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Study on Constraints Affecting the Use of Kisan Mobile Advisory Services in Uttara Kannada District, India

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A B S T R A C T

The study sought to identify the constraints faced by the farmers in using Kisan Mobile Advisory Services (KMAS) in Uttara Kananda district of Karnataka State, registered under http://mkisan.gov.in portal through ICAR-Krishi Vigyan Kendra, Uttara Kannada, Sirsi. Total of 110 respondents were selected for the study, 10 each from 11 talukas in the district. Factor analysis was used to identify the major constraints that lie inherent in the set of 10 specific constraints that were presented before the respondents for their rankings on a four-point continuum (0 to 3). Computed Problem confrontation Score (CPCS) was developed to make rank order of the constraints. The results of the analysis revealed four major constraints like "Clarification is difficult if any doubt arises, "poor mobile network connectivity", "Language compatibility with the mobile set" and "difficult to understand the technical words in the messages" along with other six constraints. The constraints faced by the respondents – as identified in this study area- must be addressed adequately to enhance the efficacy of KMAS.

Introduction

Agriculture extension system plays a vital role in dissemination of technologies from lab to land. Due to limited human resource in this system, failure of information distribution on time, handicaps this model. Thus cost effective and efficient communication technologies are required for timely distribution of information, to take lead in this changing agricultural scenario. Information Communication Technologies (ICTs) like TV,

Radio, Telephone and other print media are playing major role in agriculture sector for mass communication of information since early decades. In the present scenario, modern technologies like mobile phones and computer are playing vital role as ICTs and created revolution in agriculture information dissemination.

As part of agricultural extension (extending research from lab to the field), under the National e-Governance Plan - Agriculture

(NeGP-A), various modes of delivery of services have been envisaged. These include internet, touch screen kiosks, agri-clinics, private kiosks, mass media, Common Service Centres, Kisan Call Centres, and integrated platforms in the departmental offices coupled with physical outreach of extension personnel equipped with pico-projectors and hand held devices. However, mobile telephony (with or without internet) is the most potent and omnipresent tool of agricultural extension. (mKisan Portal)

As per TRAI data of April, 2019 (https://main.trai.gov.in), though there are about 50.99 crore mobile telephone connections in rural areas, internet penetration in the countryside is still low (in single digit percentage). Therefore, mobile messaging is the most effective tool so far having pervasive outreach to nearly 8.93 crore farm families.

mKisan SMS Portal is a mobile based agro advisory service an initiative by Ministry of Agriculture, GOI, started during July 2013 with the aim of sending agriculture information in the form of SMS to the maximum numbers of farmers in their local languages, free of cost. mKisan SMS Portal for farmers enables all Central and State government organizations in agriculture and allied sectors to give information/services/advisories to farmers by SMS in their language, preference of agricultural practices and location.

ICAR KVK Uttara Kannada Sirsi is also one of the beneficiaries of this free service. KVK UK Sirsi has more than 10000 farmers registered in this portal. Need based agro advisories are being disseminated to these farmers since 2013-14.

Table 1 depicts the kisan mobile advisories (KMAS) sent by ICAR KVK Uttara Kannada Sirsi to the registered farmers during 2014-15

to 2018-19 through mKisan portal in Kannada language. The messages sent are broadly categorised into crops, livestock, weather, awareness and other enterprises. Year wise and category wise dissemination of messages reveal that year by year the registered farmers are increasing, which shows the horizontal spread of the popularity of the service. There is increase of 18.39 % in number of farmers registered since 2014-15. The message sent with respect to *crop* tops the priority with 36% followed by *weather* related messages with 25.6% followed by *other enterprises like information on trainings organized, call for awards etc.* 6.6%, *awareness* 1.6% and livestock 1% related messages.

Feedback with respect to the usefulness of the KMAS delivered was received from the farmers; many farmers expressed constraints in using Kisan Mobile Advisories. Hence, this study is mainly focused on the constraints faced by the farmers of Uttara Kannada District in Karnataka in accessing the KMAS in Kannada language disseminated by ICAR-KVK UK, Sirsi.

Materials and Methods

Area of study

Karnataka state comprises of 30 districts, of which Uttara Kannada, Dakshina Kannada and Udupi are in the costal belt. Uttara Kannada district is bounded between 13.769^{o} to 15.732^{o} north and 74.124^{o} to 75.169^{o} east. It encompasses an area of 10,291 sq km, which is 5.37% of the total area of the State. The district extends to about 328 km north south and 160 km east west. Most of the district is hilly and thickly wooded. The area of the district is 10,222.3 sq km. For administrative purpose, the district has 11 taluks. Supa taluk is the largest with an area of 1890.3 sq km and Bhatkal Taluk the smallest in district with 348.9 sq km. ICAR KVK Uttara Kannada is

the pioneer institute for agriculture extension in the district, established by University of Agricultural Sciences, Dharwad under the financial support of ICAR. Need based agro advisories are being sent to registered farmers through https://mkisan.gov.in portal since 2013. The messages sent in regional language Kannada since last 5 years are considered for sake of convenience of the study.

Sampling technique

Random sampling method was used to select 110 respondents 10 each from 11 talukas of the KVK jurisdiction. The data were collected with the help of structured questionnaire through personal interview of the respondents over phone or in person. The questionnaire included 10 common constraints which were identified during the feedback from farmers during pre-test (Patil *et al.,* 2017).

Measurement of variables

Constraints faced by the farmers in receiving KMAS through mobile SMS was the focus variable of the study. A four point rating scale weighing 0, 1, 2, and 3 for not at all, low, moderate and high respectively was used to explore the extent of constraints faced while using the KMAS. The possible scores of the respondent ranged from 0 to 30 where '0' indicates the respondent had no problem and '30' indicate the highest problem. According to the problem confrontation score of individual farmer, the farmers were categorized into three group i.e. Low problem (up to score 7), medium problem (score 8 to 15) and high problem (score 16 to 30).

