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Patronage of farm radio as an agricultural knowledge source for farmers: Experiences from Ghana

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Numerous studies have been conducted on farm radio programmes but there is limited information on farmers' level of patronage, utilisation and satisfaction with the information obtained. This study aimed to fill this gap. The research was carried out in the Bosome Freho District of the Ashanti Region of Ghana with 400 farmers selected using the multi-stage sampling technique. Data were analysed using means, standard deviations, and the chi-square test of independence. Results show that the farmers highly patronized the farm radio programmes. Although farmers were satisfied with the farm radio programmes, their utilization of knowledge from the programmes was low. Patronage of farm radio programmes is associated with radio set ownership, educational level and age of farmer. The study recommends that farmers should be encouraged to own radio sets and continue to rely on farm radio programmes for agricultural information. The reasons behind the low utilisation of information from farm radio programmes and why patronage and satisfaction are high need to be researched further.

Key words: Agricultural knowledge source, farm radio, Ghana, listenership, patronage, satisfaction, utilisation.

INTRODUCTION

Agricultural extension is a vital organ in the entire food security spectrum. It is a vital conduit for the transmission of information from researchers to farmers, scientists, and new technologies to farmers (Cloete et al., 2019). Agricultural extension aims at empowering and equipping farmers with the knowledge and skills they need to make wise decisions, solve problems on their own, and manage their farms (Vanclay and Leach, 2011). Individual approaches such as farm and home visits, telephone conversations, text messaging, and other channels are available to the extension agent. Field visits, result demonstrations, technique demonstrations and other group methods, as well as mass means

including print media (newspapers, magazines, newsletters, pamphlets, and posters) and electronic media (radio, television, and film schedules and filmstrips) have been widely employed to provide farmers with information (Olowu and Oyedokun, 2000).

Various routes are used to disseminate agricultural knowledge to farmers. The most traditional, but still widely employed among farmers in developing nations is face-to-face contact (Msoffe and Ngulube, 2016). Communicators can use a variety of modes (facial expressions, gestures, intonation, words, and body language) to convey a single message using this method of communication. Because the communicating parties

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are in the same physical location, it also improves immediate feedback. The channel, on the other hand, is notorious for altering messages as they are transmitted from one person to another (Velentzas and Broni 2014). According to Okwu et al. (2007), for active communication, information should be transmitted with minimal or no distortions from the source to the receiver.

According to Okwu et al. (2007), communication channels are essentially divided into two categories: non-interpersonal (radio, television, phone calls, posters, newspapers, meetings, film shows, internet, social media, and so on) and interpersonal (extension agent, contact/lead farmers, opinion leaders, friends and family, field demonstrations, and so on). The cost, availability/accessibility, and suitability of a communication channel, as well as the nature of the message and the farmer's expectation or desire, all, go into the decision.

Mass media methods are useful to farmers as sources of agricultural knowledge as well as techniques of informing them of new developments and emergencies. Depending on the aim and the number of farmers to be reached, the only way to get information to the target audience at the right moment is to use mass media (Nwachukwu and Onuekwusi, 2005). To a large extent, mass media serves as a veritable instrument for information dissemination in agriculture. Planners in developing countries recognize that effective use of mass media can speed the growth of agriculture (Purushothaman et al., 2003).

Radio is the most effective technique of disseminating agricultural information to rural farmers among the various forms of mass media. Radio can also help people overcome illiteracy and require less mental effort (Kuponiyi, 2000). It is regarded as a reliable, trustworthy and prominent source of information and mode of communication (Palvi et al., 2018). In terms of credibility, farmers must believe that the information is reliable, important, and weighty when it comes to adopting information and agricultural technology. Farmers' interest in implementing new strategies to increase their production activities is piqued when they have access to reliable information. A credible source of information stimulates farmers' interest in adopting innovative measures that aim at increasing their production activities (Kakade, 2013). Extension personnel play a critical role in bridging the gap between farmers and research institutions. As a result, agriculture necessitates a clear link between the availability of information and agricultural development. To reach their production goals, farmers need access to high-quality information, which they can only get if they are well-informed (Babu et al., 2011).

