



Access and Usefulness of Agricultural Information among Poultry Farmers

Sunday Alagba Obazi, Mabel Ukamaka Dimelu, Michael Chukwueze

Department of Agricultural Extension, University of Nigeria Nsukka, Enugu State, Nigeria

Abstract

This study ascertained access and usefulness of agricultural information among poultry farmers in Enugu State, Nigeria. A total of Ninety poultry farmers were selected using multistage sampling technique and data were collected through a structured interview schedule. Findings revealed that both male and female poultry farmers got information on poultry production from multiple sources. Internet was the most accessible platform for sourcing information on poultry production by farmers. Results also revealed that the outbreak of disease and prevention, management of vaccine failure and poultry feed were the most frequently sourced information. Furthermore, results indicated that male poultry farmers considered information from veterinary personnel ($M = 4.2$) as most useful, while female poultry farmers rated information from internet ($M = 5.0$) most useful than others. Some of the major constraints to access and usefulness of agricultural information by male poultry farmers were poor internet access ($M = 0.813$) and poor access/irregular extension visit ($M = 0.812$) while cost of acquiring communication facilities ($M = 0.800$), lack of awareness ($M = 0.779$) and inadequate fund ($M = 0.594$) were major constraints to access and usefulness of information by female poultry farmers. Thus, government, policy makers, NGOs and related organizations should train many extension agents to dissemination agricultural information since multiple sources of information can lead to contradiction, confusion and information distortion. Also, government should ensure that internet network is made available to farmers in different communities to enable them have access to information using internet services.

Keywords:

Access, Use, Information, Poultry

1. Introduction

Poultry production remains one of the fastest growing sectors in agriculture in Africa region (Mottet & Tempio, 2017). It competes favourably with other subsectors in agriculture (e.g. crop production) by taking indispensable position in household food security of the teeming population. The Nigerian poultry industry in particular has been rapidly expanding in recent years and it is therefore, one of the most commercialized animal farming in the country's agricultural development (Heise et al., 2015). According to Onuk et al., (2017), the popularity of poultry production can be explained by the fact that poultry has many advantages over other aspect of animal husbandry. Poultry birds are good converters of feed into useable protein in form of meats and eggs (Banjoko et al., 2014; Onuk et al., 2017). The meat is very tender and acceptable to many consumers regardless of social class or religious beliefs. The eggs, on the other hand, are cheap, affordable and available for people than other sources of animal protein (Aboki et al., 2013; Onuk et al., 2017). Also, poultry production cycle is quite short and capital invested is not tied up over a long period. Moreover, its production costs per unit remain relatively low, and the return on investment is quick and high (Banjoko et al., 2015). In addition, poultry dung is excellent manure for improving soil fertility (Zhang et al., 2017).

Considering the aforementioned importance of poultry farming in nutrition, household livelihood and economy of the country, the sector needs to grow much further. Significant among factors that will lead to rapid development of

poultry sector is provision of adequate and relevant information to farmers, investors and consumers. Yaseen et al., (2016) asserted that agricultural information provision is the central element in advancement of agricultural system, as well the fundamental and essential promoter for agriculture development for betterment of the rural farmers. It plays a key role in acquisition of inputs, market price and transportation of produce, production practices, environmental protection techniques, food processing and preservation, and also serves as a conduit through which farmers can learn innovations to improve their productivity (Adi et al., 2020).

Agricultural information is crucial only when it is accessible and need based. Access and use of agricultural information is imperative to making rational decision, reduce uncertainty, and enhance adoption of farm innovation and production (Adi et al., 2020). It is a key component in improving agricultural production and linking increased production to remunerative markets, thus; leading to improved rural livelihoods, food security and national economies (Mojaki & Keregero, 2019). The information is mostly accessed through print media (newspapers and magazines, books/leaflets), electronic media (radio, television, phone) and face-face contact with extension agents, fellow farmers or similar stakeholders (Adio et al., 2016).

