

International Journal of Agriculture Extension and Social Development

Volume 1; Issue 2; Jul-Dec 2018; Page No. 38-46

Received: 12-07-2018
Accepted: 15-08-2018

Indexed Journal
Peer Reviewed Journal

Access and utilization of agricultural information by arable crop farmers in UYO agricultural zone, Akwa Ibom state, Nigeria

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Abstract

The study examined information access and utilization by arable crop farmers in Uyo Agricultural Zone, Akwa Ibom State, Nigeria. Primary data were sourced from 120 farmers using questionnaire and analyzed using simple percentages, mean, Likert Scale rating technique and multiple regression analysis. Findings revealed a mean household size, farming experience, education, farm size and age of 5 persons, 11 years, 9 years, 0.65 hectares and 40 years, respectively. Findings further showed that the most highly need information were on sources of credit/ funding of agricultural activities ($X = 3.67$), production inputs ($X = 3.43$), processing/ value addition, ($X = 3.12$), pest and diseases control, ($X = 3.10$), product marketing and pricing, ($X = 2.96$), and modern method of product storage and preservation ($X = 2.62$). Also, the information sources that were available and patronized by farmers in order of priority were family and friends (91.7%), fellow farmers (83.3%), cooperative and other social organization (73.3%), mobile phone (75%), radio and television (53.3%), agricultural extension agent (45.8%), newspaper and magazines (42.5%), government Agencies and Parastatals (38.3%), Non- governmental Organizations (NGOs), (34.2%), posters and bulletins (25%) newsletters, extension bulletins and leaflets (24.2%), research institutions and universities, (20.8%) and exhibitions (0.07%). However, the most frequently used in formation source were friends and relative ($X = 3.92$), fellow farmers ($X = 3.64$), mobile phone ($X = 3.28$), radio and television ($X = 3.11$), newspaper ($X = 3.01$), agricultural extension agents ($X = 2.73$), and cooperative and other social organization ($X = 2.52$). Among the serious constraints to agricultural information access were: low extension to farmers ratio ($X = 3.42$), lack of finance to buy TV, radio newsletters etc ($X = 3.25$), irregular power supply ($X = 3.08$), odd hours airing of agricultural information on radio and television ($X = 3.03$), non- existence of community library ($X = 2.97$), poor radio and television signal ($X = 2.96$), inadequate infrastructure like access road for easy access by extension and other agricultural information sources agents ($X = 2.93$). the study recommended the promotion of farmers awareness, deployment of more extension agents to rural communities, promoting education and encouraging the formation of farmer groups as a way out.

Keywords: Information access, information utilization, arable crop farmers and Uyo Agricultural Zone

1. Introduction

Information which is otherwise called “processed data” is the bedrock of every society. In fact, every segment of the economy (Agriculture inclusive) requires access to timely information to thrive. Agriculture as a popular sector of Nigerian economy is bewildered with myriads of problems ranging from risks and uncertainties to low utilization of modern technologies, among others. Consequently, farmers are faced with problem of decision making. Accordingly, timely access to accurate and reliable information will guide farmers make such informed decisions.

Arable crop farmers also require periodic access to agricultural information for enhanced productivity. Agricultural information embraces all category of knowledge (publish and unpublished) on all facets of agriculture. This ranges from technological innovations, changes in agricultural policies and programmes to new farming ideas. However, for agricultural information to be readily available and accessed by farmers, adequate dissemination of such information must be ensured. This requires the selection and use of appropriate disseminating

channel. This will, invariably, depend on the nature of the information, source of the information as well as the targeted audience. Empirical studies by (Ufuoko, Emah and Itedjere, 2008 and Okoedo-Okojie, 2015) ^[20] and kesit student) listed the major agricultural information sources available to farmers as; farmers’ groups, other farmers, NGO,s, radio and television, ADP, cooperative societies, conferences, books/leaflets, electronic mails, exhibitions, magazine, posters, bulletin, film/ slide presentation, community leaders, public campaign, Government Department of agriculture, research institutions, trade fair, telephone, extension agents, talk show and newspaper.

