Effectiveness of Agricultural Information Disseminated through Social Media

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ABSTRACT

The study conducted to understand the effectiveness of agricultural information disseminated through social media as perceived by the farmers in three erstwhile districts of the Southern Telangana zone of Telangana state, with a sample size of 120 in year 2020. Effectiveness of Agricultural Information Index (EAII) was developed for the study by selecting eight indicators. It was found that (39.17%) of the respondents perceived effectiveness of agriculture information disseminated through social media as a medium level. Age and farming experience were found to be negative and significant with the effectiveness of agricultural information perceived by respondents. Digital literacy, farm size, social media network, social media usage, mode of access and preference, readiness to accept information, social media participation was positive and significant in relation to perceived effectiveness, and the variable information processing was found non-significant. The results shown that more than half of the respondents perceived information received on social media is effective. Social media platforms can be utilised effectively by developing better interface and information content to pictures and video format.

INTRODUCTION

Sustainable development depends on attitude towards information, adjustment for sharing information, and proper consumption of information by the people (Sinha, 2018). The way of information dissemination is also changing along with technological changes. Recent innovations in information technology can deliver agricultural information with high speed to a large number of people and with more accuracy (Goyal, 2011). In 21st century, social media occupied major space in communication and there is no field untouched by social media. ICT utilization among the livestock and poultry farmers was maximum followed by mass media exposure and extension agency (Panda et al., 2022), indicating the importance of ICT tools. The tribal farmers of Rajasthan ranked Mobile, TV and Radio in higher positions for getting agricultural information (Jat et al., 2021). The availability of numerous online information resources from computer files, library catalogues, databases, organizations, newsgroups, industrial, and commercial sources as well as from individuals, makes the internet an indispensable tool for academia and research (Buabeng et al., 2016). Mobile based delivery ensures timeliness and is of great use to the farmers (Sandhu et al., 2012). Google for searching information ranked 1st, followed by Facebook, Others (Malik et al., 2020). Social networking was found effective in creating knowledge (Nain et al., 2019).

Since the last decade the Social Media platforms have predominantly dominated the way of communication. They are an interactive network in which ICTs bequeath to modern society through the instrumentality of the internet and the telecommunication gadgets (Eke et al., 2014). The social media has become a preferred media for receiving and further sharing information among all the stake holders (Sharma et al., 2020). Social media are tools of electronic communication that allow users to interact with others

individually or in groups for the purposes of sharing thoughts, information and opinions (Bhattacharjee & Raj, 2016). The unique experience of openness, conversation, community and connectedness makes social media an important tool of communication (Mayfield, 2008). Educating the patients by using modern digital media content formats like text, voice messages, and animated modules in local language enhanced the knowledge, skill, and attitude of the respondents towards the disease for effective self-management among the diabetic patients (Devi, 2020). Farmers exposed to paddy expert system had high level of symbolic adoption behaviour (Monikha et al., 2021). WhatsApp, Facebook, and YouTube were more familiar at field level among all social media platforms and extension personnel should develop content accordingly in such a way that reach farmers more effectively through these social media platforms (Sandeep et al., 2020). The advantages of using social media are beyond cost effective ways of communication to empowerment (Neill et al., 2011). Social media can be easily included for sharing information related to agriculture along with different other media. In recent years, however, technology awareness and digital literacy are increasing among farming community in all demographics and various forms of social media are being used more and more by farmers searching for news, education, and other information in day to day life for agricultural development. Thus, the present investigation was conducted to study the perceived effectiveness of agricultural information received on the Social Media platforms with help of Effectiveness of Agriculture Information Index (EAII).

METHODOLOGY

Southern Telangana Zone of Telangana State was purposively selected for the study in 2020. All three erstwhile districts of the Southern Telangana Zone were selected. Two Mandals from each district and two villages from each Mandal were selected using a simple random sampling technique. Thus, a total of twelve villages were selected and from each village 10 respondents were selected making 120 respondents for the study. In total, ten profile characteristics i.e., age, digital literacy, farming experience, farm size, social media network, social media usage, information processing, mode of access and preference, readiness to accept information and social media participation were selected for the study to find out the relationship with the effectiveness of agricultural information disseminated through social media perceived by respondents after reviewing the literature available. The Effectiveness of Agricultural Information Index (EAII) was developed. In total 15 indicators were identified based on literature and shortlisted after judges rating having relevancy score more 0.80. Only eight indicators satisfied this condition, and they were information content, retrievability of information, relevancy of information, information practicability, ease of understanding, the utility of information, information satisfaction, and timeliness of the information. The reliability of index was measured by using test-retest method and the correlation value ($r = 0.83$) found satisfied. The content validity method used to know the validity of the index. As index value differs for almost all statements included had a very high discriminating value, it seemed reasonable to accept the index as a valid measure of the effectiveness of agriculture information. Each indicator to study the