Regrettably, in most farming communities in Nigeria, most farmers do not get adequate information specific to their agricultural production activities, and in extreme scenario, they have no access at all to agricultural information providers. According to Mofe and Ngulube (2016), poultry farmers lack necessary market information and production. Okoh et al., (2010) also asserted that most farmers lack the required husbandry skills, training and opportunity to effectively improve the productivity of poultry production. In addition, male and female farmers tend to receive disproportionate agricultural information. Ankras et al., (2020) asserted that access to resources such as land, agricultural extension services and information remained gendered. This situation hinders development of agriculture especially poultry sector (Sanga et al., 2018). It also endangers food security and livelihood improvement of farmers. Based on this scenario, the study sought to examine access and use of agricultural information among male and female poultry farmers in Enugu State. Specifically, it ascertained sources of agricultural information of male and female poultry farmers; ascertained type of agricultural information accessible to the farmers through different sources of information; ascertained level of access to agricultural information for poultry production; ascertained level of usefulness of the information, ascertained factors that influenced information access and ascertained constraints to access and use of agricultural information.

2. Materials and Methods

2.1 Study area

The study was conducted in Enugu state, Nigeria. Enugu state is located between latitudes 5°56 and 7°06 North of the equator and longitudes 6°53 and 7°55 East of the Greenwich Meridian. The state shares borders with Abia State and Imo State to the south, Ebonyi State to the east, Benue State to the northeast, Kogi State to the northwest and Anambra State to the west. It occupies an area of about 8, 022, 95 km² and has a population of about 3,257,278 persons as at the last census. The common animal reared in the state includes goat, sheep, pig and poultry. The state capital (Enugu) and surrounding urban areas have designated live bird markets and poultry slaughter and processing slabs that provided employment for a good number of youths, although none of these markets have mechanized slaughter, processing, and waste handling facilities. Enugu State has 17 local government areas (LGA) and six agricultural zones.

2.2 Sampling procedure and method of data collection

All poultry farmers in Enugu state constituted the population for the study. Multistage sampling procedure was employed in selecting the respondents. In the first stage three agricultural zones namely: Nsukka, Enugu-Ezike and Udi were purposively selected from the six agricultural zones in the state based on preponderance of poultry production activities. In the second stage, two blocks each were selected using simple random sampling technique from the three zones giving a total of six blocks. In the third stage, a cell (circle) was selected from each block using purposive sampling techniques based on the concentration of poultry farmers and intensity of involvement in poultry production. In the fourth stage, 10 female and 10 male poultry farmers were selected through snowball from these cells. However, only 29 male poultry farmers were accessible and complied with the interview for the study. Therefore, the sample size used was 61 females and 29 male poultry farmers. This gave a total of 90 respondents for the study. A structured interview schedule was developed, validated and employed in data collection based on the objectives of the study.

2.3 Measurement of variables and data analysis

Farmers sources of agricultural information on poultry production was obtained by providing a list of possible information sources which included: extension agents, friends/neighbor, radio, television, internet, mobile phone, fellow farmers, agro input dealers etc., and farmers were asked to indicate either "yes or no" to the various sources of agricultural information. Types of agricultural information accessible to farmers were determined by providing a list

of different possible information related to poultry production and management, and farmers were asked to tick from the list based on where they accessed the information. In level of access to agricultural information for poultry production, a five-point Likert type scale with response options of not accessible=1, less accessible=2, accessible=3, very accessible=4 and most accessible=5, was used. These values were added to obtain 15, which was further divided by 5 to obtain 3.0 as a cut-off mean. Variables with mean score less than 3.0 were not regarded as accessible. On the other hand, variables with mean score equal to or above 3.0 were regarded as accessible information. Level of usefulness was measured on a five-point Likert-type scale of not useful=1, less useful=2, useful=3, very useful=4 and most useful=5. The cut-off mean was 3.0. Variables with mean score less than 3.0 were not regarded as useful. On the other hand, variables with mean score equal to or above 3.0 were regarded as useful information. To determine constraints to access and use of agricultural information, a list of possible constraints were provided from which the respondents was required to indicate the constraints they encounter in a 3-point Likert type of not serious = 1; serious = 2 and very serious = 3. The variables were analysed using factor analysis. The factors were grouped into three with 0.4 as the cut-off point. Factors that loaded above 0.4 were regarded as major constraints. All the data collected were analyzed using statistical product and service solution (SPSS) software.