Rural radio and community radio are two terms that have become interchangeable to designate FM stations that broadcast to a local and largely rural audience (Chapman et al., 2003). The use of radio for rural

development has piqued the interest of practitioners and academics in recent years, who agree that this medium has enormous potential for improving the food security of smallholder farmers (Gilberds and Myers, 2012; Nakabugu, 2001). The rise of rural radio stations in recent decades reflects both advancements in information technology and a movement in the development paradigm toward a more participatory approach to information and knowledge sharing (Chapman et al., 2003).

Numerous studies have been undertaken to demonstrate radio's enormous potential for knowledge transmission and listener well-being. For instance, Chapman et al. (2003) investigated the use of rural radio in agricultural extension for soil and water conservation in Northern Ghana and discovered that there is an unusual mix of approaches in the use of rural radio for agricultural extension. Mubofu and Elia (2017), Spurk and Dingerkus (2017) and Sanga et al. (2013) investigated the level of use of radio and television as sources of agricultural knowledge among farmers and discovered that the use of radio and television as sources of agricultural knowledge was limited due to the low number of agricultural radio and television programmes broadcast each week. Zakariah (2008) investigated the possibilities of local radio for agricultural communication in Ghana and discovered that the rural farmer is more of a receiver or listener than a collaborator in radio communication.

However, there is limited information on farmers' patronage of farm radio programmes, their utilisation and satisfaction with the information obtained. Hence, this study is structured to assess the patronage of farm radio programmes as an agricultural knowledge source by farmers in the Bosome Freho District. The specific objectives are to ascertain farmers' level of patronage of farm radio programmes, the level of utilisation of knowledge gained through patronized farm radio programmes, the extent of farmers' satisfaction with the farm radio programmes and the factors that are associated with farmers' patronage of farm radio programmes.

MATERIALS AND METHODS

The research was carried in the Bosome Freho District. The District is in the South- Eastern part of Ashanti Region. In this study, the target population was drawn from the farmers in the Bosome Freho District. The District has 51,338 farmers according to the 2010 Population and Housing Census Report. The sample size of this research was calculated using a formula proposed by Yamane (1973). The sample size calculated was 397. However, it was adjusted to 400 farmers.

This study used the multi-stage sampling technique. In the first stage, purposive sampling was used in selecting the target district. This is because the district has 85% of its population as farmers and again eight radio stations are transmitting around the district. In the second stage, the simple random sampling technique was used to select ten communities out of the eighty-five communities. In the third stage, the proportional sampling technique was used to select farmers from the selected (10) communities: Adeito-40, Anyanso-

Table 1. Frequency of listenership of Farm Radio Programme.

Radio station	Never N (%)	Occasionally N (%)	Always N (%)	Mean	Std. Dev.
Kings Radio- Akuafo Kyefa	36 (9)	180 (45)	184 (46)	2.37	0.64
Virgin FM- Akuafo Mo	52 (13)	199 (49.75)	149 (37.25)	2.24	0.67
Asempa Radio- Akuafo Adanfo	77 (19.25)	192 (48)	131 (32.75)	2.14	0.71
Salt FM- Okuani Pa	77 (19.25)	182 (45.50)	141 (35.25)	2.16	0.72
Adanse FM- Akuafo Bedwa	73 (18.25)	197 (49.25)	130 (32.50)	2.14	0.69
Ahwenepa FM- Akuafo Adc a WC Bedi de3n	60 (15)	186 (46.50)	154 (38.50)	2.24	0.69
Dess Radio- Akuafo Mer3	117 (29.25)	181 (45.25)	102 (25.50)	1.96	0.74

Index: 2.18. Source: Field Data, 2021.

43, Anumso-42, Nsuaem-40, Abosamsso-34, Duase-42, Korhyikrom-44, Tebeso II-32, Freso-39 and Dajanso-41. Data from the questionnaires were coded and entered into a computer. The computer programmes STATA and SPSS were used to analyze the data.

