Effectiveness of Social media-WhatsAppfor Dissemination of ImprovedCrop ProductionTechnology

ABSTRACT

Across India, WhatsApp groups are not only connecting farmers to their customers in the virtual market also they're creating a network of resources and support for the country's farmers who need it most. It is one of the world's most popular communication applications in the 21st century. Therefore, a study on effectiveness of WhatsApp for dissemination of Agriculture technologies in Paddy Crop was conducted at Krishi Vigyan Kendra, Jabalpur (M.P.) during 2022. An exhaustive WhatsApp user list was prepared from 06 villages, Khiriya Kalan and Kathoda, from Panagar block, Badkhera and Dunda from Kundam Block; and Agasi, Ahrora from Sahpura block were selected randomly. Thus, 50 farmers from the 3 blocks of the district using WhatsApp were selected randomly and grouped for sending the messages of agricultural aspects. The present study highlights and examines the usefulness of WhatsApp among farmers. The social media–enabled WhatsApp is helping farmers to solve farming related problems more efficiently by making them digitally literate. It can be concluded that by the use of WhatsApp farmers are able to seek information on farm operations, clarify their doubts on agriculture and paddy crop production technology, disease & insect pest etc. It also saved the time and expenses for solving the problems. As they perceived in the study that the WhatsApp messages used were clear and satisfactorily for them. Immediate solution to the farmers on mass level through this App could have been achieved by KVK and need & time based service to the farming communities were served. On the level of daily interaction, the WhatsApp groups are successful for providing complete assistance and in motivating farmers.

Keywords:*WhatsApp; social media; technology dissemination; paddy, digital farming, mobile.*

1. INTRODUCTION

Agriculture is one of the most important sectors in India. In that regards, extensive use of modern information technologies need to be promoted to farm level for the transfer of technologies and information in a cost effective manner [1]. Information and Communication Technology is ruling the world in all walks of life and access to mobile phones and internet facility is growing in India at a rapid rate in recent years. India is a huge market for social media that is constantly expanding into the rural areas and that improves the scope of reaching not only to the farmers but the farm families and youth altogether for higher impact [8]. Low-cost information and communication technology (ICT) tools possess the ability to deliver timely, relevant, and actionable information to farmers at lower costs than traditional extension services[10].

Social media is becoming popular way of communication. Integration of Information and Communication Technologies is rapidly transforming the way of agricultural technology

transfer [8]. It is not only one of the driving forces of globalization but it played important role in liberalization of world trade in the field of agriculture development across the world.ICT like web portals, mobile phones and social media are the most popular and most widely used and can enhance the interaction among researchers, extension personnel and farmers [5].

This innovative method utilize ICT technologies, social medias like WhatsApp in delivering information to farmer by personal calls, voice and text SMS, pictures, videos etc.[8].The trump card for WhatsApp has been the group messaging ability of the platform to send messages, photos and videos to individuals and groups in a cost effective manner cheap than most MMS based platform in the market [5]. India is a land of diversity and thus package of practices for raising crops differ significantly from place to place, today most of the farmer do not have access to information at right time, so farmers' approach towards receiving agricultural information has been completely changed by getting ICT base-tool in their hand [6]. The role of ICT in agriculture for management decision in modern farming require to be up to date and localized for information on weather forecasts, regional recoding of crop disease and pests, plant protection, irrigation management, harvesting and marketing.

As the social media use for agriculture sector and extension has gained momentum in the recent times.WhatsApp is a major platform that is being used by extension professionals to communicate with peers or client farmers but the communication (individual and group) being personal in nature, not much information is available about the groups other than when highlighted by the media[4].Smart phone users spend considerably more time on social media platforms such as WhatsApp. Thus, there exists an ample opportunity to utilize WhatsApp for agricultural extension activities[13].

The Communication technology enables user-to-user interactivity and interactivity and promotes the creation of social wealth in the form of discussion forums of Innovative farmers for learning exchange [4]. Additionally, information sharing is possible at any place and at

any time without worrying about background disturbances[13].It can help farmers to seek information on farm operations, clarify their doubts on plants/ livestock disease symptoms and can have immediate access to market related information. However, this can be possible only when they are socially networked with human resources–agricultural researchers, extension agents, veterinarians, progressive farmers, sellers & other buyers–in virtual space. With increasing internet penetration levels in India and smartphone increasingly becoming veryaffordable one is left to imagine how a platform such as WhatsApp can transform agriculture value chain actors such as Agro dealers, Agribusiness SMEs, and Agriculture extension workers and ultimately create value for the small holder farmers [5].

Even though some problems doexist, such as -

1. Lack of timely dissemination of agricultural messages.
2. Insufficiency of on time available solutions of the problems.
3. Unawarenessabout agri. Related news and events.
4. Lack of interaction of farmers with agri. Scientists and experts.

