Research Article

Correlation of technical knowledge of Kisan Mobile Sandesh beneficiaries in Jabalpur district : A case of mobile-based ICT application

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SUMMARY : The experiments conducted by various institutions accumulated the rich experiences of information technology utilization in agriculture technology dissemination. This study was conducted during year 2012-13 in the Jabalpur district of M.P. The totals of 117 respondents were selected randomly for the study. Results showed that Chi-square analysis of the selected five independent variables with dependent variable (*i.e.* technical knowledge) indicated that, the variables age, education, annual income, information seeking behaviour, appropriateness of message were positively significant at 0.05 per cent level of significance. The profile analysis clearly indicated that majority of the KMS beneficiaries belonged to the young age group (57.26%) and were having education upto high school (47.00%). Their main occupation was farming (70.08%), possessed medium size of land holding (50.42%). Higher percentage of Kisan Mobile Sandesh beneficiaries (52.99%) had above 5 members in the family and belonged to medium annual income (46.16.%) category. They had high perception (44.44%) level and were medium cosmopolite in nature (47.86%). Majority of them had higher economic motivation (42.74%), higher information seeking behaviour (41.02%) and perceived message as appropriate (44.44%). This research paper showed the significant relationship between all independent and one of dependent variable *i.e.* knowledge in Agricultural information dissemination.

BACKGROUND AND OBJECTIVES

Agriculture is the mainstay of the Indian economy, as it constitutes the backbone of the rural livelihood security system. It is core of the planned economic development in India, Growth in agriculture has a maximum cascading impact on the other sector. 141 million hectares area is net sown area, while 190 million is gross cropped area with the cropping intensity 134 per cent. The agriculture sector contributes about 21per cent of Indian gross domestic product. 11 per cent of total export and provides employment to around 56.4 per cent. Agriculture food grain production was 208.60 million tones. The rapid growth of agriculture is essential not only for self-reliance but also meeting the food and nutrition security of the people, to bring about equitable distribution of income and wealth in rural area, and to reduce poverty and improve the quality of life.

Information communication technology can provide vital access to information, related to markets by connecting the rural poor and marginalizing them to the world's information resources and opportunities. However, not everyone have access to this information. The inequality in opportunities presented by ICT is widest between urban and rural groups, rich and poor, men and women and the educated and uneducated. Despite this, use of ICT in rural areas

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is increasing, such as the internet and cell phones. Also, the individual, community and national benefits they bring by making information available at the fingertips are forever emerging.

The discourse on mobile technologies in agriculture is part of a wider debate on ICT and mobile technology in development, which has received significant attention over the last ten years. Enthusiastic studies find mobile phones do have a multi-dimensional positive impact on sustainable poverty reduction and identify accessibility as the main challenge in harnessing the full potential (Bhavnani *et al.*, 2008). More critical political economists (Leye, 2009) contest the assumption that technologies are autonomous forces or independent variables causing change in every domain of human life. Mobile phones have also been used in agriculture to empower people in rural areas. Many mobile based ICT projects have been running successfully worldwide like Web Alliance for Re-greening in Africa (WARA), Google Traders, Google farmers friend, IIFCO Kisan Sanchar Limited and many more. One of the mobile based ICT project which is highly successful in India is Kisan Mobile Sandesh.

Kisan Mobile Sandesh is also one of them by which short message services are being provided by KVK's. The population of M.P is about 6 crore, out of which 90 lakhs are mobile phone users. All 45 KVK of Madhya Pradesh is sending agricultural messages to the farmer through mobile. The feature of Kisan mobile Sandesh long sms facility (160 characters) and sending 2 SMS in a week *i.e.* on Tuesday and Friday, on in various agriculture aspect like agronomy, horticulture, plant protection, etc. to the farmers (besides some messages are also being sent by the KVKs as per the urgent needs).

