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EVALUATION OF FARMERS' PERCEPTIONS ON THE EFFECTIVENESS OF EXTENSION DELIVERY CHANNELS USED IN COMMUNICATING IMPROVED TECHNOLOGIES TO FARMERS IN THE SOUTH-WESTERN ZONE, NIGERIA

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Abstract

Evaluation of the effectiveness of extension delivery channels used in disseminating agricultural practices/technologies to farmers in the South-western zone of Nigeria was the focus of this study. Emphasis was placed on identification of various extension delivery channels used by various agencies and institutions, and the effectiveness of each of the channels in imparting knowledge, skill and attitude to farmers. Structured, pretested and validated interview schedule were completed by 600 respondents selected through multi-stage random sampling techniques in Ogun and Osun States. Descriptive statistical techniques like frequency counts, mean, weighted mean score and percentages were used to analyze the data. Correlation was used to determine the relationship between the variables investigated in the study. The study shows positive and significant correlation between the effectiveness of extension delivery channels and level of education ($r = 0.29$), income ($r = 0.28$), membership of association ($r = 0.26$), and farming experience ($r = 0.21$). Also, farmers' perceptions of the use of extension delivery channel in the study areas ranked very low showing the ineffectiveness of the delivery channels. The most effective extension delivery channels are other farmers (8.8), friends/relatives (8.54), radio (8.51) and extension agents (8.5). This paper therefore recommends that extension should play a more active role in helping farmers to get organized into functional organizations, including commodity groups, credit societies, cooperatives, and other types of farmer associations while using combination of different delivery channels to disseminate extension technologies to farmers. Media organizations particularly the public-owned should devote a certain amount of air time for agricultural extension (radio and TV) programmes.

Keywords: Extension delivery channels, Communication, Extension contacts.

Introduction

The transformation of the agricultural sector from the shackles of peasantry to prosperity rests on the adoption of new and proven technologies and this could only be efficiently transmitted to the clientele by using appropriate channel of communication. Farmers need technology, which must be technically viable, economically feasible, socially acceptable, environmentally sustainable and easily communicable in order to improve their knowledge, skills and attitude so as to enhance their productivity. For obvious reasons, less than 2 per cent of the farmers in Nigeria go to research stations where the technologies abound. They rely on the extension agent who shoulders the dissemination of new technology from research. The extension agent is also saddled with other non-farming related problems confronting the farmers and their families. The need to use different channels to reach the farmers therefore becomes expedient in order to make an impact on the clientele.

In Nigeria, efforts over several decades to avail farmers with beneficial research-based agricultural technology do not seem to have yielded the expected impact. Akinbode, (1996) asserted that the majority of Nigerian rural farmers are still tradition-bound in their production methods and therefore, continued to suffer from low productivity, low income and deprivation. Quite often the farmers are totally blamed or considered to be change-resistant and therefore responsible for the country's slow agricultural and industrial take-off. The technologies being introduced to the farmers are viewed as being blameless or taken for granted; so also are the channels of communication employed in technology dissemination. However, the technologies that are considerably alien or based on alien principles and assumptions are often inappropriate for use by the farmers, and the communication channels are generally questionable.

Communication is a process of conveying information from one person to another. It is the exchange of information, idea, attitude, emotion or impression in such a way that both the trainer and the trainee will gain a common understanding of the meaning and impact of the use of the content (Adedoyin, 1989). Extension delivery channels as an important element of communication process is the way the extension message is transmitted. Hence, appropriateness of channel is a principal factor for a successful extension work. Communication channels could be interpersonal, visual, spoken or written. Appropriate combination of different channels has proved to be very efficient in that it tasks all the sense organs thereby ensuring effective learning (Okunade *et al.*, 1999). What will be the most effective way of sharing the information will depend upon the following considerations: What are the characteristics of the message? Does it need a visual presentation, as when crop pests are being described? Is it necessary to show movement or detailed actions (in which case, film, video or a demonstration will be needed)? If a permanent, accurate record of detailed information is required, as in farm records or fertilizer recommendations, the information should be in written or printed form. What channels are available to the receivers? Do they see newspapers? Can they read? Do many of them have radio? What are the receiver's expectations? A senior government official, for example, is more likely to take notice of a written submission followed by a personal visit.

