

Analysis of Problems and Solution to Usage of ICT Components among Frontline Extension Agents in Nigeria

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ABSTRACT

The paper highlights the problems associated with the usage of ICT components among extension agents in three selected States Agricultural Development Projects (ADPs) of Nigeria. Two hundred and four (204) Village Extension Agents (VEAs) were sampled as respondents for the study. With aid of simple statistical tools (average, cumulative and percentages), and the analysis of the results indicate that for each platforms of ICT used by the extension agents, there were peculiar problems they faced. Some of the major constraints identified were: poor and lack of network/services, lack of electricity/batteries to power them, the cost of purchasing it was too expensive, lack of access/un-availability, lack of money to buy air time/or recharge cards, lack of maintenance, inability to operate it and lack of awareness. Others were; poor quality of video; and lack of knowledge of operating it/too complicated, poor maintenance capacity, it gets spoilt or malfunction and lack of time to use them. . The paper puts forth recommendations aimed at solving the problems and enhancing improvement in the job performance of extension agents.

Keywords: Agriculture, Development, Extension agents, Information, Communication, Technologies, Components

INTRODUCTION

Generally, the various available ICT components/devices include the following: Radio, Television, Multi-media systems (VCDs, DVDs, VHS, Over-head projectors), Telephones (Land-lines and Mobile phones), Internet (E-mailing, Web-browsing, telephoning), Computers and Personal Digital Assistants (PDAs). Others include: Media Players (MP 2, 3 & 4), Geographic Information System (GIS), Geographic Position System (GPS), Cable Satellite, online Newspapers, e-Books, journals, tablet systems (e.g. ipads, Galaxy Tabs) and smart phones. In a wider sense, it includes such tools as: Internet, e-learning technologies, CD ROMs, CDs, DVDs, etc).

The limitations and constraints found in the traditional and formal communication channels have made ICT application more relevant. Consequently, because of its wide application in scope and coverage, a more satisfactory and useful mechanism for innovation in communication in agricultural context is

desirable (Omotayo, 2005). This has thus brought about the introduction of ICT as an innovation in agricultural development. Documented and extensive work on communication for innovation that looked at the changing perspectives and the organizational and inter-organizational issues involved abound (Leeuwis and van den Ban, 2004). Specific to the media methods, and process management, the work outlined issues related to farm management, pre-defined issues, exploration and training. Their work went further to examine methods related to information provision with discussion on written and computer-based search and access facilities as well as information-needs assessment.

Emphasis is being placed on the need to use these media to exchange information with the stakeholders such as: farmers, extension agents, researchers, administrators, policy-planners, marketers, cooperatives, agro-processors, Non-Governmental organizations (NGOs). The world today is still confronted with the problems of

illiteracy and ignorance coupled with inadequate flow of information. The importance of information on research and development cannot be over-emphasized. Indeed, the usefulness of information and credibility of information source have been found to be positively and significantly related to adoption of improved cassava production technologies (Matthews-Njoku, 2003).

Wikipedia (2010a) stated that ICT, apart from being user-friendly, easy to access, cost effective and well-protected from unauthorized accesses, also serves the following purposes: Record text, drawings, photographs, audio, video, process descriptions, and other information in digital formats; produce exact duplicates of such information at significantly lower cost; transfer information and knowledge rapidly over large distances through communications networks; develop standardized algorithms to large quantities of information relatively rapidly; and achieve greater interactivity in communicating, evaluating, producing and sharing useful information and knowledge.

Contreras (1980) examined the impact of communication on modernity thus generating a thesis that communication has not played as important role in rural development in developing countries because of a series of structural constraints under which it has operated and, of course, will probably continue to operate.

Rogers and Burdge (1972) defined social change as: "the process by which alteration occurs in the structure and function of a social system." Examples of social change, in their view, include issues such as; national revolution, the invention of a new manufacturing technique, the founding of a village improvement council, and the adoption of birth control methods by a family. Explaining further, on the process of change, they presented it in three sequential steps, namely; (1) Invention, (2) Diffusion, and (3) Consequences. Their definitions of each of these are as follows:

Invention is the process by which new ideas are created or developed. Diffusion is the process by which these new ideas are communicated to the members of a social system. Consequences are the result of the adoption or rejection of the innovation. Change occurs when a new idea has an effect.

