

Possibility of Extending Information & Communication Technologies Role in Agriculture Development

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Abstract:

Information Technology applications effectively deals with wider dissemination of information. This study aims out to see the preference of the people about acquiring information related agriculture for better farm management and practices. The results of the study have shown that the general people in study area were not literate and rely very little on the print media. Majority of the people in the area get the information through television 84.6% while some percentage of people also depends upon radio broadcasts as well. However more than 80% of the respondents has no knowledge about the new innovations and techniques. The overall results of the study reveal that electronic media is more effective in providing information to the public specially television, radio and mobile services are also of due importance but prints media does not have much effectiveness in the area for providing the agriculture related information. As part of this process policy makers should make use of the analysis of the ICT projects in this study. The main purpose of the survey was to determine when, how, and what media local farmers consider useful, their awareness, attitude, and media preferences as well as their expectations and use of agricultural information.

Key words: IT Role; Agriculture; new innovations; effectiveness; electronic media

Introduction

Media Information has long been viewed as having great potential for improving decision making in agriculture. It has connected the world globally and is now changing our life style and social consciousness dynamically. In all phases of the agricultural industry, information technologies, media and social media marketing and information sources are vital to the management and success of a business. Agriculture has also been greatly influenced by these media practices around the globe information systems (GIS) can pinpoint geospatial locations of agricultural units in a supply chain using radio frequency identification and global positioning systems (Attaran, 2007).

Electronic and print media refers to how we use information, how we compute information, and how we communicate information to people. People must have basic facilities available to them like television, radio, mobile, newspapers and etc. To participate and make informed decisions in the agricultural industry a person must have ability to gather, process, and manipulate data. The Internet is a standing topic in newspapers and on television, and the number of users doubles every year. People who use information technology creatively are pioneering careers in agriculture today (Afolabi, 2012). Jobs in today's agricultural workforce require greater use of technological skills than ever before. Moreover they have currently demonstrated a promising field of new research and application in agriculture whilst bringing new sources of information and new tools for local knowledge dissemination. So they are increasingly enabling farmers to focus, search and extract useful and up to-date

market information. Because of its potential to ameliorate this old rural farming problem an evaluation of its usage among farming communities becomes necessary (Muriithi et al. 2009).

Lack of information at the proper time causes a huge loss to farmers. This gap in communication may be bridged by media communication and information technology. Information of the required quality always has the potential of improving efficiency in all spheres of agriculture. In the past, agriculture has benefited from, and often driven, improvements in technology. For example, in this country, increased mechanization on modern farms led to the change from an agrarian to an urban demographic (NAE, 2000).

As the population of Pakistan is going to be double in the coming years therefore, it is extremely important for Pakistan to standardize and modernize its farming and allied businesses for necessary development, role of information professional is very important to linking farming communities with the information resource. An inventory of currently used communication channels and qualitative evaluation of these resources are seriously lacking in Pakistan. The present study is an effort to fill this information gap and to see the potential of different communication channels in agriculture development of the country. The result of the study depicts the farmer's preference on information sources, the type of information they required and the constraints they faced while acquiring the information. These are technical and economic development for agricultural producers; community development; research and education; small and medium enterprise (SME) development; and media networks (FAO, 2006).

The purpose of this study is to explore the effective communication channels and the role in improving agriculture productivity and; to identify farmer's knowledge requirement and type of information they required.

Methodology

The present study was conducted in Pothohar region of Punjab. Both qualitative and quantitative techniques of data collection were used. Among the qualitative techniques main center of attention was on the focus group discussion and key informant survey group discussion with different agriculture experts, IT experts, NGO's manager, farmers and other stakeholders were carried out. The quantitative information was collected through primary information with a well designed questionnaire. A sample of 39 farmers was collected from those villages from where focus group sessions were conducted. The collected data was analyzed by applying descriptive statistics using statistical package for social science (SPSS) and MS Excel.