Several empirical literatures have reiterated that agricultural information, which forms the basis for extension service delivery, is indispensable for sustained productivity. For instance, Ojo, Bala and Iheanacho, (2013) ^[21] reported that differences in access to technologies and support services results in differences in agricultural productivity. Following suit, Agbabi (2012) ^[1] in his findings attributed the variation in yield to differences in the application of improved practices and level of access to and use of extension

information and services. Therefore, for sustained increase in agricultural productivity, it is imperative that farmers frequently access and utilizes modern agricultural information. Lack of frequent access to information inhibits the availability of agricultural information (Naveev and Anwar, 2013) ^[17] and accounts for the low utilization of improved technologies by rural farm families in Nigeria. However, the effectiveness of such agricultural information is determined by source (which is an indication of its reliability), channel of communication, timeliness and accuracy. Source refers to the respective institutions which information originates while channel refers to avenues and processes through which such information are transmitted to the farmer. Timeliness has to do with the said information getting to the target audience as at when due. On the other hand, accuracy of information implies a situation where such information is free from bias. As reasoned by Glendenning, Baba and Asenso-Okyer (2010) ^[9], proper dissemination and use of agricultural information is influenced by extension personnel, the reliability, relevance, usability, timeliness and the information dissemination process.

However, frequent access to agricultural information is affected by several factors. These factors are either farmer's specific or institutional related. While farmers' specific factors are those originating within the farmer such as their socioeconomic profiling e.g age, sex. Marital status etc, institutional factors emanates from either the institution originating the information or the channel through which such information are communicated to farmers e.g attitude of extension agent, cost of the information, complexity and durability of such information. Studies by Rehman (2010) ^[24] and Koskei, Langaf, Koskei and Oyugi (2013) ^[13] reported that frequent access to agricultural information by farmers is a function of their socioeconomic characteristics. On their part, Ojo, Bala and Iheanocho, (2012) likened it to a combination of both farmers socioeconomic characteristics and institutional factors. In addition, Martinez- Gracia, Dorward and Rehman (2012a and 2012b) ^[14, 15] and Jayawarda and Sherief (2010) added farmers' orientation towards improved farming as a major determinant of frequent access to agricultural information.

In attempt to boost access to agricultural information by farmers, effort have been made by successive government and other stakeholders to employ, trained and deploy numerous extension personnel to rural areas of Nigeria. Ministry of Agriculture has equally been created in different tiers of government our universities and research institutions are not left out. The creation of the department of agricultural extension in several Federal, State and Private Universities in Nigeria is a conscious effort directed towards enhancing farmers' agricultural information access. In spite of these lofty initiatives, arable crop farmers continue to decry incidence of poor information access. Most times, farming information gets to farmers after the planting season. In addition, most farmers do not have access to the right information. These results in poor adoption of new farm practices which further constrain productivity and threaten the attainment of food security. Therefore, given the importance of agricultural information and its role in boosting agricultural productivity in the face of rising population, there is need to evolve strategies that will boost

information access in the study area. This will require an in-depth examination of farmers' information access and utilization status. Against this backdrop, this study examines the information access and utilization pattern among arable crop farmers in Uyo Agricultural one, Akwa Ibom State, Nigeria.

2. Research methodology

2.1 The study area

The study was carried out in Uyo, Agricultural Zone. Five (5) Local Government Areas; namely; Uyo, Itu, Ibiono-Ibom, Uruan, and Nsit-atai made up the zone.. Uyo which is the State capital has a population of 305,000 (Federal Government of Nigeria 2009). The study area is located between latitude 4° 59 and 5° 04' N and longitude 7° 53' 8°, 00 E. The Uyo people called the *ibibios* have unique traditions and culture with the lion cloth and "Uwawang ofong isin" with a pair of shirts and hat alongside a staff to go with. Women on their part also tie the *loin's* cloth which is called "ndot iba" with head-tie and a blouse to match. The major language of Uyo people is "Ibibio" while their major occupation is farming, craftsmanship and merchant.