For better understanding of the extent of problems faced, Computed Problem confrontation Score (CPCS) was developed to make rank order the problems by the following formula as used by Abu Salem *et al.,* (2017).

PCS= Ph x 3 + Pm x 2 + Pl x 1 + Pn x 0

Where,

PCS= Problem confrontation Score

Ph= Number of farmers indicating high problem

Pm= Number of farmers indicating moderate problem

Pl= Number of farmers indicating low problem

Pn= Number of farmers indicating no problem at all

Results and Discussion

The problem confrontation score of the farmers ranged from 1 to 14 against the possible range of 0 to 30 with an average of 6.78 and standard deviation of 2.94. Based on the problem confrontation score, the respondents were classified into three categories i.e., low, medium and high. Distribution of respondents according to their problem confrontation has been shown in Table 2. The data presented that most of the farmers faced low problems (61.82 per cent) in using KMAS while 42 % farmers faced medium problems. Over all, this shows that, the constraints in using the KMAS are not of much worry; this is mainly because of infrastructure facilities in the district, increasing exposure to mobile usage among farming community, dissemination of timely and need based advisories.

For determining the extent of confrontation of individual constraint, rank order was made based on the Computed Problem Confrontation Score as described earlier and arranged in rank order according to their high problem (Table 3).

The results in the Table 3 revealed that among ten selected constraints *"Clarification is difficult if any doubt arises"* with PCS 170 ranked first followed by *"Poor network connectivity"* (PCS 157) then by *"Language compatibility with the mobile set"* (PCS 123), "*Difficult to understand technical words in the message*" (PCS 119) and "*Incomplete messages*" (PCS 74) are the top 5 constraints which are discussed below.

78.18% of the respondents reported that after getting a message, if any doubt arises, there is no mechanism to clarify the doubts, the only way is to call back to the KVK which involve cost to them. Most of the time, the sent message doesn't include the contact number for clarification of any query. *Poor network connectivity* is another major problem in Uttara Kannada district because of the hilly terrain and forest cover. The study revealed that 74.55% of the respondents opined that poor mobile network is a major constraint in using KMAS. This is because, the district is covered with thick forest and hill areas, most of the villages are in remote places. But in recent days, due to competition among the private mobile service providers, the facilities are being created to reach the remote villages, so farmers are hoping to get good network coverage in coming days. 37.27% of the respondents are facing problem with incompatibility of Kannada language in their mobile sets. All the respondents who are facing this constraint couldn't access the message as message is not at readable. 60% farmers opined that it is difficult to understand the technical words in the messages, for example the chemical names are being sent in advisories where farmers are familiar with trade names. 39.09% farmers expressed that sometimes message will not be complete. The restrictions in characters per message and number of messages per week, restricts KVKs to shorten the advisories to best fit in the allowed character limits.

Table.1 KMAS sent in Kannada language by KVK UKS Sirsi during 2014-15 to 2018-19

Year	No. of Messages	Category of messages sent					No. Of Farmers
		Crop	Livestock	Weather	Awareness	Other enterprises	
2014-15	38	33	0	0	0	5	8406
2015-16	68	38	0	27	0	3	9425
2016-17	69	37	0	23	3	6	9440
2017-18	99	49	5	33	0	12	10256
2018-19	80	23	0	45	5	7	10296

Table.2 Distribution of the respondents according to their problem confrontation in using KMAS

Possible range	Observed Range	Categories	Farmers		Mean	SD
			No.	%		
0-30	1-14	Low (0-7)	68	61.82	6.78	2.94
		Medium (8-15)	42	38.18		
		High (Above 15)	0	0		

Table.3 Ten selected problems along with problem confrontation index and rank order

Sl. No	Constraints	Extent of problem confrontation of constraints				PCS	Rank	% of Farmers
		Very High	Moderate	Low	Nil			
1	Clarification is difficult if any doubt arises	22	40	24	24	170	I	78.18
2	Poor network connectivity.	20	35	27	28	157	II	74.55
3	Language compatibility with the mobile set	41	0	0	69	123	III	60.00
4	Difficult to understand technical words in the message.	15	23	28	65	119	IV	39.09
5	Incomplete messages	9	13	21	72	74	V	37.27
6	Practical oriented messages could not be understood through text message.	4	24	11	84	71	VI	35.45
7	Information is sometime not relevant.	0	11	20	79	42	VII	30.91
8	Irregular charging of mobile due to electricity problem.	0	9	20	81	38	VIII	28.18
9	Difficult to operate mobile Phone.	0	3	31	89	37	IX	26.36
10	KMAS were not timely.	0	5	21	84	31	X	23.64

Note: PCS = Problem confrontation score

"Practical oriented messages could not be understood through text message (PCS 71)", "Information is sometime not relevant (PCS 42)", "Irregular charging of mobile due to electricity problem (PCS 38)", "Difficult to operate mobile phones (37)", "KMAS were not timely (31)" were the other constraints faced by the KMAS subscribers.

The study revealed that, the constraints faced by the farmers in using KMAS fall in medium and low confrontation category which is a positive sign. The constraints can be overcome with appropriate solutions like establishment of cost free query resolution system like IVRS, chemical name may be replaced with local nomenclature in the messages which can be addressed by the KMAS agents and by categorising farmers based on their interest to send need based appropriate messages etc.,. Steps are to be taken by the government to strengthen mobile network coverage so as to reach to the rural and remote areas.

Acknowledgement

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