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Impact of Kisan mobile advisory services in Tikamgarh district of Madhya Pradesh

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Abstract
Kisan mobile advisory services (KMAs) is one such initiative of ICT which provide location specific and crop specific farm advisory services and facilities to the farming community in a given area. The KMA services have been provided to the respondent with consultation of expert of different field by the center. The study was carried out in Tikamgarh district of Madhya Pradesh. Six villages form Tikamgarh block of the district were selected. From the selected six villages, twenty respondents from each village were selected, thus total sample size for the present investigation consist of 120 respondents. Result of study shows that messages was partially understandable, needful and timely, partially applicable and majority of respondents agree with the help of this service save time and money, increase in social contact, increase in knowledge, increase in productivity and the content was fully adoptable. The study indicate that KMA is one of the most useful tool for dissemination of agriculture information to farmer and also can play a greater role in enhancing efficiency of extension service by reaching large number of peoples.

Keywords: Information and communication technologies (ICTs), Kisan mobile advisory services (KMAs), Kisan mobile sandesh (KMS)

Introduction
Information plays a critical role at every stage of this action chain. The information and communication technologies like radio, T.V., newspapers, telephones and magazines are playing a major role in sustainable agricultural development since, early decade and now the modern information communication technologies (ICTs) as mobiles and computers have created a revolution. In the 21st century, cost effective and efficient communication technologies are required to take lead in the changing agricultural scenario. Pioneering ICT experiments in India show that rural livelihood are greatly enhanced by access to information on improved agricultural practices, pest & disease control, market & weather etc. In modern world, information transformation transfer to and from the rural farmers hinges upon the tools of ICT where tele-centers and mobile phones application constitute major part. Since 1990s, telecenters have been experimented with a model to provide ICT opportunities to rural communities including farmers (Barbra and Foote, 2007) [1] Research indicates mobile access has somewhat contribute to the improvements of poor lives and supported poverty reduction (Silva and Zainudeen, 2007) [6]. Kisan mobile advisory services (KMA) is one such initiative of ICT which provide location specific and crop specific farm advisory services and facilities to the farming community in a given area. The KMA services through messages have been provided to the respondent with consultation of expert of different field to improve farmer's agricultural technical knowledge with decision making ability, so that they may enable to increase their production and productivity to fulfill market demands with securing better quality life and income in present competitive agrarian economy. Kisan mobile advisory had been one among those and worked successfully in disseminating the latest information in the district to the ultimate users. In Madhya Pradesh, the data revealed that 6.0 crore population having 9, 00,000 mobile phones (Kumar *et al*. 2012) [3]. Realizing the importance of Kisan mobile advisory services, some of the researchable questions relevant in this context are: What are the socio-personal, economic, communication and psychological characteristics of respondents, How are these services utilized by the respondents, Is there any impact of services of KMA on respondents/users, What are the opinion of KMA users about the services, What are the constraints faced by the users to avail the information, Is there any influence of background characteristics on indicators of KMA services? To answers these research gaps, the present study entitled "Impact of Kisan mobile advisory services in Tikamgarh district of Madhya Pradesh" was carried out.

Material and Methods

The present study was conducted in Tikamgarh district of Madhya Pradesh. The district was purposively selected for the study as one of the Krishi Vigyan Kendra under the jurisdiction of JNKVV, Jabalpur is functioning here and is responsible for providing KMA services to the farmers. Further in Tikamgarh district, Tikamgarh block was selected purposively as maximum number of registered farmers availed the KMA services provided by the KVK. From the six villages, 120 respondents were selected randomly. Thus, the total sample size consists of 120 respondents. To assess the impact of KMA services a device was developed and responses of the respondents were recorded on three point continuum scale for each nine aspects and assigned a scores. Finally an index was worked out considering the nine parameters to assess the impact of KMA services with the help of following equations:

$$I = \frac{Tsr}{Tos} \times 100$$

Where,
I = Impact of KMA on respondents
Tsr = Total scores obtained by respondents
Tos = Total obtainable score

Results and Discussion

To study this aspect, factual information related to farmers were collected and analyzed. Socio-personal, economic, psychological and communication characteristics of farmers were studied in terms of age, gender, education, land holding, annual income, farming experience, material possession, social participation, innovativeness, scientific orientation, mass media exposure and extension contact.

Profile of respondents

Table 1 reveals that a vast majority of the respondents (65%) were in medium age group. About 70.00 per cent of the respondents were male, Most of the respondents (28.33%) were illiterate, Majority of the respondents (28.33%) were having small size of land holding, An overwhelming majority of the respondents (83.34%) were having medium annual income, Most of the respondents (66.67%) were having medium farming experience, Maximum number of respondents (62.5%) were having medium level of material possession, As far as social participation is concerned, majority of the respondents (67.5%) were neither member nor office bearer in any social organization, number of respondents (75.83%) were having medium level of innovativeness, Major proportion of the respondent (81.66%) were having medium level of scientific orientation, Half of the respondents (50.00%) were having medium level of mass media exposure, More than half of the respondents (57.5%) had low extension contact.