2.2 Sources of data

Data for the study were primary data that was collected using questionnaires and personal interviews. The questionnaire was administered to 120 (one hundred and fifty) respondents in the study area.

2.3 Sampling procedures and data collection technique

Data was collected through a multi-stage random sampling. In the first stage, 5 blocks were randomly selected from the existing eight blocks in Uyo Agricultural Zone. These were (Uyo, Obot Idim, Ikot Ada Idem, Asutan and Nsit Atai). In selecting these blocks, the names of these 8 blocks was written on 8 blank papers, folded and dropped in a container and selected one after the other. The first 5 selections were taken as the chosen blocks. In the second stage, the same approach was employed to randomly select 4 cells from each of the 5 selected blocks making a total of 20 cells. In the third stage, 6 cassava farmers were randomly selected from each of the 20 communities and used for the study

2.4 Method of data analysis

In addition to simple percentages and means the study also employed the following tool for analysis:

The research adopted a four point Likert scale rating technique in assessing the information need, frequency of utilization of information source and the constraints to agricultural information access by respondents in the study area. Grading of the scale was categorized as highly needed (4), needed (3), moderately needed (2) and not need (1) (for information need,), very serious (4), serious (3), not very serious (2) and not serious (1) (for constraints), and very often (4), often (3), not often (2) and not at all (1) (for frequency of usage), respectively. These constraints, information need, or frequency of use were ranked using weighted means which was computed as $4+3+2+1 = 10/4 = 2.5$. Accordingly, any mean score less than 2.5 was considered not highly needed (for information access), not very serious (for constraints) and not frequently used (frequency of information usage), respectively and vice versa.

2.4.1 Likert Scale Rating: The research adopted a four point Likert scale rating technique in assessing the information need, frequency of utilization of information source and the constraints to agricultural information access by respondents in the study area. Grading of the scale was categorized as highly needed (4), needed (3), moderately needed (2) and not need (1) (for information need.), very serious (4), serious (3), not very serious (2) and not serious (1) (for constraints), and very often (4), often (3), not often (2) and not at all (1) (for frequency of usage), respectively. These constraints, information need, or frequency of use were ranked using weighted means which was computed as $4+3+2+1 = 10/4 = 2.5$. Accordingly, any mean score less than 2.5 was considered not highly needed (for information access), not very serious (for constraints) and not frequently used (frequency of information usage), respectively and vice versa.

2.4.2 Multiple regression analysis

This was used to estimate factors influencing access to agricultural information by respondents in the study area. The explicit form of the model is stated as

$$Y = b_0 + b_1 X_1 + b_2 X_2 \dots b_n X_n + e_i \dots$$

Where

Y = Agricultural information access (measured as the ratio of number of information sources used by a respondent to the total information sources identified in the study area)

X's are the respective explanatory variables

Where

X₁ = Annual income of farmer (naira);

X₂ = Sex of farmer (Male =1, female 0);

X₃ = Marital status (married =1, others = 0);

X₄ = Awareness level of farmer (

X₅ = Farming Experience (years);

X₆ = Farmers' attitude (assign 1 if a farmer is willing to pay for Agricultural information or 0 if he is not);

X₇ = Dependency ratio (summation of total number of household members that are less than 18 years and those above 65 years divided by the total household size);

X₈ = Access to extension agent (number of times);

X₉ = Membership of social organization (number of social organizations that a respondent belongs to);

X₁₀ = Proximity to information source (distance between the respondent home and the nearby information disseminating institution such as Ministry of Agriculture, research institute, etc);

X₁₁ = Education level (Years);

X₁₂ = Availability of off farm work (measure by the distance between respondents home and nearby government owned institution in kilometers);

X₁₃ = Age (years);

X₁₄ = Farm size (Hectares).

Three functional forms of the model were estimated (linear, quadratic and double log) and the lead equation chosen based on the number of significant variables.