Personal contact is more effective and more appropriate in communicating improved farm practices to farmers (Williams and Williams, 1972). The direct contact method, that is, the individual and group methods were found to be appropriate and effective because these methods were less complex, easy to organize, less costly and facilitate feedback and farmers participation in the learning experience.

According to Israel and Wilson (2006), developing an understanding of extension sources and channels used by clients to obtain information is a pre-requisite for efficient educational programming because messages that go unheard or unseen cannot lead to change. Though early extension efforts were based on direct communication with clients, changes in society and technology have resulted in programmes using diverse array of communication channels to reach clients, both directly and through surrogates. Many clients, especially older people, continue to rely on more traditional channels for agricultural information while using newer technologies as a complement (Howell and Hebron, 2004; Vergot *et al.*, 2005; Boz and Ozca, 2010).

Effectiveness of the communication process in extension depends on the type of delivery channels employed. In addition, the delivery channels must possess some characteristic motivating factors for them to be effective. Jibowo (1997) identified eight of such factors to include: Openness, linkage, structure, reward, capacity, proximity, synergy and feedback. According to him, structure is essential to give a rational approach to goal setting, goal attainment, division of labour and coordination of efforts. Openness means the ability of the channel to allow unimpeded flow of ideas. Linkage is the connection between two or more systems both within the clientele system and between the clientele and the diverse relevant systems. Reward encourages the sender to send messages and the receiver to continue to receive messages. Capacity has to do with the totality of wealth, power, status and education, intelligence, size and the experience of the clientele system. Proximity has to do with the degree of nearness between the sources and clientele system. Synergy or repetition is the use of a variety of channels such as radio, television, charts and personal contact to deliver the same idea/technology. Feedback makes delivery effective when the source obtains feedback from the receiver upon which the source could base its future processes of extension delivery.

Concept and model of extension evaluation

Evaluation is defined by Scriven (1991) "...as the systematic determination of the quality or value of something." Evaluation of an Extension program can be defined as a systematic application of scientific methods to assess the design, implementation, improvement or outcomes of an educational program (Rossi & Freeman, 1993). The reason to evaluate programs can be categorized either to prove something (accountability) or to improve something (Seevers, Graham, Gamon, & Conklin, 1997). Evaluations that are focused on accountability are defined as summative evaluations, while evaluations that focus on improving something are called formative evaluations (Seever *et al.*, 1997). According to Seevers *et al.* (1997), "formative evaluations yield results useful to improve programs, whereas summative evaluations yield results useful for making decisions on the continuation of programs. Seldom are evaluations strictly formative or strictly summative; their purposes usually overlap."

This study is based on some theoretical perspectives of Utilization Focused Evaluation according to Patton (2000). It is an 'approach to making evaluations useful, practical, accurate, systematic, and ethical'. This involves matching the evaluation approach and the design to the information and decision needs of primary intended users, taking into account 'other stakeholders, political factors, organisational constraints, project/program history, available resources, and cultural factors of a specific evaluation context'. He suggests that this allows for 'situationally responsive' evaluations.

The focus of this study was to evaluate perception of the effectiveness of extension delivery channels available to farmers in the South-west agro-ecological zone of Nigeria.

Objectives of the study:

The main objective of this study was to assess the extension delivery channels used in communicating improved technologies to farmers in the South-western zone, Nigeria. The specific objectives are to:

1. assess the socio-economic characteristics of the respondents;
2. identify the extension delivery channels used to disseminate technologies to farmers in the zone; and,
3. ascertain the frequency of use of the extension delivery channels.

