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Perception of Cattle Herdsmen on the use of Information and Communication Technology in Management Practice in Akinyele Local Government of Oyo State

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Abstract— *The study was carried out to investigate the perception of cattle herdsmen on the use of information and communication technology in management practice in Akinyele local government of Oyo state. Multistage sampling procedure was used for the study. A total of 164 questionnaire were administered and 135questionnaires were retrieved. Data collected were subjected to statistical analysis using the frequency table, simple percentage, chi square and PPMC (Pearson product moment of correlation).97.8% and 2.2% respectively represent the percentage of male and female respondent. The ages of the respondents were 56years and above (3.7%), 46-55years (5.2%), 36-45years (43.7%), 26-35years (32.6%), 15-25years (14.8%). Majority of the respondents (45.2%) and (72.6%) get information from television and radio set respectively. The result obtained showed that majority of the respondents (63.0%) strongly agreed that the use of ICT promotes productivity while 33.3% of the respondent agreed. Also, 47.4% of the respondent agreed that perception of cattle rearing to the use of ICT for management practices promote farming, 40.7% of the respondent strongly agreed.From the research, respondents see poor power supply, economic barrier, level of education as major constraint.PPMC shows that there was significant relationship between constraints to the use of various ICT tools and perception of the herdsmen (r= 0.944, p=0.000), the level of perception of the herdsmen and the entire hypothesis tested were all significant. Effort should be made by government to improve ways by which the recommended ICT tools can get to the herdsmen so as to enhance their production.*

Keywords— ***Cattle Herdsmen, Communication Technology.***

I. INTRODUCTION

Throughout the world, information and communication technology (ICT) has formed a source of linkage, thus bringing the world into a small global village. It should be noted that several types of ICT have contributed positively to the development of this country as a source of information in commerce, industries, agriculture, education, health, sports, culture and tourism and even religion (Flor,2009).Information and knowledge are indispensable tools for empowering livestock producers so that they will be able to make informed decisions (Adams,1999).

Information and communication technology (ICT) refers to all information and communication systems and technologies including not only the digital format such as the internet or the world wide web, but also interfaces with radio, cable and wireless television, video, cellular phones and print media. Nigeria is an agricultural oriented country because the majority of her population is based in the rural areas and these people heavily depend on livestock as a source of animal protein and their livelihood.

Information Communication Technology in agriculture is a new and growing field that focuses on how agriculture and rural development activities can be enhanced. There are innovative ways in which Information Communication Technology could be used giving the awareness that advancements in Information Communication Technology

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can aid the provision of accurate, timely, relevant information and services to the farmers so that their activities can be more productive and remunerative (Burger, 2003).

Good access to information can reduce the bargaining superiority of large operators in favor of small scale farmers. With Information Communication Technology ruminant farmers can make choices about livestock, create products for the niche markets and connect and sell their products directly to consumers (Abang, 2012)

Herdsmen need to keep abreast of necessary information that will enhance the farming system and animal production. Therefore farmers needs to be on top of information to meet investors needs, and be aware of strategies to reduce disease outbreak, malnutrition, and meat production all year round. There is a paradigm shift from old ways to modern technology method of sustaining best practices necessary for meeting production in the agricultural sector. This study is therefore designed to examine perception of cattle herdsmen to the use of information and communication technology in management practices in Akinyele local government area of Oyo state.

II. METHODOLOGY

STUDY AREA

The study was carried out at Akinyele local government area. Akinyele is a local government area in Oyo State Nigeria. It is one of the eleven local governments that make up Ibadan metropolis having its headquarters at Moniya.

Akinyele local government area is subdivided into 12wards; Ikereku, olanla/oboda/labode, Arulogun/Eniosa/Aroro, Olode/Amosun/ Onidundu, Oje-Emo/ moniya Akinyele/ Isabiyi/ Irepodun, Iwokoto/ Talonta/ Idi-Oro, Ojoo/ Ajibode/ Laniba, Ijaye/ Ojedeji, Ajibade/ Alabata/ Elekuru, Olorisa-oko/ Okegbemi/Mele and Iroko. The target population of this study consist of cattle herdsmen in Akinyele local government area of oyo state.