3. Results and Discussion

3.1 Sources of agricultural information of male and female poultry farmers

Table 1 indicated that majority of male respondents sourced agricultural information on poultry production from fellow farmers (96.6%), agro input dealers (89.7%), and veterinary personnel (65.5%). Similarly, female respondents, sourced for agricultural information on poultry production from fellow farmers (88.5%), agro input dealers (86.9%), and veterinary personnel (55.7%). Both male and female sourced for agricultural information on poultry production mainly from fellow farmers, probably because of proximity and affiliation compared to other information sources. The finding is in line with the finding by Belton, Cho, Payongayong, Kristi Mahrt & Eric Abaidoo (2020) which states that most information on farming is obtained from informal sources such as fellow farmers and relatives.

Table 1. Respondents' source of information

Sources	Male Percentage	Female Percentage
Extension Agents,	17.2	11.5
Non-governmental organization	3.4	1.6
Friends/ Neighbours	44.8	49.2
Television	24.1	6.6
Radio	34.5	13.1
Handbills	10.3	3.3
Veterinary personnel	65.5	55.7
Farm magazine	10.3	3.3
Universities	6.9	1.6
Public organization	6.9	-
Internet	34.5	4.9
Mobile phone	31.0	13.1
Fellow farmers	96.6	88.5
Agro input dealers	89.7	86.9
Farmers organization	6.9	-
Research institutes	3.4	8.2
Community leaders	3.4	-
Religious organizations	3.4	4.9

3.2 Type of agricultural information and their sources

Table 2 revealed that different types of agricultural information sourced through extension by male farmers were: training and capacity building (11.1%), how and where to access veterinary services (6.9%), effective use of loans and grants (6.3%) and sources of credit and loans for poultry production (4.3%). The female poultry farmers got information on good price for product (12.7%), government policies concerning poultry production (12.1%), training/capacity building opportunity (10.5%) and sources of credit and loans (9.1%) from the same source. The result implies that few male and female farmers had access to information through extension agents. Access to extension is a key determinant of farm diversity through technology adoption (Mwololo et al., 2019)

The information on credit and loans (21.7%), storage and disposal of poultry droppings (17.4%), good price for poultry products (16.7%), how to manage gluts/surpluses (13.8%) and consumers' demand/preference (12%) were

gotten from friends/neighbours by male poultry farmers. Similarly, the female poultry farmers sourced information on bulk purchase/sales (16.9%), storage and disposal of poultry droppings (16.1%), how to manage gluts/surpluses (15.8%) and consumers' demand/preference (14.6%) from friends/neighbours (Table 2). This finding authenticates the importance of social networks as indispensable conduits for information dissemination. The males further indicated that they sourced information on government policies/regulations on poultry production (9.1%), training/capacity building (7.4%), effective use of loan/grant (6.3%) and sources of credit and loans (4.3%) from radio. In likewise manner, female farmers sourced information from veterinary services (10.2%), training/capacity building (8.8%), and government policies concerning poultry production (8.6%) and weather requirement of birds (5.7%) from radio (Table 2). The use of radio can be as a result of the fact that radio sets are easily portable and can be used by the educated and unlettered (Bappayo et al., 2018). This has been increased by the introduction of mobile phone in Nigeria because some mobile phones come with radio feature thereby making it possible for farmers to listen to news and any programme using radio on their mobile phones.

