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Effectiveness of WhatsApp Agro - Advisory Service by the Scientist of KVK of Cauvery Delta Zone

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Nowadays usage of Social media is increasing rapidly in the 21st century. WhatsApp is the most popular social media which is used by a large number of people. The present study was focused on how effectively KVK's farmers use WhatsApp groups for agricultural purposes. Three districts of Cauvery Delta Zone Nagapattinam, Thiruvarur, and Karaikal KVK WhatsApp groups were purposively selected for the study. Totally 120 farmers were selected for primary data, and from each district, 40 farmers were selected by the Simple Random Sampling method. Data were analyzed by descriptive statistics. It reported that the overall effectiveness of the farmer's use of WhatsApp groups was at the medium level (74.17%) indicating that farmers were using the group for their agricultural activities. The easiness of understanding information on Whatsapp was found to be good, and image and video-based information, in addition to textual information aided in a better understanding of information. Based on the study recommended that is important to be placed on disseminate weather and market information to aid indecision making.

Keywords: Effectiveness; WhatsApp; KVK.

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1. INTRODUCTION

In recent years, using of social media (WhatsApp, Facebook, YouTube, Instagram, Twitter) were increasing day by day and rural people also access social media in their rural locations. Whatsapp is the most popular Social media one among three people were using to connect with relationships and friends and forming a WhatsApp group to interact with a large number of people and community and also share their information in their group and create business accounts for their business. According to Naruka et al., Farmers can benefit greatly from social media. It can assist farmers in obtaining information about farm operations, clarifying their doubts about plant/livestock disease symptoms, and gain immediate access to market-related information. However, this is only possible if they are socially networked in virtual space with human resources such as agricultural researchers, extension agents, veterinarians, progressive farmers, sellers, and other buyers. The low cost of smartphones has resulted in an unprecedented increase in social media use in rural India. The power of social media can be harnessed for the benefit of farming communities [1]. According to Jain and Sanghi (2016) Mobile internet and smartphone penetration in rural areas has increased significantly, with half of all internet users by [2]. Digital India is one such endeavor done by the Indian government to guarantee that all government services are available electronically to all citizens. It connects rural areas to high-speed internet networks, as well as knowledge of the latest agricultural technologies and their use to boost crop productivity. Using social media, particularly in areas such as agriculture, where disease and pest outbreaks can be detected and stopped before they reach the economic threshold and saving millions of people's life and economic growth of the country. There are numerous social media platforms available, with which WhatsApp is the most popular. WhatsApp is utilized by the majority of Indian farmers. Mahesh Narayanan and Senthilkumar said that farmers were actively engaged during morning hours in WhatsApp groups due to their free time rather than later hours. Farmers opined that WhatsApp positively impacted them in obtaining timely information as well as personalized information [3]. Farmers used this group to share information about their farming needs and to give advice to neighboring farmers about problems they were having in the field They also used this group to find the inputs they needed for their farms and to market their products to other farmers. Creative farmers and professionals were using WhatsApp to share their knowledge and experiences about agriculture and related activities with other group members. The majority of group members communicated their farm experiences and information via WhatsApp. Farmers' knowledge exchange is known as "innovative farmer-led extension delivery." ICAR Krishi Vigyan Kendra (KVKs) has now started a separate WhatsApp group for their specific area farmers. Through which they share all crop information, inputs availability, various training programs, advisory services, livestock information, and schemes. This WhatsApp platform serves as a direct link between farmers and KVK scientists. Through this group by simply clicking and submitting one snap or video to a representative source, after assessing the issue at the expert level, the farmer will receive an instant solution to their problem. Hence, the present study objective was focused on the Effectiveness of the Farm advisory services in the dissemination of farm technology to the farmers of KVK's WhatsApp group by the Scientists and the Relationship between farmer's profile character and effectiveness.

2. METHODOLOGY

The study was conducted in Krishi Vigyan Kendra WhatsApp group of Nagapattinam, Thiruvarur, Karaikal of Cauvery Delta Zone of Tamilnadu state and Puducherry union territories were purposively selected. These districts are purposively selected, because of face natural calamities like floods, cyclones and drought frequently. The ICAR Krishi Vigyan Kendra (KVK) systems have been functioning in these districts more effectively and timely transfer the farm technologies and advisory services to solve the farm problems by utilizing WhatsApp. Simple Random sampling techniques were used to select 40 respondents from each KVK's WhatsApp group. The study included 120 respondents in total. The effectiveness of WhatsApp groups was collected based on the need-based information, creating awareness, gained knowledge, shared information with fellow farmers, convinced with the message, and adopting that technology and also profile characters like age, educational status, occupational status, farm size, farming experience, annual income, information seeking behavior, innovativeness, social media exposure, WhatsApp operating skills, receptivity of the message, possession of electronic gadgets are

studied to find out the relationship with the effectiveness of the WhatsApp. Data were collected through a well-structured interview schedule and a face-to-face interview with farmers. Descriptive statistics such as Mean, Standard Deviation, Percentage, and Frequency, Correlation were used to analyze the collected data.