The hypothesis tested was such that, there is no significant relationship between the effectiveness of extension delivery channels and the socio-economic characteristics of the respondents. The socio-economic characteristics of the farmers include: age, gender, education, farming enterprise, farming experience, membership of farmers' association, farm size and income.

Methodology

Ogun and Osun States were randomly selected from the South-west agro-ecological zone as the target population for this study. Six local governments were randomly selected from each State including Odeda, Ewekoro, Abeokuta, Remo-north, Obafemi-Owode, Ikenne, (in Ogun State) and Atakunmosa-north, Obokun, Irewole, Oriade, Isokan and Ayedaade (in Osun State). One community was selected from each selected local government area in each of the States. Fifty farmers were randomly selected from each of the 12 communities to give a total of 600 respondents from the zone.

Structured, pretested and validated interview schedule was used to elicit information from the selected respondents with the assistance of trained enumerators who understand the local language. Descriptive statistics like frequency counts, means, weighted mean score and percentages were employed to analyze the data collected. Correlation was used to determine the relationship between variables. Socio-economic characteristics measured include gender, age, level of education, farming experience, farm size, farming enterprises, membership of farmers association, income, and benefits of cooperative membership.

Twelve major channels of extension delivery were tested to know the perception of their importance and availability to the respondents in the in the zone using the "weighted mean". The channels include interpersonal, group, mass media and internet. Respondents were asked to rank them as first, second, third up to twelfth according to their effectiveness. A score of twelve was given to the first in the rank while a score of one was attached to the twelfth in their ranking. The sum for each of the channels was then obtained and divided by the total number of respondents (600) to obtain the mean. Finally, the mean for each channel was then ranked (1st to 12th) to get the perception of the farmers (1st being the most preferred). Any channel with a mean value of 8 and above was considered very effective; between 4 and below 8 was considered effective while a mean below 4 was considered ineffective.

Results and Discussion

As indicated in Table 1, most (77%) respondents were male within the age range of 51 years and above, and had primary education and less (58.5%). Majority (73.7%) of the respondents had above 10 years of farming experience with (61%) cultivating between 1 and 5 hectares of land and

21.1% having above 5 hectares farm size. Also, respondents were engaged in different farming enterprises: crop (91.5%), cattle (1.8%), sheep and goat (25.5%), poultry (27.7%), fishing (2%); and aquaculture (5%). Over 55% of the respondents belong to farmers association with over 80% enjoying exchange of idea/knowledge/information as benefit from associating. Above 65% of the respondents realized an annual income of over N100, 000.

As reflected in Table 2, other farmers (8.80) ranked the most effective extension delivery channel. This is followed by friends/relatives (8.54) and radio (8.51). Farmers seem to prefer interpersonal contacts to mass media. These results are, to some extent, in agreement with those of Okwu and Daudu (2011). The high preference rating for other farmers may be attributed to the interpersonal interaction and immediate feedback enjoyed by the farmers. The less preference shown for newspapers, posters/handbills and extension publications e.g. bulletin/news letter may be probably due to the high illiteracy level among the respondents. The practical nature of agriculture demands a useful interpersonal contact in order to ensure effectiveness. The perceived effectiveness of 'other farmers' as a delivery channel could have been as a result of their membership of cooperative groups as indicated by 64.7% of the respondents.

Hence, efforts should be made to increase the number of functional cooperative societies. Proven and useful technologies generated by the research system can only be useful if they (the technologies) are disseminated to the end users using appropriate channels of communication. The use of appropriate channels will help avoid wastage of the colossal amount of fund spent on research institutes thereby ensuring adequate food security through enhanced productivity resulting from continuous adoption of the technologies by the farmers. Issa and Auta (2010) found Extension agents, radio and other farmers as the most effective extension delivery channels preferred by farmers among the different channels available to them in the North-western zone of Nigeria.