To ascertain farmers' level of patronage of farm radio programmes, farmers were asked to rate the content, the presenter, delivery time and language used for presentation using a likert scale. A three-point Likert scale was used to calculate the mean and standard deviation based on the number of minutes each respondent spent in listening to farm radio programme (Low = 0-140 min, moderate = 141 - 280 min and high = 281 – 420 min). This style of classification was adopted from the work of Zachariah (2008) who also used time spent by listeners as proxy to measure their interest in agricultural radio programmes. To assess the level of utilisation or adoption of knowledge gained through the farm radio programmes, a three-point Likert scale ranging from 1= Never, 2= Sometimes, 3= Always, was used to calculate the mean and standard deviation. To ascertain farmers' extent of satisfaction with the patronized farm radio programmes, the satisfaction index (Five-point Likert scale ranging from 1= Fully Dissatisfied, 2= Dissatisfied, 3= Indifferent, 4= Satisfied, 5= Fully Satisfied) was used to analyze farmers' extent of satisfaction of the farm radio programmes. To determine the factors that are associated with farmers' patronage of farm radio programmes, the chi-square test of independence was used. The Chi-square test of independence measured the relationship between the level of patronage (low, moderate and high) and the socioeconomic factors; age, marital status, educational level, type of farm, farm size, radio ownership etc.

RESULTS AND DISCUSSION

Farmers' Patronage to the farm radio programmes

Table 1 presents the frequency of listenership to farm radio programmes of farmers in the study area. Farmers' frequency of listenership of the selected farm radio programmes was assessed on a scale of 1 (Never) to 3 (Always). The various farm radio programmes were "Akuafo Kyefa", "Akuafo Mo", "Akuafo Adamfo", "Okuani Pa", "Akuafo Bedwa", "Akuafo Adc a wc Bedi de3n" and "Akuafo Mer3". These farm radio programmes are hosted by different radio stations in the study area. The highest mean score for the farm radio programmes was 2.37 (Kings Radio-Akuafo Kyefa) and the lowest mean score

for the programme was 1.96 (Dess Radio- Akuafo Mer3) respectively. This suggests that the most listened programme/station in the District was "Akuafo Kyefa" organised by Kings Radio while the least listened was "Akuafo Mer3" by Dess Radio. The overall means (frequency of listenership) was 2.18. This also shows that the frequency of listenership was occasional. Generally, farmers occasionally listened to all the farm radio programmes hosted by the radio stations. Similar results were found by Adamides and Stylianou (2018). In that study, it was found that out of those who listened to the farm programme, the majority responded that they listen to it occasionally. However, Okwu et al. (2007) and Zachariah (2008) found that farm radio was a very popular source of agricultural information to farmers and farmers' listenership to local radio was found to be high. Whites (2005) describes radio as the "Internet of Africa". Perhaps this assertion is even more valid in the case of rural farmers in Africa, who see the radio as a true companion. As a supplement to the work of agricultural extension officers, it has become an essential means to reach farmers especially in their off-farm leisure times. Okwu et al. (2007) underscored the importance of radio in agricultural development. They stated the need for farmers to be informed and educated about agricultural technology to enable them increase productivity. It can also be used as information multipliers capable of overcoming the pressures of time, population, geographical constraints, and shortage of trained extension personnel.

Farmers were asked about the number of minutes they listened to farm radio programmes within a week. This was used to calculate the level of patronage of the farm radio programme. Results show that out of those who listened to the farm radio programme, majority of the farmers (45.75%) spend between 281 to 420 min per week (high). About 34.75% of the farmers listened to farm radio programmes between 141 to 280 min (moderate) while 19.5% listened to farm radio programmes less than 140 min per week (low). This means that there is a high level of patronage (based on the number of minutes spent per week) of farm radio

Table 2. Level of Patronage of the Farm radio programme.

Patronage Level	Frequency	Percent
< 140 min (low)	78	19.5
141 – 280 min (moderate)	139	34.75
281 – 420 min (high)	183	45.75
Total	400	100.00

Source: Field Data, 2021.

programmes among the farmers (Table 2). Ordinarily, people patronize products or services that they find relevant to their needs. With a high level of patronage of farm radio programmes, it could mean that the farm radio programmes are serving as good sources of agricultural knowledge to the farmers. Similarly, Odira (2014) and Murumba and Mogambi (2017) found that a significant majority of farmers do patronize radio stations for farm information. In a study where Zachariah (2008) measured the audiences' level of participation in local radio agricultural programmes, it was found that whilst rural farmers' listenership to local radio was high; participation by way of involvement or contribution to the discussions was found to be very low. Contrary to the findings of this study, Adamides and Stylianou (2018) found that there is low patronage of farm radio programmes among farmers.