3. RESULTS AND DISCUSSION

From Table 1. This shows that the majority of the respondents (43.00%) belonged to the middle-aged category followed by (29%) of respondents in the young age category and (28%) of respondents in the old age category respectively. It could be absorbed that the participation of middle-aged farmers in the WhatsApp groups was higher because most of the farmers are educated and well versed in using a smartphone. The findings are consistent with those of Akashdeep Jain et al., who also reported that the majority of respondents were middle-aged [4]. Concerning educational status reported that more than half of the respondents (61.70%) had collegiate education followed by an equal percentage of (17.50 %) respondents who had primary and secondary education and only (3.30%) of respondents had middle school education. Among the 120 respondents, none respondents were illiterate or functionally literate. The results are following Mahesh Narayanan and Senthil Kumar who reported a majority of WhatsApp users had their collegiate education [3]. Regarding the occupational status majority of the respondents (79.20%) had agriculture as their primary occupation followed by only (20.80%) of respondents who had agriculture as their secondary occupation. The findings were similar to the findings of Dharanipriya [4], who concluded that the majority of farmers using WhatsApp had farming as their primary occupation [5]. Related to social media exposure less than half of the respondents (48.00%) had a medium level of exposure followed by (33.00) of respondents had a high level of exposure to social media and (19.00%) of respondents had a low level of exposure. The majority of respondents were middle-aged and collegiate education may be a significant reason for their medium exposure levels to social media. The results are following Mahesh Narayanan and Senthil Kumar (2022) who reported that the majority of farmers had a medium level of exposure to social media platforms [3]. Regarding WhatsApp operating skills showed that nearly three-quarters (72.50 percent) of respondents were moderately skilled. In comparison, nearly an equal number had high skills (14.16%) and less skill (13.34%) in using WhatsApp. Most respondents in the moderately skilled category may be due to their education level up to collegiate education.

The effectiveness of the WhatsApp message received by the farmers from the KVK's scientists. Needbased information more than half of the respondents (56.67%) pleaded that information shared in the WhatsApp groups was a medium level of need for agricultural activities followed by (40.83 %) respondents informed that highly needed for their agricultural activities and only (2.50 %) respondents feels that information shared in groups were low in need for their agricultural activities these results were accordance with the Akashdeep Jain et al.,(2019) the sound that majority of the respondent uses WhatsApp have medium level need based information [4]. In terms of creating awareness, the Majority of respondents (89.00%) reported they have a medium level of awareness, followed by (16.00%) have a low level of awareness and (15%) of respondents have a high level of awareness. This is because KVK's scientists and progressive farmers shared information about new varieties of paddy and recently improved technology for their farmland development, and also made them aware of the government schemes and policies that helped make farmers secure. Regarding knowledge gained a majority of the respondents (90.00%) informed that a medium level of knowledge gained followed by (8.33%) respondents have a high level of knowledge gained and only a few (2.67%) respondents were found with low knowledge gained because of scientist and farmers use local language Tamil as their medium of exchange language so every farmer easily read and understand the content of the message. Regarding shared with fellow's majority of the respondents (85.00%) opinioned that medium levels of sharing of information and technologies with other farmers followed by (15.00%) have a high range of sharing information. Because most of the farmers were educated and well versed in using a smartphone. In of being convinced of the message (75.00%) of respondents reported that medium level of satisfaction with the messages followed by (15.83%) of respondents with a high level of satisfaction with messages and (9.17%) of respondents with a low level of satisfaction with the messages. Because KVK's scientist's transfer technology or farming practices in

videos, pictures, audio, and documents made them more satisfied with convinced the information and farmers read or watch all of the technology and gain comprehensive knowledge about the specific farming practices and technology, and they were persuaded to try it out in their field conditions. Regarding the Adoption of the technology half of the respondents (60.00%) revealed that medium level of adoption followed by (20.83%) of respondents with a low level of adoption and the remaining (19.17%) respondents had a high level of adoption this result comes through because of maximum farmers were convinced with the technology and practices shared in that groups but during the adoption of that technology or practice made the farmers think about their situation and most of the farmers had low land holding so they were not in a situation to take the new technology or practice in their field and they feels that it leads to the huge loss in their income. Even though some innovative farmers always try new practices and technology in their field conditions [6-11] (From Table 2).

Table 3 shows that a Medium level of effectiveness was found with the majority of the respondents (74.17%) followed by a high level of effectiveness reported by (15.83%) of respondents and a low level of effectiveness was found with only (10.00%) of respondents. This result is because using WhatsApp among the farmers would increase their ability to search the solution to their field problems, awareness of the new technology and practices introduced in agriculture, government scheme and policy. And most importantly share their know information with their other farmers and farmers also asked solutions for their field problems directly from the experts and KVK's scientists.