The data in Table 3 shows a positive and significant relationship between effectiveness of extension delivery channels and level of education ($r = 0.29$), income ($r = 0.28$), farmers' membership of association ($r = 0.26$) and farming experience ($r = 0.21$). Table 3 indicates that level of education, income, farmer's membership of association, and farming experience were significant and explained 8.5%, 8.2%, 6.9% and 4.8%, of the effectiveness of extension delivery channels respectively. This means that the higher the level of education, income, association membership and farming experience; the more the effectiveness of the extension delivery channels. Boz and Ozcatalbas (2010) found educational level to have significant effect on the use of modern information channels. The ineffectiveness of other delivery channels could be due to the literacy demand, and high cost of use.

Conclusion and recommendations

Other farmers (despite its informality) was found to be the most effective extension delivery channel followed by friends/relatives and radio. Farmers seem to prefer interpersonal contacts to mass media. This underscores the importance of cooperation among farmers. The result is in line with what was obtained under membership of cooperative association (in Table 1) where 55% of

respondents belong to one farmer cooperative society or the other. More so, above 80% of the respondents who belong to association enjoyed exchange of idea/knowledge/information. This paper therefore recommends that extension agencies should play a more active role in helping farmers get organized into functional organizations, including commodity groups, credit societies, cooperatives, and other types of farmer associations. Also, combination of different delivery channels to disseminate extension technologies to farmers becomes imperative. This fact is upheld as radio ranked next to other farmers and friends/relatives as an effective delivery channel. Also, the dwindling number of extension agents in the States Agricultural Development Projects (ADPs) as asserted by NAERLS and NPAFS (2010) underscores the need to articulate an agricultural extension media policy so that media organizations, particularly public owned, will devote a certain amount of their air time for agricultural extension (radio and TV) programmes. This will check the media organizations' prohibitive charges for extension programmes, which have been detrimental to the dissemination of agricultural information to farmers.

References

- Adedoyin, S. F. (2004): "Plentiful Agricultural Resources but Limited Andragogical Transmission". 33rd Inaugural Lecture, Olabisi Onabanjo University Press, Ago-Iwoye, Nigeria. 51Pp.
- Adedoyin, S. F. (1989). Communication in training women extension workers. Paper presented at the training course on the FAO FMANR and Development, O. A. U. Department of agricultural Extension and Rural Sociology, Ile-Ife, Nigeria, Sept 18 – 19.
- Akinbode, I. A. (1996): "Sustainable development in rural Nigeria: An Agenda for the suspended Republic", *Proceedings of the 8th Annual conference of the Nigerian Rural Sociological Association (NRSA)*. Pp 12-20.
- Arokoyo, J. O. (2009): "An Effective and Functional Extension Service to Maximize Farmers' Productivity", Staff orientation, National Agricultural Extension and Research Liaison Services, Ahmadu Bello University, Zaria, October 5th – 9th.
- Boz, I., and Ozcatalbas, O (2010). Determining information sources used by crop producers: A case study of Gazian province in Turkey. *Afr. J. Agric Res.*, 5(10): 980-987
- Howell, J.L, Hebron, G.B (2004). Agricultural landowners lack of preference for internet extension. *J. Ext.*, 42(6). retrieved May 6, 2011 from <http://www.joe.org/joe/2004december/a7.php>
- Israel G.D, Wilson, K.M (2006). Sources and channels of information used by educational program clients. *J. Appl. Comm.*, 90 (4): 55-78
- Issa, F. O. (2006). "Impact of OFAR and SPAT as Strategies for Agricultural Technology Delivery in Lagos State", *Proceedings of the 11th Annual Conference of Agricultural Extension Society of Nigeria*, Pp 249 – 256.