Jibowo (2000) described Social change as when viewed within the context of a social system, it is the alteration in the values, norms, social roles, habits, obligations of people, or change in life-style, life goals, chances, environment, or in the composition or organization of their society. Eisenstadt (1973) made a tremendous contribution to the theory of social change by giving a focus on the functionalists' perspective on structural change and modernization. He asserted that every social system has a propensity for change. Its development was traced to Europe, which had owed much to its various traditions, city-state, imperial and feudal, and more, to the development of commerce and secularism. It was reported that Protestants Reformation played a crucial role in the eventual restructuring of Europe in the fifteen century (Moore, 1963).

In the Functionalist perspectives, Social Change can occur at both micro level and macro level. At micro-level, it involves the group and people within one's immediate environment while at macro-level, it involves the economic, political and educational systems. Haralambos and Holborn (2004) observed that functionalism holds that the economy is solely responsible for solving the societal problems, with industrialism playing crucial and significant role.

In Nigerian context, there is the drive for change and development, and this is being promoted through the instrumentality of ICT. With the gradual exposure of the rural areas to the ICT, VEAs, as agents of change, are in good position to exploit the available technologies in their trainings and information exchange i.e. a change from traditional person-to-person communication to digital communication in all ramifications. For, it is expedite of them that for a meaningful extension service delivery and innovation adoption to be achieved, the deployment and application of ICT would go a long way in improving agricultural practices, production, productivity just like in the advanced countries that have used ICT appropriately. This study therefore presents an emerging trend, indeed a change from person-to-person communication/information method, to the use of modern technologies and devices in information and communication by the extension agents. This change is envisaged to bring about improvement and efficiency in their work relation and job performance.

In as much as ICT has been found to be of tremendous use to humanity, and indeed, the people of the world today, the level of its adoption and utilization are beset with ominous limitations. Despite the virtues of ICT and its benefits to its users, there are several problems associated with its usage.

For example, a number of literature have isolated some constraints in using ICT to include: poor physical infrastructure, lack of electricity supply (Lal, 2007); break in connectivity, remoteness of station, lack of time, high cost of accessibility (Aderinto et al., 2008); low sensitisation, poor source of power supply and high cost of software/hardware (Abdulsalam et al., 2008); frequent power failure, lack of knowledge of ICT, difficulties in ICT operation, procurement and maintenance (Zainab et al., 2008). The consolation however, is that these and many other problems connected to ICT usage can be surmounted if they are addressed squarely.

Objectives of the Study

The following are the two objectives that guided us in carrying out the study:

1. To identify those problems VEAs have in using ICT components under investigation, and
2. To proffer solution to the problems found by VEAs in using ICT components

Table1. *The population and sample sizes of the VEAs.*

S/No	State ADPs	Population of the VEAs	Sample size (20%)
1	Kebbi State ADP (KARDA)	226	45
2	Kaduna State ADP (KADP)	241	48
3	Kano State ADP (KNARDA)	551	111
	Total	1018	204

The questionnaires were administered between September, 2009 and February, 2010. When the duly filled questionnaires were returned, they were subjected to verification, and decoded before they were entered into computer for analysis. Data were analysed with the aid of descriptive and inferential statistical tools as the case may be. Results from data analysis are presented in form of tables and figures.

RESULTS AND DISCUSSION

Problems Encountered by Veas in Using ICT

The study also looked into the constraints, challenges vis-à-vis problems encountered by

METHODOLOGY

A structured questionnaire was designed to adequately elicit information needed for the study. The questionnaire was pre-tested on some Village Extension Agents (VEAS) who were not part of the respondents used for the study. The questionnaire was pre-tested with a validity result of r=79.