RESOURCES AND METHODS

The present study was conducted in Jabalpur district of M.P. Out of the 7 blocks in Jabalpur district, 2 blocks *viz.,* Panagar and Sehora were selected. Total 161 farmers were registered under Kisan Mobile Sandesh by the KVK, Jabalpur in the block out of which 70 per cent of the farmers *i.e.* 117 respondent of Panagar and Sehora block were considered for the study. The study was designed to know the impact of Kisan Mobile Sandesh beneficiaries. The relationship of independent variable like age, education, annual income, information seeking behaviour, appropriateness of message with their technical knowledge was also observed. The data were obtained through pre-tested structured schedule with the help of interview. The collected data were quantified, classified, tabulated and presented on the basis of frequencies and percentages, χ^2.

OBSERVATIONS AND ANALYSIS

The results of the present study as well as relevant

discussions have been presented under following sub heads:

Socio - economic status of Kisan Mobile Sandesh beneficiaries:

In order to know the background and socio-economic status of respondents, it is important to study these characteristics. In all 11 variables were studied. The data in Table 1 showed that the higher percentage of the Kisan Mobile Sandesh beneficiaries (57.26 %) belonged to young age group, followed by 23.94 per cent belonged to old age group, the present finding is supported by Sharma (2000), Paigwar (2006) and Shaik (2008).In case of education 47.00 per cent beneficiaries had higher secondary education followed by 40.18 per cent beneficiaries who had college level education. This finding is supported by Sharma (2000), Sharma (2005) and Shaik (2008). In case of occupation majority of Kisan Mobile Sandesh beneficiaries (70.08%) were dependent solely on farming, followed by 29.92 per cent in farming and other. The finding is supported by Shaik (2008). It is evident from the study that nearly half of Kisan Mobile Sandesh beneficiaries *i.e.* 50.42 per cent had medium size of land holding followed by 28.20 per cent had marginal size of land holding.The finding regarding family members revealed that majority (52.99%) of beneficiaries had above 5 members in the family and 41.09 had up to 5 members in the family. The finding is supported by Mahrukh Siraj (2011) and Oluwatayo (2011). The study inferred that the majority of the Kisan Mobile Sandesh beneficiaries 46.16 per cent belonged to medium annual income group and 34.18 per cent beneficiaries belonged to the low annual income group. The finding is supported by Singh (2005) and Shaik (2008). The study depicted that majority (44.44%) of beneficiaries had higher perception of Kisan Mobile Sandesh and 29.92 per cent had medium perception of Kisan Mobile Sandesh. The finding is supported by Muhammad *et al.* (2005) and Lal *et al.* (2005).The study revealed that higher percentages (47.86%) of the Kisan Mobile Sandesh beneficiaries were medium cosmopolite in nature, followed by 28.21 per cent who had low level of cosmopoliteness in nature. The finding is supported by Sharma (2000). Majority of the Kisan Mobile Sandesh beneficiaries 42.74 per cent were having higher economic motivation followed by 34.18 per cent who had medium level of economic motivation. In case of information seeking behaviour, higher percentage (41.02%) of the Kisan Mobile Sandesh beneficiaries were having high Information seeking behaviour followed by 37.60 per cent who had medium level of information seeking behaviour. The finding is supported by Singh (2005).Majority of the Kisan Mobile Sandesh beneficiaries 44.44 per cent beneficiaries perceived the message as appropriate whereas 31.63 per cent perceived the message of most appropriate. The finding is supported by Singh (2005).