Table 2 also revealed that information on how to manage vaccine failure (3.4%) and veterinary services (3.4%) were gotten from handbills and farm magazines by male poultry farmers. But, storage and disposal of poultry droppings (1.8%), bulk purchases/sales (1.7%) were information gotten by the females. The result shows poor patronage of print material among the respondents which could be as a result of illiteracy. This supports finding by Acheampong et al., (2017) which states that poor/unreliable information, infrastructure, high illiteracy levels, low income, lack of electricity and high cost of ICTs have limited the accessibility of information services in rural areas. A greater proportion of male poultry farmers sourced agricultural information on how to conduct vaccination (51.7%), storage and handling of vaccine (48.3%), source quality vaccine (44.8%), effective brooding/management of day old chicks (42.9%) and disease outbreak and prevention (37.9) from veterinary personnel (Table 2). Similarly, the females got information on how to conduct vaccination (50.8%), storage and handling of vaccine (50%), how to manage vaccine failure (47.5%) and disease outbreak and prevention (37.9) from veterinary personnel. This shows that the respondents mostly seek for information on vaccine handling and disease management and vaccination from veterinary personnel probably because they have the technical know-how and competence required than other sources. Corroborating the finding, Msoffe and Ngulube (2016) found that poultry farmers mostly source information on diseases control and protection. Table 2 further indicated that information on government policies concerning poultry production (36.4%), training/capacity building opportunity (22.2%) and effective use of loan/grant (18.8%) were gotten from the internet by the male farmers. The female farmers got information on government policies concerning poultry production (36.4%), training/capacity building opportunity (22.2%) and effective use of loan/grant (18.8%) from the internet. Internet plays crucial role in the distribution of farming information especially among literate farmers. A greater proportion of the male farmers sourced information on bulk purchases/sales (75.9%), consumers demand/preference (72%), good price for product (70.8%), how to manage gluts/surpluses (65.5%) and disease outbreak and prevention (34.5) from fellow farmers (Table 2). In a similar way the female farmers got information on effective use of loan and grant (70.5%), good price for product (67.3%), storage and disposal of poultry droppings (66.9%), and disease outbreak and prevention (37.7%) from fellow farmers. This is in line with a study carried out by Sani and Maiwada (2018), and Rahman et al., (2020) which states that the major sources of information for farmers are predominantly local (neighbours, friends and family). Furthermore, the male farmers indicated that they sourced information on poultry equipment/maintenance (56.0%), efficient housing (39.1%), how to manage vaccine failure (24.1%) and weather requirement of birds (21.7%) from Agro input dealers (Table 2). In same manner the female farmers sourced for information on poultry equipment/maintenance (57.6%), efficient housing (48.1%), poultry feedstuff (45%) and poultry production technologies (44.6%) from Agro input dealers. Farmers may have sourced information on poultry equipment/maintenance to improve their production system. Also, they may have sourced information on weather requirement for production to enable them manage their poultry birds properly amidst of harsh and excessive heat caused by climate change.

Table 2. Percentage distribution of male and female poultry farmers by agricultural information and sources (M = male; F = female)

Activities	Extension Agent		Friends/ neighbour		Radio		Handbills		Veterinary Personnel		Internet		Mobile phone		Fellow farmers		Agro input	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Information on new breed/technology	1.6	4.9					1.6	37.9	41.0	13.8	1.6		1.6	20.7	19.7	24.1	27.9	
Effective brooding of day old chick	1.6	3.4	1.6					44.8	47.5	10.3	1.6			17.2	19.7	24.1	26.2	
Where to source quality vaccine		3.4	1.6		1.6				48.3	44.3	10.3	1.6			20.7	24.6	24.6	
How to conduct vaccination		3.4			1.6				51.7	50.8	10.3	10.3			13.8	19.7	20.7	26.2
Information on storage/handling of vaccine		3.4							51.7	50.8	10.3	10.3			13.8	18.0	20.7	29.5
How to manage vaccine failure.		3.4	1.7		1.7	3.4			44.8	50.0	6.9				13.8	16.7	24.1	28.3
Disease outbreak and prevention		3.4	8.2						37.9	36.1	13.8			1.6	34.5	37.7	13.8	14.8
Training/capacity building opportunity.	11.1	10.5		7.0		8.8			14.8	10.5	22.2				18.5	33.3	14.8	22.8
How and where to access veterinary services	6.9	8.5	7.4	6.8	7.4	10.2			6.9	5.1	6.9		3.7		62.1	52.5	3.4	15.3
Bulk purchase/sales		1.7	10.3	16.9		5.1		1.7		1.7	3.4	1.7			75.9	64.4	6.9	5.1
Poultry feedstuff.			13.8	6.7				1.7	7.4	5.0	7.4	1.7			44.4	40.0	25.9	45.0
Poultry equipment/maintenance		3.5	11.1	5.3	3.7				4.0	5.3	8.0	3.5			24.0	24.6	56.0	57.9
Sources of credit and loans	4.3	9.1	8.0	7.3		3.6				1.8	4.3	3.6			7.3	60.9	60.0	4.3
Effective use of loan/grants	6.3	2.3	21.7	6.8	4.3	4.5				2.3	18.8	2.3			4.5	62.5	70.5	4.5
Storage and disposal of poultry droppings			6.3	16.1	6.3	3.6		1.8		1.8	17.4				1.8	60.9	66.9	4.3
Good price for products	4.2	12.7	17.4			1.8				1.8	4.2	1.8				70.8	67.3	4.2
Weather requirement of birds.			16.7			5.7			21.7	41.5	21.7	1.9			5.7	21.7	9.4	21.7
Government policies on poultry production	9.1	12.1	8.7	3.4	4.3	8.6			13.6	25.9	36.4	3.4			6.9	18.2	24.1	9.1
How to manage gluts/surpluses	3.4	7.0	4.5	15.8	9.1	5.3				1.8	13.8	1.8			1.8	65.5	54.4	3.4
Consumers demand/preference		1.8	13.8	14.6		3.6		1.8		3.6	16.0	1.8			3.6	72.0	58.9	10.7
Poultry production technologies	3.7	1.8	12.0	3.6		3.6			7.4	17.9	22.2	1.6			1.6	22.2	19.6	37.0
Efficient housing			3.7	3.8	3.7	3.8			26.1	23.1	8.7	1.9			1.9	21.7	15.4	39.1
Advisory services	3.6	3.4	4.3	3.4		3.4			42.9	41.4	10.7	1.7			1.7	28.6	17.2	10.7