SAMPLING TECHNIQUE

Multistage sampling procedure was used for this research. The first stage involves selection of the study area. Akinyele local government was purposively selected because it contains a considerable level of cattle herdsmen. The cattle herdsmen in the local government are divided into five cells namely;Ikereku cell, Alabata cell, Arulogun cell, Moniya cell, Atan/ Ijaye cell.

The second stage involves the selection of cell to be used for the study; the cell used for the study was Ikereku cell, the cell consist of 822 cattle herdsmen, in which 20% of the total number of herdsmen were used. Ikereku cell was purposively selected because it has the highest number of cattle herdsmen compared to other cells.

The third stage involves random selection of the respondent. A total number of 164 questionnaires were distributed to the respondents in the study area, while 135 questionnaires were retrieved

DATA COLLECTION AND DATA ANALYSIS

Data from this study were collected using primary source through the use of well structured questionnaire and personal interview method. Descriptive technique was used to illustrate the socio-economic characteristics of the respondents; these include frequency distribution and percentage. Analytical tools was used to investigate relationship between two variables and compare significant association between them, chi-square and PPMC (Pearson product moment of correlation) were used to analyze the hypothesis.

III. RESULTS AND DISCUSSION

Socio-economic characteristics of respondents

Table 1 shows that 97.8% of the respondents were male while female constitute 2.2%.This implies that males are more involved in cattle rearing than females. The indication of this is that males were more committed to agricultural farming practices than the female which was in line with the findings of Grenada (2000).

Respondents with age range between 36-45yrs had the highest percentage of 43.7% followed by the respondents that fell within the range of 26-35yrs with the percentage of 32.6%. The 15-25yrs sub-group were 14.8%, 46-55yrs were 5.2% while 56yrs and above constituted 3.7% of respondents. Involvement of youth to most farm work is apparently done by young farmers due to their strength to farm activities (Idrees,2003).

Also the marital status of the respondents were examined, married respondents constitute the highest percentage of 58.5%, followed by the single respondents who constituted 29.6% of total respondents, followed by the divorced respondents who constituted 11.0% of the respondents. Majority of the respondents in the study area were married.

The result also shows that 51.1% of the respondents had no formal education, 37.8% had primary school certificate, 11.1% had secondary school certificate while none had tertiary education.Also, majority of the respondents, (94.8%) are Muslim, 5.2% were Christian. In the culture of Nigerians, most people that are involved in the occupation of herdsmen are within the Islamic relation based on the

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relations of religion of rural farmers with their occupation(Collias,2012).With regards to the family size of the respondents, the result shows that 49.6% of respondent had family size of 1-5, and family size 6-10 were 40.7% of the respondents, while family size of above 10 were 9.6% of the respondents.

With respect to the income of the respondent, those that earn their income weekly have the highest percentage of 44.4%, followed by those who earn monthly having 34.1%, 21.5% of the respondent earn their income daily.

Table 1: Socio-Economic Characteristics of Respondents in the Study Area

Variables	Frequency	Percentage(%)
SEX		
Male	132	97.8
Female	2	2.2
Total	**135**	**100**
AGE		
15-25	20	14.8
26-35	44	32.6
36-45	59	43.7
46-55	7	5.2
56 and above	5	3.7
Total	**135**	**100**
MARITAL STATUS		
Married	79	58.5
Single	40	29.6
Divorced	16	11.0
Total	**135**	**100**
EDUCATIONAL STATUS		
No formal	69	51.1
Primary	51	37.8
Secondary	15	11.1
Tertiary	0	0
Total	**135**	**100**
RELIGION		
Christianity	7	5.2
Islam	128	94.8
Traditional	0	0
Total	**135**	**100**
FAMILY SIZE		
1-5	67	49.6
6-10	55	40.7
Above 10	13	9.6
Total	**135**	**100**
INCOME		
Daily	29	21.5
Weekly	60	44.4
Monthly	46	34.1
Total	**135**	**100**

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Table2a: Management Practices used by Herdsmen