3. Findings and discussion

3.1 Socioeconomic characteristics of farmers

Table 1 present the socioeconomic characteristics of

respondents. As evidenced in the table, majority (65%) of farmers were female, indicating that women farmers dominated arable crop production in the study area. Bassey, Oboh and Onyia, (2019) reported that more women (55.3%) were into arable crop production in the study area. The mean household size was six persons with the dominant household size range of 5-10 persons (51.7%). The huge household sizes in the study area can translate into available labour crop production. In the study area, Bassey, Oboh and Onyia (2019) had previously reported a mean household size of 5 persons. Experience wise, farmers were quite experienced with a mean of 9 years of experience. The high years of experience possessed by farmers will assist in boosting agricultural information access because experience farmers is expected to be more knowledgeable in their choice of information sources and dissemination channels than their non-experienced counterparts. Bassey, Oboh and Onyia, (2019) had reported a mean of 11 years of experience among cassava farmers in the study area. Maritally, a greater part of respondents (52.5%) were married, 30.8 percent were single while 6.7 and 10 percentages were divorcee and widow, respectively. In the study area, Bassey, Obh and Onyia, (2019) had reported that most cassava farmers were married. Considering education, farmers were quite educated with a mean of 9 years of educational attainment. Further breakdown of this shows that about 31.6% attended primary school, 42.5% attended secondary school, 6.7% had NCE/ OND while 1.7% had B.Sc/ B. Agric/ HND, while 17.5% had no formal education. The high educational attainment will facilitate access to agricultural information and adoption of innovation. In the study area, Bassey, Oboh and Onyia, (2019) reported that about 83.3% of cassava farmers were educated. The average farm size in the study area was 0.65 hectares with about 80% cultivating less than 1 hectare, 29.2% and 10.8% cultivated between 1 and 2 hectare and above 2 hectares, respectively. This is an indication that farm holdings were smaller in the study area. Also, access to credit was low (36.3%) and is capable of constraining access to agricultural information by farmers. In the study area, Bassey, Oboh and Onyia, (2019) also reported a low access to credit among cassava farmers (15.3%). In terms of extension contact, about 56.7% reportedly had access to extension services while 43.3% did not. The high percentage farmers who had access to extension services were more than the 13.6% reported among cassava farmers in the study area by Bassey, Oboh and Onyia, (2019). Regarding, membership of social organization, all the farmers were members of social organization and is capable of boosting their information access because of contacts and interactions am among other group members. In the study area, Bassey, Oboh and Onyia, (2019) reported that about 62% of cassava farmers were members of social organization. This might imply that farmers might have suddenly realized the huge benefit associated with group membership and have decided to embrace it. Findings further revealed a mean age of 40 years with a dominant age bracket of 41-50 years (37.5%). This implied that farmers were still very active in the study area. A dominant age range of 51-60 years was previously reported among cassava farmers in the study area by Bassey, Oboh and Onyia, (2019).

Table 1: Socioeconomic characteristics of Respondents

Variable	Frequency	Percentage	Mean
Sex:			
Female	78	65	
Male	42	35	
Household Size			
Less than 5	48	40	
5-10	62	51.7	
11-15	9	7.5	6
Above 15	1	0.8	
Farming experience			
Less than 5 years	20	16.7	
5-10 years	50	25	9
11-20 years	71	42.5	
Above 20 years	19	15.8	
Marital status:			
Married	63	52.3	
Single	37	30.8	
Divorce	8	6.7	
Widow	12	10	
Educational attainment			
No formal education	21	17.5	
Primary School	38	31.6	
Secondary School	51	42.5	9
OND/NE	8	6.7	
HND/ B.Sc	2	1.7	
PGD	0	0	
Farm size			
Less than 1 ha	72	60	
1ha – 2ha	35	29.2	0.65
Above 2 ha	13	10.8	
Access to credit			
No	74	61.7	
Yes	46	38.3	
Extension visit			
Yes	68	56.7	
No	52	43.3	
Membership of social organization			
Yes	100	100	
No	0	0	
Age of farmer (years)			
Less than 30	9	7.5	
30 -40	35	29.2	
41-50	45	37.5	40
51-60	25	20.8	
Above 60	6	5	

Source: Field survey, 2020.

