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ROLE OF AGRICULTURAL JOURNALISM IN DIFFUSION OF FARMING TECHNOLOGIES

Muhammad Yaseen [1], Mujahid Karim [2], Muhammad Luqman * [3] and Muhammad Umer Mehmood [4]

[1] Lecturer, [2,4] Ph.D. Scholar, [3] * Assistant Professor, Department of Agricultural Extension, College of Agriculture, University of Sargodha, Sargodha, Pakistan

*Corresponding author email: extensionpak@gmail.com

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ABSTRACT

Agricultural journalism considered an effective tool in diffusion of agricultural technologies among the farming communities. Various forms of agricultural journalism are used by different organizations in order to address the community problems and provide solutions to them. The present study was conducted to analyze the role of agricultural journalism in the dissemination of agricultural information in year 2018. The universe of the study was district Sargodha from which a sample of 100 farmers was collected with the help of pre-tested, validated and expert reviewed interview schedule. The collected data were analyzed by running computer-based software "statistical package for social sciences" (SPSS). The results of the present study revealed that majority of the respondents (64.6%) were middle aged (31-50 years), also indicates a high (73.23%) literacy rate above middle level education, most (78.3%) of the respondents were connected with the occupation of farming. In various forms of agricultural journalism Radio/T.V./ F.M is used by 99.4% of the respondent, mobile phones 96%, Magazine/Newspaper/periodical 66.4% and social media 60.9%. As for as areas focused by agriculture journalism "Help farmers to enhance their productivity" is on the highest level with mean of ($\bar{x}$ =3.98/5.00). The regression model of famer's education and various forms of agricultural journalism facilities used was found to be significant.

KEYWORDS: Agricultural journalism; diffusion; farming technology; media; Pakistan.

INTRODUCTION

The role of agricultural journalism in the development of agriculture sector has recently become more popular, particularly by researchers, scholars and policy makers in developing countries. The main factor in print media is to reassure the audience today that they are expected to influence the learners' practice and attitude toward the media (Agbamu, 2006). The success of agriculture development depends upon the mobilization of people through various forms of agricultural journalism, which, acclaimed to be the most important source for the diffusion of agricultural innovation. Recently are facing challenges including inadequate use of pesticide, large machines and equipment, storage facilities and livestock-keeping systems (Rabinowitz *et al.,* 2013; U.S. Occupational Safety and Health Administration. 2017), storing smaller quantities of fish, private products, direct marketing, hereditary genetics and agro-tourism development. While, agriculture extension is a multi-cultural workforce that highlights major issues of farm families and their needs for agricultural information (Byler *et al.,* 2013 Irwin and Poots, 2015 and Liebman *et al.,* 2014). Agricultural innovative technologies are published in print media, also substituted by TV and radio programs. Computer, web sites, search engines, cell phones, various software programs and new knowledge have been generated through these diversified media networks.

Agricultural journalism is a fast and painstaking task for farmers to get farming knowledge. Due to agricultural business, demand for agricultural journalism is increasing day by day not only in developed countries, but also in developing countries like Pakistan. In Pakistan agriculture broadcast media were introduced in 1955, to educate the farmers about the farming technologies to boost up agricultural growth (Zia and Khan 2012). Major populations of Pakistan are directly and indirectly engaged in agriculture, the media, so that the latest method of disseminating information about the farm and the latest technical development in agriculture sector (Malik 2000). Even conventional broadcasting like radio, TV, agriculture magazines are also acting as multi-media platforms as well. According to the National Association of Farm Broadcasting (2015), approximately 20 percent of farmers listen broadcast farm radio other than the radio i.e. media, podcasts, web videos, etc. According to the national survey, 39 percent of the respondents in the agro-market have anticipated that up to 20-50 percent of digital marketing, advertising, and public relations etc.

were accomplished (Truffle Media Network, 2013). At the same time, traditional agriculture media, for example, farms & rural radio and TV broadcasts are the main sources of information for farmers.

In developing country like Pakistan, where the economy is exclusively agriculture driven, nothing seems most imperative in development of agriculture than the delivery of advanced agro-based information amongst farming community. Agricultural journalism plays an important role in educating the farming community about current developments in agriculture. To further increase the potential and competence of this sector, it is important to ensure that the beneficiary, who is a farmer, receives all up-to-date agricultural information about crop protection and production as well as other allied sector information (Abbas *et al.,* 2003 and Muhammad 2005).

