

## RESEARCH NOTE

## Adoption of Information and Suggestions from Farmers to Overcome the Constraints in the Efficient Use of Mobile Communication Technologies to Transfer Agril. Information

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### ABSTRACT

A study was conducted to find out the distribution of the respondents according to their adoption of information and to seek suggestions from farmers to overcome the constraints in the efficient use of mobile communication technologies to transfer agricultural information. Ex-post facto research design was followed. A total of 240 respondents were selected from twelve villages. One sample test of kurtosis & skewness, frequency, adoption index, rank and percentage were used for statistical measures. The most essential information adopted by the farmers through mobile was: "Market price" with Adoption Index 79.03 per cent (1 rank) and the most important suggestions offered by the farmers to overcome the constraints in the efficient use of mobile communication technologies to transfer agricultural information were: Continuous accessible network services should be made available in rural areas (79.58%) and Information should be offered in understandable local language (77.92%).

**Key word:** Adoption; Agriculture; Farmers; Mobile; Suggestions;

Smartphones have been identified as one of those effective innovations which benefited a large number of people in the developing world (Barh and Balakrishnan, 2018). Mobile-based information delivery holds great promise and it is in use as a major channel for agricultural advisory services (Singh et al., 2019). Mobile phone technologies have provided a good platform for farmers to share their knowledge and information among each other in time such as weather information, crop and variety selection, fertilizer and irrigation management, disease and pest management market prices of the product and on-going government programmes (Kailashet al., 2017).

The rapid spread of mobile phone coverage in developing countries provides a unique opportunity to facilitate technological adoption via information and communication technology (ICT)-based extension programs (Aker, 2011). The major suggestions as given by the farmers about agricultural information through mobile text and voice messages were agricultural

information should be provided at the right time according to the field condition, information should be provided according to the crop condition and problems of insect pests and the fertilizer dose should be given in kg/vigha instead of percentage (Kalsariya et al., 2018). Among other ICTs, mobile telephony has emerged as the technology of choice of the majority of the urban and even the rural masses (Ansari and Pandey, 2013). Keeping this in view, an attempt has been made to seek adoption level of information and suggestions from farmers to overcome the constraints in the efficient use of mobile communication technologies to transfer agricultural information.

### METHODOLOGY

Ex-post facto research design was followed. The study was conducted in Saurashtra region of Gujarat state covering, Junagadh, Rajkot and Amreli districts. Two villages were selected from each of the selected talukas by random sampling method. A total of twelve

villages were selected for the study. Twenty respondents were selected from each village. Thus, a total of 240 respondents were selected from twelve villages. The statistical measures such as one sample test of kurtosis & skewness, frequency and percentage were used.

For measuring the adoption level of the respondents, three continuums were used and the numerical values were assigned to the responses received from the respondents. The numerical score '3' was assigned for fully adoption, '2' for partial adoption and a numerical score of '1' was assigned for non adoption of each adoption of information and 'Adoption Index' was calculated using the following formula;

$$AI = \frac{\text{Sum of adoption score obtained}}{\text{Maximum obtainable adoption score}} \times 100$$

AI= Adoption Index

## RESULTS AND DISCUSSION

*Adoption of information* : Adoption of information was taken as dependent variable and adoption is a decision to continue use of an innovation. In this study adoption of information was operationalized as the adoption of agricultural information delivered to farmers through mobile phone. The data regarding adoption of agricultural information delivered to farmers through mobile phone are given in Table 1.

The Table 1 revealed that, the category of information which was fully adopted by the more than fifty per cent of the respondents was namely weather forecasts (53.33%) and market price (52.50%). The category of information which were partially adopted by the nearly fifty per cent of the respondents were namely animal husbandry (49.58%) and crop insurance

(47.50%). The category of information which was not adopted by the maximum number of respondents was namely machinery (20.42%). It can be inferred that the most essential information adopted by the farmers through mobile were: "Market price" with Adoption Index 79.03 per cent (I rank), "Weather forecasts" with Adoption Index 78.89 per cent (II rank) and "Seed varieties" with Adoption Index 77.78 per cent (III rank). *Suggestions from respondents* : From the Table 2 it can be inferred that the most important suggestions offered by the farmers to overcome the constraints in the efficient use of mobile communication technologies to transfer agricultural information were: "Continuous accessible network services should be made available in rural areas" (79.58%), "Information should be offered in understandable local language" (77.92%), "Mobile call from service providers should be done according to suitable timing of farmers in short and simple form" (72.50%), "Low cost smart phone should be made available to the farmers" (69.17%), "Government should provide free or low cost SMS service to farmers" (59.17%) and "Efforts should be carry out to popularize the smart phone through farmer's friend and progressive farmers" (51.25%).