3.2 Information need of farmers in the study area

Table 2 which presents the information need of farmers in the study area showed that farmers varied on the basis of their information need. From the table, the most highly needed information in order of priority were on, sources of credit/ funding of agricultural activities ($X= 3.67$), production inputs ($X = 3.43$), processing/ value addition, ($X = 3.12$), pest and diseases control, ($X = 3.10$), product marketing and pricing, ($X = 2.96$), and modern method of crop preservation ($X = 2.62$). Among the agricultural information that were not highly needed were information on agricultural tools and machinery ($X= 2.23$) and improved crop rotation practices ($X= 2.00$). The high desire for

agricultural information on soil types and fertility, basic production inputs, crop and disease control, introduction of new herbicide and pesticides etc was previously reported by Obidike, (2011) ^[19] in Enugu State of Nigeria. Information on processing and value addition was highly desired partly as a result of the perishable nature of agricultural produce and partly as a result of inadequate storage facilities in the study area. The high desire for marketing information is also justified in a bid to ensure proper marketing of farm household's agricultural produce. Also, the plausible explanation for the increased desire for credit and agricultural funding information is as a result of the low access to formal credit by farm families in the study areas as

reported by.....

The low desire for agricultural information on tools and machinery may not be unconnected with the scattered and fragmented land holdings characterizing the study area which hinders the use of tangible agricultural tools as well

as mechanization. The low use of information on improved crop rotation conflicts with the finding of Obidike (2011)^[19] in Enugu State who found that information on improved crop rotation was highly required by farmers.)

Table 2: Information need of farmers (N=120)

Information needs	Mean	Rank	Remark
Product marketing and pricing	2.96	6 th	Highly needed
Pest and disease control	3.10	4 th	Highly needed
Sources of credit/ funding of agricultural activities	3.67	1 st	Highly needed
Basic production inputs	3.13	2 nd	Highly needed
Soil fertility and best soil for planting	2.97	5 th	Highly needed
Modern method of crop preservation	2.62	7 th	Highly needed
Processing/ value addition	3.12	3 rd	Highly needed
Agricultural tools and machinery	2.23	8 th	Not highly needed
Improved crop rotation practices	2.00	9 th	Not highly needed

Decision rule: Any mean score ≥ 2.5 was adjudged to be highly needed while any one ≤ 2.5 were adjudged to be highly needed.

Source: Field survey, (2021)

3.3 Sources access and frequency of Agricultural information in the study area

As observed in Table 3, the information sources available and patronized by farmers in order of priority were family and friends (91.7%), fellow farmers (83.3%), cooperative and other social organization (73.3%), mobile phone (75%), radio and television (53.3%), agricultural extension agent (45.8%), newspaper and magazines (42.5%), government Agencies and Parastatals (38.3%), Non- governmental Organizations (NGOs), (34.2%), posters and bulletins (25%) newsletters, extension bulletins and leaflets (24.2%), research institutions and universities, (20.8%) and exhibitions (0.07%).

Further analysis of the frequency of these information sources revealed that the most frequently used in formation source was friends and relative (X= 3.92), fellow farmers (X= 3.64), mobile phone (X= 3.28), radio and television (X= 3.11), newspaper (X= 3.01), agricultural extension agents (X= 2.73), and cooperative and other social organization (X= 2.52). The high frequency of use of friends, relatives and other farmers can be attributed to the cheaper nature of these sources which made them affordable