Table 1: Profile of respondents [N=120]

S. No.	Socio-personal, economic, communication and psychological profile	Percentage (Majority of Population)
1.	Age	65.00 (belongs to middle age group i.e. 26 to 50 years)
2.	Gender	69.16 (were male)
3.	Education	28.33 (were illiterate)
4.	Size of land holding	45.00 (were small farmers i.e. 2.51-5.0 acres)
5.	Annual income	83.34 (medium)
6.	Farming experience	majority were having 10-32 years of experience
7.	Material possession	62.50 (medium)
8.	Social participation	67.50 (no membership)
9.	Innovativeness	75.83 (medium)
10.	Scientific orientation	81.66 (medium)
11.	Mass Media Exposure	Half of the respondents had medium mass media exposure
12.	Extension contact	57.50Low extension contact)

Impact of Kisan Mobile Advisory services

The study indicate that KMA is one of the most useful tool for dissemination of agriculture information to farmer and also can play a greater role in enhancing efficiency of extension service by reaching large number of peoples. The result obtained indicated (Table 2) that messages were partially to highly understandable for large majority i.e. 46.67 to 33.33% of respondents.

Further, the data shows that messages were needful for 90.84 per cent of the respondents. KMA provided a vide bouquet of agricultural information's ranging from their land preparation to harvesting and storage and timeliness also about allied enterprises but needfulness of the messages was very important. The findings were nearby to the findings reported by Saxena *et al*. (2011) [5]. The finding regarding time based information revealed that majority of respondents (51.66%) agreed that the messages were timely. The results are in consonance with the results of Sandhu *et al*. (2012) [4]. As far as applicability of message is concerned, the result indicated that message was partially to fully applicable for about 65.84 per cent to 26.66 per cent of respondents. It is evident from the data that 87.5 per cent farmers expressed their views regarding KMS that it saved the time and money. The findings were nearby to the findings reported by Saxena *et al*. (2011) [5]. The farming community resides at villages of our country. In villages farmers have a very close relationship with each other and hence are in regular touch and interact among themselves. In case of receiver i.e. the message reader, was regarded as a very important person among the villagers as he acts also as a communicator or interpreter of the KMA. The result indicated that the total 80.84 per cent of the respondents agree that this increased their credibility and technical reliability among the farming community and apparently respondents had clearly stated that the KMA has increased their social contact and importance as a resource with creditability and reliability. The findings supported by Kansana *et al*. (2015) [2].

Table 2: Distribution of respondents according to different parameters [N=120]

Parameter	Frequency (Percentage)
1. Understanding of the message	
A. Highly understandable	40 (33.33)
B. Partially understandable	56 (46.67)
C. Not understandable	24 (20)
2. Need based information	
A. Needful	109 (90.84)
B. Somewhat Needful	9 (7.5)
C. Not Needful	2 (1.66)
3. Time based information	
A. Timely	62 (51.66)
B. Undecided	52 (43.34)
C. Not timely	6 (5)
4. Applicability of message	
A. Fully applicable	32 (26.66)
B. Partially applicable	79 (65.84)
C. Not applicable	9 (7.5)
5. Save time & money	
A. Agree	105 (87.5)
B. Disagree	7 (5.83)
C. Undecided	8 (6.67)
6. Increase in social contact	
A. Agree	97 (80.84)
B. Disagree	5 (4.16)
C. Undecided	18 (15)
7. Increase in knowledge	
A. Agree	103 (85.83)
B. Disagree	8 (6.67)
C. Undecided	9 (7.5)
8. Increase in productivity	
A. Agree	81 (67.5)
B. Disagree	22 (18.34)
C. Undecided	17 (14.16)
9. Adoption of KMA Services	
A. Fully adopted	57 (47.5)
B. Partially adopted	31 (25.84)
C. Not adopted	32 (26.66)
10. Overall impact of KMA services	
A. Low (<50 Scores)	16 (13.33)
B. Medium (50-99 Scores)	87 (72.50)
C. High (>99 Scores)	17 (14.17)

As far as the findings related to increase in knowledge is concerned that 85.83 per cent respondents were agree that their knowledge regarding various agricultural operations was increased after availing KMA services. Regarding 'increase in productivity' as a result of KMA services the findings revealed that 67.5 per cent of respondents were agree that there is increase in productivity after adopting information received through KMA. Further, results revealed that majority of farmers (47.5%) fully adopted the information delivered through KMA services.

