Journal of Plant Development Sciences
Meerut, India

INFORMATION

UTILIZATION PATTERN OF SMARTPHONE APPLICATIONS IN GETTING AGRICULTURAL INFORMATION BY THE FARMERS OF JAIPUR DISTRICT

Tribhuwan Singh Rajpurohit[1]*, Ishaq Mohammed Khan[2], Jitendra Kumar[3] and Sita Ram Bijarnia[4]

[1]Department of Agricultural Extension Education, CCSHAU, Hisar, Haryana
[2]Department of Extension Education. SKNAU, Jobner, Rajasthan
[3]Department of Agricultural Extension Education, MPUAT, Udaipur.
[4]Department of Agricultural Extension and Communication, SKRAU Bikaner
Email: Trisingh27@gmail.com

Received-02.08.2023, Revised-13.08.2023, Accepted-25.08.2023

Abstract: The study focuses on the growing role of Smartphone's in the agriculture sector in India. It emphasizes that Smartphone's have become crucial for farmers in accessing information related to various aspects of agriculture. The government has initiated multiple efforts to disseminate this information through different media, including radio, television, and mobile apps. This study was conducted in Jaipur district, Rajasthan, with two blocks, Govindgarh and Bassi, selected as they represented the highest and lowest produce arrivals in the market. From these blocks, four villages each were randomly chosen, totaling eight villages for the study. In these villages, 10 farmers from each were selected randomly, resulting in a sample of 80 farmers. Key Findings were most smartphone-using farmers (58.75%) have low utilization of agricultural information-seeking smartphone applications, while 40.00% have medium use, and only 1.25% have high use. Farmers in Govindgarh primarily obtain information by calling other farmers or relatives, while in Bassi, they rely more on contacting retailers. Overall, farmers gain the most information by calling other farmers or relatives, followed closely by contacting retailers.

Keywords: Agriculture, Smartphone Applications, Utilization pattern, Information access, Farmers

INTRODUCTION

Traditionally, farmers relied on local channels to share information. For example, if there was a pest infestation, they would discuss it among themselves and try to find solutions through trial and error. Although farmers with experience could hold out for several years, the losses were heartbreaking. Information communication technology (ICT) has proved to be game-changing providing many opportunities to transfer knowledge and information. Technology serves as our interface to the information world. First, the spread of technology in all aspects of human existence has created the prospect of rapid, unrestricted access to vast amounts of knowledge that is constantly being updated, enriched, and modified (Kumar, 2020). Similarly, the use of ICT in agricultural advisory services, particularly mobile phone services, in the agricultural sector is providing information about the market, weather, transport, and agricultural techniques to be in contact with relevant authorities and departments. In recent years, mobile phones have offered farmers a new approach to making tentative decisions because of their access to a variety of communication methods. Current information and knowledge about markets, agricultural issues and problems, and suggestions for the development of the agricultural market can be obtained via mobile phones (Essay About the Usefulness of Mobile Phones for Farmers in Agriculture, 2022). Mobile phone use leads to greater social cohesion and improved social relations between farmers and the business community. However, short messaging services (SMSs) and voice recording have led to improvements in social relationships. Mobile-based social networks in developing countries show the growing importance of this aspect. The mobile phone is seen as important for agricultural development as it is a simple device that puts the world right in the hands of users.

All relevant data can be accessed with just a few taps on the screen. In an era driven by technology, information, and insight, smartphone penetration has been rapid across all sectors. Agriculture is no stranger to this revolution. Many futuristic apps can be downloaded for free on the smartphone, such as Kisan Suvidha, Krishi Mitra, aAqua Mini, mKrishi, Life Tools, Sanchar Shakti, Pusa Krishi, and Shetkari, which are specially designed to provide information about fertilizers, subsidies, new varieties

*Corresponding Author

of plants, pesticides, current weather, forecasts for the coming days, and market prices of commodities in nearby Mandis. Along with providing agricultural machinery information, they help in managing various farm operations like farm management and marketing in the local language of the farmer. Furthermore, these apps enable and encourage farmers to use ICT to promote improved agriculture. If a farmer finds any disturbances in the crop or wants to get information about farming, he can just take a picture and upload it or send a text SMS through the app.

A team of experts immediately reviews the images or the text, and within minutes, a secured solution is sent back to the farmer. Smartphones have ensured that no matter what the problem, farmers can find a solution in a timely manner. They even can use the platforms such as YouTube and Google where farmers can learn from the many free farm management tutorials available. Many New Age start-ups are also working to develop apps that will make farmers' lives less stressful. Some disruptive apps launched by these organizations include the Harvest Farm Calendar, which gives farmers all the insights needed for end-to-end cultivation.

