

ON-THE-LINE RADIO PROGRAMME AS A CONDUIT FOR SUSTAINABLE AGRICULTURAL COMMUNICATION: AN EXAMPLE FROM BENUE STATE

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Abstract

Agriculture, which has high potentials for food security and accounted for over 80 percent of Nigeria's Gross Domestic Product (GDP) was neglected due to the discovery of crude oil with huge financial gains. This development affected agricultural extension services and most food producers no longer have access to productive information. Development in technology has made it possible for mobile phone owners to interact with radio stations and since radio has the capacity to reach several people at different locations almost at the same time, this study was designed to know the effectiveness of Radio Benue FM on-the-line programme to determine its suitability for educating farmers for sustainable agricultural development. The study was anchored on the Uses and Gratification theory, which centers on what uses we make of the media and what gratification we gain from exposing ourselves to it. The study used the survey research method and data collected from 250 randomly selected respondents from Makurdi and Otukpo Local Government Areas of Benue State, Nigeria, who participate in the phone-in radio programme, using a structured questionnaire showed 86% have farms, 55.6% participate regularly, 66.8% get required feedbacks, 79.2% increased their knowledge and 74.8% find the level of interaction high. Issues mostly discussed are social (48.8%), political (29.6%), economic (8.4%), and religious (5.2%). χ^2 test showed the programme provided required feedbacks (P. value = 0.000, R^2 . 137.096) and the Mann-Whitney test showed no significant difference in interaction amongst male and female participants (P-value = 0.800, Z = -0.254, W = 9415.500). Logit Regression showed age and education have significant effects on knowledge (P-values = 0.006 and 0.001). The study recommends agriculture communicators partner with on-the-line radio producers to strengthen the knowledge base and participation level of farmers for sustainable agricultural development and enhanced greater public participation in farm activities.

Key words: Effectiveness, Phone-in radio programme, agriculture, communication, sustainability, and development.

Introduction

Agriculture provided the main source of foreign exchange for Nigeria and is an important sector of the economy with high potentials for employment generation, food security and poverty reduction. Oluigbo, (2012) in Obiora & Emordi, (2013) noted that up to the early 1970s, agriculture accounted for over 80 percent of Nigeria's Gross Domestic Product (GDP) but the discovery of crude oil in the late 1960s and the huge financial gains benefitted from it made the government to shift its priority from agriculture

to crude oil and relied on food importation as a means of feeding her citizens. Consequently, this development affected agricultural production and extension services.

Sadly, the price of crude oil in the world market started falling in 2015 and Yusuf (2016), explained that over \$21bn was lost in capital investment in 2015 alone due to the sharp decline in oil receipts, and exploration investments was drying up, thereby affecting foreign reserves and straining fiscal budget. Following the reduction, Nigerians became apprehensive of the effects and there were calls for diversification. For instance, Moghalu (2016a & b) noted that despite the efforts of successive governments in Nigeria, there have been high rates of poverty, unemployment and infrastructure deficits, and counseled that government must build a sustainable economic future by looking beyond oil.

The financial state of the economy has compelled the Nigerian government to focus on diversification and agriculture is one of the springboards with youths in mind. This is understandable because Nigeria's farm labour in this generation requires energetic and information seeking workforce to exploit the huge potentials in the agricultural sector.

Sustainable agricultural production for food and industrial use has been a major concern for the Nigerian government and several intervention programmes like the River Basin Development Programme (RBDP), Operation Feed the Nation (OFN), Green Revolution (GR), the Directorate for Food, Roads and Rural Infrastructure (DFRRI), Agricultural Development Programme (ADP), National Food Security Program (NFSP) and Agricultural Transformation Agenda (ATA) were put in place at various times. It would appear that these interventions did not fully achieve the purpose for which they were created and that was why the Federal Government of Nigerian (2008) stated that although agriculture remained a key component of the country's economy, contributing (at that time) about 40.0% of the GDP and employing about 70.0% of the active population, the sector significantly underperformed its potential.