to farmers since they are most times accessed freely. Nkeme, Udo and Udoidung (2017)^[18] had previously reported the high use of friends, relatives and other farmers as frequently utilized information in the study area. Elsewhere in Delta State of Nigeria, farmers groups, other farmers and NGOs were reported by Ofuoku, Emah and Itedjere, (2008)^[20] as most frequently used agricultural information sources. The low use of government agencies and Parastatals (X= 2.16), research institutions and universities (X=1.36) and NGOs (X= 1.94) are an indication that these sources of information have not done enough in terms of dissemination of agricultural information to farmers. It might also be that farmers are not patronizing these information sources despite their effort in disseminating information, In Turkey, Boz and Ozcatalbas, (2010)^[7] reported that the key sources of agricultural information were family members, neighbors and extension agents. Also, the frequent use of fellow farmers and television were reported as frequently used sources for agricultural information by Rehman *et al.* (2013)^[25]. The low frequency of use of NGO by arable farmers was also previously reported by Rehman *et al.* (2013)^[25]

Table 3: Information sources and their frequency of use

Information sources	Frequency of usage					
	Sources	%	Rank	Mean	Rank	Remark
Extension agent		45.8	6 th	2.73	6 th	FU
Radio and television		53.3	5 th	3.11	4 th	FU
Government agencies and parastatals		38.3	8 th	2.16	8 th	NFU
Posters and bulletin		25	10 th	2.04	9 th	NFU
Research institution and universities		20.8	12 th	1.36	12 th	NFU
NGOs		34.2	9 th	1.94	10 th	NFU
Exhibition		0.07	13 th	1.22	13 th	NFU
Mobile phone		75	4 th	3.28	3 rd	FU
Newsletter and bulletin and leaflets		24.2	11 th	1.88	11 th	FU
Family and friends		91.7	1 st	3.92	1 st	FU
Cooperative and other Social organizations		73.3	3 rd	2.52	7 th	FU

Fellow farmers	83.3	2 nd	3.64	2 nd	FU
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Note: FU and NFU signify frequently utilized and not frequently utilized, respectively. Decision rule: Any mean score ≥ 2.5 was adjudged to be frequently utilized while any one ≤ 2.5 were adjudged to be not frequently utilized.

Source: Field survey, (2021)

3.4 Result of multiple regression analysis

Table 4 presents the result of multiple regression estimates for factors influencing agricultural information access in the study area. Of the three functional forms, (linear, quadratic and double log), that were estimated, the linear form was chosen as the lead equation based on the number of significant variables. The F statistics (632.46) was statistically different from zero, implying that that the estimated variables in the model had significant effect on agricultural information access. The estimated R² value of 0.898 implied that about 89.9 percent of the variability in agricultural information access was explained by the explanatory variables included in the model.

Result showed that the coefficient of annual income of farmers (6.82E-04) was positive and significantly increases access to agricultural information at 1 percent probability level. This is expected because increase in household income will enhance their liquidity position; hence, their ability to acquire modern ICT based information dissemination items and gadgets such as radio, television, computer etc which will boost their rate of information access than their low income counterparts.

Marital status of farmers (0.001) was negative and significantly reduces agricultural information access at the 5 percent probability level. This finding is surprising given that married people has more responsibilities, hence, was expected to require and source for more agricultural information especially pertaining to agricultural income enhancement than their single counterparts. However, this finding agrees with those of Koskei and Yugi, (2013) [13] who also reported a negative relationship between both variables. They argued that single farmers have limited responsibilities than married farmers and as such make more friends and contacts than married farmers, through which they accesses more agricultural-based information. This finding also conflict with that of Opara, (2008) [23] who reported a positive relationship between information access and marital status.

Awareness level of farmers (0.834) was positively associated with information access at 1 percent probability level, denoting that a 1 percent increase in farmer;s awareness will increase agricultural information access by 0.834 percent. This is expected because the more the level of awareness, the more chances a farmer has in being acquainted with diverse information communication channels through which they become more informed and presumably utilized them than their uninformed farmers. Amaechi and Ossai-Onah, (2015) [4] and Sanusi, Petu-Ibikunle and Mshalia, (2010) [26] reported that poor awareness constrained agricultural information access

Farmers' attitude (0.033) was also positive and significantly increases farmers' access to agricultural information at 5 percent significant level. This is in line with theoretical postulation because farmers who have positive attitude will develop a positive mindset, become more proactive, focus and seek for avenues to achieve his or her desired information than negatively minded people who are often

times easily discouraged from pursuing a task. Tadesse (2008) [27], Jayawardana and Sherief, (2010), Martinez-Gracia, Dorward and Rebman, (2012a) who reported separately that farmers attitude towards improved farming impacted severely on agricultural information access.

