Asian Journal of Agricultural Extension, Economics & Sociology
14(2): 1-8, 2016; Article no.AJAEES.30080
ISSN: 2320-7027

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Assessing the Availability, Accessibility and Use of Media Channels for Sourcing Agricultural Information by Urban and Rural Farmers in Kogi State, Nigeria

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Authors' contributions

This work was carried out in collaboration between all authors. Author SOA designed the study, wrote the protocol and supervised the work. Authors MHE and UMS carried out all field work and performed the statistical analysis. Author UMS managed the analyses of the study. Author SOA wrote the first draft of the manuscript. Author MHE managed the literature searches and edited the manuscript. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/AJAEES/2016/30080
Editor(s):
(1) Jamal Alrusheidat, Assistant and Consultant to Director general for Extension Education Director of Extension Education Department, National Centre for Agricultural Research and Extension (NCARE), Amman, Jordan.
Reviewers:
(1) Darlan Daniel Alves, Feevale University, Brazil.
(2) Kalpana L. Chaudhari, Sardar Vallabhbhai National Institute of Technology, India.
(3) Valentin Ivanov Kosev, Institute of Forage Crops, Bulgaria.
Complete Peer review History: http://www.sciencedomain.org/review-history/17346

Original Research Article

Received 15th October 2016
Accepted 27th November 2016
Published 26th December 2016

ABSTRACT

The study assessed the availability, accessibility, and use of mass media among urban and rural farmers in Kogi State, Nigeria. A three staged random sampling technique was used to select 320 urban and rural farmers for the study. Data for the study were collected through well structured questionnaire and subsequently analyzed with descriptive statistics and sigma scoring. The findings revealed that availability of television in the urban areas was 98% while in the rural areas it was 86.13%. 31.88% had access to television in the urban while 27.50% had its access. For radio, the availability was 98.13% in the urban and 98.12% in the rural while its access was 59.38% and 65% in the urban and rural areas respectively. The high level of availability and low level of

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accessibility of some of this mass media among urban and rural farmers could be attributed to factors such as high cost of purchase, illiteracy, time, low income level of the farmers among others. Sensitization and establishment of communication centres especially in rural areas were recommended.

Keywords: Availability; accessibility; farmers; usage; radio.

1. INTRODUCTION

Agricultural information dissemination is an important stage of agricultural technology development and transfer. It is important because any success or improvement in the development of agriculture is highly dependent on the new knowledge and dissemination of information through the appropriate channels. Although farmers usually have adequate knowledge of their local conditions and valuable experience of how best to successfully exploit their environment, they require timely and innovative information generated from research and development to cope with exigencies of weather and pestilence [1]. The timing, quality, presentation and sources of information have been shown to be vital in agricultural communication especially with regard to the (rural) agricultural communities. Studies have indicated that mass media are intensively used in sourcing for agricultural information in developing countries such as Nigeria [2].

In spite of the benefits accruing from the use of media technologies, poor exposure of farmers to appropriate agricultural information has been identified as one of the major reasons for low yield recorded by many farmers [3]. Studies on media usage by farmers in Kogi State appears scanty especially with reference to agricultural activities. As a result of the non-accessibility of agro-information by farmers, many have continually practiced subsistence farming which does not give room for improved food production situation in the state.

The problem therefore, is not that of availability of agricultural technologies but that of accessibility and effective use of available media sources for agricultural development in the state. This means that the available media might not bring the expected change if they cannot be accessed by majority of the urban and rural farmers. The expected change might also be a mere dream if the available media do not address the desires and aspirations of the farmers. The urban and rural farmers need to be informed and educated about improved practices through the media to enable them put such innovations into practice as this would enhance farming systems and raise productivity and income. Many media sources are available, but what needs to be ascertained is the extent to which each source is practically available and accessible to urban and rural farmers. It is against this backdrop that this study assessed the availability, accessibility and use of mass media channels as source of agricultural information in Kogi State, Nigeria.

1.1 Mass Media as Source of Agricultural Information

Mass media are channels of communication which can expose large number of people to the same information at the same time or within a short space of time. They may include media which pass on information through the use of sound, the use of moving pictures or the use of print [4]. According to [5], media are technologies used to convey information or message to the receiver. Extension services used mass media because of the high speed and low cost with which information can be communicated over a wide area. They are generally useful as sources of initial information to farmers and constitute methods of notifying farmers of new development and emergencies. They are equally important in stimulating farmers' interest in new ideas and practices. According to [6], mass media are the devices employed by anyone involved in a mass-mediated communication situation for moving messages across distance or time.