VARIABLES	Frequency	Percentage(%)
CASTRATION		
Always	13	9.6
Sometimes	18	13.3
Never	104	77
Total	**135**	**100**
DEHORNING		
Always	9	6.7
Sometimes	64	47.4
Never	62	45.9
Total	**135**	**100**
CROSSBREEDING		
Always	76	56.3
Sometimes	48	35.6
Never	11	8.1
Total	**135**	**100**
IMPROVED GRAZING		
Always	33	24.4
Sometimes	74	54.8
Never	28	20.7
Total	**135**	**100**
WEANING		
Always	101	74.8
Sometimes		21.5
Never	5	3.7
Total	**135**	**100**
PREGNANCY TEST		
Always	57	42.2
Sometimes	64	47.4
Never	14	10.4
Total	**135**	**100**

Table2b: Management Practices used by Herdsmen

VARIABLES	Frequency	Percentage(%)
ARTIFICIAL INSEMINATION		
Always	3	2.2
Sometimes	34	25.2
Never	98	72.6
Total	**135**	**100**
VACCINATION AND MEDICATION		
Always	96	71.1
Sometimes	34	25.2

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Never	5	3.7
Total	**135**	**100**
DIPPING & DEWORMING		
Always	69	51.1
Sometimes	58	43
Never	8	5.9
Total	**135**	**100**
CREEP FEEDING		
Always	68	50.4
Sometimes	56	41.5
Never	11	8.1
Total	**135**	**100**
LAIRAGE		
Always	30	22.2
Sometimes	59	43.7
Never	46	34.1
Total	**135**	**100**

The tables above shows the management practices used by the cattle herdsmen.77.0% of the respondent never castrated their cattle, 13.3% of the herdsmen sometimes castrate their cattle, while 9.6% of the respondents castrate their cattle. Castration of farm animals are usually engaged by livestock owners, herdsmen usually don't engage in the management practices but involved in the production and breeding of their livestock (Adewale, 2013). Result also shows that 47.4% of the respondents sometimes engage in dehorning of their cattle, while 45.9% of the respondent never dehorned their cattle and 6.7% of the respondents engage in dehorning of their cattle.

The result also shows that 56.3% of the respondents always engage in the crossbreeding of their livestock, 35.6% of the respondents sometimes crossbreed their livestock, while 8.1% of the respondents never crossbred their cattle. The herdsmen do participate in crossbreeding of their cattle for better breeds. Crossbreeding in beef cattle is partly to combine breed differences and partly to make use of heterosis to improve production (Lamb, 2004).

It also shows that 71.1% of the respondent always vaccinate and give medication to their cattle, 25.2% of the respondent sometimes vaccinate and give medication to their cattle and only 3.7% of the respondent never medicates their cattle. From this result, higher percentage of respondent vaccinates and give medication to their cattle. Livestock vaccination reduces the economic losses associated with diseases, which are mostly induced by farmers in both rural and urban community (Adekunle, 2002).

Most of the respondents (50.4%) always practices creep feeding of their young cattle, while 41.5% of the respondents sometimes practices creep feeding and 8.1% of the respondents never practices the use of creep feeding on their young cattle. Creep feeding is supplemental feeding of sucking livestock in a way that the feed is not available to the mother or other adult animal (Babayemi*et al*.,2014).

Table 3a: Level of ICT Utilization for Management Practices

Variables	Frequency	Percentage (%)
VIDEO		
Always	61	45.2
Sometimes	46	34.1
Never	28	20.7
Total	**135**	100
NEWSPAPER		
Always	22	16.3
Sometimes	95	70.4

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Never	18	13.3
Total	**135**	100
RADIO		
Always	98	72.6
Sometimes	29	21.5
Never	8	5.9
Total	**135**	100
TELEVISION		
Always	32	23.7
Sometimes	46	34
Never	57	42.2
Total	**135**	**100**
WEBSITE		
Always	9	6.7
Sometimes	5	3.7
Never	121	89.6
Total	**135**	**100**

Table 3b: Level of ICT Utilization for Management Practices

Variables	Frequency	Percentage (%)
Always	4	3
Sometimes	15	11.1
Never	116	85.9
Total	**135**	**100**
MAGAZINE		
Always	10	7.4
Sometimes	9	6.7
Never	116	85.9
Total	**135**	**100**
BULLETINS		
Always	7	5.2
Sometimes	7	5.2
Never	121	89.6
Total	**135**	**100**
POSTERS		
Always	12	8.9
Sometimes	18	13.3
Never	105	77.8
Total	**135**	**100**
COMPUTER		
Always	6	4.4
Sometimes	12	8.9
Never	117	86.7
Total	**135**	**100**

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Table 3a shows that 45.2% of the respondents always utilize videos, 34.1% sometimes utilize videos while 20.7% never utilize videos.