effectiveness of agriculture information consisted of unequal number of statements and hence their rage was different. Therefore, the scores of all the eight indicators were normalized by using the formula given below:

$$U_{ij} = \frac{Y_{ij} - Min_{yj}}{Max_{yj} - Min_{yj}}$$

Where, U_{ij} = Unit score of the ith respondents on j[th] component, Y_{ij} = Value of ith respondent on the jth component, Max_{yj} = Maximum score on the jth component, Min_{yj} = Minimum score on the jth component, The score of each component ranged from 0 to 1 i.e. when Y^{ij} is minimum the score is 0 and when Y^{ij} is maximum the score is 1.

$$\text{Effectiveness of agriculture information} = \frac{SI_1 + SI_2 + SI_3 + SI_4 + SI_5 + SI_6 + SI_7 + SI_8}{8}$$

Where, SI_1 = Normalized indicator value of information content, SI_2 = Normalized indicator value of information retrievability of information, SI_3 = Normalized indicator value of relevancy of information, SI_4 = Normalized indicator value of information practicability, SI_5 = Normalized indicator value of utility of information, SI_6 = Normalized indicator value of ease of understanding, SI_7 = Normalized indicator value of information satisfaction and SI_8 = Normalized indicator value of timeliness of the information.

The primary data was collected from the farmers using social media as source of agricultural information and appropriate statistical methods like data classification, frequency, and correlation used for data analysis.

RESULTS AND DISCUSSION

Perceived effectiveness of agricultural information disseminated through social media

Data presented in Table 1 shows that majority (50.00%) of the respondents perceived that agricultural information on social media was good. In total 64.10 per cent of the respondents perceived that information content available on social media is good and above. Regarding the retrievability of information from social media (35.00% perceived that retrievability of information in social media was poor followed by average (31.17%), good (20.00%), very good (9.17%), and excellent (4.16%). Further regarding the indicator relevancy of information available on social media platforms, 45.83 per cent perceived that the relevancy of agriculture information on social media was very good. Practicality of the information perceived by the 44.17 per cent of respondents as good and the results are supported by the finding of Khan et al., (2017). The indicator utility of information was found by the majority (50.00%) as average and similar results were observed by (Kumar et al., 2017 & Soumya et al., 2018). 43.30 per cent of the respondents perceived that ease of understanding of agriculture information on social media was good and results are on par with the findings of Khan et al., (2017). The majority (65.00%) of the respondents perceived information satisfaction as good and the findings were in line with the (Kumar et al., 2017). Further that majority (52.50%) perceived timeliness of information was good and results are on par with the (Sowjanya et al., 2018).

Table 1. Distribution of respondents on dimension of EAII Index

S.No.	Indicator	Category	Class Interval	Percen-tage
1.	Information Content (SI_1)	Poor	15-18	4.20
		Average	19-22	31.70
		Good	23-26	50.00
		Very good	27-30	5.80
		Excellent	31-34	8.30
2.	Retrievability of information (SI_2)	Poor	24-27	35.00
		Average	28-31	31.17
		Good	32-35	20.00
		Very good	36-39	9.17
		Excellent	40-43	4.16
3.	Relevancy of information (SI_3)	Poor	12-13	1.17
		Average	14-15	10.00
		Good	16-17	28.33
		Very good	18-19	45.83
		Excellent	20-21	14.16
4.	Information practicability (SI_4)	Poor	12-14	0.83
		Average	15-17	10.83
		Good	18-20	44.17
		Very good	21-23	36.67
		Excellent	24-26	7.50
5.	Utility of information (SI_5)	Poor	19-22	4.20
		Average	23-26	50.00
		Good	27-30	33.30
		Very good	31-34	7.50
		Excellent	35-38	5.00
6.	Ease of understanding (SI_6)	Poor	13-17	2.50
		Average	18-22	20.80
		Good	23-27	43.30
		Very good	28-32	29.20
		Excellent	33-37	4.20
7.	Information satisfaction (SI_7)	Poor	14-17	0.80
		Average	18-21	13.30
		Good	22-25	65.00
		Very good	26-29	14.20
		Excellent	30-33	6.70
8.	Timeliness of the information (SI_8)	Poor	10-12	2.50
		Average	13-15	26.67
		Good	16-18	52.50
		Very good	19-21	14.17
		Excellent	22-24	4.16