- Issa, F. O. and Auta, S. J. (2010). Assessment of the extension delivery channels used in communicating improved technologies to farmers in the North-western zone, Nigeria. *Journal of Sustainable Development*, Vol. 7. No. 2, September, pp 63 – 68.
- Jibowo, A. A. (1997). Factors influencing effective communication. Unpublished manuscript, pp 86 – 89.
- Madukwe, M. C. (2008). *Practice without Policy: The Nigerian Agricultural Extension System*, An Inaugural Lecture of the University of Nigeria Nsuka, April 29th. UNN Press, Pp76.
- National Agricultural Extension and Research Liaison Services (NAERLS) and National Programme on Agriculture and Food Security (NPAFS), (2010). Agricultural performance assessment report of 2010 wet season in Nigeria (Executive summary). October, pp 11.
- National Agricultural Extension and Research Liaison Services (NAERLS) and Project Coordinating Unit (PCU) (2002). Annual Agricultural Performance Evaluation Survey Report.
- Okunade, E. O., Ogbimi, G. E. and Jibowo, A. A. (1999). Characteristics of extension teaching methods used in communicating improved farm practices to women farmers in Osun State. *Journal of Agricultural Extension*. Vol. 3, pp 57 -65.
- Okwu, O.J and Daudu, S. (2011). Extension communication channels' usage and preference by farmers in Benue State, Nigeria. *Journal of Agricultural Extension and Rural Development* Vol. 3(5), pp. 88-94. [http:// academicjournals.org/JAERD](http://academicjournals.org/JAERD)
- Patton, M. Q. (2000). Re: Ohio's Evaluation Conference, description of workshop run by Micheal Patton, GOVETAL (an international E-mail discussion list on public sector program evaluation, Thursday April 2000).
- Rossi, P.H., & Freeman, H.E. (1993) *Evaluation: A systematic approach* (5th ed.). Newbury Park, CA: Sage.
- Scriven, M. (1991). *Evaluation thesaurus* (4th ed.). Newbury Park, CA:Sage.
- Seevers, B., Graham, D., Gamon, J., & Conklin, N. (1997). *Education through Cooperative Extension*. Albany, NY. Delmar Publishers.
- Williams, S. K. T. and Williams, C. E. (1972). Analytical study of agricultural services in Western Nigeria. *Bulletin of Rural Economics and Sociology*, Vol. 7, No. 1, 72.

Table 1: Socio economic characterisation of farmers in the South-west zone (n = 600)

Characteristics	Frequency	Percentage
Sex		
Male	462	77
Female	138	23
Age (yr)		
30 and below	27	4.5
31 – 50	256	42.6
51 & above	317	52.8
Level of Education		
None	143	23.8
Primary	208	34.7
Koranic/adult education	145	24.2
Tertiary education	104	17.3
Farming enterprise*		
Crop production	549	91.5
Livestock: 1. Cattle	11	1.8
2. Sheep & Goat	153	25.5
3. Poultry	166	27.7
Aquaculture	26	4.3
Fishing	12	2
Farming experience (yr)		
1 – 10	158	26.3
11 – 20	163	27.2
Above 20	279	46.5
Farm size (ha)		
< 1	97	16.3
1 – 5	366	61
6 – 10	103	17.2
Above 10	34	3.9
Membership of Association		
Yes	333	55.5
No	267	44.5
Income of farmers (N/annum)		
1,000 – 100, 000	209	34.8
101,000 – 200,000	132	22
201,000 – 300,000	101	16.8
301, 000 – 400,000	70	11.7
401,000 – 500,000	42	7
Above 500,000	46	7.7
Benefits derived from membership of association* (n=333)		
Loan	274	82.3
Exchange of idea/knowledge/information	267	80.2
Farm inputs	90	27
Increased income	87	26.1
Psychological satisfaction	115	34.5
Training plot	25	7.5
Government assistance	11	3.3
Linkage to market	138	41.4

*Multiple responses

Source: Field survey, 2009

Table 2: Distribution of respondents according to their perception of effectiveness of (available) extension delivery channels (n = 600)