MATERIALS AND METHODS

The study was conducted in the two blocks Govindgarh and Bassi in Jaipur district of Rajasthan. Out of 33 districts, Jaipur district of Rajasthan was selected due to the following reasons-, Jaipur district is having the highest number of cultivators (7,44,374) among all the districts in Rajasthan state, due to which it is expected that more number of smart phones is used by the farmers in this district as compared to other districts. (Source-The Directorate of Economics and Statistics, Rajasthan (2016) and Census of India (2011). The Directorate of Agriculture is located in Jaipur, which monitors different schemes related to technology transfer to the farmers through smart phones. The headquarter of Kisan Call Center is located in Jaipur district, which is often used by the farmers to get the information related to agriculture. Jaipur District comes under the jurisdiction of Sri Karan Narendra Agriculture University, Jobner and the Directorate of Extension Education of this university is providing the information to the farmers through the mobile calling and messaging bu using smartphones. Jaipur district comprises of thirteen blocks viz. Amber, Bassi, Chaksu, Dudu, Govindgarh [Chomu], Jamwaramgarh, Jhotwara, Kotputli, Phagi, Sambhar, and Sanganer.. Out of these Govindgarh and Bassi blocks were selected due to having the highest and lowest value of produce arrival in the market simultaneously. In this way, one developed and one underdeveloped blocks were selected from the population for study purpose. (Source-Department of Agricultural Marketing, Government of Rajasthan). According to administration record the block Govindgarh comprises 115 villages, and a total population of 3,95,009 on the other hand Bassi have 205 villages with a total population of 2,83,594.

From the selected blocks separate lists of villages having more than 100 farmers were prepared, and four villages from each block were selected randomly. In this way, a total of 8 villages will be selected for the study purpose. From the selected villages, separate lists of farmers using Smartphone will be prepared. Out of which 10 farmers from each of the selected village will be selected randomly. In this way, a total sample of 80 farmers will be selected for the study purpose. The research design adopted for the present study was exploratory research design. Exploratory research seeks what is rather than predicts relations to be found.

RESULTS AND DISCUSSION

It is clear (Table 1) that the smartphone using farmers's attained maximum information from call to other farmers/ relative (MPS 80.00) ranked as first followed by Call to retailer (MPS 77.50), WhatsApp (MPS 63.33), Youtube (MPS 55.42) and by internet (MPS 45.83) which were ranked as second, third, fourth and fifth respectively. However, online audio content (MPS 4.58) and twitter (MPS 2.50) were less used for getting agricultural information.

By analyzing further, it was found that majority in Govindgarh Block smartphone using farmers attained maximum information from the call to other farmers/ relatives (MPS 80.83) whereas in Bassi majority is from call to the retailer (MPS 81.67) which was ranked first. The smartphone application sources that were used for getting agricultural information in Govindgarh were Call to the retailer (MPS 73.33), WhatsApp (MPS 60.00), YouTube (MPS 59.17) and by internet (MPS 52.50) which was ranked as second, third, fourth and fifth respectively. On the other hand in Bassi Block Face book is in top five used sources as Call to other farmers/ relatives (MPS 79.17), WhatsApp (MPS 66.67), Youtube (MPS 51.67) and by Facebook (MPS 40.00) which were ranked as second, third, fourth and fifth respectively.

In both the blocks, more than 90 percent smartphone using farmers never used twitter and online audio content for getting agriculture information.

The data presented in Table.2 indicated that majority of smartphone using farmers (58.75%) were having low use of smartphone applications in seeking the agricultural information, whereas 40.00% smartphone using farmers were having medium use of smartphone applications and only 1.25% were having a high use of smartphone applications in seeking the agricultural information.

The data in table 2 further indicated that majority of smartphone using farmers of Govindgarh (52.50%) were having medium use of smartphone applications in seeking the agricultural information, whereas in

Bassi Block majority (72.50%) of smartphone using farmers were having low use of smartphone applications in seeking the agricultural information. Followed by (27.50%) smartphone using farmers of Bassi Block were having medium use of smartphone applications in seeking the agricultural information and in Govindgarh (45.00%) farmers were having low use of smartphone applications in seeking the agricultural information. Only 2.50 percent smartphone using farmers of Govindgarh and None of the smartphone using farmers of Bassi was having a high use of smartphone applications in seeking the agricultural information respectively.

CONCLUSION

The predisposition of behavior towards positive utilization of ICT tools can usher a new era of information depended technological intervention in agriculture. The present study reflected the attitude of farmers towards utilizing ICT tools and identified the influence of socio-personal attributes on attitude. The family education status and economic affluence of the family enhance the positive attitude of the farmer in case of utilizing the ICT tools in a better way. The managerial efficacy and the appropriate use of communication sources are also two important indicators for developing positive attitude towards ICT tools use in an effective manner. So, it is to infer that for future policy implication related to development of positive attitude of farmers towards appropriate use of ICT tools should technically and critically consider the perspectives like higher economic status, high level of managerial efficacy, high level of education and high level of efficiency for appropriate utilization of information and communication technology sources.