Results and Discussions

Education Level

Educated farmers are more likely to adopt new technologies or products early since they have superior access to related information and are better capable to distinguish between promising and unpromising innovations. In contrast, farmers with few schooling will rather not introduce a new technology until its profitability has been proven e.g. through other farmers that have successfully adopted the innovation. (Revisiting the Role of Education for Agricultural Productivity. Malte Reimers, Stephan Klasen 2011)

Out of the total respondents 18% did not attend any kind of schooling. Primary (5th grade) and Middle (8th grade) pass respondents were 24% in total. While there is highest percentage for Metric (10TH grade) and Intermediate (12 grade), 51% as shown in table.2 below. While only 3 out of 39 respondents were graduates with 14 years of education

Educations levels of the sample respondents

S #	Education	Percentage
1	Uneducated	18
2	Primary	8
3	Middle	16
4	Matric	28
5	Intermediate	23
6	Bachelor	7
	Total	100

Farming Experience

The results have shown that majority of the respondents heaving enough farming in the area. Out of total 39 respondents 23% have less than 10 years of experience, 25% of the farmers have experience between 10 to 20 years. Similarly, 23% of the farmers have experience of agriculture farming between 20 to 30 and then 30 to 40 years respectively. Only two farmers have experience of 40 to 50 years out of total 39 respondents.

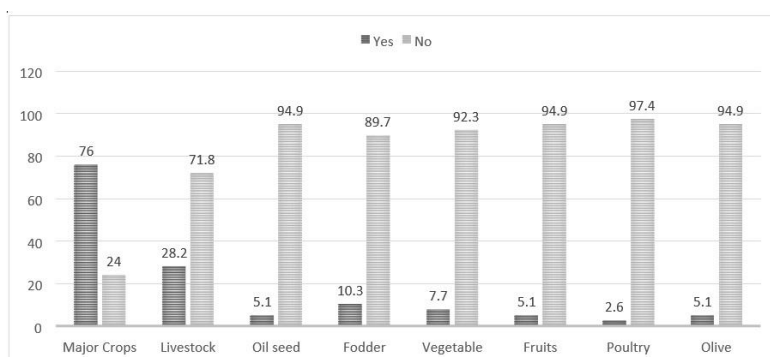
Farming Experience of the sample respondents

S #	Experience(Years)	Percentage
1	< 10	23
2	10-20	25
3	20-30	23
4	30-40	23
5	40-50	6
	Total	100

Farmer perceived areas of interests.

Data shows that the needs of information and guidance regarding agricultural commodities to the farmers of the study area. It is revealed from the results that the needs of information and guidance to the farmers were very high (76 %) in major crops (wheat, rice, maize, sugarcane and cotton). The

information and guidance about livestock mean rating was 28.2 % (medium), which shows that farmers need information and guidance regarding livestock related activities. The mean score of oilseeds and fodder crops were 10.3% that show that farmers were low interested in information and guidance about oilseeds and fodder crop. The mean score of vegetables, fruits, poultry and olive were 7.7%, 5.1%, 2.6% and 5.1%, respectively. The results indicate the farmers of the research area were less interested in information and guidance regarding vegetables, fruits, poultry and olive. Cording to estimated result it was revealed that the farmer in the targeted area were in great need of proper guidance respondent were willing to get more information regarding the crops.



Access to Information

The source of information for majority of people in the area was through watching television. 84 % of the respondents seek information while relying on television. And 16% have not TV for getting latest information about agriculture. 59% of the total farmers have radio and 41% have not radio. Just 22% of total respondents have computer and 78% have not computer. And 22% used internet to get information, 70% of total respondents have mobile phone and just 30% have not mobile phone. 44% of total respondents use print media for latest agriculture news and 56% don't use print media as they have no resources about

print media. There is also not facility of internet in the village due to lack of knowledge, however majority of the people rely on television.