The North-West Geopolitical Zone of Nigeria was the focus of the study, comprising seven States, namely: Kaduna, Kano, Katsina, Kebbi, Jigawa, Sokoto and Zamfara States). A multi-stage sampling technique was used for the study. The first stage was identification of the study area. The population of the study was the VEAs of three States’ ADPs (Kaduna, Kano and Kebbi States). Thus, out of seven (7) states in the North-West Geopolitical Zone, the three states were purposively chosen for this study taking into cognizance the need to give geographical representation and coverage of the Zone (i.e. three states chosen out of seven states constituted 42%). The second stage involved the use of random sampling technique. From each State ADP, a list of the VEAs was obtained for the study to get the population frame. From the total number of the VEAs’ population (1,018) in the zone, 20% (i.e. 204 VEAs) was randomly selected as respondents. The breakdown of respondents was 111, 48 and 45 from Kano, Kaduna and Kebbi States’ ADPs respectively (Table 1).

the respondents in the process of using the selected ICT components. The respondents encountered a number of problems in their use of ICTs. The problems associated with each of the selected ICT components, are presented as follows:

GSM Phones

The results as shown in Table 11 indicate that thirteen (13) problems were identified by the respondents in their usage of GSM phones. First on the list was poor and lack of network/coverage/services (1st). It is not unusual to find complaints of lack of network, network break down, ineffective network, interruption of the

network or outright lack of or total failure or break down of coverage of telecommunication services. Other problems (ranked 2nd - 5th) identified by the respondents were: insufficient money to buy air/time/recharge cards (2nd); lack of electricity for charging the hand-set (3rd); the high cost of purchasing it /too expensive (4th); and lack of access /un-availability (5th).

The foregoing findings corroborate that of Burrell (2009) who found some limitations with mobile network services including: too

expensive, over-congestion and less accessible to the poor. Furthermore, it is akin to that of: Atala and Umar (2006), who in a study on the use of GSM by journalists, identified the following problems; poor services, high charges, network problems, and difficulty in interconnectivity. Consequently, these problems present serious constraints to VEAs in utilizing ICT, in the discharge of their work and making effective agricultural extension delivery.

Table2. Distribution of the respondents according to problems identified on their usage of GSM Phones, in ranking order.

S/No	Problems	Total score*	%	Ranking
1	Poor or lack of network/coverage/services	142	69.6	1
2	Insufficient money to buy air/time/recharge cards	69	33.8	2
3	Lack of electricity for charging the hand-set	54	26.5	3
4	The cost of purchasing it is high	50	24.5	4
5	Lack of access /un-availability	20	9.8	5
6	Lack of knowledge in operating it/too complicated	8	3.9	6
7	Problem of maintenance	7	3.4	7
8	Transmission of wrong messages	5	2.5	8
9	It gets spoiled	5	2.5	9
10	Lack of awareness of GSM phone	3	1.5	10
11	Problem of theft	2	1.0	11
12	Effects of radiation/insecurity	2	1.0	12

*= Multiple responses were allowed and received from the respondents

Landline (Fixed) Phones

Results presented in Table 3 show that twelve (12) problems were identified by the respondents in their usage of landline phones. On the top hierarchy of occurrence was lack of access /unavailability in the rural areas (1st). This is the commonly found problem amongst phone users. It is not unusual to find complaints of lack of access to telecommunication services. Other problems with landline phones(ranked 2nd -5th) identified by the respondents were; lack or inefficient network (2nd); it is too costly

to purchase (3rd); lack of electricity supply (4th); and immobility of service (5th).This finding therefore is similar to that of www. Indiahometips.com (2011) which stressed the problems of landline phone which include; problem in telephone jack or wiring, bad cords and/or bad corroded modular plugs, damages caused by thunder or power surge to phones. Consequently, these problems present serious constraints to VEAs in utilizing land-line phones as a format of ICT and making effective agricultural extension delivery.