Table 1: Profile of selected Kisan Mobile Sandesh beneficiaries

Sr. No.	Variables	KMS beneficiaries		Mean	S.D.
		Frequency	Percentage		
1.	**Age**			39.5	13.3
	Young age (<35 year)	67	57.26		
	Middle age (36 – 50 year)	22	18.80		
	Old age (>50year)	28	23.94		
2.	**Education**			3.26	.66
	Up to primary school	15	12.82		
	H.S school	55	47.00		
	Graduate and above	47	40.18		
3.	**Occupation**			1.30	.48
	Farming	82	70.08		
	Farming + other	35	29.92		
4.	**Land holding**			2.67	1.6
	Marginal (Up to 1 hectare)	33	28.20		
	Small (1.01 - 2 hectare)	15	12.83		
	Medium (2.01 - 5 hectare)	59	50.42		
	Large (Above 5)	10	8.55		
5.	**Family size**			1.52	.503
	Up to5 member	55	47.01		
	Above 5 member	62	52.99		
6.	**Annual income**			1.68	1.1
	Low (Up to 1 lakh)	40	34.18		
	Medium (1.01 lakh – 2 lakh)	54	46.16		
	High (Above 2 lakh)	23	19.66		
7.	**Perception towards KMS**			14.39	3.44
	Low (1 – 3)	30	25.64		
	Medium (4 – 6)	35	29.92		
	High (7 – 10)	52	44.44		
8.	**Cosmopoliteness**			5.85	2.10
	Low (0 – 4)	33	28.21		
	Medium (4 – 8)	56	47.86		
	High (9 – 12)	28	23.93		
9.	**Economic motivation**			33.02	5.64
	Low (6 – 18)	27	23.08		
	Medium (19 – 30)	40	34.18		
	High (31 – 42)	50	42.74		
10.	**Information seeking behavior**			17.42	3.39
	Low (1 – 11)	25	21.36		
	Medium (12 – 22)	44	37.60		
	High (23 – 32)	48	41.02		
11.	**Appropriateness of message**			4.08	.75
	Less Appropriate (0 – 2)	28	23.93		
	Appropriate (3 – 4)	52	44.44		
	Most Appropriate (5)	37	31.63		

Relationship between technical knowledge and independent variables:

Relationship between age of beneficiaries and technical knowledge of Kisan Mobile Sandesh beneficiaries:

The data presented in Table 2 show the relationship between age of the beneficiaries and their technical knowledge. It was observed that in the category of young age group, 13.43 per cent beneficiaries belonged to the category of low technical knowledge, while 71.64 per cent and 14.93 per cent beneficiaries belonged to medium and high, respectively. Similarly, out of total 22 beneficiaries of middle age group, 27.27 per cent were having low technical knowledge followed by 45.46 per cent medium and 27.27 per cent had high technical knowledge, while in the case of old age group 35.71, 42.86 and 21.42 per cent had low, medium and high technical knowledge, respectively.

The $\chi 2$ value 10.179 was found to be significant at 5 per

Table 2: Relationship between age and technical knowledge of Kisan Mobile Sandesh beneficiaries

Age	Technical knowledge			Total
	Low	Medium	High	
Young	9 (13.43)	48 (71.64)	10 (14.93)	67 (100.00)
Middle	6 (27.27)	10 (45.46)	6 (27.27)	22 (100.00)
Old	10 (35.71)	12 (42.86)	6 (21.42)	28 (100.00)
Total	25	70	22	117

$\chi 2$ Cal =10.179, significant at 0.05 level of probability with 4 d.f. $\chi 2$ tab = 9.49

Table 3: Relationship between education and technical knowledge of Kisam Mobile Sandesh beneficiaries

Education	Technical knowledge			Total
	Low	Medium	High	
Up to primary school	5 (33.33)	5 (33.33)	5 (33.34)	15 (100.00)
High Secondary school	6 (10.91)	40 (72.73)	9 (16.36)	55 (100.00)
Graduate and above	14 (29.79)	25 (53.19)	8 (17.02)	47 (100.00)
Total	25	70	22	117

$\chi 2$ Cal =10.953, significant at 0.05 level of probability with 4 d.f. $\chi 2$ tab = 9.49

Table 4: Relationship between annual income and technical knowledge of Kisan Mobile Sandesh beneficiaries