Access to extension agent (0.051) was positive and significantly agricultural information access at 10 percent probability level. This is expected because extension agent are channels of agricultural information dissemination, hence, consistent access to them by farmers will invariably translates to more access to timely information at 5 percent probability level.

The coefficient for membership of social organization (0.008) was found to exhibit a significant positive influence on access to agricultural information at 5 percent probability level. The plausible explanation for this finding is that membership of social organization broaden farmer;s contacts and pool of information knowledge through which agricultural ideas and information could be equally shared to the betterment of members. Katungi, (2006) [12] reported that group membership facilitates information exchange among group members as a result of shared experience and knowledge. This finding corroborates those of Ofuoku, (2008) [20], Conley and Udry (2010) [8] and Bandiera and Rasul, (2003) [5].

The coefficient of off-farm income (-3.6E-08) was negative and significantly reduce access to agricultural information at 5 percent probability level. The negative relationship is justified because increase in off-farm income will imply greater abandonment of farm work by rural household for off-farm work. This will invariably reduce farmers interest in farming as well as their quest for agricultural information. This finding is consistent with those of Akudugu *et al.* (2012) [3] and conflicts with those of Koskei *et al.*, (2013) [13], respectively.

Farmers age (-1.33E-06) surprisingly carried a negative sign and significantly reduce access to agricultural information at 1 percent probability level. This result is surprising given that aged farmers were expected to seek for more farming information, given their level of experience acquired and diverse nature of information contacts made. It might be that besides being too anxious to get knowledge and information, younger people are usually more flexible in risk taking than aged farmers, hence, seek for more information than them. This finding supports that of Haba, (2004) [10] who reported that older people are mostly unwilling to pay for agricultural information delivering technologies.

The coefficient of education (0.512) was found to exert a significant positive influence on access to agricultural information at 1 percent probability level. This is justified in that education enhances farmer's ability to easily understand and decode new farming information and can leverage on their widely circulated contacts to boost their information access status. This finding support those of Rehman *et al.*, (2013) [25].

Table 4: Factors influencing farmers access to agricultural information

Variables	Linear (L) Coefficient tstat	Quadratic Coefficient tstat	Double log Coefficient tstat
Constant	0.692(11.074)***	0.683 (5.184)***	-4.124(1.984)*
Annual income	6.82E04(3.014)***	8.41E-08(0.868)	0.005(1.375)
Sex of farmer	-0.003(0.020)	0.004(1.406)	-
Marital status	-0.001(2.474)**	-0.003(6.112)***	-
Farmers awareness	0.834(3.155)***	0.062(0.984)	0.521(1.511)
Famers experience	-7.12E-04(0.974)	-2.05E-01(1.384)	-0.204(3.462)
Farmers attitude	0.033(2.228)**	0.014 (1.182)	-
Dependency ratio	-0.211(0.834)	-0.034(1.841)	-0.014(1.155)
Access to extension	0.051(1.934)*	0.224(2.462)**	-0.004(10.441)***
Membership of social organization	0.008(2.243)**	0.001(2.336)**	-
Proximity to information source	0.007(0.441)	0.001(0.324)	0.073(0.666)
Educational level	0.512(4.042)***	0.051(2.378)**	-0.203(8.182)***
Off-farm income	-3.61E-6(2.482)**	-5.37E-13(2.962)***	0.864(0.996)
Age of farmers	-1.33E-7(3.874)***	-2.35E-11(1.102)	-0.002(1.894)***
Farm size	2.31E-05(0.364)	1.51E-08(1.094)	-0.045(2.472)**
R2 Fstat	0.898 632.246***	0.8024 644.320***	0.7982 98.627***

Note: ***, ** and * signify significant at 1,5 and 10 percent, respectively. Figures in parenthesis are Z values.