Table3. Distribution of the respondents according to problems identified on their usage of Land-line phones (Fixed), in ranking order

S/No	Problems	Total score*	%	Ranking
1	Lack of access /unavailability in the rural areas	86	42	1
2	Lack or inefficient network	45	22.1	2
3	It is too costly to purchase/lack of fund/too expensive	39	19.1	3
4	Lack of electricity supply	17	8.3	4
5	Immobility of the service	10	4.9	5
6	It gets spoilt/malfunction	5	2.5	6
7	Problem of maintenance/repairs	4	2.0	7
8	Insufficient money to buy air/time/recharge cards/pay monthly bills	4	2.0	8
9	Lack of knowledge in operating it/too complicated	3	1.5	9
10	Lack of interest	2	1.0	10
11	Limited patronage	1	0.5	11
12	Problem of it getting stolen	1	0.5	12

*= Multiple responses were allowed and received from the respondents

Television (TV)

Results shown in Table 4 indicate that 13 problems were identified by the respondents in their usage of Television sets. First on the list was poor electricity supply. This is a problem commonly found amongst Television set users. Other problems (ranked 2nd – 5th) identified by the respondents were; high cost (2nd); lack or poor quality of network/transmission/signal (3rd); lack of access to it /unavailability of TV (4th) and; lack of access to TV programmes (5th). This finding therefore is similar to that of Gillwald et al., (2010) who identified these as problems of watching TV namely: issues of

harassment, differences in socialization, sentiment/fear, gender bias; and culture. Also, the finding corroborates to some extent the report of (www.csu.edu/science/health/, 2011) to the effect that problems associated with T.V. were: causing real life mayhem, sedentary nature of T.V. – watching, behavior deficiency, serious health consequences and causative of obesity. Consequently, these problems pose serious challenges to VEAs in utilizing ICT (particularly television set) and in effective performance of their work especially in getting agricultural information from the television.

Table4. Distribution of the respondents according to problems identified on their usage of Television, in ranking order.

S/No	Problems	Total score*	%	Ranking
1	Lack of electricity supply	88	43	1
2	It is too costly to purchase/ too expensive	59	28.9	2
3	Lack or poor quality of network/transmission/signal	28	13.7	3
4	Lack of access /unavailability	18	8.8	4
5	Lack of access to programmes	10	4.9	5
6	Problem of maintenance	9	4.4	6
7	It gets spoilt/malfunction	8	3.9	7
8	No time to watch programmes	5	2.5	8
9	Lack of knowledge in operating television set	5	2.5	9
10	Language barrier	3	1.5	10
11	Risk on eyes due to radiation and over-exposure	1	0.5	11
12	Influence of Custom and religion	1	0.5	12
13	Problem of theft	1	0.5	13

*= Multiple response were allowed and received from the respondents

Cinema

Results in Table 5 show that 11 problems were identified by the respondents in their usage of Cinema. Topmost on the list of occurrence was lack of access to/unavailability of cinema. This is a peculiar problem faced by cinema users. Other problems (ranked 2nd - 5th) identified by the respondents were; Lack of electricity supply (2nd); It is too costly (3rd); Lack of knowledge in operating it (4th); and Bad attitude cultivated

through it (5th). These findings agree with Lal (2007) who stated that one of the major factors inhibiting ICT diffusion and intensive utilisation is poor physical infrastructure represented by inadequate and interrupted electricity supply and communication connectivity infrastructure. Consequently, these problems present serious constraints to VEAs in utilizing ICT generally (and cinema usage in particular) and making effective agricultural extension delivery.

Table5. Distribution of the respondents according to problems identified on their usage of Cinema, in ranking order.

S/No	Problems	Total score*	%	Ranking
1	Lack of access to /unavailability of cinema	55	27	1
2	Lack of electricity supply	42	20.6	2
3	It is too costly	40	19.6	3
4	Lack of knowledge in operating it	13	6.4	4
5	Bad attitude cultivated through it	12	5.9	5
6	Lack of access to programmes	8	3.9	6
7	No time to watch programmes	7	3.4	7
8	Problem of maintenance	5	2.5	8
9	It gets spoilt/malfunction	5	2.5	8
10	Age factor	3	1.5	10
11	Language barrier	2	1.0	11