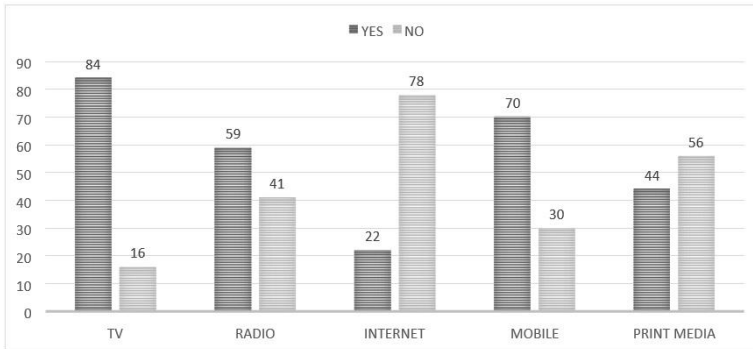


Figure.1 Sample distributions by access of information sources. (Percent)

Information Sources Extent of Use

Keeping in view of the extent of use of different information sources, a total of 39 farmers were interviewed. Farmers acquire the information regularly, they collect when they need. Different sources are used occasionally to get the information. Out of total respondents 15% rarely use radio, 5% of them regularly listen to it, while 27% out of total, occasionally use the radio source in the area. The main source of taking information in the area is television. 35% of the respondents in the area use television as the source of information for them on regular basis. Similar studies was conducted by Irfan et al and came up with the results, where, regular viewers of television in the area were high i.e. 35% in total. Due to low literacy rate in the area only 10% uses the print media information for acquiring the knowledge. “Majority of farmers suggested that one Agro-TV Channel should be started for the Improvement of agriculture” (Irfan et al 2009) .A vast majority of the respondents did not Listen/watch agricultural radio/TV Broadcasts regularly or occasionally. With Regard to

effectiveness, the respondents ranked TV, radio and print media as 1st, 2nd and 3rd, respectively

Uses of different information sources. (Percent)

		Never	rarely	Occasionally	regularly	as when required	Total
1	Radio	53	15	27	5	0	100
2	T V	22	7	32	35	4	100
3	Print media	55	10	10	10	15	100
4	Internet	80	5	10	2	3	100
5	Extension field staff	50	10	27	10	3	100
6	Private sector	87	9	2	0	2	100

Contact with Government Department for getting the information on agriculture

The results have also shown that in the study area only 35% of the respondents have ever contacted the government department for getting the information on agriculture whereas 65 percent respondent does not contacted. Similar results were found in the study conducted by Ahmed et al (2009) where majority (82.5%) of the farmers did not visit the local Agriculture Extension office and only 12.5% of the farmers reported visits of extension worker to their field majority of which was a big and influential.

Preferences about Print Media

Data have been collected for the preference of area people for getting information. It was revealed from the results that 69.2 percent respondents reported that print media was not important for latest information, timely information and low cost whereas 25.6, 20.5 and 20.5 percent respondent inform that print media was important/very important for latest information, timely information and low cost, respectively. About 23 percent respondents described that the language of

print media was important/very important for information dissemination while 17.9 percent respondents told that the access of print media was important/very important. Farooq (2007) came out with almost the same results in which farmer, and print media were the sources of agricultural information of all the respondents.

Sample farmer distribution regarding the importance of print media

print media	Latest Information	Timely information	Low cost	Easy language	Easy access
not important	69.2	69.2	69.2	71.8	71.8
least important	0	0.	5.2	2.6	2.6
somewhat important	5.2	10.3	5.1	2.5	7.7
Important	17.9	12.8	12.8	12.8	7.7
very important	7.7	7.7	7.7	10.3	10.2
Total	100	100	100	100	100

Preference to Television

The ratio of preference for television is higher where around 50% of the sample respondents give importance to television to get the latest information while for the other factors like timely information, low cost, easy language and easy access of television is concerned, the combined results for very important and important are 33.4%, 46.2%, 43.6% and 43.5% respectively. The share of preferences for television is higher as compared to other media because the majority of people in the area have easy access to television.