3.3 Level of access to agricultural information sources

Table 3 indicated the level of accessibility to information sources by the male and female poultry farmers. The information sources regarded as accessible by male farmers were: internet (M = 4.20), fellow farmers (M = 3.96), veterinary personnel (M = 3.89), friends and neighbours (M= 3.69), mobile phone (M =3.67), farmers' organization (M =3.50), agro input dealers (M=3.42), handbills, public organization, extension agents and television (M =3.00) each. Similarly, female farmers regarded the following sources as accessible: internet (M =4.38); veterinary personnel (M = 4.08); fellow farmers (M = 3.87); friends and neighbours (M= 3.58) agro input dealers (M=3.48); farmers' organization (M =3.43); handbills (M =3.20) and public organization (M =3.00). The result revealed that internet was the most accessible sources of information used by male and female farmers. This may be that respondents were educated or still young and can embrace new technologies. Similarly, the result revealed that female poultry farmers unlike their male counterpart had low access to information from extension services. This could be attributed to gender bias often seen in most extension service works. It could also be tied to insufficient number of extension personnel in the state. This finding is not consistent with Avilesh, Shane and Arvind (2017) who found that even though farmers have internet connection, only few of them accessed agricultural information with it. Similarly, the study is not in consonance with Mtega (2018) who found that radio sets were more accessible by more farmers for information in Tanzania.

Table 3. Poultry farmers' level of accessibility to information sources

Sources	Male		Female		Together	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Extension Agents,	3.00*	1.87	2.71	0.76	2.83	1.27
NGO	1.00	.	.	.	1.00	.
Friends/ Neighbours	3.69*	1.03	3.53*	0.77	3.58*	0.85
Television	3.00*	1.00	2.25	0.50	2.73	0.91
Radio	2.80	0.92	2.25	0.71	2.56	0.86
Handbills	3.00*	1.00	3.50*	0.71	3.20*	0.84
Veterinary personnel	3.89*	0.81	4.18*	0.83	4.08*	0.83
Farm magazine	2.67	1.15	3.00*	1.41	2.80	1.10
Universities	2.50	0.71	3.00*	.	2.67	0.58
Public organization	3.00*	1.41	-	-	3.00*	1.41
Internet	4.20*	0.63	5.00*	0.00	4.38*	0.65
Mobile phone	3.67*	0.87	3.38*	1.19	3.53*	1.01
Fellow farmers	3.96*	0.88	3.81*	0.78	3.87*	0.81
Agro input dealers	3.42*	0.86	3.51*	0.76	3.48*	0.80
Farmers organization	3.50*	0.71	3.40*	0.89	3.43*	0.79
Research institutes	2.00	.	.	-	2.00	.
Community leaders	1.00	.	-	-	1.00	.
Religious organizations	1.00	.	2.67	0.58	2.25	0.96