Source: Output of computer analysis using data from field survey, 2021.

3.5 Constraints to Agricultural information access

As evidenced from table 2, the major constraints to agricultural information access by farmers in the study area were low extension to farmers ratio (X= 3.42), lack of finance to buy TV, radio newsletters etc (X= 3.25), irregular power supply (X= 3.08), odd hours airing of agricultural information on radio and television(X= 3.03), non-existence of community library (X= 2.97), poor radio and television signal (X= 2.96), inadequate infrastructure like access road for easy access by extension and other agricultural information sources agents (X= 2.93), poor access to computer and ICTS(X= 1.87), poor public relation of the extension worker (X= 1.87), problem of reliability of information source (X= 1.75), language barrier (X= 1.36), illiteracy (X= 1.31) and lack of awareness on the existence or presence of agricultural extension worker (X=1.28). Poor

radio and television signal, electric power interruption, odd hour airing of agricultural information by television and radio, were reported by Okoedo- Okojo, (2016) as major constraints to agricultural information access in Edo State, Nigeria. In South Africa, Aina (2007) [2] also listed insufficient contact with extension, lack of money to buy agricultural information bulletins, insufficient extension worker, poor radio and television signal and lack of financial power as major constraints to information access. The low mean score reported by farmers for illiteracy is presumably due to the high educational attainment of farmers in the study area. Also, in Delta State of Nigeria, Ofuoko, Emmah and Itedjere, (2008) [20] also reported that inadequate extension contact was a major challenge to agricultural information access.

Table 5: Constraints to agricultural information access

Constraints	Mean	Rank	Remark
Illiteracy	1.31	11 th	Not serious
Odd hour airing of agricultural information in the radio and television	3.03	4 th	Very serious
Poor radio and Television signal	2.96	6 th	Very serious
Irregular power supply	3.08	3 rd	Very serious
Poor infrastructure e-g access road for easy access by extension agent	2.93	7 th	Very serious
Low extension agent to farmers ratio	3.42	1 st	Very serious
Insufficient income to buy radio, television and newsletters and extension bulletins	3.25	2 nd	Very serious
Poor public relation of extension workers	1.87	8 th	Not serious
Poor access to computer and ICT	1.87	8 th	Not serious
Language barrier	1.36	10 th	Not serious
Lack of awareness on the existence of agricultural extension services	1.28	12 th	Not serious
Non- existence of community library	2.97	5 th	Very serious
Problem of reliability of information sources	1.75	9 th	Not serious

Decision rule: Any mean score ≥ 2.5 was adjudged to be a very serious constraint while any one ≤ 2.5 were adjudged to be a not too serious constraint.

Source: Field survey, (2021)

4. Conclusion

In this study, access and utilization of agricultural information by arable crop farmer have been assessed and the determinants of agricultural information access estimated. The study has shown that farmers differ substantially on the basis of their information need, access

and utilization pattern. It further revealed those farmers’ socioeconomic characteristics affects their information access status. The study while decrying the low frequency of usage of government agencies and parastatals, research institutions and universities as information sources in the study area concluded that future effort aimed at boosting

access to agricultural information should be tailored towards addressing issues that bordered on farmers socioeconomic characteristics.

5. Recommendations

Based on the research findings, the following recommendations are offered:

- a. Effort should be made to promote farmers level of awareness through series of awareness campaigns and sensitization exercises carried out on the availability and need of existing and new agricultural information
- b. To enhance access to extension services, farmers should train and deploy more extension agents to rural areas so as to boost extension agent farmers ratio
- c. Emphasis should be laid on promoting educational attainment in the study area through the establishment of evening schools and encouraging farmers to enroll in satellite campuses
- d. Farmers should be enlightened and encourage to form cooperative and other farmer groups as these will broaden their contact horizon which will invariably enhance their information access status.

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