Also, for the level of ICT utilization of radio among the respondents, 72.6% of the respondent always use radio set while 21.5% sometimes use radio set. Also from the respondents, 23.7% utilizes television set, 34% of the respondents sometimes utilize television set, while 42.2% of the respondents never utilize using television. Information and communication involves better communication and research in a particular field of study, in agriculture it enhances growth, rapid involvement in newly generated farming practices according to (Idome, 2002).

The respondent utilization on website usage are, 89.6% of the respondent never utilized website, 6.7% always utilize website and 3.7% sometimes uses website. It implies that the respondents are majorly not aware of the use of website which could be due to their level of education. Also the respondents level of utilization on the use of magazine are, 85.9% of the respondent never utilize magazine, 7.4% of the respondent utilizes magazine, while 6.7% of the respondents sometimes utilize magazine.

On the use of posters, 77.8% of the respondent never use posters, 13.3% of the respondent sometimes use posters and 8.9% of the respondent always use posters.

The use of computers is another ICT usage type, 86.7% of respondent never make use of computer, 8.9% of respondent sometimes use computers and 4.4% always use computers in getting more information in the utilization of management practice. In this section it implies that mostly all the respondents do not have or come across the use of ICT in improving their management practice, thus result gotten were drastically low. Farmers educational background is informal which reduces access and involvement of farmers to the use of computers (Lincoln,2009).

Table 4: Perception of Cattle Herdsmen to the use of ICT for Management Practice

S/N	Perception	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1	Promote productivity	85(63.0)	45(33.3)	4(3.0)	1(0.7)	-
2	Improve standard of living	54(40.0)	75(55.6)	6(4.4)	-	-
3	Increase fertility	66(48.9)	50(37.0)	17(12.6)	2(1.5)	-
4	Reduce cost of production	10.74	15(11.1)	48(35.6)	48(35.6)	55(40.7)
5	Reduce weaning procedure	53(39.3)	34(25.2)	22(16.3)	12(8.9)	14(10.4)
6	Reduces mortality	42(31.1)	68(50.4)	20(14.8)	4(3.0)	1(0.7)
7	Reduce incidence of disease	51(37.8)	68(50.4)	11(8.1)	5(3.7)	-
8	Promote farming	55(40.7)	64(47.4)	16(11.9)	-	-
9	Weaners growth deficiency	3(2.2)	7(5.2)	3(2.2)	58(43.0)	64(47.4)
10	Increase animal quality	46(34.1)	75(55.6)	12(8.9)	1(0.7)	1(0.7)
11	Maintain accurate breeding	48(35.6)	67(49.6)	16(11.9)	3(2.2)	1(0.7)
12	Conservation of rare breeds	65(48.1)	50(37.0)	15(11.1)	3(2.2)	2(1.5)
13	Revaccination harm animal	26(19.3)	20(14.8)	18(13.3)	35(25.9)	36(26.7)
14	Reduce overpopulation	27(20.0)	55(40.7)	30(22.2)	15(11.1)	8(5.9)
15	Identification of pregnancy	51(37.8)	55(40.7)	25(18.5)	3(2.2)	1(0.7)

Table 4 shows that 63.0% of the respondents strongly agree that the use of ICT promote productivity, 33.3% agreed, 3.0% of the respondents were undecided. 0.7% respondent disagreed with the statement; no respondent strongly disagreed with the statement which simply means that the knowledge of respondent about promoting productivity is very high. Result gotten from the findings of (Collins, 2009) shows that proper use of management practices increases the yield of production on farm animals.

The respondent perception to improving standard of living revealed that, 55.6% agree with the statement and 40.0% strongly agree with the statement, 4.4% of the respondent

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were undecided. No respondent disagreed with the statement nor strongly disagree which means that the knowledge of respondent on the improvement of standard of living is very high which agrees with the research work of Eger (2003) that the standard of living of farmers are improving gradually with effective use of modern tools and adequate information and communication usage.

On the aspect of reduction of mortality, 50.4% of the respondents agreed with the statement, 31.1% of the respondent strongly agreed with the statement, 14.8% of the respondent were undecided, while 3.0% of the respondent disagreed with the statement.