*= Multiple responses were allowed and received from the respondents

CD/DVD Player

Results presented in Table 6 show that 10 problems were identified by the respondents in their usage of CD/DVD players. The first in the ranking on the list of occurrence, according to the respondents, was lack of electricity supply. This is a peculiar problem associated with cinema users as a relatively new technology. Other problems (ranked 2nd -5th) identified by the respondents were the following: It is too costly to purchase (2nd); Lack of access /unavailability (3rd); It gets spoilt/malfunction (4th); and Lack of knowledge in operating it/too complicated (5th).This agrees with Lal (2007)

who stated that one of the major factors inhibiting ICT diffusion and intensive utilisation is poor physical infrastructure represented by inadequate and interrupted electricity supply and communication connectivity infrastructure. Aderinto et al., (2008) also identified in their study the following as constraints to ICT usage: lack of time, remoteness of station, high access charge; and low knowledge of use.

Consequently, these problems pose serious constraints to VEAs in utilizing ICT in general (and VCD/DVDs in particular), and making it difficult for their effective agricultural extension delivery.

Table6. Distribution of the respondents according to problems identified on their usage of CD/DVD player, in ranking order.

S/No	Problems	Total score*	%	Ranking
1	Lack of electricity supply	86	42	1
2	It is too costly to purchase/ too expensive	49	24	2
3	Lack of access /unavailability	35	17.1	3
4	It gets spoilt/malfunction	16	7.8	4
5	Lack of knowledge in operating it	14	6.7	5
6	Problem of maintenance	11	5.4	6
7	Poor quality of Video	8	3.9	7
8	Limit/lack of time to watch CD/DVD	5	2.5	8
9	Problem of it getting stolen	3	1.5	9
10	Lack of agricultural programme on CDs and DVDs	2	1.0	10

*= Multiple responses were allowed and received from the respondents

VHS video player

Results as shown in Table 7 indicate that 11 problems were identified by the respondents in their usage of VHS video players. Topmost on the order of occurrence, was lack of electricity supply. This is a peculiar problem associated with VHS video players owing to its nature. Other problems (ranked 2nd - 5th) identified by the respondents included; it is too costly to

purchase (2nd); lack of access/unavailability (3rd); poor quality of video (4th); and lack of knowledge of operating it/too complicated (5th). Consequently, these problems present serious constraints to VEAs in utilizing ICT, especially VHS video player, in storing and retrieving agricultural information, in the performance of their jobs and making effective agricultural extension delivery.

Table7. Distribution of the respondents according to problems identified on their usage of VHS Video player, in ranking order.

S/No	Problems	Total score*	%	Ranking
1	Lack of electricity supply	71	34.8	1
2	It is too costly to purchase/ too expensive	41	20.1	2
3	Lack of access /unavailability	34	16.7	3
4	Poor quality of video	16	7.8	4
5	Lack of knowledge in operating it	10	4.9	5
6	Problem of maintenance	9	4.4	6
7	It gets spoilt/malfunction	8	3.9	7
8	Limited or no time to watch it	5	2.5	8
9	Problem of it getting stolen	4	2.0	9
10	Lack of VHS cassette on agriculture	2	1.0	10
11	Inability to buy VHS Cassette	1	0.5	11

*= Multiple responses were allowed and received from the respondents

Camera

Results as shown in Table 8 indicate that 11 problems were identified by the respondents in their usage of cameras. Topmost on the list of occurrence, was that it was too costly to purchase/too expensive.

This problem associated with camera users was that the cost implication was enormous. Other problems (ranked 2nd - 5th) identified by the respondents were: lack of access /unavailability (2nd); lack of electricity/batteries (3rd); lack of

knowledge in operating it/too complicated (4th) and; difficulty in processing it into photos (5th). This finding therefore is similar to that of: Aderinto et al., (2008) who identified some of the constraints associated with ICT, namely; lack of time, remoteness of station, high access change and low knowledge of use. Hence, these problems pose serious constraints to VEAs in utilizing ICT and making effective agricultural extension delivery. Indeed, with this situation they would not be able to fully maximize the benefits from camera.

Table8. Distribution of the respondents according to problems identified on their usage of Camera, in ranking order.