Broadly speaking, mass media can be classified into prints and electronic media. Examples of print media include posters, leaflets, billboards, newsletters, direct mail circulars, newspapers, magazines, journals and books while examples of electronic media include radio, cinema, television, telephone (landlines or Global System for Mobile Communication, GSM) etc. [7] defined media as any materials, objects, instruments or system which serves to communicate information including leaflets, farming press, other written and printed materials, all types of cinema films, radio and television and video system.

Communication has also been defined as a process by which participants create and share information with one another in order to reach mutual understanding. Communication can also be defined as a process of sending and receiving messages through the channels and devices at a convergence and as established meaning between a source and receiver [8].

Effective communication of new research findings and technologies in agriculture to rural farmers remains a promising strategy for increasing agricultural productivity [9]. Generally, such information may include techniques of applying fertilizers, insecticides and fungicides to crops, improved method of cultivation and soil conservation, techniques of planting, harvesting and storage of crops. There are also new technologies of animal husbandry as well as processing and marketing of various agricultural products. For the farmers to adopt the new technologies and put them to use, the new idea must reach their farms and homes through effective extension communication methods such as mass media channels.

There are myriad of media sources available to users like farmers, some of these are:

Radio Programmes- Attempt to communicate information considered useful to a large number of people. It is a powerful instrument for communicating with people far away in about the fastest manner. It can reach many people at relatively low cost and is suited for timely presentation of programmes and is used to alert farmers at times of emergencies. Radio programmes help in keeping people aware of recommended practices.

A radio broadcast must be followed by other methods to bring people to adoption stage. Radio programmes must be in the language the generality of the farmers will understand. The limitations are that broadcasting time may not always be appropriate to farmers and extension workers, also some of the farm homes may not have radio sets. More so, radio programmes are not designed to give great details about extension activities. It does not provide for immediate feedback since the listener cannot ask question or respond. Despite these shortcomings of radio, it is the cheapest and fastest means of reaching out to the target audience.

Television- offer people an opportunity to employ the two major sense of seeing and hearing in the learning process thereby strengthening the likelihood of grasping and retaining the subject matter presented. Through television, the extension worker can give a method demonstration to a very large audience and can give a short talk or conduct a personal discussion on a topic of interest. The use of television makes learning simple and easy when presented. This is because the speaker is seen and television programmes look real and can accommodate demonstration of certain practices. The limitations of using television include the fact that owing to the high cost, many farm homes do not own television sets. The viewer too is not in a position to ask questions to clarify the points made in a television presentation and the short airtime allocated to extension broadcasts.

Internet- The internet is described as a worldwide collection of networks through which information can be exchanged, not only within an organization, but among organizations or individuals across the world [10]. According to [11], communications via the internet takes place in two ways. One way is by sending and receiving e-mail, and the second way is by gaining access to large repositories of a wide range of topics or information.

Accessing of the internet by a user is however, made possible by the World Wide Web (www). [11] also indicated that the web is a more recent development, and has rapidly become widespread across the internet, making it possible to browse the net. In order to browse the net, it is required that a user has the website address of the documents one hopes to access. The internet is being widely applied in almost all sectors of human life in today's world. It is used in commerce, education, research, government and non-governmental organizations.

It is on the ground of this, that the agricultural sector, particularly, the agricultural extension service, cannot be left out of the potentials of the internet. This information-driven technology is a veritable tool by which research and extension organizations can rely on to exchange agricultural information.

Research findings and technical agricultural information can be placed on the net for easy access by the extension workers. Very valuable research and extension information can be down-loaded from the net. Internet extension (cyber extension) has gained ground in Uganda and elsewhere. Farmers in Uganda constantly visit the non-governmental internet centres for farm advice [12].

Newspapers- are valuable means of transmitting agricultural formation to the people who can read. They are good for informing literate or educated farmers. Such information should be well organized and written in simple and clear language. The material should be presented in short, simple sentences and paragraphs that are easy to read. News stories have the advantage of reaching a large number of people who might otherwise be left out. However, news stories are not useful to the illiterates.

Newsletters/ Bulletins/ Leaflets/ Pamphlets- provide information on specific areas meant for a particular group of persons. Such publications used in extension education contain information that centres on farming. They are specifically designed for those who are interested in farming. They are also used to convey a lot of valuable information to farmers and give detailed explanation of how to carry out some agricultural practices. Some of these papers are published by research institutes and are valuable means of obtaining new discoveries made in the field of agricultural research. However, they are highly technical and can only be useful to well educated farmers or audience.