Also on the statement, revaccination harm animal, 26.7% of the respondents strongly disagreed with the statement, 25.9% of the respondents disagreed with the statement, 19.3% of the respondent strongly agreed with the statement,14.8% of the respondent agreed with the statement. Vaccination of livestock can be due to ailment of the livestock or preventive measures vaccines for growth improvement, revaccination could not cause animal harm depending on what it is been treated for, likewise revaccination could be due to the animal activity to the use of the vaccine which it as to be repeated (Akon*et al*.,2004).

Table 5: Constraints in the use of Various ICT Tools for Management Practice by Cattle Herdsmen

S/N	Constraint	Not a constraint	Minor constraints	Major constraint
1.	Delay in information	61(45.2)	30(22.2)	44(32.6)
2.	Weather	31(23.0)	63(46.7)	41(30.4)
3.	Poor power supply	38(28.1)	46(34.1)	51(37.8)
4.	Economic barrier	37(27.4)	35(25.9)	63(46.7)
5.	Level of education	40(29.6)	47(34.8)	48(35.6)
6.	Resistance to change	35(25.9)	64(47.4)	36(26.7)
7.	Poor access to computer	48(35.6)	52(38.5)	35(25.9)
8.	High cost of software & hardware	53(39.3)	43(31.9)	39(28.9)

Table 5 reveals that majority (45.2%) of the respondent indicated that delay in information is not a constraint, 32.6% chose it to be a major constraint while 22.2% of the respondent chose it to be a minor constraint. On poor power supply, respondent revealed that 37.8% of the respondent chose minor constraint, 34.1% chose it to be a minor constraint while 28.1% of the respondent sees it as not a constraint. Energy is one of the source which makes the usage of some information and communication to commence, management tools on livestock farm include the use of power supply, in which production could be reduced if there is low energy or poor power supply (Meyer, 1999).

On the level of education, 35.6% of the respondent agreed that it is a major constraint while 34.8% chose minor constraint and 29.6% of the respondent sees it as not a constraint. With regards to high cost of software and hardware, 39.3% of the respondent chose not a constraint, 31.9% of the respondent sees as a minor constraint, while 28.9% of the respondent chose it to be a major constraint.

Table 6: Chi-Square Analysis on Socio-Economic Characteristics of Respondents.

VARIABLES	CHI-SQUARE VALUE	p-VALUE	DECISION
Sex	123.267	0.000	S
Age	83.185	0.000	S
Marital status	44.933	0.000	S
Education	33.600	0.000	S
Religion	108.452	0.000	S
Family	35.733	0.005	S
Income	10.711	0.005	S

The hypothesis was subjected to chi square and the result was presented in the table above. The result shows that sex, age, marital status, education, religion, family and income has significant relationship with the respondent at 0.05%

level of significance, this implies that sex, age, marital status, education, religion, family and income affect the perception of the cattle herdsmen. Therefore, null hypothesis is rejected and alternate hypothesis is accepted.

Table7: Pearson Product Moment Correlation (PPMC) Analysis of the Perception of Cattle Herdsmen toConstraints to the use of Various ICT Tools

VARIABLES	r-value	p-value	DECISION
Constraints Vs. Perception	0.944**	0.000	S

From the table above, there is significant relationship between constraints to the use of various ICT and perception of cattle herdsmen [r= 0.944, P= 0.000] in which the null hypothesis is rejected and the alternate hypothesis is accepted. This implies that there is correlation between constraints to the use of various ICT and the perception of cattle herdsmen

IV. CONCLUSION

From the research, the respondents have knowledge about some of the various ICT tools for management practices. Majority of the respondents agree that use of ICT for management practices help improve standard of living, reduces mortality, reduce incidence of diseases, promote farming, increase animal quality, maintain accurate breeding, reduce overpopulation and help in the identification of pregnancy.Also, the result also shows that, poor power supply, economic barrier and level of education is a major constraint for the cattle herdsmen.The result also shows that the socio-economic characteristics of the respondents have effect on the management practice that is carried out by the cattle herdsmen. Based on this research, government should improve ways by which herdsmen can get various ICT tools recommended for them so as to enhance their production.

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