However, print and electronic media is very often involved in highlighting political and related issues of agriculture. A various forms of agricultural journalism are used to promote advanced agricultural information's to the farmers like includes as agriculture newsletters, grey literature, hand bills and walls newspaper, posters, radio programs, television programmers (Mohsin, 1997). However, for sophisticated literate population, the message can be easily and efficiently transmitted through smooth printing media. The newspaper gives a unique potentially instruction to meet the cognitive needs of the people who require such information. Agricultural journalism has recently emerged in Pakistan (Muhammad, 2005). Although, many issues have been identified in the diffusion of technology through the newspaper, they can be very well utilized with the illuminated behavior of the information provider and its distributor. The need of struggle is very important in creating awareness for the important role of farm media in bridging the gap between "rich information" and "poor information". Farmers can also get the right advice from experts through this medium to address the problems that arise by sending their problems and questions to the editors. Print media has the capability to address future agricultural problems and to help them solve their problems. There is a growing trend for publishing agricultural journalism in Punjab for agricultural communities. Therefore, present research was designed to assess the role of agricultural journalism in diffusion of farming technologies to address emerging challenges faced agriculture at national level.

MATERIALS AND METHODS

The study aimed at analyzing the role of agricultural journalism in diffusion of farming technologies in district Sargodha in 2018. It is the 11th largest district of Pakistan and it is located in 172 km northwest of Lahore and 94 km from Faisalabad in southeast, Jhang district is in the east, Mianwali and Chashma barrage is in the west. The Jhelum River flows on the west and north sides and the Chenab River is on the east side of the city. The temperature is extremely hot in summer, while the temperature is moderate cold in winter. Wheat, rice and sugar cane are the main crops of the Sargodha district and also famous for citrus fruits. The average annual rainfall is 532.5 mm. The temperature varies from 39°C (maximum) to 25°C (minimum).

A descriptive type of study was design in district Sargodha, Punjab, Pakistan. The population of the study was all the farmers living in district Sargodha. So multistage random sampling method was used for the selection of the respondent from the target population. A list of respondents was obtained from the Department of Agriculture (Extension Wing) of the respective area and respondents were selected randomly. District Sargodha comprises of six Tehsils. Out of these one Tehsil Sargodha was selected randomly, five union councils were selected with two village of each union council, two villages were selected at random. From each selected village, 10 respondents were selected randomly, thus making a sample size of 100 respondents. A questionnaire was developed keep in view objectives of the study. The questionnaire consisted of three parts which cover demographic information, various forms of agricultural journalism and aspect focused by agricultural journalism. After assessing the reliability and validity of the questionnaire, the data were collected from the research area. The data were analyzed by using SPSS.

RESULTS AND DISCUSSION

Journalism is the most important tool to support the development of agriculture throughout the world, and there is a need to consolidate strategies to address the challenges of effective media use.

Regarding demographic characteristics, majority (64.6%) of the respondent were middle aged (31-50 years) while 22.4% of the respondents were old (above 50 years) and only 13% of the respondents were young aged (up to 30 years) category. This outcome implies that most of the respondents in the research area were quiet mature and belong to young age group. This shows that young farmers showed greater interest towards print media for updating their knowledge. In connection with these findings Muhammad *et al.* (2008) and Majeed (1994) that young and middle aged

farmers had more inclined toward the new innovation than old aged farmers. This shows that young farmers have a positive attitude toward publication. The findings of Saeed (1993) and Wimmer and Dominick (2003) also indicate that younger farmers have a more positive view of the availability of agricultural information in publication in relation to old farmers. Only 26.7% of the respondents were illiterate while rest of the respondents received middle, secondary and higher level of education. It is reported by Yomi-Alfred (2006) that farmers with more high level of education receive more information and adopt higher number of technologies than no level of education. Table 1 shows that majority of the respondents (78.3%) were connected with farming as an occupation and 20.5% of the respondents were doing the both occupation of job and farming. Table 1 also shows that 36.6% of the farmers had up to 5 acres of land while 35.7% of the respondents had a land in range between 6-10 acres of land.