Regarding the impact of KMA services on the respondents the results indicates that KMA imposes medium impact on 72.5 per cent of respondents.

Area wise distribution of problems discussed by KMA service users with SMS of KVK

Table 3 showed that the major areas of problem discussed by KMA service users for getting solution were crop production ranked first followed by horticulture, soil science, insect and pest problems, weather forecasting, post-harvest management and livestock production & management ranked second, third, fourth, fifth, sixth and seventh, respectively. However, as far as the extent of discussion of KMA service users with SMS of KVK is concerned, maximum respondents rarely discuss the problems with the SMS of KVK to get the solutions.

Table 3: Area wise distribution of problems discussed by KMA service users with SMS of KVK

S. No.	Area of problem discussed	Extent of discussion Frequency (Percentage)				Mean scale value	Rank
		Once in a month	Fortnightly	Never	Occasionally		
1.	Crop production	33 (27.5%)	2 (1.66%)	45 (37.5%)	41 (34.16%)	2.21	I
2.	Insect and pest problems	25 (20.83%)	3 (2.5%)	4 (37.5%)	45 (38.33%)	1.69	IV
3.	Horticulture	30 (25%)	2 (1.66%)	48 (40%)	39 (32.5%)	2.1	II
4.	Livestock production & management	13 (10.83%)	2 (1.66%)	61 (50.83%)	35 (29.16%)	1.57	VII
5.	Soil science	10 (8.33%)	3 (2.5%)	45 (37.5%)	59 (49.16%)	1.77	III
6.	Weather forecasting	6 (5%)	3 (2.5%)	47 (39.16%)	57 (47.5%)	1.62	V
7.	Post-harvest management	8 (6.66%)	3 (2.5%)	48 (40%)	50 (41.66%)	1.6	VI
8.	Others	–	–	–	–	–	–

Opinion of KMA service users in making services more effective

As far as opinion of KMA service users in making services more effective is concerned, the results revealed that majority of the respondents opined that messages should be served in local language followed by providing messages on latest technologies on agriculture and allied sector, providing voice messages, market related up to date information, simple language should be used, along with names of insecticides, pesticides etc. approximate market prices of the same should be provided, message appropriate to their farming situations and messages on agricultural related enterprises should be provided.

Table 4: Opinion of KMA service users in making the KMA service more effective (N=120)

S. No.	Opinion	Frequency (%)	Rank
1.	The message should be simple and understandable	20 (16.66%)	V
2.	Message should be appropriate to the farming situation	17 (14.16%)	VII
3.	The message should be serve in local language	49 (40.83%)	I
4.	Voice message facility should be provided	36 (30%)	III
5.	Along with the name of the insecticides, pesticides etc, approximate market prices should also be communicated	19 (15.83%)	VI
6.	Message on agriculture related enterprises should also be provided	4 (3.33)	VIII
7.	Market related up to date information should be given	34 (28.33%)	IV
8.	Message on latest technologies on agriculture and allied sector should be provided	45. (37.5%)	II

Relationship between profile characteristics and impact indicators

Table 5: Relationship between profile characteristics and impact of KMA services.

S. No.	Characteristics	Correlation coefficient 'r'
1	Age	-0.436^{NS}
2	Gender	0.551*
3	Education	0.642*
4	Land holding	0.149^{NS}
5	Annual income	0.228*
6	Farming experience	-0.441^{NS}
7	Material possession	0.394*
8	Social participation	0.248*
9	Innovativeness	0.476*
10	Scientific orientation	0.698*
11	Mass media exposure	0.667*
12	Extension contact	0.509*

* Significant at 5% level of significance
NS Non-significant

It is clear from the results that out of the twelve variables, nine variables viz. gender, education, annual income, material possession, social participation, innovativeness, scientific orientation, mass-media exposure and extension contact were significantly related with impact of KMA services, whereas age, land holding and farming experience had no relationship with the impact of KMA services on the respondents.

Conclusion

Regarding the impact of Kisan mobile advisory services, the overall impact was found to be of medium level. The messages delivered through KMA services were partially to highly understandable, needful and timely as reported by majority of the respondents. The message was partially to fully applicable for about 65.84 per cent to 26.66 per cent of respondents. The respondents agreed that this increased their credibility and technical reliability among the farming community and apparently respondents had clearly stated that the KMA has increased their social contact and importance as a resource with creditability and reliability. Crop production was the area sought by majority of the respondents for getting solution. Further, majority of the respondents opined that messages should be served in local language which will speed up the rate of adoption of messages transmitted through KMA services. The innovative information and communication technology like Kisan Mobile Advisory is proving as one of the important step to transform the present agricultural information system at grass root level.

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