Therefore,the present study was conducted on effectiveness of Social Media (WhatsApp) for dissemination of Agriculture technologies in Paddy Crop in Jabalpur District Madhya Pradesh.

2. MATERIALS AND METHODS

The study was conducted at Krishi Vigyan Kendra, Jabalpur during 2022. The KVK utilized WhatsApp (social media) for the dissemination of agricultural technology in Jabalpur district of Madhya Pradesh. The three (03) blocks namely Panagar, Kundam and Sahpura of District Jabalpur were selected for study. Total 06 villages i.e. Khiriya Kalan and Kathoda, from Panagar block, Badkhera and Dunda from Kundam Block; and Agasi, Ahrora from Sahpura block were selected randomly. Thus, 50 farmers from the 03 blocks of the district using WhatsApp were purposively selected randomly; list was prepared and grouped for sending the messages of agricultural aspects. Time to Time agro advisories, weather report, new

varieties, sowing method, seed availability, market rates, new technologies and how to take precaution from the coming disease and pest outbreak were delivered to the farmer's group.To assess the overall impact of technology an interview schedule was developed and responses were recorded on a 03-continuum scale for each aspect and assigned scores. The farmers werepersonally interviewed and responses were collected on:

Performance Indicators/ Parameter-

1. Perception of Respondents for WhatsApp Usage
2. Content of the Message
3. Time of the Message sent
4. Visibility of the content
5. No. of total message sent
6. Need of the message
7. Feedback message of farmers

Data was collected through personal interview. The data thus collected was organized and tabulated using simple statistical method, tables and percentage.

3. RESULTS AND DISCUSSION

3.1 Perception of Respondents for WhatsApp Usage:

3.1.1 Reasons to use of WhatsApp :

The Tables-1 shows the reasons of use of WhatsApp. Because of the peer presence in social media, it makes a great platform to discuss idea and problems and get professional views. The major uses of social media, according to the respondents, were to find information related to agriculture news (72.00%), to exchange agriculture knowledge (66.00%), to connect with agriculture experts and farmers (62.00%),To share agriculture information (58.00%), to share agriculture professional activities (58.00%) and to find agriculture related interest (56.00%).Findings of **Thakurand Chander,2018 [12]**is the similar with the present finding.

Table-1. Reasons to use WhatsApp (%) n=50

S. No.	Reasons	(%)
1.	Find agriculture related interest	56.00
2.	Share agriculture professional activities	58.00
3.	Connect with agricultureexperts and farmers	62.00
4.	To share agriculture information	58.00
5.	Exchange agricultureknowledge	66.00
6.	Find out agriculture relatednews	72.00

Even though use of social media for agricultural information was fairly high among the respondents, there were some major concerns for not using it intensively for the purpose. Also, sparse use of the platforms for professional use, lack of authentic information, lack of awareness about its use, lack of competence in using the social media platforms properly, unavailable or bad internet connections, and biased information and advertisements were found to be acting as deterrents among the respondents in using WhatsApp for professional purposes reported earlier by **Naruka *et al.*, 2017 [5].**

Table- 2. Drawbacks in using Whats App per cent (n=50)

S. no.	Reasons	(%)
1.	Fear of get lost	12.00
2.	Lack of know how in social media	28.00
3.	Low battery back up	18.00
4.	Fruitless use of time	30.00
5.	Bad internet connectivity	36.00

3.1.2 Drawback in using WhatsApp:

Table No.2 shows the major drawbacks in using WhatsApp as a socialmedia.Bad internet connectivity (36.00%) and fruitlessuse of time (30.00%) were considered as themajor drawback in using WhatsApp (Table 2).Lack of know how was also reported by about28.00 per cent of the respondents. Concernsabout privacy, wastage of time, and lack ofexpertise in using WhatsApp is in line with thefindings ofNewbury *etal.*,2014 [7]. While internet connections areinfrastructural issues and needs to be looked intoby the service providers and governments,personal constraints and privacy concerns canbe easily taken care of with awareness creation and learning to better use social media throughtrainings and workshops, if needed [11].

Table-3.Content of the Message (n=50)

Poor	Good	Very good	High Frequency	Percentage
5 (10 %)	5 (10%)	40 (80%)	40.00	80.00

3.2Content of the Message-

Relevant information is one of the key requirements for increased productivity and increased income to reduce poverty among foodproducers in underprivileged communities[9].Content of message most important factor for effective dissemination of technology. The Tables-3 shows about the Content of the Message to share message related to paddy crop production technology and insect pest management. Total 40 (80%) respondent said the content was very good, 5 (10 %) response was good message & 5 (10 %) responded poor message.