Up till now the poor performance in agriculture that is clearly demonstrated in the very high food prices nationwide, unemployment and food insecurity at household and national levels was attributed to negligence due to dependence on revenue from crude oil and this affected agricultural extension and agricultural communication activities. For instance, Arokoyo, (1998) earlier explained that the extension system was not able to engineer a sustainable agricultural development that would have ensured: national and household food security, improved rural livelihoods and indeed, make Nigeria's agriculture competitive in the world agricultural market because it was dominant, ineffective, inefficient and characterized by a top-down, supply-driven extension system that was compounded by serious structural, organizational and management challenges. Supporting Arokoyo (1998), the Presidential Commission on Cassava Reports (2003), explains that studies show suitable knowledge and technology to render cassava production among small scale farmers more profitable were readily available from various sources of research but diffusion and implementation of it seems to be hampered by an inefficient extension system, lack of finance and problems of farmer's accessing buyers and markets. We believe that some of these issues are likely to be addressed by the effective use of information technology because new developments in information and communication technologies are making it possible to share information widely, quickly and cheaply thus making interaction more effective.

Studies found that Nigerian farmers have owned and used radio (Shears, 1984; Ladebo, Kassal, & Banjoko, 1997; Ochu, 2000; Odiaka, 2006) and radio has served as an effective communication channel for teaching rural people about farming, nutrition and animal husbandry (Obinne & Ozowa, 1997). Radio was also found to contribute to increase in yam output (Odiaka, 2011). Nigerian men, women and youths in the states of Bauchi and Nassarawa, for example, own radio sets and listen to farm radio broadcasts

at least once a week (Obinne, 2004). In Benue State, 66.1% males and 41.5% females of the respondents in a study listen to radio broadcasts most days (Odiaka, 2008). Broadcasting of agricultural messages became seriously constrained by the commercialization of radio stations, which compelled clients to pay high rates for airtime and there are no external funding for farm radiobroadcasts.

However, in recent times, Phone-in-radio programmes have emerged and become popular platforms for direct audience participation to exchange views, express concerns and encourage open discussion on several issues. Media planners including those in Radio Benue, developed On-the-line (phone in) programmes as a strategy for obtaining immediate feedback thereby giving opportunity for instantaneous interaction between relevant stakeholders on specific issues. This study therefore, examined the effectiveness and level of interaction of participation on Radio Benue FM on-the-line programme to determine its suitability for educating practicing and potential farmers for sustainable agricultural development. We hypothesized that:

HO₁. On-the-line radio programme did not provide the required feedbacks,

HO₂. There is no significant difference in interaction amongst male and female participants, and

HO₃. Socio-economic characteristics have no significant effect on the knowledge of participants of Radio Benue on-the-line programme.

METHODOLOGY

Benue State the study area, which was created on 3rd February, 1976, derived its name from River Benue, the second largest river in Nigeria, and is located in the middle belt region of the country, with a population of 4.22 million people (Federal Republic of Nigeria, 2007) spread among three senatorial zones: Eastern, Northern and Central. Popularly referred to as the “Food Basket” state, with its headquarters in Makurdi, Benue State has a land mass of 30,955 square kilometres distributed among 23 Local Government Areas (LGAs)—14 in Tiv-speaking areas, 7 in Idoma-speaking areas and 2 in Igede-speaking areas (Department of Planning and Statistics, 2004). River Benue and its tributaries water the land and provide opportunities for fishing and agricultural activities.

Farmers take advantage of the rivers, soil types and climatic condition to produce tuber crops such as white yam “*Dioscorea rotundata*” and cassava “*Manihot esculenta*”; cereals such as rice “*Oryza sativa*”, maize “*Zea mays*”, millet “*Pennisetum spp*”, guinea corn/sorghum “*Sorghum bicolor*”, soya-bean “*Glycine max*”, bambara-nut “*vigna subterranean*”, beniseed “*Sesamum indicum*”, tree crops such as mango, cashew “*Anacardium occidentale*”, oranges, oil palm “*Elaeis guineensis*”; vegetables. such as ‘Ugwu’ “*Telfairia occidentalis*”, amaranthus (Green) “*Cruentus*”, tomatoes “*Lycopersicon lycopersicum*” etc. while those at the riverside areas engage in fish farming also. A good number of the Urban dwellers whose primarily occupation are non farm, also engage in farm activities.