2. MATERIALS AND METHODS

The study was carried out in Kogi state, Nigeria. Kogi State has a total population of 3,278,487 people based on the 2006 population census and is made up of 1,691,737 males and 1,586,750 females. The State is located between Latitude 6°30'N, and 8°50'N and Longitude 5°51'E and 8°00'E. It shares common boundaries with Niger, Nassarawa and the Federal Capital Territory to the north, Benue State to the east, Anambra and Enugu States to the south, and Edo, Ekiti, Ondo, and Kwara States to the west. Important food and cash crops grown in the state are yam, millet, sorghum, rice, cocoyam, sweet potato, cassava, cowpea, bambara nuts, groundnuts, beniseed, banana/ plantain and cotton. Fruits and vegetables such as okra, pepper, spinach and fluted pumpkin are cultivated. Tree crops such as cocoa, cashew, coffee, oil palm and citrus are equally grown. Cattle, goats, sheep and poultry are major animals reared. Fishing activities are carried out along Rivers Niger and Benue as well as their tributaries and other inland water bodies.

Two Local Government Areas were randomly selected from each of the four Agricultural Zones (A, B, C and D) as delineated by the Kogi Agricultural Development Programme, making a total of 8 LGAs. One urban and one rural community were randomly selected from each of the LGAs making a total of 16 communities (8 urban and 8 rural communities). Twenty (20) farmers each were randomly selected from both urban and rural communities making a total of 320 farmers for the study.

Data for the study was collected with the use of structured questionnaire and personal observations. Data obtained were analysed using descriptive statistics and sigma score. Sigma scoring method was used to ascertain the availability, accessibility and use of various media channels by urban and rural farmers in the area. This method was adopted by following the steps below:

First, obtain the percentage of farmers who ticked the media channel as available and accessible or available and not accessible.

[(Number of farmers who responded / Total number of respondents) X (100 / 1) = A%]

This is followed by dividing the percentage (A%) by two and the answer from 100. 100 - (A% ÷2) = B%. Check B% on the statistical table of normal deviates to get the sigma distance (Z). Next increase the value of the Sigma distance using a constant figure of 2 and multiplying the result by the same constant,

$$(Z + 2) \times 2 = y$$

Since Sigma method assigns weight in reverse direction on a 10 point scale, the actual Sigma score would be 10 minus the answer (y)

$$10 - y = z$$

Decision Rule: Any mean score ($\overline{X}$) less than 5 is considered as low level of availability and accessibility.

3. RESULTS AND DISCUSSION

3.1 Availability, Accessibility and Use of Mass Media by Urban and Rural Farmers

Table 1 shows the distribution of respondents according to extent of media/communication channels' availability, accessibility and use by urban farmers in Kogi State. The result indicated that 90.00% (sigma score 5.75) of the urban farmers agreed that television was available while 86.16% (sigma score 5.65) of the rural farmers agreed that television was also available.

Table 1. Distribution of respondents according to extent of media/communication channels' availability, accessibility and use by urban farmers in Kogi State

Types of media	Availability				Accessibility				Use			
	Urban		Rural		Urban		Rural		Urban		Rural	
	%	Sigma	%	Sigma	%	Sigma	%	Sigma	%	Sigma	%	Sigma
Television	90	5.75 (144)	86.16	5.65 (137)	31.88	4.00 (51)	27.50	3.81 (44)	30.63	3.95 (49)	25.63	3.27 (41)
Radio	98.75	5.97 (158)	98.13	5.95 (157)	59.38	4.93 (95)	65.00	4.91 (104)	57.50	4.88 (92)	63.75	4.89 (102)
GSM	98.13	5.95 (157)	88.75	5.71 (142)	46.25	4.54 (74)	45.63	4.51 (73)	41.25	4.36 (66)	45.00	4.49 (72)
Newspaper	88.75	4.28 (142)	53.75	4.74 (86)	25.00	3.70 (40)	24.34	3.67 (39)	18.75	3.37 (30)	45.00	4.49 (36)
Cinema	17.50	3.28 (23)	4.38	1.97 (7)	3.75	1.86 (6)	00	1.44	1.85	1.27 (3)	00	1.44
Internet	28.13	3.85 (45)	11.25	2.82 (18)	7.50	2.43 (12)	7.50	2.43 (12)	5.00	2.08 (8)	6.25	2.27 (10)
Computer	41.88	4.40 (67)	20.63	3.47 (33)	14.63	3.09 (23)	10.00	2.71 (16)	11.88	2.87 (19)	8.75	2.59 (14)
Journal/Mag	58.75	4.92 (94)	23.75	3.64 (38)	23.72	3.64 (38)	11.25	2.71 (18)	11.88	2.87 (31)	8.75	2.59 (75)

Source – Field survey, 2013

Decision rule: *Any mean score (2) less than 5 is considered as low level of availability and accessibility*

31.88% (sigma score 4.00) of the urban farmers had access to television while 27.50% (sigma score 3.81) of the rural farmers had access to television too. The use of television among urban and rural farmers stood at 30.63% (sigma score 3.95) and 25.63% (sigma score 3.72) respectively. The low accessibility and usage of television by urban and rural farmers could be attributed to problems such as lack of signal and lack of steady power supply. This is in line with the views of [13] when they said that challenges such as lack of electricity supply and lack of signal prevent farmers, especially rural farmers from using television for sourcing agricultural messages. Similarly, Moore [14] pointed out that availability of media sources is not a guarantee that they would be used by farmers.