Table 4 shows that 7 out of 13 variables were significant to the effectiveness of WhatsApp. The variables social media exposure (x9), WhatsApp operating skills (familiarity) (x10), receptivity to messages from the smartphone (x12), and possession of electronic gadgets (x13) showed a positive correlation and significance with WhatsApp effectiveness at 1 percent level of significance. The variables farm size (x5), information-seeking behavior (x7), and WhatsApp operating skills (utilization) (x11) had a positive correlation and significance at a 5 percent level of significance. And the variables age (x1), educational status (x2), occupational status (x3), experience in farming (x4), annual income (x6), and innovativeness (x8) showed a non-significant relationship with the effectiveness of WhatsApp. Positive relationship of variables such as farm size, information-seeking behavior,

Table 1. Profile character of Respondents

S. No	Profile characters	Frequency	Per cent
1.	**Age**		
	Young (less than 35 years)	35	29.00
	Middle (36-45 years)	51	43.00
	Old (Above 45 years)	34	28.00
2.	**Educational Status**		
	Illiterate	00	00.00
	Functionally literate	00	00.00
	Primary school education	21	17.50
	Middle school education	04	3.30
	Secondary school education	21	17.50
	Collegiate education	74	61.70
3.	**Occupation Status**		
	Agriculture as Primary occupation	95	79.20
	Agriculture as Secondary occupation	25	20.80
4.	**Social Media Exposure**		
	Low – (below 9)	23	19.00
	Medium – (10-11)	58	48.00
	High – (above 12)	39	33.00
5.	**Overall WhatsApp Operating Skills**		
	Less skilled – (Below 33)	16	13.34
	Moderately skilled – (33 - 41)	87	72.50
	Highly skilled – (Above 41)	17	14.16

Table 2. Effectiveness of WhatsApp

S. No.	Effectiveness of WhatsApp	Range	Frequency	Per cent
1.	**Need based information**			
	Low	Below 9	3	2.50
	Medium	9 – 11	68	56.67
	High	Above 11	49	40.83
2.	**Create awareness**			
	Low	Below 16	16	13.33
	Medium	9-13	89	74.17
	High	Above 13	15	12.50
3.	**Gained knowledge**			
	Low	Below 8	2	1.67
	Medium	8 -11	108	90.00
	High	Above 11	10	8.33
4.	**Shared with fellow farmers**			
	Low	Below 5	0	00.00
	Medium	5 -8	102	85.00
	High	Above 8	18	15.00
5.	**Convinced with messages**			
	Low	Below 7	11	9.17
	Medium	7- 9	90	75.00
	High	Above 9	19	15.83
6.	**Adopted technology know through the WhatsApp**			
	Low	Below 5	25	20.83
	Medium	5 – 10	72	60.00
	High	Above 10	23	19.17

Table 3. Overall Effectiveness of the WhatsApp

S. No	Overall Effectiveness	Range	Frequency	Percent
1.	Low	Below 49	12	10.00
2.	Medium	49 - 61	89	74.17
3.	High	Above61	19	15.83
	Total		**120**	**100**

Table 4. Relationship between profile characters and effectiveness of the WhatsApp

Variable. No.	Variables	'r' value	'P' value
X_1	Age	$.127^{NS}$	.167
X_2	Educational Status	$-.003^{NS}$	.974
X_3	Occupational Status	$.008^{NS}$	.930
X_4	Experience in Farming	$.136^{NS}$	.139
X_5	Farm Size	$.216^{*}$	.018
X_6	Annual Income	$.151^{NS}$	.100
X_7	Information Seeking Behavior	$.205^{*}$	.024
X_8	Innovativeness	$.014^{NS}$	.880
X_9	Social Media Exposure	$.642^{**}$	.000
X_{10}	WhatsApp operating skills (Familiarity)	$.490^{**}$	.000
X_{11}	WhatsApp operating skills (utilization)	$.085^{*}$	.035
X_{12}	Receptivity to messages from smartphone	$.290^{**}$	.001
X_{13}	Possession of Electronic Gadgets	$.340^{**}$	.000

**. significant at the 0.05 level (2-tailed), **. significant at the 0.01 level (2-tailed), NS= non – significance*

social media exposure, WhatsApp operating skills (familiarity), WhatsApp operating skills (utilization), receptivity to messages from the smartphone, and possession of electronic gadgets to the effectiveness of WhatsApp because more number of farmers were familiar in using smart phone so it easy for them to handle WhatsApp for Agricultural and information shared in the groups and messages were very simple on their language so it easy for them to understand the message and successfully applied in the field condition.

4. CONCLUSION

WhatsApp groups not only provide agricultural information to the farmers but also assist them to communicate directly with scientists and strengthen their bonds through regular interaction. This study reported that there was a high demand for information related to new technology and practices that are shared regularly in groups. The easiness of understanding information on Whatsapp was found to be good, and image and video-based information, in addition to textual information, aided in a better understanding of information. Sharing the information with other farmers through WhatsApp was very simple and covers a large area in a shorter period. Farmers are easily convinced by new technologies and practices, but farmers face difficulties in adapting to that technology. Based on the study it is recommended that more importance be placed on weather and marketing information for better aid in decision making.

CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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