The comparatively less important suggestion as expressed by the respondents were: "Efforts should be made to make mobile service farmers friendly" (49.17%), "Information needs of farmers should be identified to make worthy use of mobile services" (40.42%), "Training about how to overcome basic problems in smart phones should be provided to the users" (34.58%) and "Uninterrupted electricity facilities should be made available in rural areas" (31.67%).

**Table 1. Distribution of the respondents according to their adoption of information with adoption index (N=240)**

Category of information	Adoption of information			AI (%)	Rank
	Fully adopted (No.) (%)	Partially adopted (No.) (%)	Not adopted (No.) (%)		
Fertilizer application in major crops of study area	102 (42.50)	110 (45.83)	28 (11.67)	76.94	IV
Pesticide application in major crops of study area	98 (40.83)	95 (39.58)	47 (19.58)	73.75	V
Best agricultural practices recommended	88 (36.67)	105 (43.75)	47 (19.58)	72.36	VIII
Improved Seed varieties	119 (49.58)	82 (34.75)	39 (16.25)	77.78	III
Crop insurance to reduce risk in agriculture	86 (35.83)	114 (47.50)	40 (16.67)	73.06	VII
Government scheme information	98 (40.83)	95 (39.58)	47 (19.58)	73.75	V
Weather forecasts information	128 (53.33)	72 (30.00)	40 (16.67)	78.89	II
New Machinery information	83 (34.58)	108 (45.00)	49 (20.42)	71.39	IX
Market price information	126 (52.50)	77 (32.08)	37 (15.42)	79.03	I
Information regarding vaccination for animal	85 (35.42)	119 (49.58)	36 (15.00)	73.47	VI

AI=Adoption Index, Figures in parenthesis indicate per cent

**Table 2. Suggestions from respondents to overcome the constraints in the efficient use of mobile communication technologies to transfer agricultural information (N=240)**

Suggestions	No.	%	Rank
Continuous accessible network services should be made available in rural areas	191	79.58	I
Information should be offered in understandable local language	187	77.92	II
Mobile call should be done according to suitable timing of farmers in short and simple form	174	72.50	III
Low cost smart phone should be made available to the farmers	166	69.17	IV
Government should provide free or low cost SMS service to farmers	142	59.17	V
Efforts should be popularize the smart phone through farmer's friend and progressive farmers	123	51.25	VI
Efforts should be made to make mobile service farmers friendly	118	49.17	VII
Information needs of farmers should be identified to make worthy use of mobile services	97	40.42	VIII
Training about how to overcome basic problems in smart phones should be provided to the users	83	34.58	IX
Uninterrupted electricity facilities should be made available in rural areas	76	31.67	X

It can be concluded that important suggestions offered by majority of the respondents were: continuous accessible network services should be made available in rural areas (I), information should be offered in understandable local language (II) and mobile call from service providers should be done according to suitable timing of farmers in short & simple form (III). At the same time the least important suggestions offered by the more number of respondents were: uninterrupted electricity facilities should be made available in rural areas (X) and training about how to overcome basic problems in smart phones should be provided to the users (rank ninth). The findings was more or less in line with the findings of *Shukla (2016)*.

## CONCLUSION

The experts of ICTs have realized that mobile

is the most suitable gadget for providing accurate, timely, relevant information and for creating general awareness amongst the farmers. Therefore it is very much necessary to seek suggestions from farmers to overcome the constraints in the efficient use of mobile communication technologies to transfer agricultural information. The most essential information adopted by the farmers through mobile were: "Market price" with Adoption Index 79.03 per cent (I rank) and "Weather forecasts" with Adoption Index 78.89 per cent (II rank) and the most important suggestions offered by the farmers to overcome the constraints in the efficient use of mobile communication technologies to transfer agricultural information were: Continuous accessible network services should be made available in rural areas (79.58%) and Information should be offered in understandable local language (77.92%).

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