Respondents Rankings	Extension Delivery Channels											
	Other farmers	Friends/Relatives	Radio	Extension Agents	Farmers organization	Field/Agric days	Televisio n	Extension Publication	Mobile Phone	NGOs	Research institutes	Internet
1st	42 (7)	46 (7.7)	47 (7.8)	228 (38)	32 (5.3)	3 (0.5)	3 (0.5)	2 (0.3)	-	3 (0.5))	3 (0.5)	-
2nd	150 (25)	161 (26.8)	124 (20.7)	63 (10.5)	80 (13.3)	29 (4.8)	29 (4.8)	11 (1.8)	25 (4.2)	5 (0.8)	-	1 (0.2)
3rd	136 (22.7)	113 (18.8)	121 (20.2)	48 (8)	46 (7.7)	51 (8.5)	40 (6.7)	15 (2.5)	2 (0.3)	5 (0.8)	1 (0.2)	1 (0.2)
4th	107 (17.8)	79 (13.2)	112 (18.7)	20 (3.3)	55 (9.2)	51 (8.5)	43 (7.2)	23 (3.8)	12 (2.0)	18 (3.0)	1 (0.2)	-
5th	33 (5.5)	24 (4)	43 (7.2)	5 (0.8)	31 (5.2)	83 (13.8)	44 (7.3)	15 (2.5)	23 (3.8)	46 (7.7)	4 (0.7)	-
6th	28 (4.7)	46 (7.7)	35 (5.8)	1 (0.2)	25 (4.2)	61 (10.2)	17 (2.8)	16 (2.7)	24 (4.0)	11 (1.8)	5 (0.8)	-
7th	8 (1.3)	13 (2.2)	5 (0.8)	1 (0.2)	29 (4.8)	11 (1.8)	15 (2.5)	9 (1.5)	26 (4.3)	11 (1.8)	9 (1.5)	3 (0.5)
8th	3 (0.5)	5 (0.8)	-	37 (6.2)	1 (0.2)	28 (4.7)	10 (1.7)	9 (1.5)	13 (2.2)	7 (1.2)	5 (0.8)	1 (0.2)
9th	1 (0.2)	1 (0.2)	1 (0.2)	184 (30.7)	-	1 (1.2)	3 (0.5)	34 (5.7)	7 (1.2)	4 (0.7)	5 (0.8)	1 (0.2)
10	90 (15)	112 (18.7)	112 (18.7)	13 (2.2)	1 (0.2)	1 (1.2)	1 (0.2)	2 (0.3)	3 (0.5)	5 (0.8)	28 (4.7)	1 (0.2)
11th	2 (0.3)	-	-	-	300 (50)	281 (46.8)	25 (4.2)	464 (77.3)	3 (0.5)	1 (0.2)	2 (0.3)	5 (0.8)
12	-	-	-	-	-	-	370 (61.7)	-	462 (77)	484 (80.7)	537 (89.5)	587 (97.8)
Total Points	5278	5121	5105	5102	3424	3190	2188	1883	1481	1366	846	648
Mean	8.80	8.54	8.51	8.50	5.71	5.32	3.65	3.14	2.47	2.28	1.41	1.08
Overall ranking	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th

Source: Field survey, 2009

Points = 1st, 2nd, 3rd12th assigned 12, 11, 10.....1 points respectively.

* Figures in parenthesis represent percentage value

Table 3: Correlation between the effectiveness of extension delivery channels and the socio-economic characteristics of the respondents

Socio-economic characteristics	Correlation (r)	Coefficient of determination (r²)	F-Value
Gender	0.1982	0.0393 (3.9%)	1.1722
Age	0.0632	0.0039 (0.39%)	0.3802
Level of education	0.2917*	0.0850 (8.5%)	3.9386
Farming experience	0.2192*	0.0480 (4.8%)	3.0152
Farm size	-0.0349	0.0016 (0.16%)	0.1863
Farming enterprise	0.0384	0.0014 (0.14%)	0.2632
Membership of farmers' association	0.2627*	0.0690 (6.9%)	3.3241
Income	0.2872*	0.0824 (8.2%)	3.7062

Figures in parenthesis represent percentage value

Source: Computed from field survey, 2009