Extent of satisfaction with the patronized farm radio programmes

Table 3 shows farmers' satisfaction with the knowledge received through farm radio programmes. A satisfaction index of 4.0 shows that farmers are highly satisfied with the knowledge received through farm radio programmes. The three areas with the highest level of satisfaction were; "land preparation techniques" (M=4.29, SD=0.45), "method of fertilizer application" (M=4.29, SD=0.51), "fall armyworm identification and management techniques" (M=4.29, SD=0.48) and "anti-rabies vaccination" (M=4.29, SD=0.69). This shows that majority of the farmers were satisfied with knowledge on land preparation procedures, method of fertilizer application, fall armyworm diagnosis and management techniques and anti-rabies vaccine. Farmers' knowledge will rise if they listen to farm radio programmes and are satisfied with the knowledge they receive. The implication of this finding is that efforts to air farm radio programmes must aim at arousing farmers' interest. It must also cause them to take the lessons serious so that it can result in increased agricultural productivity and long-term sustainability. Farmer satisfaction with farm radio programmes will go a long way toward facilitating the use of radio agricultural information as a reliable source of knowledge and information (Agwu et al., 2008). This study's findings are consistent with that of Oyelade (2006) who also found that majority of farmers were very

satisfied with agricultural programme. These findings, however, contrast that of Agwu et al., (2008), who claimed that majority of farmers in Nigeria's Enugu State were dissatisfied with radio agricultural programmes.

Level of utilisation of knowledge gained through patronized farm radio agriculture programmes

Table 4 shows how farmers utilize farm radio programme information. Generally, they sometimes employ the knowledge gained from the programme into their farming practices. This is shown by the utilisation index of 1.97. The three areas with the highest utilization of information gained from farm radio programmes were; "prepare your suckers well by clearing all debris and disease infected areas before planting" (M=2.55, SD=0.50), "stop burning your field when preparing the field for cultivation" (M=2.46, SD=0.50) and "select different soil or land for specific crops" (M=2.36, SD=0.48). This indicates that utilization of knowledge gained from farm radio programmes was mostly for preparing suckers well by clearing all debris and disease infected areas before planting, stopping the burning of field when preparing the field for cultivation and selecting different soil or land for specific crops. Utilisation of information gained from farm radio programmes was relatively low. Zakariah (2008) assessed the potential of local radio for agricultural communication in Ghana. Inferences from that study could show the reason for low utilisation of knowledge from farm radio programmes. The rural farmer is primarily a receiver or listener, rather than a collaborator in radio communication/utilisation of radio information. Since they have no hand in the organisation of the farm radio programmes, they are likely to be passive. Farmers make firm and positive contributions to the pattern and pace of development if they will be more involved in farm radio programmes and utilize the knowledge they get from it (Berringham, 1979). Zakariah (2008) further showed some of the main reasons given by farmers who were not able to adopt [utilize] farm radio messages often: lack of money to buy agricultural inputs and machinery, messages are not often timely, messages are not understood. Kakade (2013) disagreed with the results of the study and stated that majority of respondents (56%) in her study fully used information in their day today farming while 31.92% used information partially and farmers who have not used the information were only 13.46%.

Factors associated with farmers' patronage of farm radio programmes

There is a statistically significant association between radio set ownership and patronage of farm radio programmes at 10%. With a statistically significant level of 10%, it means that farmers who own radio sets are more likely to listen to farm radio programmes than

Table 3. Farmers' satisfaction with farm radio programme information.

