	-	-	200 (100.0)
Disease resistant crop varieties	30 (15.0)	05 (2.5)	-	165 (82.5)
Use of modern techniques for palm oil production	70 (35.0)	20 (10.0)	10 (5.0)	100 (50.0)
Bee production and processing	36 (18.0)	60 (30.0)	02 (1.0)	102 (51.0)
Construction of fish pond	-	-	-	200 (100.0)
Feed formulation and feeding	10 (5.0)	-	-	190 (95.0)
Fish breeding	10 (5.0)	-	-	190 (95.0)
Total	1114 (37.1)	122 (30.7)	47 (1.6)	1727 (57.6)

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Table 4: Communication factors affecting adoption of innovations as perceived by change agents

S N	Communication factors	SA Freq. (%)	A Freq. (%)	U Freq. (%)	D Freq. (%)	SD Freq. (%)
1	Power failure during air time of programme disrupt message flow and benefits of aired programme	16 (64.0)	05 (20.0)	-	04 (16.0)	-
2	Inability of the farmers to respond to aired programme	20 (80.0)	04 (16.0)	-	-	01 (4.0)
3	Noise such as dog barking impede listening to Programmes	10 (40.0)	09 (36.0)	01 (4.0)	04 (16.0)	01 (4.0)
4	Information overload such as programme repetition	19 (76.0)	06 (24.0)	-	-	-
5	Waning attention due hunger/thirst affects adoption of innovations	17 (68.0)	-	08 (32.0)	-	-
6	Incorrect message content	15 (60.0)	06 (24.0)	-	04 (16.0)	-
7	Inaccessibility of change agent after introduction of innovation.	20 (80.0)	04 (16.0)	-	01 (4.0)	-
8	Prior knowledge of change agents about the audience affects innovation adoption (feed forward problem)	19 (76.0)	05 (20.0)	-	-	01 (4.0)
9	Difficulty in understanding information passed across to farmers hinders the actuation of innovation	09 (36.0)	10 (40.0)	-	02 (8.0)	04 (16.0)

* SA – Strongly Agree; A – Agree; U – Undecided; D – Disagree; SD – Strongly Disagree.

Table 5: Problems encountered and suggested solution by farmers and VEAs

Variables	Farmers Freq. (%)	VEAs Freq. (%)
Problems		
Transportation	140 (70.0)	12 (48.0)
Language barrier	132 (66.0)	13 (52.0)
Finance	96 (48.0)	16 (64.0)
Inability to procure inputs	84 (42.0)	12 (48.0)
Indivisibility of innovation	84 (42.0)	07 (28.0)
Inability to understand innovations	88 (44.0)	05 (20.0)
Solutions		
giving feedback	140 (70.0)	13 (52.0)
Making available inputs	152 (76.0)	15 (60.0)
Avoidance of information overload	136 (68/0)	15 (60.0)
Giving meaningful information	116 (58.0)	25 (100.0)
Using clear and simple language with simple interpretation	104 (52.0)	17 (68.0)

Table 6: Results of analysis of relationship between communication factors and selected variables

Variables	Communication factors			
Chi-square test	**X2**	**df**	**P - value**	**Remark at p ≤ 0.05**
Age	46.48	36	0.018	S
Education	33.42	36	0.591	NS
No of dependants	39.89	36	0.301	NS
Marital status	56.32	36	0.017	S
Correlation test	**R**	**N**	**P - value**	**Remark at p ≤ 0.05**
Problems encountered				
Transportation	-0.0230	200	0.047	S
Language barrier	0.0742	200	0.296	NS
Finance	0.0131	200	0.050	S
Procurement of inputs	-0.1041	200	0.142	NS
Indivisibility of innovation	-0.0737	200	0.300	NS
Understanding of innovation	0.0321	200	0.652	NS
Methods of communication used				
Radio	-0.0143	200	0.841	NS
Television	-0.0614	200	0.388	NS
Audiotapes	-0.0133	200	0.852	NS
Posters	-0.1940	200	0.018	S
Group discussions	-0.1353	200	0.050	S
Shows/exhibitions	-0.1948	200	0.018	S
SPAT	-0.0950	200	0.623	NS
Method demonstration	-0.1722	200	0.031	S
OFAR	-0.0350	200	0.623	NS
Result demonstration	-0.0005	200	0.994	NS

Note: S = Significant, NS = Not Significant

language barrier along with other problems. The majority of the farmers and the agents (52.0% and above) suggested that giving feedback, making inputs available, avoidance of information overload, giving meaningful information and the use of clear and simple language with simple interpretation will considerably reduce these problems.

Table 6 shows the result of the analysis carried out on the study. It shows that at p – value ≤ 0.05, there exists a significant relationship between communication factors and the farmer's age (χ^2 = 46.48, p = 0.018) and marital status (χ^2 = 56.32, p = 0.017). This could imply that the older the farmer or the more family commitment of the farmers may be a barrier to their adoption of innovations. Also, a significant relationship exists between communication factors and transportation problems (r = -0.023, p = 0.047) and financial problems (r = 0.013, p = 0.05). Though other problems are not significantly related to communication factors, yet they will contribute to the effect of transportation and finance required for effective dissemination and adoption of innovation.

The table further revealed that the use of posters (r = -0.194), group discussion (r = -0.135), shows / exhibition (r = -0.195) and method demonstration (r = -0.172) at p – value ≤ 0.05 are significantly related to communication factors.

CONCLUSION

Emanating from this study is the fact that some communication factors affects adoption of innovation by farmers in Ogun State. These factors include prior knowledge about change agents (feed forward problem), shortage of inputs, thoughts of basic needs (waning attention), noise, information overload, incorrect message content, accessibility of agents and difficulty in understanding such innovations. Nigeria is now in the era of agricultural revolution and if agriculture has to be greatly improved upon, there is need for effective communication between the change and the farmers, thus making the adoption of innovation at the grassroots level very easy.

Hence, there should be greater financial support from the

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government to the change agent and the farmers towards smooth adoption of innovations. Also, the road network in the country should be improved for easy accessibility of change agents to farmers and farmers to major markets in the state. Change agents should also emphasize the use of teaching aids as indispensable tools in the teaching – learning situation. Moreover, change agents should be posted to communities where they are well known as indicated in the study that it is a plus for effective communication, which invariably makes adoption easier at the grassroots level.

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