The state is served by three Universities (Federal University of Agriculture, Makurdi, Benue State University Makurdi and University of Mkar, Mkar, Gboko,) and five radio stations (Radio Benue FM 95.0 and AM stations, Joy FM 96.5 Otukpo, Harvest FM 103.5 Makurdi, Ashiwaves FM 99.9 Katsina Ala and Benue State University (BSU) FM 89.9, Makurdi). While Radio Benue AM/FM, which was established on April 1, 1978 covers the state and surrounding states (Taraba, Nasarawa, Kogi, Enugu, Niger, Cross River, Anambra and Plateau), the other stations are limited.

On-the-line that started in 1993, is produced every Saturday between 9.00am to 11.30am as one of the sponsored Radio Benue phone-in programmes . The anchorperson and the guests spend the first 30 minutes for introduction and talk on the

main topic, thereafter, callers are allowed to ask questions, make comments and/or contributions. All calls made to that line are free and could be in English or any of the major languages.

The study covered January to December 2015 and a multi-stage sampling technique was used to select the sample. Two senatorial zones (Zone A = Benue North East and C= Benue South) were randomly selected from the three senatorial zones (South (A), North West (B) and North East (C), thereafter; the headquarters of the selected zones (Makurdi and Otukpo) were purposefully selected because initial discussion with the producer of the program revealed that most phone-in participants were from these two LGA Headquarters. National Primary Health Care Development Agency (2015) report showed that Makurdi LGA has 11 wards and Otukpo LGA, 13 wards. Four wards were randomly selected from each of the LGAs: Makurdi (Agan, North Bank 2, Fiidi, Ankpa/Wadata and Modern Market) and Otukpo (Sabon Gari, New GRA, Otada and Old GRA).

Interaction with the producer of the programme shows that an average of 19 listeners phone-in during each programme, giving an estimate of 988 in a year (2015). Twenty five percent of the estimate gave 247, which was rounded up to 250 as the sample for the study and the questionnaires were administered to them. With the help of 7 research assistants' 3 streets were randomly selected from each ward and on-the-line radio listeners were identified through random visits to houses. The 250 respondents were randomly selected from the wards using the ballot method as follows: Agan (31), North Bank 2 (31), Fiidi (32), Ankpa/Wadata (31) and Sabon Gari (31), New GRA (31), Otada (31) and Old GRA (32) and the instrument administered to them.

Simple percentages and frequencies were used to explain data collected. Chi-square was used to test whether the programme provide the required feedbacks on issues raised to the audience or not, Mann Whitney was used to examine the significant difference in interaction amongst male and female participants and Logistic Regression tested the significant effect on the knowledge of listeners to Radio Benue FM 95.0 on-the -line programme.

RESULTS AND DISCUSION

Of the 250 respondents, 69.6% were males and 30.4% females, 47.2% aged between 21 and 25 years of age; 26.8% were between 26 and 30 years, 10.4% were 31-35 years, 4.4% were 36-40 years and 11.2% were above 41 years (Table 1). The table also shows that 29.2% were married, 1.2% divorced, 0.8% widowed and 68.8% single. With regard to their educational status, 31.2% had Senior Secondary School Certificate (SSSC), 27.2% had Ordinary National Diploma (OND) or National Certificate of Education (NCE), 40.8% had Higher National Diploma (HND) or Bachelor of Science (BSc.) degree and 0.8% had at least Master of Science (MSc.) degree.

Data from Table 1 indicates that more males participate in the programme than females. The variation justifies the general believe in Nigeria that males are more interested in participating in radio programmes that are not gender sensitive. The disparity in the participation level is also noticed in the marital status where unmarried respondents listen more than the married ones, also demonstrating the level of interest of youths in the programme. Going by the definition of the Nigerian National Youth Policy of 2001, youths comprise all young persons between the ages of 18 and 35 years (Anasi, 2010) showing that most of the respondents (84.4% ie. 211) in this study are youths.

The academic status of the respondents show that most participants have formal education and the high percentage that have at least a BSc. degree suggests that participants are people who are exposed and can ask reasonable questions or make useful contributions.