For radio, 98.75% (sigma score 5.97) and 98.13% (sigma score 5.95) of the urban and rural farmers agreed that radio was available but 59.38% (sigma score 4.93) of the urban farmers had its access while 65.00% (sigma score 4.91) of the rural farmers had access to radio. [6] reported in 13 that availability of media sources does not necessary mean its accessibility. The use of radio in urban area by farmers was 57.50% (sigma score 4.88) while in the rural area, it was 63.75% (sigma score 4.89). The result also indicated that radio had a higher patronage among rural farmers than urban farmers. This goes to buttress the views of [15] when they said that radio is the most popular ICT facility especially in rural communities because it is considerably cheap to buy and communicates useful agricultural messages to a large number of people at relatively low cost and faster rates.

On GSM facility, 98.13% (sigma score 5.95) of the urban farmers confirmed its availability while 88.75% (sigma score 5.71) of the rural farmers also confirmed that it was available but 46.25% (sigma score 4.54) of the urban farmers had its access while 45.63% (sigma score 4.51) of the rural farmers had access to GSM (mobile phone) as well. The result also showed that 41.25% (sigma score 4.36) of the urban farmers and 45.00% (sigma score 4.49) of the rural farmers used GSM respectively. The low usage of GSM by both urban and rural farmers could be attributed to low level of farmers' income, lack of electricity and poor network coverage. This finding is in line with [16] who said that telecommunication and electricity infrastructure in developing countries is lacking and poorly developed. Similarly, [17] identified lack of network and dropped calls as major reasons for low utilization of mobile phone. However, some of the farmers interviewed concluded that mobile phone has assisted a large number of agricultural producers to access market and market information as well as communicating and interacting with relatives, fellow farmers and other stakeholders thus reducing social isolation.

On newspapers, 88.75% (sigma score 4.28) of the urban farmers and 53.75% (sigma score 4.74) of the rural farmers agreed that newspapers was available 25.00% (sigma score 3.70) and 24.34% (sigma score 3.67) of the urban and rural farmers had access to newspapers respectively. The low usage of newspapers among farmers could be attributed to their literacy level.

On internet facilities, only 28.13% (sigma score 3.85) and of the urban and rural farmers, respectively said they were available. As for its accessibility, 7.50% (sigma score 2.43) of the urban and rural farmers had access to internet but only 5.00% (sigma score 2.08) of the urban and 6.25% (sigma score 2.27) of the rural farmers used internet for sourcing agricultural information. According to most of the farmers in the urban and rural areas, this media source was available but the problem was that of its accessibility as a result of challenges been faced by farmers. [18] identified some of the factors that prevent farmers from accessing and using information to lack of knowledge, physical isolation, information overload, inadequate information systems, cultural differences, lack of information skills, work pressures, environmental and professional roles to mention but a few.

4. CONCLUSION AND RECOMMENDA-TIONS

Agricultural information and knowledge is essential in improving farmers' productivity. Indicatively, media sources abound both in urban and rural areas of Kogi State, however, radio was mostly accessed and used by both the urban and rural farmers. The level of access and use of media sources such as cinema, journal/magazines, internet, and computer were invariably low due to factors such as unsteady power supply, network services, and financial resources. Based on the findings, the following recommendations are made:

1. Media sources should be made available and affordable to all farmers by government, non-governmental

organizations and other private service providers. This will encourage them to develop a positive attitude to seeking information relevant to their needs.

2. To solve the problem of low availability and accessibility or complete unavailability and inaccessibility of mass media channels of agricultural information to farmers, the available mass media in place should devise ways of reaching out to the rural areas instead of concentrating their activities in urban centres.
3. There is also the need for government to set up communication centres especially in the rural areas where extension agents who have the technical skills to operate these machines, are available to help teach the farmers on how to operate them effectively.
4. Radio and television programmers should give more time slots and at convenient time for the farmers on agricultural issues so that they could develop positive attitude towards media usage.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Peer-review history:
The peer review history for this paper can be accessed here:
http://sciencedomain.org/review-history/17346