Statements	FDN (%)	DN (%)	NN (%)	SN (%)	FS N (%)	Mean score	Std. Dev.
Site selection techniques	-	6 (1.50)	48 (12.00)	297 (74.25)	49 (12.25)	3.97	0.55
Land preparation techniques	-	-	-	284 (71.00)	116 (29.00)	4.29	0.45
Use of recommended improved seeds for planting	1 (0.25)	-	28 (7.00)	359 (89.75)	12 (3.00)	3.95	0.35
Method of fertilizer application	-	-	39 (9.75)	296 (74.00)	65 (16.25)	4.29	0.51
Proper nursery management	-	-	5 (1.25)	275 (68.75)	120 (30.00)	4.07	0.48
Fall armyworm identification and management techniques	-	1(0.25)	1 (0.25)	280 (70.50)	118 (29.50)	4.29	0.48
Anti-rabies vaccination	-	43(10.75)	71 (17.75)	282 (70.50)	4 (1.00)	4.29	0.69
Vaccination of farm animals	2(0.50)	8(2.00)	64 (16.00)	283 (70.75)	43 (10.75)	3.62	0.62
Safe use of agrochemicals	-	-	2 (0.50)	369 (92.25)	29 (7.25)	3.89	0.27
Identification and management of crop pests and diseases	-	11(2.75)	-	310 (77.50)	79 (19.75)	4.07	0.54
Importance of farmer group formations	2(0.50)	31(7.75)	45 (11.25)	263 (65.75)	59 (14.75)	3.87	0.77
Storage of cereals and grains	-	12(3.00)	-	308 (77.00)	80 (20.00)	4.14	0.55
Vegetable production techniques	-	46(11.50)	66 (16.50)	237 (59.25)	51 (12.75)	3.73	0.83
Market information	6(1.50)	80(20.00)	62 (15.50)	213 (53.25)	39 (9.75)	3.50	0.97
Rice production techniques-pests, diseases management and harvesting	-	4(1.00)	8 (2.00)	322 (80.50)	66 (16.50)	4.13	0.46
Farmers accessing credit facilities	5(1.25)	48(12.00)	85 (21.25)	202 (50.50)	60 (15.00)	3.66	0.92
Reduction of postharvest losses	-	-	5 (1.25)	301 (75.25)	94 (23.50)	4.22	0.45

Satisfaction Index: 4.0. Source: Field Data, 2021. NB: FD-Fully dissatisfied, D-Dissatisfied, N-Neutral, S-Satisfied, FS-Fully satisfied.

Table 4. Farmers' utilisation of farm radio programme knowledge.

Statements	Never N (%)	Sometimes N (%)	Always N (%)	Mean	Std. Dev
Select different soil or land for specific crops	-	258 (64.50)	142 (35.50)	2.36	0.48
Stop burning your field when preparing the field for cultivation	-	215 (53.75)	185 (46.25)	2.46	0.50
Prepare your suckers well by clearing all debris and disease infected areas before planting	-	180 (45.00)	220 (55.00)	2.55	0.50
Take part in planting for food and jobs	24 (6.00)	234 (58.50)	142 (35.50)	2.30	0.57
Use certified seeds for planting	7 (1.75)	259 (64.75)	134 (33.50)	2.32	0.50
Buy your seeds from certified seed sellers	135 (33.75)	201 (50.25)	64 (16.00)	1.82	0.68
Stop using your grains from your farm as seeds for planting	42 (10.53)	342 (85.71)	15 (3.76)	1.93	0.38
Do the line and pegging before planting	106 (26.50)	223 (55.75)	71 (17.75)	1.91	0.66
Nurse your rice seeds before planting	15 (3.75)	304 (76.00)	81 (20.25)	2.17	0.46
Put on your PPEs to protect oneself well when applying any of the agrochemicals	172 (43.00)	200 (50.00)	28 (7.00)	1.64	0.61
Apply fertilizer to your crops	7 (1.75)	332 (83.05)	61 (15.25)	2.14	0.39
Place your fertilizer about 10cm away from the plant	90 (22.50)	291 (72.75)	19 (4.75)	1.82	0.49

Table 4. Cont'd.