S/No	Problems	Total score*	%	Ranking
1	It is too costly to purchase/ too expensive	48	23.5	1
2	Lack of access /unavailability	43	21.1	2
3	Lack of electricity/batteries	23	11.3	3
4	Lack of knowledge in operating it	22	10.8	4
5	Difficulty in processing it into photos	14	6.9	5
6	Problem of maintenance	11	5.4	6
7	It gets spoilt/malfunction	9	4.4	7
8	Problem of it getting stolen	6	2.9	8
9	Lack of interest	5	2.5	9
10	Poor or limited quality and performance	4	2.0	10
11	Cultivating bad or negative attitude	1	0.5	11

*= Multiple responses were allowed and received from the respondents

Computer

Results as shown in Table 9 indicate that 10 problems were identified by the respondents in their usage of computers. On the order of occurrence in the ranking, the first was that it was too costly. This is a problem associated with computer users particularly in terms of cost implication in acquiring computer. Other problems (ranked 2nd - 5th) identified by the respondents included: lack of access/unavailability (2nd); lack of knowledge in operating it/ too complicated (3rd); lack of electricity (4th); and problem of maintenance (5th).

This finding is similar to that of Abdulsalam et al., (2008) who reported that major problems identified with regards to the usage of ICTs include; poor access to ICT facilities, low sensitization on available ICTs, poor source of power supply and high cost of software and

hardware. It further complies with the findings of Zainab et al., (2008) who highlighted the problems and constraints with ICT components usage which include: frequent power failure and lack of alternative power supply, lack of basic knowledge of ICT utilization, system difficulties operation, inadequate finance for procurement and maintenance of ICT facilities (components), and lack of adequate and trained staff to handle ICT facilities. Again, this finding is in agreement with Heinz (2009) who reported the shortcoming of the new XO computer developed by the One Laptop Per Child (OLPC) organization, which was rugged and useful for educational websites and database purposes but with a cost constraints (in the amount of downloaded data).

Consequently, these problems present serious constraints to VEAs in utilizing ICT in general, and computers in particular, and making effective agricultural extension delivery.

Table9. Distribution of the respondents according to problems identified on their usage of Computer, in ranking order.

S/No	Problems	Total score*	%	Ranking
1	It is too costly to purchase/ too expensive	75	37	1
2	Lack of access /unavailability	57	28	2
3	Lack of knowledge in operating it	51	25	3
4	Lack of electricity	44	21.6	4
5	Problem of maintenance	14	6.9	5
6	It gets spoilt/malfunction	7	3.4	6
7	Lack of awareness	5	2.5	7
8	Problem of it getting virus	3	1.5	8
9	Cause eye problems due to over-exposure	2	1.0	9
10	Lack of interest/awareness	1	0.5	10

*= Multiple responses were allowed and received from the respondents

Internet (E-mailing)

The findings shown in Table 10 indicate that 8 problems were identified by the respondents in their usage of Internet (E-mailing). The first on the list of occurrence was lack of access /unavailability. This problem is usually found among Internet browsing users and it constitute an inhibition to their usage of it. Other problems (ranked 2nd - 5th) identified by the respondents were as follows: lack of network (2nd); it is too

costly to purchase/sustain/ too expensive (3rd); lack of knowledge in operating it/too complicated (4th); and lack of electricity supply (5th). This finding is in consonance with Anonymous (2009) who had argued that in many cases, lack of literacy is a further impediment to the proliferation of the internet.

Consequently, these problems present serious constraints to VEAs in utilizing ICT and making effective agricultural extension delivery.

Table10. Distribution of the respondents according to problems identified on their usage of Internet (E-mailing), in ranking order.