Table 1. Utilization of different smart phone application by the farmers in getting agriculture information

Sources of Smartphone Application	Blocks																	
	Govindgarh (n_1=40)						Bassi (n_2=40)						Total (n=80)					
	Frequency of use				MPS	RANK	Frequency of use				MPS	RANK	Frequency of use				MPS	RANK
	Regularly	Sometimes	occasionally	Never			Regularly	Sometimes	occasionally	Never			Regularly	Sometimes	occasionally	Never		
Kisan call center	3	16	17	4	48.33	VI	1	7	30	2	39.17	VI	4	23	47	6	43.75	VI
Kisan help line	1	2	12	25	15.83	XII	0	2	9	29	10.83	IX	1	4	21	54	13.33	XI
Hello kisan (DD Kisan)	2	1	5	32	10.83	XIII	1	2	2	35	7.50	XI	3	3	7	67	9.17	XII
M-Kisan	1	4	2	33	10.83	XIII	0	0	2	38	1.67	XIV	1	4	4	71	6.25	XIII
Call other farmers / Relatives	24	11	3	2	80.83	I	27	5	4	4	79.17	II	51	16	7	6	80.00	I
Call to retailer	19	13	5	3	73.33	II	25	11	1	3	81.67	I	44	24	6	6	77.50	II
By internet	6	15	15	4	52.50	V	5	2	28	5	39.17	VI	11	17	43	9	45.83	V
Online video/ webcast	2	4	12	22	21.67	IX	0	2	6	32	8.33	X	2	6	18	54	15.00	X
Online version of farm publication	1	2	16	21	19.17	X	0	2	5	33	7.50	XI	1	4	21	54	13.33	XI
Email	1	3	19	17	23.33	VIII	0	0	10	30	8.33	X	1	3	29	47	15.83	IX
Facebook	6	10	15	9	44.17	VII	3	8	23	6	40.00	V	9	18	38	15	42.08	VII
Twitter	0	0	3	37	2.50	XV	0	0	3	37	2.50	XIII	0	0	6	74	2.50	XV
Online audio content	0	2	3	35	5.83	XIV	0	2	0	38	3.33	XII	0	4	3	73	4.58	XIV
News letter	1	1	18	20	19.17	X	0	2	24	14	23.33	VIII	1	3	42	34	21.25	VIII
WhatsApp	9	16	13	2	60.00	III	4	32	4	0	66.67	III	13	48	17	2	63.33	III
You Tube	7	19	12	2	59.17	IV	6	12	20	2	51.67	IV	13	31	32	4	55.42	IV

Table 2. Levels of use of smartphone applications by the farmers in seeking agricultural information

S.No	Categories	Blocks				Total (n=80)	
		Govindgarh (n_1=40)		Bassi (n_2=40)			
		F	P	F	P	F	P
1	Low (Upto 16)	18	45.00	29	72.50	47	58.75
2	Medium (From 16 To 32)	21	52.50	11	27.50	32	40.00
3	High (Above 32)	1	2.50	0	0.00	1	1.25
	Total	40	100	40	100	80	100

F = Frequency, P = per cent

REFERENCES

Census of India (2011). Mode of Communication: 2001-2011, Office of the Registrar General and Census Commissioner, India. Ministry of Home Affairs, Govt. of India, New Delhi. It is retrieved from http://www.censusindia.gov.in.

Google Scholar

Fahad, A. and Mehmood A. N. (2017) Farmers perceptions regarding the use of information and communication technology (ICT) in Khyber pakhtunkhwa, Northern Pakistan. *Journal of the Saudi Society of Agricultural Sciences.*

Google Scholar

Jain, L. and Kaur, H. (2015) Social Media Using Mobiles - A Boon for the Agricultural Extension Workers: A Generic Concept. *International J Agricultural Science and Research* **5**(5): 295-304.

Google Scholar

Kumar, R. (2020). Digital information literacy among the engineering students: A survey. Library Philosophy and Practice, 1–7. https://digitalcommons.unl.edu/libphilprac/4326/.

Google Scholar

Kumar, R. (2021). Application of cloud computing technology for library re-designing: Moving beyond desktop applications. Library Philosophy and Practice, (e-journal). 5290. https://digitalcommons.unl.edu/libphilprac/5290/.

Google Scholar

Ganesan, M., Karthikeyan, K., Prashant, S. and Umadikar, J. (2013). Use of mobile multimedia agricultural advisory systems by Indian farmers: Results of a survey. *Journal of Agricultural Extension*, **5**(4), 89-99.

Google Scholar

Kameswari, V.L., Kishore, V. and Gupta, V. (2011). ICTS for agricultural extension: A study in Indian Himalayan region. *The Electronic Journal on Information Systems in Developing Countries* **48** :3.

Google Scholar