The data presented in Table 2 regarding various forms of journalism used by the respondents show that near about half (48.1%) of the respondents searched internet website for agriculture information. Majority of the respondents (66.5%) used magazine, newspaper and periodical for the purpose getting agricultural information. A survey concluded the results that agriculture magazine and material related to farm read by 81% of the respondents weekly. Programs on Radio and T.V. related to agriculture was listened and viewed by 99.4% of the respondent. This finding revealed a large number of studies that have gained confidence in the radio as an important source of information in Nigeria (Mohammed and Wonasa, 1993, Yahaya, 1995 and Olowu *et al.,* 2004). It is reported that information related to farm, climate and markets were listened 77% of respondents on the radio. According to FAO (1998), television is a tool to raise awareness of the challenges of development and to encourage local discussion and possible solutions. Cable network facility was used by the large number (76.4%) of the respondent for watching agriculture programs where new innovation are demonstrated at the national and international channel which are connected to satellite. Social media is a source of agricultural journalism in which 60.9% of the respondent used social media where they share stories in front of the people and use live streaming for showcase their work. They update post and join by answering question on the post for getting suggestion and appreciation. Majority of the respondent (96%) used mobile phone services for getting in touch with the information providing center and helplines.

Table 1. Socio-economic characteristics of the respondent

Age	Frequency	Percent
Young (upto 30 years)	42	13.0
Middle (31-50 years)	208	64.6
Old (above 50 years)	72	22.4
Education		
Illiterate	86	26.7
Middle	104	32.3
Secondary level education	72	22.4
Intermediate	32	9.9
Graduation and above	28	8.7
Occupation		
Farming	252	78.3
Business	4	1.2
Job + farming	66	20.5
Landholding		
Upto 5 acres	118	36.6
6-10 acres	115	35.7
10-15 acres	45	14.0
16 acres and above	44	13.7

Table 2. Various forms of agricultural journalism

Facilities used		
Internet website	**f**	**%**
Yes	155	48.1
No	167	51.9
Magazine/Newspaper/ periodical		
Yes	214	66.5
No	108	33.5
Radio/F.M/T.V.		
Yes	320	99.4
No	2	0.6
Cable network		
Yes	246	76.4
No	76	23.6
Social media		
Yes	196	60.9
No	126	39.1
Mobile phone services		
Yes	309	96.0
No	13	4.0

The data presented in Table 3 revealed the different aspect related to agricultural information focused by agricultural journalism used by the respondents in which mean of information sources for crop production and protection was ($\bar{x}$ =3.76/5.00), information sources for agricultural technologies ($\bar{x}$ =3.82/5.00), Environmental and climatic change information ($\bar{x}$ =3.38/5.00), Information for agricultural inputs and marketing's ($\bar{x}$ =3.68/5.00), Knowledge sources and skill enhancement ($\bar{x}$ =3.11/5.00), Help farmers to enhance their productivity ($\bar{x}$ =3.98/5.00), Awareness among community to conserve natural resources ($\bar{x}$ =3.04/5.00), Promote awareness among rural community for education ($\bar{x}$ =3.94/5.00), Play role in highlighting most emergent problems of farmers ($\bar{x}$ =3.20/5.00), Provide link among farmers, research and academia ($\bar{x}$ =3.11/5.00), Mobilize community for

self-reliance to ensure sustainability ($\bar{x}$ =2.95/5.00). This results implies that famers used agriculture journalism for crop production and protection followed by information for agricultural technologies because it knows a good and reliable source agriculture information. This results also indicates that farmers used information source about agriculture inputs and marketing's and then it helps farmers in enhancing crop productivity followed by promote awareness among rural community for education. Therefore, it is concluded that the agriculture extension department and different private sector working in these areas should take into account that farmers who mostly access to agriculture information in the areas of crop production and protection, agricultural technologies, agricultural inputs and marketing and help farmers in order to improve their agricultural productivity.

Regression model

Multiple regression model was applied to find out the relationship between one dependent variable (Education) and six independent variable Internet website, Magazine/ Newspaper/ Periodical, Radio/F.M/ T.V., Cable network, Social media and Mobile phone service. The results of regression model are presented in Table 4.