S/No	Problems	Total Score*	%	Ranking
1	Lack of access /unavailability	73	35.8	1
2	It is too costly to purchase	52	25.5	2
3	Lack of knowledge in operating it	34	16.7	3
4	Lack of electricity supply	31	15.2	4
5	Lack of network	13	6.4	5
6	Lack of awareness	7	3.4	6
7	It gets spoilt/malfunctioned	3	1.5	7
8	Lack of interest	2	1.0	8

*= Multiple responses were allowed and received from the respondents

Overhead Projector

Results presented in Table 11 shows that 8 problems were identified by the respondents in their usage of overhead projectors. The first on the list of occurrence, was lack of access/unavailability. This problem endemic with Overhead projectors as it is not easily accessible to them. Other problems (ranked 2nd - 5th) identified by the respondents were: It is too costly to purchase/too expensive (2nd); lack

of electricity supply (3rd); lack of knowledge in operating it (4th); and it gets spoilt (5th). This finding is similar to that of Paradi (2011) who found six common problems with computer presentation displays (including projector) namely, display toggle, cable loose, selection of the input source, turning on power, standby mode on, and projector cover loose causing harm. To this end, these problems present serious constraints to VEAs in utilizing ICT and making effective agricultural extension delivery.

Table11. Distribution of the respondents according to problems identified on their usage of Overhead projector, in ranking order.

S/No	Problems	Total score*	%	Ranking
1	Lack of access /unavailability	55	27	1
2	It is too costly to purchase/ too expensive	50	24.5	2
3	Lack of electricity supply	25	12.3	3
4	Lack of knowledge in operating it	19	9.3	4
5	It gets spoilt	11	5.4	5
6	Problem of maintenance	10	4.9	6
7	Problem of carrying it/bulkiness	6	2.9	7
8	Lack of interest/awareness	3	1.5	8

*= Multiple responses were allowed and received from the respondents

Fax

The results in Table 12 show that 8 problems were identified by the respondents in their usage of Fax machines. The first on the list of occurrence was lack of access /unavailability. This is a peculiar problem associated with Fax machine usage. Other problems (ranked 2nd - 5th) identified by the respondents included: It is too costly to purchase/too expensive (2nd); lack of electricity supply (3rd); lack of knowledge in operating it/too complicated (4th); and problem of maintenance (5th).

Therefore, the foregoing finding is liken to that of Anonymous (2011) who stated that despite extensive usage and gaining popularity of fax, the following problems are connected to it: security and confidentiality issues surrounding it; they are too easy to use; and the messages transmitted may be prohibitive by Government. It is noteworthy to state that these problems present serious constraints to VEAs in utilizing ICT in general, and Fax in particular, and making effective agricultural extension delivery.

Table12. Distribution of the respondents according to problems identified on their usage of Fax, in ranking order.

S/No	Problems	Total score*	%	Ranking
1	Lack of access /unavailability	69	33.8	1
2	It is too costly to purchase/ too expensive	45	22.1	2
3	Lack of electricity supply	18	8.8	3
4	Lack of knowledge in operating it	15	7.4	4
5	Problem of maintenance	6	2.9	5
6	Lack of awareness/interest	6	2.9	6
7	It gets spoilt/malfunction/mis-handling	3	1.5	7
8	Lack of network	1	0.5	8

*= Multiple responses were allowed and received from the respondents

Cassette recorder

Table 13 shows that 9 problems were identified by the respondents in their usage of cassette recorders. On the top-most of the list of occurrence was lack of electricity/batteries to power it. This is a peculiar problem associated with cassette recorders' usage. Other problems (ranked 2nd – 5th) identified by the respondents were as follows: Problem of maintenance/mechanical failure (2nd); lack of access /unavailability (3rd); lack of access /

unavailability (4th); and lack of knowledge in operating it/too complicated (5th). This finding therefore is similar to that of: Wikipedia (2011c) who found problems of cassette recorder in the area of: lower fidelity, poor quality, limitations of the cassette's size and speed, poor quality in playing back pitch, spoilage of tapes, and the need for regular maintenance. Hence, these problems present serious constraints to VEAs in utilizing cassette recorders and making effective agricultural extension delivery.

Table13. Distribution of the respondents according to problems identified on their usage of Cassette recorder, in ranking order.