Apply two different types of fertilizer to your crops	83 (20.75)	267 (66.75)	50 (12.50)	1.92	0.57
Apply the fertilizers separately	103 (25.75)	255 (63.75)	42 (10.50)	1.85	0.58
Stop using one particular chemical to control pests and diseases on the field week after week	62 (15.50)	316 (79.0)	22 (5.50)	1.90	0.45
Use the pic sacks for storing your grains and cereals to avoid postharvest losses	228 (57.0)	148 (37.0)	24 (6.0)	1.49	0.61
Take part in farmers group meetings and activities	29 (22.48)	93 (72.09)	7 (5.43)	1.83	0.50
Access credit facilities from the banks to farmers	234 (58.50)	162 (40.50)	4 (1.00)	1.43	0.52
Contact the extension officer for chemicals to control fall armyworms	45 (11.25)	323 (80.75)	32 (8.00)	1.97	0.44
Contact the veterinary officer to vaccinate your pets against anti-rabies	163 (40.85)	223 (55.89)	13 (3.26)	1.62	0.55
Vaccinate your small ruminants against diseases through the veterinary officer	158 (39.50)	229 (57.25)	13 (3.25)	1.64	0.55
Information on prices of food items from various markets before sales	2 (0.50)	331 (82.75)	67 (16.75)	2.16	0.38

Utilisation Index: 1.97. Source: Field Data, 2021.

farmers who share a family radio. Findings of this study are consistent with that of Okwu et al. (2007) who found out that farmers who owned radio sets used them for accessing agricultural knowledge and therefore, ownership of radio sets by farmers enhances farmers' exposure and interest in radio agricultural programmes. Radio is the most important mass communication medium in Africa (Table 5). As a result of this, there is high radio ownership and listenership among even illiterate rural populations. Radio ownership has been found to be equally high in Ghana. Chapman et al. (2003) reported that 59% of the farmers in Northern Ghana who were selected for a study on the use of vernacular radio for information delivery on soil and water conservation, owned radio sets and this greatly influenced their listenership of radio.

Association between patronage and educational level

The education level of farmers had a statistically significant association with a significance level of 5%, on farmers' patronage of the farm radio programme. Farmers with a JHS educational level

are more likely to patronize agricultural radio programmes than those with no education, those who had primary education and those who had senior high school education. The results of this study agree with that of Ango et al. (2013) and Khan et al. (2017) who reported that there is positive relationship between formal education and patronage of agricultural radio programmes for agricultural innovation. In general, it is expected that people with high levels of education are expected to learn more from mass media than those with low levels of education (Tichenor et al., 1970). This means they will be exposed to the mass media and learn news at a faster rate than the less educated (Price and Zaller, 1993).

In relation to local radio, it is expected that farmers in local communities who rate high on education will listen to radio and learn more from the radio news than those who rate low on education (Table 6).

Association between patronage and years in farming

There was a statistically significant relationship between years in farming and farmers' patronage

of farm radio programmes. This is because, one of the cells had a frequency value of zero (0) and so it did not fit into the criteria for chi-square calculation. The number of years a farmer has worked in the field has no substantial impact on their willingness to patronize farm radio programmes. Ordinarily, experienced farmers rely greatly on their farm experience in all their farming activities. In agreement, Ndagi et al. (2013) and Rehman et al. (2013) also found that farming experience was not significant in influencing farmers' patronage of farm radio programmes (Table 7). The number of years spent in farming does not influence farmers' patronage of farm radio programmes for agricultural information.

Association between patronage and marital status

Table 8 shows that there is no association between marital status and patronage of farm radio programme. This is because, one of the cells has a value of zero (0) and so it does not fit into the criteria for chi-square calculation. This means that one's marital status has no bearing on whether or not they patronize farm radio

Table 5. Association between patronage and radio set ownership.

Patronage	Radio set ownership		Total
	Own radio	Family radio	
Low (0 or < 140mins)	54 (16.95)	27 (28.12)	81 (19.64)
Moderate (141 – 280mins)	107 (35.55)	31 (32.25)	138 (34.76)
High (281 – 420mins)	143 (47.5)	38 (39.58)	181(45.56)
Total	304 (100)	96 (100)	400 (100)

Pearson $\chi^2 = 8.57$; $P < 0.07$. Source: Authors' Construct, 2021.

Table 6. Association between patronage and educational level.

Patronage	Educational Level				Total
	Non-formal	Primary	JHS	SHS	
Low (0 or < 140min)	2 (100)	24 (20)	47 (19.74)	5 (12.5)	78 (19.5)
Moderate (141–280min)	5 (12.5)	38 (23.33)	82 (34.45)	14 (35)	139 (34.75)
High (281-420min)	5 (12.5)	48 (31.66)	109 (45.8)	21 (52.5)	183 (45.75)
Total	12 (100)	110 (100)	238 (100)	40 (100)	400 (100)

Pearson $\chi^2 = 22.32$; $P < 0.03$. Source: Authors' Construct, 2021.