Table 1: Characteristics of Respondents

Characteristics	Number of Respondents	Percentage
Age		
21-25	118	47.2
26-30	67	26.8
31-35	26	10.4
36-40	11	4.4
41 and above	28	11.2
Total	250	100
Sex		
Male	174	69.6
Female	76	30.4
Total	250	100
Marital status		
Married	73	29.2
Divorced	3	1.2
Widowed	2	0.8
Single	172	68.8
Total	250	100
Highest Educational Qualification		
Senior Secondary School Certificate	78	31.2
Ordinary National Diploma (OND)/ National Certificate of Education (NCE)	68	27.2
Higher National Diploma (HND) / Bachelor of Science degree (BSc.)	102	40.8
Master of Science degree (MSc.) & above	2	0.8
Total	250	100

Table 2 shows that 86% of the participants in the phone – in radio programme are involved in farming. These are Civil Servants who own farms (20.4%), farmers who are also artisans (30.3%), full time farmers (28.0%, business people who have backyard gardens (4.0%) and business people who own farms (3.6%). However, 12.4% of the Civil Servants and 1.6% private business respondents do not participate in any form of farming indicating that a good number of practicing farmers are interested in interacting with stakeholders through radio to obtain information and seek for clarifications on issues that affect them.

Table 2: Respondents occupation

S/no	Main Occupation	Minor Occupation	No. of respondents (%)	No. that own Farm
1	Civil servant	Farm	51 (20.4)	51
2	Civil Servant	Artisan	31 (12.4)	--

3	Farming	Artisan	75 (30.0)	75
4	Farming	None	70 (28.0)	70
5	Private Business	Garden	10 (4.0)	10
6	Private Business	Farm	9 (3.6)	9
7	Private Business	None	4 (1.6)	--
Total			250 (100)	215 (86)

The participation level of the respondents shows that 55.6% were very regular (Table 3). They listen and make calls once a week (each time the programme is on). 16.0% listen and call every other week, 14.8% do so once a month and 13.6% listen but never made calls, showing that majority of the participants find the programme interesting and probably meeting their information needs.

Table 4 illustrates respondent's view of feedbacks from the programme and the data shows that 66.8% agree they get feedbacks from the guests in the studio. 25.2% were undecided and 8.0% disagreed. It is possible that respondents who were undecided or disagreed may not have been satisfied with the responses from the guests or could not stay to the end to get the summary of the discussion.

Table 3: Regularity of respondents participation in on-the-line radio programme from January to December 2015.

s/no	Regularity	Frequency	Percentage
1	Listen and call once a week	139	55.6
2	Listen and call once in two weeks	40	16.0
3	Listen and call once a month	37	14.8
4	Listen but never made a call	34	13.6
Total		250	100

Table 4: Respondents view of feedbacks from on-the-line programme

Feedbacks	No of Respondents	Percentage
Agree	167	66.8
Undecided	63	25.2
Disagree	20	8.0
Total	250	100

Respondent's opinion of the impact of the programme shows that there was high increase in awareness and knowledge (35.6%), moderate increase (43.6%) and less increase (20.8%) (Table 5). The data shows that to some extent, there was an improvement in participants awareness and knowledge since no respondent ticked "no increase in my awareness /knowledge"

Table 5: Respondents opinion of the impact of on-the-line radio programme in increasing awareness/knowledge.

s/no	Impact	Frequency	Percentage
1	High increased in my awareness /knowledge	89	35.6
2	Moderate increase in my awareness /knowledge	109	43.6

3	Less increase in my awareness /knowledge	52	20.8
	Total	250	100

Data in Table 6 shows that the level of interaction between callers, the guests and the anchorman was very high (23.2%), high (51.6%), low (19.2%). In other words, participants were communicating effectively with one another.

Table 6: Respondents feeling of the level of interaction during on- the -line programme

Interaction level	No of Respondents	Percentage
Very high	58	23.2
High	129	51.6
Low	48	19.2
Very low	15	6.0
Total	250	100

The main areas of discourse during the programme are in Table 7. The result shows that social issues (48.8%) were discussed more followed by political concerns (29.6%), economic matters (8.4%) and religious issues (5.2%). Others, which include the environment, health etc. was 8.0%. Most social issues focused on communal clashes and “Herdsman” invasion of communities, while political matters focused on unfulfilled campaign promises and governance. On-the-line is a sponsored radio programme, which explains why the issues being discussed did not include agriculture because issues of food production are usually taken for granted.