Annual income	Technical knowledge			Total
	Low	Medium	High	
Low	12 (30.00)	22 (55.00)	6 (15.00)	40 (100.00)
Medium	5 (9.25)	39 (72.23)	10 (18.52)	54 (100.00)
High	8 (34.78)	9 (39.14)	6 (26.08)	23 (100.00)
Total	25	70	22	117

$\chi 2$ Cal =11.185, significant at 0.05 level of probability with 4 d.f. $\chi 2$ tab = 9.49

Table 5: Relationship between information seeking behaviuor and technical knowledge of Kisan Mobile Sandesh beneficiaries

Information seeking behaviour	Technical knowledge			Total
	Low	Medium	High	
Low	10 (40.00)	8 (32.00)	7 (28.00)	25 (100.00)
Medium	5 (11.36)	32 (72.72)	7 (15.92)	44 (100.00)
High	10 (20.83)	30 (62.51)	8 (16.66)	48 (100.00)
Total	25	70	22	117

$\chi 2$ Cal =12.083, significant at 0.05 level of probability with 4 d.f $\chi 2$ tab = 9.49

Table 6: Relationship between appropriateness of message and technical knowledge of Kisan Mobile Sandesh beneficiaries

Appropriateness of message	Technical knowledge			Total
	Low	Medium	High	
Less appropriate	6 (21.42)	12 (42.85)	10 (35.73)	28 (100.00)
Appropriate	5 (9.61)	27 (51.92)	20 (38.47)	52 (100.00)
Most appropriate	5 (13.51)	27 (72.98)	5 (13.51)	37 (100.00)
Total	25	70	22	117

$\chi 2$ Cal =12.728, significant at 0.05 level of probability with 4 d.f $\chi 2$ tab = 9.49

cent level of probability. Thus, Null hypothesis was rejected and it can be concluded that there was significant relationship between age and technical knowledge.

Relationship between education of beneficiaries and technical knowledge of Kisan Mobile Sandesh beneficiaries:

The data presented in Table 3 show the relationship between education of the beneficiaries and their technical knowledge. It was observed that in the category of up to primary school 33.33 per cent beneficiaries belonged to low technical knowledge. While 33.33, 33.34 beneficiaries belonged to medium and high technical knowledge, respectively. In the group of higher secondary 10.91 beneficiaries belonged to the category of low, followed by 72.73 per cent and 16.36 per cent belonged to category of medium and high technical knowledge group, respectively. Similarly, in the case of beneficiaries having college level and above education, 29.79 per cent had low, 53.19 per cent had medium and 17.02 per cent had high technical knowledge.

The $\chi 2$ value 10.953 was found to be significant at 5 per cent level of probability. Thus, Null hypothesis was rejected and it can be concluded that there was significant relationship between education and technical knowledge.

Relationship between annual income of beneficiaries and technical knowledge of Kisan Mobile Sandesh beneficiaries:

The data presented in Table 4 show the relationship between annual income and technical knowledge of the beneficiaries. It was observed that in the category of low annual income group, 30.00 per cent had low technical knowledge, followed by 55.00 per cent had medium and 15.00 per cent had high technical knowledge. Similarly, in medium income groups, 9.25 per cent belonged to low technical knowledge, 72.23 per cent had medium and 18.52 per cent had high technical knowledge. While in the case of high annual income group, 34.78 per cent belonged to low technical knowledge followed by 39.14 per cent and 26.08 per cent belonged to medium and high technical knowledge, respectively.

The $\chi 2$ value 11.185 was found to be significant at 5 per cent level of probability. Thus, Null hypothesis was rejected and it can be concluded that there was significant relationship between annual income and technical knowledge.