*accessible

3.4 Level of usefulness of information sources

Table 4 revealed that the level of usefulness of information sources used by male and female poultry farmers. The information sources rated by male farmers based on usefulness were: veterinary personnel (M=4.21), internet (M=4.10), fellow farmers (M = 3.79), mobile phone (M =3.78), handbills (M = 3.67), agro input dealers (M=3.65) and farmers' organization (M=3.50). Similarly, the information sources rated by female farmers based on usefulness were: internet (M =5.00), veterinary personnel (M = 4.44), handbill (M=4.00), agro input dealers and mobile phone (M= 3.75) each and fellow farmers (M=3.74). This implies that veterinary personnel and internet were held as the most useful in information provision by both male and females in poultry production. Veterinary specialist provides professional advice on prevention and treatment of animal disease, and this may have explained the reason why both farmers frequently sought information on vaccine management and disease prevention. The finding is in line with

Tasie, Wilcox and Kalio (2020) who found that farmers association, veterinary officers, Internet and researchers are the significant sources of information on bio-security to the poultry farmers in Imo state. Utilization of relevant, accurate and up-to-date information in the agricultural sector would ensure increased productivity.

Table 4. Level of usefulness of information sources used by male and female poultry farmers.

Sources	Male		Female		Together	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Extension agents	2.15	1.214	1.43	0.54	1.67	0.49
NGO	2.00	.			2.00	.
Friends/Neighbour	3.46*	0.52	3.43*	0.63	3.44*	0.59
Television	3.43*	0.79	3.25*	0.50	1.64	0.67
Radio	2.00	.	1.75	0.71	3.44*	0.62
Handbills	3.67*	0.58	4.00*	0.00	2.80	0.48
Vet personnel	4.21*	0.71	4.44*	0.71	4.36*	0.71
Farm magazine	1.00	0.00	1.50	0.71	1.50	0.55
Universities	2.00	0.00	1.00	.	1.00	0.00
Public organization	1.00	0.00	.	.	3.50*	0.71
Internet	4.10*	0.74	5.00*	0.00	4.31*	0.75
Mobile phone	3.78*	0.83	3.75*	1.03	3.76*	0.90
Fellow farmers	3.79*	0.79	3.74*	0.59	3.76*	0.66
Agro input dealers	3.65*	0.69	3.75*	0.68	3.72*	0.68
Farmers organization	3.50*	0.71	3.20*	0.45	3.29*	0.49
Research institutes	1.00	.	-	-	1.00	.
community leaders	2.00	.	-	-	2.00	.
Religious organization	2.00	.	1.67	0.58	2.75	0.96

*Useful

3.5 Constraints to access and use of agricultural information by males

Table 5 presented result of the factor analysis of constraints to access and use of agricultural information by the male respondents. Three factors were extracted based on the item loadings as constraints to access and use of agricultural information for male poultry farmers and they include; communication factors (factor 1), capacity/ICT related factors (factor 2) and power/domestic factors (factor 3). Specific constraints that loaded high under communication factors were: poor internet access (0.813), poor access/irregular extension visit (0.812), poor level of awareness of internet facilities (0.811). Variables that loaded high in capacity/ICT related constraints were: lack of awareness (0.859), poor network facilities (0.829), and technical language format of agricultural information (0.588). Variables that loaded high in power/domestic constraints were: feedback problem (0.580) time constraints due to domestic work load (0.578), insufficient/lack of power (0.571) among others. These factors are critical for poultry production and their deficiencies results to loss in production. In line with Msoffe and Ngulube (2016), lack of awareness of information hinders access and use of information on poultry production. Also, corroborating the findings, Belton *et al.* (2020) found that poor access to credit and loans was one the serious challenges in poultry production. Other constraints to information access and use by the male farmers were technical language format of agricultural programme, the problem of feedback among others.