Sample farmer distribution regarding the importance of Television (percent)

Television	Latest Information	Timely information	Low cost	Easy language	Easy access
not important	23.1	23	28.2	30.8	38.5
least important	0	2.6	5.1	10.3	2.6
somewhat important	25.6	41.0	20.5	15.3	15.4
Important,	43.6	28.2	38.5	33.3	28.2
very important	7.7	5.2	7.7	10.3	15.3
Total	100	100	100	100	100

Criteria for giving preference (RADIO)

The importance of radio in the dissemination of information was highlighted by various researchers. Similarly, Adeniji has also documented the importance and usage of radio in the agriculture sector. “The main sources of information were extension agents and the use of radio” Adeniji (2007). For radio services the results indicated 23.1% respondents think radio is very important for latest information. While for the other factors like timely information, low cost, easy language and easy access of radio is concerned, the combined results for very important and important are 20.5%, 17.9%, 20.5% and 17.9% respectively the results indicated a usual rate of awareness in the zone.

Sample farmer distribution regarding the importance of Radio (percent)

Radio	Latest Information	Timely information	Low cost	Easy language	Easy access
not important	61.5	53.0	66.7	74.4	71.8
least	0	0	5.1	0	0

important					
somewhat important	15.3	20.5	10.3	5.1	10.3
Important,	15.4	12.8	12.8	12.8	12.8
very important	7.7	7.7	5.1	7.7	5.1
Total	100	100	100	100	100

Criteria for giving preference mobile/telephone to Getting Information

“While for mobile services the results are again the same for getting knowledge about agriculture as only 13% think it’s important.” Khan et al (2006) came up with the results of similar nature where the electronic media included mobile phone, telephone, agricultural help line, and mobile phone. While, the use of electronic media as agricultural information sources was not substantial. Results shown that the 28.2% respondents feel mobile/telephone is very important for latest information. While for the other factors like timely information, low cost, easy language and easy access of radio is concerned, the combined results for very important and important are 18.2%, 17.8%, 25.7% and 25.6% However, the future preferences for getting agricultural information from the electronic media showed some improving trend in each case as compared to the present use of electronic media.

Sample farmer distribution regarding the importance of mobile/telephone (percent)

mobile/telephone	Latest Information	Timely information	Low cost	Easy language	Easy access
not important	59.0	59.0	66.7	69.2	66.7
least important	7.7	7.6	7.7	5.1	7.7
somewhat important	5.1	5.2	12.8	0	0
Important	15.4	17.9	12.7	10.3	10.2

very important	12.8	10.3	5.1	15.4	15.4
Total	100	100	100	100	100

Conclusion and Recommendations

The present study was conducted to highlight the access and usage level of different information sources (Print and Electronic Media) Although efforts are being made for dissemination of information at mass scale access to information is still marginal and electronic media i.e. TV is still playing pivotal role in dissemination of information. Access to computer based information is still very small despite the fact that there is increase in overall use of computer based information. More efforts are to be made to incorporate ICT in all activities related to agricultural development. The organizations and departments concerned with agricultural development need to understand the potential of ICT for the fast transfer/dissemination of information to farmers.

Government at national and state level in Pakistan need to change the focus and direction of agricultural policies so that a fully-fledged strategy is formed to harness ICT's potential for assisting overall agricultural development. As part of this process policy makers should make use of the analysis of the ICT projects in this study, to become acquainted with how such projects function. Having access to agricultural information is an essential ingredient that would always lead to better crop and livestock production in any community. Farmers in Pakistan seldom feel the impact of agricultural innovation either because they have no access to such vital information or because it is poorly disseminated. This paper attempts to explore the credibility of Information technology in terms of disseminating agricultural programmes to its target audience – farmers. The main purpose of the survey was to determine when, how, and what media local farmers consider useful, their awareness, attitude, and media preferences as well as their

expectations and use of agricultural information to farmers. Highlighted below are the some recommendation in extend Information and Communication Technology role in Agriculture Development

Recommendations

Having access to agricultural information is an essential ingredient that would always lead to better crop and livestock production in any community. Farmers in Pakistan seldom feel the impact of agricultural innovation either because they have no access to such vital information or because it is poorly disseminated. This paper attempts to explore the credibility of Information technology in terms of disseminating agricultural programmes to its target audience – farmers.

The main purpose of the survey was to determine when, how, and what media local farmers consider useful, their awareness, attitude, and media preferences as well as their expectations. This survey was conducted with a view to create baseline data that can be used to improve dissemination and use of agricultural information to farmers.

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