Table-4.Time of the Message sent (n=50)-

Before	On time	Delayed	High Frequency	Percentage
26 (52%)	21 (42%)	3 (6%)	26	52

3.3 Time of the Message sent –

Timeliness of agricultural information is very crucial to farmers' success. Farmers need to be provided with the information at the right time so as to apply that information in their farming activities for better farm productivity. Tables 4 shows about the time of the message sent, 26 (52%) of respondent, replied the messages send before sowing of paddy crop, 42 % respondent responded that messages send on time of crop & while, 6% respondent told message sent delay. social media makes a great platform to discuss idea and problems and get professional views. Similar findings were also recorded by **Naruka *et al.*, 2017 [5].**

Table-5.Visibility of the content (n=50)-

Low	Medium	High	High Frequency	Percentage
6 (12 %)	5 (10 %)	39 (78 %)	39	78

3.4 Visibility of the content-

It is clear from Table No -5 that the audio-visuals messages used to relay the information was very simple and easy to understand by the farmers. Total 39 (78 %) of farmers replied that it was easy to understand, photo related to paddy crop shared via WhatsApp and content of message visibility clear, 10% responded medium visibility & while, 12 % low visibility. Very easy to group share of information of text, audio, video and image form were very satisfied with the quality, simplicity of language and content of the WhatsApp messages.Similar observation also reported by **Muthiah, 2015 [2]** that the agricultural information that was disseminated through WhatsApp could be easily comprehended by farmers.

Table-6.No. of total message sent (n=50)-

Low<5	Medium (5)	High>5	High Frequency	Percentage
7 (14 %)	4 (8 %)	39 (78 %)	39	78.00

3.5 No. of total message sent-

It is recorded from TableNo-06 that, 78 percent (39) people said that No of message was more than five and was sufficient while, 8 % farmers responded that No of message was 5 it was in medium frequency, while 14 % people responded that No of message was less than 5 and was low in frequency. It is also clear most of the farmers are satisfied with No of message sent related to rice crop production.

Table-7.Need of the message (n=50)-

No Need	Partially need	Full Need	High Frequency	Percentage
4 (8 %)	18(36 %)	28 (56 %)	28	56.00

3.6 Need of the message-

Table No-7 shows that 56 % messages is full need based of farmers, 36 % Partially need based, related to disease and insect pest management of paddy crop. While, 8 % farmers

reported that there was no need of message, it was due to that some farmers already having good experience for management of rice crop. The main purpose of delivering information through WhatsApp was to make farmers aware of the usefulness of modern crop management practices in enhancing a crop's productivity and subsequently to convince the farmers to adopt the technologies communicated. The WhatsApp messages delivered to registered farmers contained agricultural information covering different aspects of fertilizer application, pesticide application, pest management, disease management, best agricultural practices, seed varieties, seed treatment, weeding and government schemes.Similarly, it has been stated that although mobile phone can help in disseminating agricultural information to improve the farm productivity and rural incomes, trustworthiness of information is one of the important aspects that need to be considered while delivering to farmers to meet their needs and expectations **[3].Naruka *et al.*, 2017 [5]**reported the similar result regarding the need of message sent for agriculture crop cultivation purpose.

Table-8.Feedback message of farmers (n=50)-

S.No	Parameter	Always (%)	Sometimes (%)	Never (%)
1.	Adequate Rice and Agriculture information	86.00	12.00	2.00
2.	Information acc. to the farmers request and need	80.00	16.00	4.00
3.	Quickly dissemination of information	66.00	32.00	2.00
4.	Quickly communication and solution	60.00	32.00	8.00
5.	Very easy to group share of information through text, audio, video and image form	78.00	20.00	2.00

3.7.Feedback message of farmers-

With reference to feedback of farmers, the data from Table-8 indicated that farmers (86%) were very satisfied with the quality and adequateinformation on rice. 80 per cent farmers responded that the message was as per farmers request and need, 66 per cent farmers responded that the WhatsApp can be used in agriculture for quick dissemination of information. 60 percent of farmers were satisfied to find quick solution by fast

communication. 78 per cent farmers expressed that it is very easy to share agriculture information in form oftext, audio, video and image through WhatsAppin comparison with other sources of information. Similar result also affirmed by **Naruka *et al.*, 2017 [5].**

4.CONCLUSION

Across India, WhatsApp groups are not onlyconnecting farmers to their customers in thevirtual market—they're creating a network ofresources and support for the country's farmerswho need it most. The social media–enabledWhatsApp is helping farmers to solve farming related problems more efficiently by making themdigitally literate as they perceived in the studythat the WhatsApp messages used were clearand satisfactorily for them. WhatsApp is very useful which saved the time and expenses for solving the problem. Immediate solution to the farmers on mass level through this App could have been achieved by KVK and need & time based service to the farming communities were served. From the study it can be concluded that by the use of WhatsApp farmers are able to seek information on farm operations, clarify their doubts on agriculture and paddy crop production technology ,disease & insect pest etc . On thelevel of daily interaction, the WhatsApp groups aresuccessful at providing a sounding board of assistance and in motivating farmers.

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