Table 7. Association between patronage and years in farming.

Patronage	Years in farming					Total
	1-10 years	11-20 years	21-30 years	31-40 years	Above 40 years	
Low (0 or < 140min)	44 (19.91)	16 (16.32)	14 (21.21)	2 (18.18)	2 (50)	78 (19.5)
Moderate (141 - 280min)	68 (30.77)	36 (36.73)	30 (45.45)	5 (12.45)	0 (0)	139 (34.75)
High (281 – 420min)	109 (49.32)	46 (46.49)	22 (33.33)	4 (36.36)	2 (50)	183 (45.75)
Total	221 (100)	98 (100)	66 (100)	11 (100)	4 (100)	400 (100)

Pearson $\chi^2 = 25.47$; $P < 0.06$. Source: Authors' Construct, 2021.

Table 8. Association between patronage and marital status.

Patronage	Marital status				Total
	Single	Married	Divorced	Widowed	
Low (0 or < 140mins)	0 (0)	68 (19.6)	9 (19.15)	1 (25)	78 (19.5)
Moderate (141 – 280mins)	1 (50)	127 (36.60)	9 (19.15)	2 (50)	139 (34.75)
High (281 -420mins)	1 (50)	152 (43.8)	29 (61.7)	1 (25)	183 (45.75)
Total	2 (100)	347 (100)	47 (100)	4 (100)	400 (100)

Pearson $\chi^2 = 12.49$; $P < 0.41$. Source: Authors' Construct, 2021

programmes. The results of this study contradict that of Ango et al. (2013) who found out that there is rather a positive significant association between the marital status of the respondents and patronage of agricultural radio programmes.

Association between patronage and age

Age of farmers had a statistically significant association farmers' patronage of farm radio programmes at a significance level of 5%. Farmers between the ages of 41

and 50 are more likely to patronize agricultural radio programmes than those in the other age groups. The results of this study disagree with that of Khan et al. (2017) who reported that there is no positive relationship between the age of the respondent and the patronage of farm radio programmes (Table 9).

Conclusion

It can be concluded that: the patronage of farm radio programmes in the District was high since majority of the

Table 9. Association between patronage and age.

Patronage	Age						Total
	Below 30	31-40	41-50	51-60	61-70	Above 70	
Low (0 or < 140min)	1 (5.56)	15 (20)	39 (22.81)	12 (14.82)	8 (16.67)	3 (42.86)	78 (19.5)
Moderate (141 – 280min)	10 (55.56)	25 (33.33)	61 (35.67)	30 (37.04)	8 (14.48)	5 (12.5)	139 (34.75)
High (281 – 420min)	7 (38.89)	35 (46.66)	71 (41.52)	39 (48.15)	27 (56.25)	4 (57.14)	183 (45.75)
Total	18 (100)	75 (100)	171 (100)	81 (100)	43 (100)	12 (100)	400 (100)

Pearson $\chi^2 = 38.49$; $P < 0.00$. Source: Authors' Construct, 2021

farmers listened to farm radio programmes between 281 to 420 min per week. Farmers were satisfied with the knowledge (land preparation procedures, method of fertilizer application, fall armyworm diagnosis and management techniques and anti-rabies vaccine) gained from farm radio programmes. However, their utilisation of information gained from farm radio programmes was relatively low. Utilisation of information gained from farm radio programmes were mostly for preparing suckers well by clearing all debris and disease infected areas before planting, stopping the burning of field when preparing the field for cultivation and selecting different soil or land for specific crops.

Radio set ownership, educational level and age of farmers were significantly associated with patronage of farm radio programmes. The study therefore recommends the following; farmers should be encouraged to own radio sets and continue to rely on farm radio programme as an agricultural knowledge source. Further research should be carried out to find out why farmers highly patronized the farm radio programme, were satisfied with the information gained through the farm radio programmes but were not utilizing the knowledge gained from the programmes.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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