Relationship between the information seeking behaviour and technical knowledge of Kisan Mobile Sandesh beneficiaries:

The data presented in Table 5 show the relationship between information seeking behaviour and technical knowledge of the beneficiaries. It was observed in the category of low information seeking behaviour, 40.00 per cent had low technical knowledge, followed by 32.00 per

cent had medium and 28.00 per cent had high technical knowledge. Similarly, in medium information seeking behaviour group, 11.36 per cent belonged to low technical knowledge. 72.72 per cent had medium and 15.92 per cent had high technical knowledge. While in the case of high information seeking behaviour group, 20.83 per cent belonged to low technical knowledge followed by 62.51 per cent and 16.66 per cent belonged to medium and high technical knowledge, respectively.

The $\chi 2$ value 12.083 was found to be significant at 5 per cent level of probability. Thus, Null hypothesis was rejected and it can be concluded that there was significant relationship between information seeking behaviour and technical knowledge.

Relationship between the appropriateness of message and technical knowledge of Kisan Mobile Sandesh beneficiaries:

The data presented in Table 6 show the relationship between appropriateness of message and technical knowledge of the beneficiaries. It was observed in the category of less appropriateness of message, 21.42 per cent had low technical knowledge, followed by 42.85 per cent had medium and 35.73 per cent had high technical knowledge. Similarly in appropriateness of message, 9.61 per cent belonged to low technical knowledge. 51.92 per cent had medium and 38.47 per cent had high technical knowledge. While in the case of most appropriateness of message, 13.51 per cent belonged to low technical knowledge followed by 72.98 per cent and 13.51 per cent belonged to medium and high technical knowledge, respectively.

The $\chi 2$ value 12.728 was found to be significant at 5 per cent level of probability. Thus, Null hypothesis was rejected and it can be concluded that there was significant relationship between appropriateness of message and technical knowledge.

Conclusion:

On the basis of above findings and discussion, it can be concluded that the studied variables had significant relationship with technical knowledge. The phases indicate that ICT can significantly contribute to strengthening the beneficiaries in the agricultural sector. Therefore, these cases have to be expanded to meet the diverse needs of production by overcoming the constraints apparent in different areas. It includes not only information of agricultural markets, but also gives technical knowledge, bridging the information gap, sharing information and creation of knowledge.

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REFERENCES

Bhavnani, Asheeta, Won-Wai Chiu, Rowena, Janakiram, Subramaniam and Silarszky, Peter (2008). The Role of Mobile Phones in Sustainable Rural Poverty Reduction, **1** (1) : 1-25

Leye, Veva (2009). Information and communication technologies for development: A critical perspective. *Global Governance*, **15** (1) : 29-35.

Muhammad Sher, Butt, S.A. and Ijaz Ashraf (2005). Farmers' perception of PTV's agricultural telecast. *Pakistan J. Agric. Sci.,* **41** (3/4): 162-165.

Oluwatayo, I.B. (2011). Information and communication technology as drivers of growth experience from detected small- scale businesses in Rural South west Nigeria, Ph. D. Thesis, University of Ibadan, NIGERIA.

Paigwar, Vaibhav (2006). Impact of watershed development programme (WSDP) on tribal farmers in relation to employment and income generation in Kundam block of Jabalpur district (M.P).M.Sc. (Ag.) Thesis, Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur, M.P. (INDIA).

Shaik, M.N. (2008). *ICTs in agricultural extension.* Ganga Kaveri Publishing House, Varanasi (U.P.) INDIA, 248p.

Sharma, A.K. (2005). A study of viewing behaviour of the T.V. viewing farmers. *Indian J. Extn. Edu.,* **5** (1): 52-55.

Sharma, V.P. (2000). Cyber extension in context of agriculture extension in India. *Manage. Extn. Res. Rev.,* **1** : 24-41.

Shrivastava, D.C. *et al.* (2011). Impact of information and communication technology through Kisan mobile advisory paper published in Abstracts brought out on *National Seminar* on Innovative extension approach for enhancing rural household. September 27-29,2011 held at Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur, M.P. (INDIA): 24.

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