Constraints to access and use of agricultural information by females

Table 6 revealed the factor analysis of constraints to access and use of agricultural information by female respondents. Based on item loadings, network/financial factors (factor 1), communication factors (factor 2) and language/institutional factors (factor 3) were identified as factors that act as constraints to these farmers. Cost of acquiring communication facilities (0.800), poor network facilities (0.733), poor level of awareness of internet facilities (0.695), among others are loaded high under network/financial factors. This indicates that cost of acquiring communication facilities such as computer is a major constraint. Most farmers lack the wherewithal to buy required gadgets needed to enhance information access. This supports findings by Belton *et al.* (2020) which states that high cost of inputs and lack of access to electricity were some of the serious challenges in poultry production.

Table 5. Constraints to access and use of agricultural information by males

Constraints	Communication factors	Capacity/ICT related factors	Power/domestic constraints
Poor internet access	0.813	-0.099	0.272
Poor access/irregular extension visit	0.812	0.124	-0.025
Poor level of awareness of internet facilities	0.811	0.033	0.203
Poor access to credit and loans	0.738	-0.221	-0.110
Cost of acquiring communication facilities	0.576	-0.069	-0.218
Age of the farmer	0.284	0.150	0.077
Improper awareness	-0.044	0.859	-0.120
Poor network facilities	-0.086	0.829	-0.051
Technical language format of agric info	0.148	0.588	0.097
Non availability of phone	0.361	0.567	-0.255
Lang. barrier/understanding	0.389	-0.547	0.364
Inadequate fund	0.323	-0.475	-0.294
Feedback problem	0.278	-0.190	0.580
Time constraints due to domestic work load	0.075	-0.068	0.578
Insufficient/lack of power	0.038	-0.119	0.571
Inappropriate airing time of agric programmes	0.216	-0.107	-0.568
Timeliness of information	-0.013	0.376	0.539

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

Feedback problem (0.844), distance/inaccessibility (0.779), and lack of awareness (0.717) are among the factors that loaded high under communication factors. It shows that absence of feedback, distance/inaccessibility and lack of awareness are among major constraints to access and use of information. Variables that loaded high under language/institutional factors were: language barrier/understanding (0.734), poor access/irregular extension visit (0.695), and age of farmer (0.548). Technical language often seen in print material often limits the understanding that can be derived especially from those who are not literate.

Poor extension visit was also a constraint on the part of the farmers. Adequate access to extension services is important for adoption of improved technologies and farming practices. On the contrary, poor extension visit may reduce the chances of households having access to better production techniques, improved inputs as well as other production incentives, provided by extension agents. In line with Msoffe and Ngulube (2016), lack of funds, limited facilities, few extension officers and long distances were the major factors which inhibited information providers from disseminating poultry management information to the rural communities.

Table 6. Constraints access to use of agricultural information by females

Constraints	Network/Financial factors	Communication factors	Language/institutional factors
Cost of acquiring communication facilities	0.800	-0.141	-0.073
Poor network facilities	0.733	0.268	0.032
Poor level of awareness of internet facilities	0.695	0.188	0.349
Insufficient/lack of power	0.594	0.263	0.160
Inadequate fund	0.594	-0.099	-0.091
Illiteracy	0.592	0.155	0.216
Time constraints due to domestic work load	0.428	0.089	0.360
Feedback problem	-0.027	0.844	0.272
Distance/inaccessibility	0.086	0.779	0.050
Lack/Improper awareness	0.326	0.717	-0.210
Inappropriate airing time of agric programmes	0.336	0.457	0.300
Lang. barrier/understanding	0.158	-0.001	0.734
Poor access/irregular extension visit	-0.042	0.078	0.698
Age of the farmer	0.244	-0.357	0.548
Poor access to credit and loans	0.023	0.313	0.438

4. Conclusion and Recommendation

Male and female poultry farmers have access to information on poultry production. They sourced information on poultry production from multiple sources. Also, there are no much disparity between male and female farmers in their level of access and use of information on poultry production. The information sourced were mostly on disease and prevention, management of vaccine and poultry feed. Moreover, both farmers had one or more constraints in access and use of information on poultry production. The study recommends that government, policy makers, NGOs and related organizations should train many extension agents to dissemination agricultural information since multiple sources of information can lead to contradiction, confusion and distortion. Also, government should ensure timely provision of poultry production facilities and communication gadgets necessary to improve information dissemination among farmers. In addition, government should ensure that internet network is made available to farmers in different communities to enable them have access to information using internet services.

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