Table 3. Aspect focused by agriculture journalism

Aspect focused by agriculture journalism	N	Mean	Std. Deviation
Information sources for crop production and protection	351	3.76	0.77
Information sources for agricultural technologies	351	3.82	0.83
Environmental and climatic change information	351	3.38	1.14
Information for agricultural inputs and marketing's	351	3.68	0.71
Knowledge sources and skill enhancement	351	3.11	0.99
Help farmers to enhance their productivity	351	3.98	0.50
Awareness among community to conserve natural resources	351	3.04	1.02
Promote awareness among rural community for education	351	3.94	0.43
Play role in highlighting most emergent problems of farmers	351	3.20	1.13
Provide link among farmers, research and academia	351	3.11	1.01
Mobilize community for self-reliance to ensure sustainability	351	2.95	1.07

Table 4. Multiple Regression Model

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.640[a]	0.410	0.399	0.95020

a. Predictors: (Constant), Internet website, Mobile phone services, Magazine/ Newspaper/ periodical, social media, cable network, Radio/ F.M/T.V.

ANOVA[a]

Model		Sum of quares	Df	Mean Square	F	Sig.
1	Regression	197.827	6	32.971	36.518	.000[b]
	Residual	284.409	315	0.903		
	Total	482.236	321			

a. Dependent Variable: Education

b. Predictors/Independent Variables: (Constant), Internet website, Mobile phone services, Magazine/ Newspaper/ periodical, social media, cable network, Radio/ F.M/T.V.

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.244	0.187		6.651	0.000
	Internet website	0.045	.064	0.055	0.708	0.480
	Magazine/ Newspaper/ Periodical	0.113	0.053	0.106	2.119	0.035
	Radio/F.M/T.V.	-.154	0.056	-.148	-2.757	0.006
	Cable network	.229	0.058	0.278	3.925	0.000
	Social media	.309	0.059	0.388	5.193	0.000
	Mobile phone service	-.008	0.047	-.009	-.160	0.873

a. Dependent Variable: Education

A multiple regression model

The results of multiple regression model as presented in above table shows the R value was 0.640 and value of R^2 was observed to be 0.410 which shows that majority of the data was non uniform and scattered. Therefore the model was not explaining all the variability of the response data around its mean. It might be due to the fact that difference in opinion of the people with different demographical backgrounds can be expected which resulted in scattered data. Similarly table also depicts the ANOVA table. The ANOVA table also depicts that the regression model was statistically significant as the p value (0.000) was much lower than 0.05. Table also depicts that education level of the respondents was highly dependent on different forms of agricultural journalism i.e. internet website, mobile phone services, magazine / newspaper / periodicals, social media, cable network, radio/F.M/TV. If we increase the forms of agricultural journalism, resultantly education level of people can be improved. Co-efficient table shows that all the forms of agricultural journalism except mobile phones and internet website were statistically significant. Internet website and mobile phone services were significant.

CONCLUSION

From the above results it is concluded that 64.6% of the respondent were middle age having 31-50 years of age. Least level of education of most of the respondent 32.3% were middle whereas only 8.7% of the respondent were graduate. Occupation of 78.3% of the respondent were farming. Landholding of 36.6% of the respondent has upto 5 acres of land while 35.7% of the respondent has 10-15 acres of land. In various forms of agricultural journalism, 48.1% of the respondent were using internet website and 66.5% of the respondent were using magazine/periodical/ newspaper for agriculture information. Most (99.4%) of the respondent were using a source of radio for getting agriculture information while 76.4% of the respondent watch cable network related to agriculture. Social media is an important form of agriculture journalism where 60.9% of the respondent were connected about agriculture crops. Mobile phone services used by 96% of the respondent for contacting with other fellows and extension agents. A mean score (x=3.98) of the respondent regarding agricultural journalism help the farmers to enhance their productivity and a mean value (x=3.94) regarding agricultural journalism also help to promote awareness among rural community for education. A multiple regression model find the relationship between six independent variable Internet website, Magazine/ Newspaper/ Periodical, Radio/F.M/ T.V., Cable network, Social media and Mobile phone service and dependent variable (Education). This model concluded that various forms of agricultural journalism were strongly dependent on education. More the level of education, resultantly using of agricultural journalism will increase. Coefficient of regression model concluded that various forms of agriculture journalism were significant except mobile phone services and internet website.

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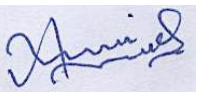
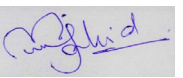
S. No	Name of author	Contribution	Signature
1	Muhammad Yaseen	Conceived the idea and research plan, analyzed data and reviewed the first draft	
2	Mujahid Karim	Collected data and wrote first draft of the manuscript	
3	Muhammad Luqman	Analyzed data and technically revised the manuscript	
4.	Muhammad Umer Mehmood	Helped in data collection and prepared research instrument