Table 7: Major issues addressed during “on -the -line” Programme

Issues	No of Respondents	Percentage
Political	74	29.6
Social	122	48.8
Economic	21	8.4
Religious	13	5.2
Others	20	8.0
Social issues	250	100

Test of Research Hypotheses

HO₁ states that On-the-line radio programme did not provide the required feedbacks. The decision rule is that if the Z cal. < the P. value (the critical value), we accept Ho. The X² result showed that Z cal. > the P. value (Table 8), thereby rejecting Ho and demonstrating that On-the-line radio programme provided the required feedbacks to participants. It’s an indication that most participants are satisfied with most of the responses they get from the radio station.

Table 8: Chi- Square test showing if on-the-line programme provided

required feedback to the audience

Options	Observed	Expected N	Residual
Yes	167	83.3	83.7
No	63	83.3	- 20.3
Ad	20	83.3	- 63.3
Total	250		

	On-the line feedback
Chi – Square	137.096
P. value	0.000

The Nagelkerke R^2 of chi square is 137.096
P. value of X^2 Statistic =0.000
The X^2 Statistic is significant at 1% level.

The second hypothesis states that there is no significant difference in interaction amongst male and female participants. The hypothesis was tested for mean significant differences at 1% probability level. The decision rule is that if the Z cal. < the P. value (the critical value), we accept H_0 . The result as shown in Table 9, revealed that there was no significant difference in interaction between males and females (Z cal. (-0.254) < P-value (0.800). In other words, males did not interact more than females, suggesting that the producer/moderator were gender sensitive.

Table 9: Mann-Whitney test on the difference in interaction between male and female participants

	Sex	N	Mean Rank	Sum of Ranks
Interaction	Male	174	126.20	21959.50
	Female	76	123.89	9415.50
Total		250		

	Difference in interaction
Mann-Whitney U	6489.500
Wilcox on W	9415.500
Z	- 0.254
P-value	0.800

Hypothesis 3 states that Socio-economic characteristics have no significant effect on the knowledge of participants of Radio Benue on-the-line programme. The Nagelkerke R^2 of the logistic regression is 0.135, explaining that the independent variables in the model accounted for 13.5% of the Variables in the probability of increase in knowledge. The X^2 (22.418) shows that all the variables measured put together had significant effect on the knowledge of farmers at 1% level of significant. However, Age had positive effect and was significant showing that the older a participant is, the more knowledge he will obtain from the program. Education had negative effect but significant at 1% thus explaining that the more educated a participant is, the less knowledge he/she would likely have. This is possible where such participants mainly call in to make

contributions. Thus suggesting that the less educated ones gain more knowledge from the program. The implication is that majority of the farmers who are not highly educated will find this programme very educative.

Table 10: Logistic Regression on the effect of some characteristics of respondents on knowledge during on- the -line programme

Independent variable	Coefficient	P. value	Wald
Constant	1.147	.000	14.689
X ₁ Age	.925	.006	7.517
X ₂ Sex	.447	.245	1.353
X ₃ Educational	- 1.149	.001	11.619
X ₄ Freq of listening	.644	.743	3.210

Nagelkerke R² =0.135

Chi-Square Statistic = 22.418

P-Value of X² Statistic = 0.000

Summary and Conclusion

Central to sustainable agricultural production and at every point in the value chain is effective communication, which provides the relevant knowledge and skills for production of quality food products. The use of radio sets and mobile smart phones to obtain farm information has remained consistently high in Nigeria and media planners have developed on-the-line (phone-in-radio) programme as a strategy to obtain immediate feedback thereby giving opportunity for prompt interaction between relevant stakeholders. Phone-in-radio programmes are admired platforms for direct audience participation to exchange views, express concerns and encourage open discussion on issues. Therefore, the use of viable on-the-line radio as a sustainable strategy for effective dissemination of agricultural information is desirable particularly that Nigerian agricultural work force are energetic, information seeking youths who listen to radio programmes and can obtain relevant agricultural information through this channel to enable them exploit the huge potentials in the agricultural sector.

Furthermore, if the phone-in-radio programme is adopted by SDSN it will incorporate all participants in the agricultural value chain to improve collaboration, harness knowledge and information from various sources for improved production, utilization and sustainable agricultural development.

Recommendation

The study recommends agriculture communicators partner with on-the-line radio producers to strengthen the knowledge base and participation level of farmers for sustainable agricultural development and enhanced greater public participation in farm activities. It is believed that sustainable agricultural development would basically depend on stakeholder's corporate responsibility in sharing relevant information at the right time and through the right channel.

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