S/No	Problems	Total score*	%	Ranking
1	Lack of electricity/batteries to power it	43	21.1	1
2	Problem of maintenance/mechanical failure	34	16.7	2
3	It is too costly to purchase	26	12.8	3
4	Lack of access /unavailability	25	12.3	4
5	Lack of knowledge in operating it	15	7.4	5
6	Lack of time listen and use it	5	2.5	6
7	Lack of agricultural programme to listen to	3	1.5	7
8	Lack of interest	2	1.0	8
9	Lack of awareness	1	0.5	9
10	It can get lost or be stolen	1	0.5	10
11	Poor quality in recording	1	0.5	11

*= Multiple responses were allowed and received from the respondents

Personal Digital Assistants (PDAs)

The results in Table 14 show that 7 problems were identified by the respondents in their usage of Personal digital assistant (PDA). Topmost on the list of occurrence, according to the respondents, was lack of access/unavailability. This is a problem common because VEAs do not possess or have access to PDAs. Other problems (ranked 2nd - 5th) identified by the

respondents were: It is too costly to purchase/too expensive (2nd); lack of electricity supply (3rd), lack of knowledge in operating it/too complicated (4th); and lack of awareness/ interest (5th).

Hence, these problems present serious constraints to VEAs in utilizing ICT and making effective agricultural extension delivery especially in the discharge of their work.

Table14. Distribution of the respondents according to problems identified on their usage of Personal digital assistants (PDAs), in ranking order.

S/No	Problems	Total score*	%	Ranking
1	Lack of access /unavailability	53	26	1
2	It is too costly to purchase/ too expensive	30	14.7	2
3	Lack of electricity supply	16	7.8	3
4	Lack of knowledge in operating it	15	7.4	4
5	Lack of awareness/interest	14	6.9	5
6	It gets spoilt/malfunction	9	4.4	6
7	Problem of it getting stolen or lost	1	0.5	7

*= Multiple responses were allowed and received from the respondents

Radio

Results in Table 15 show that 11 problems were identified by the respondents in their usage of radio sets. Topmost on the list of occurrence was lack of electricity or batteries to power it. This is a peculiar problem associated with radio set usage. Other problems (ranked 2nd - 5th) identified by the respondents were the following: It is too costly to purchase (2nd); lack of access/unavailability (3rd); problem of maintenance (4th); and lack of reception of transmission (5th).

The foregoing finding is in consonance with Gillwald et al., (2010) who found that usage of radio was constrained by: lack of access; lack of money; inability to repair it; lack of knowledge on how to operate it; not able to select which programmes to listen to; and periodic expenses of buying new batteries. Therefore, these problems present some constraints to VEAs in fully utilizing radio and making effective agricultural extension delivery.

Table15. Distribution of the respondents according to problems identified on their usage of Radio, in ranking order.

S/No	Problems	Total score*	%	Ranking
1	Lack of electricity or batteries to power it	52	25.5	1
2	It is too costly to purchase	28	13.7	2
3	Lack of access /unavailability	18	8.8	3
4	Problem of maintenance	13	6.4	4
5	Lack of reception of transmission	11	5.4	5
6	Lack of time to listen to programme	10	4.9	6
7	Lack of feed-back mechanism	9	4.4	7
8	Wrong timing of airing programme	8	3.9	8
9	It gets spoil/malfunction	5	2.5	9
10	Lack of knowledge in operating it	3	1.5	10
11	Lack of interest	1	0.5	11

*= Multiple responses were allowed and received from the respondents.

CONCLUSION

The problems that are associated with the adoption of ICTs among the respondents (VEAs) was quite high on all the selected ICT devices used for the study. The study found some constraints and problems that the respondents had in using ICT. Prominent among them were: poor and lack of network/services, lack of electricity, the cost of purchasing it was too expensive, lack of access/un-availability, lack of money to buy air time/or recharge cards, lack of maintenance, inability to operate it and lack of awareness.

RECOMMENDATIONS

The following recommendations are derived from the study;

Some problems were found to be impeding on the usage of ICT by the respondents such as: lack of access/unavailability in the rural areas; lack of network and services; and the cost of purchasing it was high.

Therefore, it is recommended that ICT suppliers, dealers and telecommunication/communication providers should be mobilized toward making the ICT devices and facilities readily available and accessible in rural areas, in order to optimize their usage.

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