Overall effectiveness of agricultural information perceived by respondents

Data presented in Table 2 shows that 39.17 per cent of the respondents perceived effectiveness of agriculture information medium level of effectiveness followed by less level of effectiveness (38.33 %), very high level of effectiveness (8.33%), high level of effectiveness (7.50%) and very less (6.67%). It can be depicted that 55 per cent of respondents perceived that agriculture information received through social media as effective and above. The results are in line with Satyapriya et al., (2017) & Khan et al., (2017). The probable reason for these results might be due to the fact that social media platforms providing local agricultural information and access to information is available round the clock, the advantage of sharing information in text, photo and video format in easy way and the reach of information is also rapid. It also might be due to fact that these social media platforms helping the farmers to share information to experts, in the same way receive information from them at cheaper cost and it is providing platform to discuss

Table 2. Effectiveness of agricultural information

S.No.	Category	Class interval	Frequ-ency	Percen-tage
1.	Very less effective	0.14 – 0.29	08	6.67
2.	Less effective	0.30 – 0.45	46	38.33
3.	Effective	0.46 – 0.61	47	39.17
4.	Highly effective	0.62 – 0.77	09	7.50
5.	Very highly effective	0.78 - 0.93	10	8.33
	Total		120	100.00

agricultural related topics. It can also be depicted that 45 per cent of respondents perceived the effectiveness of agricultural information disseminated through social media as less and very less effective and it could be due to the low digital literacy and difficulty in retrieving the agricultural information from social media platforms.

Relationship between profile characteristics of farmers and perceived effectiveness

It is revealed from the Table 3 that 'r' calculated values between the digital literacy, farm size, social media network, social media usage, mode of access and preference, social media participation and effectiveness of agriculture information were greater than the 'r' table value at 0.01 level of significance. The calculated 'r' value between readiness to accept information and effectiveness were greater than the 'r' table value at 0.05 level of significance. In case of age and farming experience, negatively significant correlation was observed with perceived effectiveness of agriculture information; the calculated 'r' value is greater than the table value at 0.01 level of significance. On the other hand, 'r' value of variable information processing and effectiveness of agriculture information were found less than 'r' table value. Therefore, it can be concluded that there was positive and no significant relationship between information processing and effectiveness of agriculture information.

It was observed from the results that there was a significant negative relationship between the variables age, farming experience and effectiveness of agricultural information. The possible reason for the above trend might be attributed to the fact that the farmers with middle, young age and low farming experience respondents and might be enthusiastic to use and to know new technologies through digital platforms and it is also based on the fact that old

Table 3. Relationship between profile characteristics and perceived effectiveness of agriculture information

S.No.	Profile characters	Correlation Coefficient
1.	Age	-0.548**
2.	Digital Literacy	0.413**
3.	Farming Experience	-0.489**
4.	Farm Size	0.359**
5.	Social Media Network	0.240**
6.	Social Media Usage	0.452**
7.	Information Processing	0.092[NS]
8.	Mode of Access and Preference	0.399**
9.	Readiness to Accept Information	0.215*
10.	Social Media Participation	0.472**

**Significant at 0.01 level; *Significant at 0.05 level NS = non-significant

aged and high farming experienced farmers have poor skills to revive information on social media and to choose direct contact with experts than connecting digitally. Digital literacy was found to be positive and to have significant relationship with the effectiveness. This might be due to the fact that high digital literacy will enhance the ability to get information from different social media and digital platforms. The farm size variable was observed to be positive and significant related, the probable reason for which might be due to larger holding would have generated more income and it will provide more opportunities to try and purchase latest communication technologies. The variable social media network was found to be positive and significant and may be due to the better social media network that would have influenced better satisfaction level of individuals. Social media usage was found to be positive and significant, due to more usage of social media for agriculture information that would help individual to have more exposure to agriculture information. Information processing was found to be positive and non-significant, which indicates that these variables have low effect on effectiveness of information perceived by farmers. An individual having more chance of access and preference to use will have positive effect on anything. Similar kind of results were found with variable mode of access and preference and effectiveness of agriculture information. Readiness to accept information and social media participation was observed to be positive and had significant relation, which might be due to the fact that individual acceptance and participation have direct bearing on effect of phenomenon.

CONCLUSION

The farmers perceived the information available or received through social media platforms as effective and useful to them in practicing and helping them to adopt best agricultural practices. The content in social media needs to be developed based on user's need and interface in social media platforms and simpler for easy identification of information from these platforms. Relevancy of information available or disseminated in social media was good and optimum to adapt to their situation. It is suggested to provide alternate solutions along with recommended practice in social media platforms as they take up best among alternate solutions based on resource availability. For better utilisation of information, avoid too much information and not to publish irrelevant information. It was found that ease of understanding of information on social media was good and image and video-based information along with the textual information helped in a better understanding of information. To give more importance in disseminating weather and market information is suggested to assist in decision making for adopting agricultural technologies.

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