



CONSTRAINTS FACED BY THE FARMERS IN THE USE OF ICT BASED EXTENSION SERVICES

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ABSTRACT

The use of computers and technology today has become fundamental to the operation of organizations and society. These allow the transfer of massive amounts of information in a matter of seconds, enabling humankind to advance in a multitude of ways. ICT provides the farmers with the latest technologies and improve their farm income. Hence the present study was undertaken to find out the constraint encountered by farmers in ICT utilization. In this existing scenario it is expected that integration of ICT's in agricultural extension will provide needed impetus to agricultural sector and ICT's can complement the traditional extension system for "KNOWLEDGE RESOURCE" delivery to the millions of farmers. The study was carried out in two selected districts of UP i.e. Allahabad and Kanpur Dehat covering 2 blocks and 8 villages and 284 respondents. Data were collected through personal interview technique with the help of pre structured interview schedule. Collected data were processed and analyze using descriptive statistics. The study revealed that the majority (93.33 %) of the respondents encountered the problem in ICT utilization were lack of feedback followed by problems of foreign language (90.00%) and 86.66 per cent said lack of skills to use ICT gadgets.

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INTRODUCTION

Constraints refer to situation or circumstances which may restrict, hinder or limit the availing fully of ICT based extension services. As per Telecom Regulatory Authority of India (TRAI) data of May, 2014, though there are about 38 crores mobile telephone connections in rural areas, internet penetration in the countryside is still abysmally low (in single digit percentage). Therefore, mobile messaging is the most effective tool so far having pervasive outreach to nearly 8.93 crores farm families. 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.

Green SIM card for farmers is an initiative of the IFFCO Kisan Sanchar Ltd (IKSL). IKSL is a joint venture of IFFCO (Indian Farmers Fertilizers Cooperative) and AIRTEL. IKSL provides voice-based agricultural information in regional languages to empower rural farmers. This service was launched in 2008. Subscribers receive 5 recorded voice messages. Every day each voice message is of one minute duration. These messages are in regional languages, covering various fields like Agriculture, Animal husbandry, Horticulture, Insurance,

Government policies and schemes, Mandi prices, weather forecast, Sericulture, Pisciculture, Crop Loans, Plant protection, Health etc. In spite of these good services there are some constraints coming on the way which hinder the success of the extension service delivery. Keeping these facts in view the study attempted to identify the constraints faced by users in utilizing these services.

LITERATURE REVIEW

Micheal and Maier (2007) study revealed that obstacles to ICT use were generally structural (time, location, illiteracy) and not personal (e.g. a prohibition from a relative).

Agwu *et al.* (2008) reported that lack of communication infrastructure on which ICTs depend ($x = 2.00$), lack of sufficient trained computer personnel ($x = 2.03$), erratic power supply ($x = 2.55$), poor finance ($x = 2.32$) and lack of internet access in the rural areas ($x = 2.60$). Others include; poor communication network ($x = 2.10$), high cost of ICTs soft ware ($x = 2.00$) and high cost of ICTs hard ware ($x = 2.08$). It is generally agreed that ICTs access unevenly favour urban and wealthy residents.

Arokoyo (2003) observed that the adoption and utilization of ICTs in agriculture are constrained among other problems by inadequate infrastructure, limited human resource capacity, absence of national policies and low ICTs literacy. On the part the specific constraints perceived by extension workers include; lack of competence in handling ICT facilities ($x = 2.30$), unavailability of hard ware required by modern ICTs

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(x = 2.00), erratic power supply (x = 2.03), lack of communication infrastructure on which ICTs depend (x=2.03), lack of sufficient trained computer personnel (x = 2.00), poor finance (x =2.48), lack of adequate awareness about ICTs (x = 2.28), lack of internet access to the rural areas (x=2.45), poor communication network (x = 2.23) and nature of information provided (x =2.30).The farmers also considered 12 constraints as major constraints to the use of ICTs These include lack of confidence in operating ICT facilities such as computers (x = 2.40), lack of competence in handling ICT facilities (x = 2.33), lack of adequate time for training on ICT facilities (x =2.33) and unavailability of hardware required for modern ICTs (x = 2.23.Others include; lack of communication infrastructure on which ICTs depend (x =2.20), lack of computer trained personnel (x = 2.20) and erratic and fluctuating power supply (x = 2.70).

Singh *et al.* (2009) found that the difficulties in browsing the Internet based information resources. It was found that low speed Internet access, erratic power supply and lack of required full text journals are problems with regards to the use of Internet based e-resource.

Parida (2010) revealed that 8.69 per cent of UASD staff faced obstacle always regarding reliability of content. Majority of them found Internet connection poor or low in most of the times (28.26%). With respect to the staff of KUD inadequate computer facility always played a major problem for them (17.39%), lack of proper training as a problem (26.08%). With respect to social problem conversation with parents (8.69%) for UASD staff. Occasionally they faced the problem like spending less time in social events or gathering outside home (34.78%). Nearly three fourth of them never faced the problem of visit to the irrelative house (73.91%). 23.91 per cent of KUD staff regularly faced the problem of meeting friends and conversation with parents. Occasionally they felt the problems like visit to relative house and spending time in social events or gathering outside home (41.30%). Further, most of the UASD staff faced the physiological problem like eye pain regularly (10.86%). Eye pain and back ache (32.60%). Eye pain, back ache and head ache played regular problems for most of the KUD staff (17.39%). Occasionally most of them faced the problem of eye pain (23.91%)

RESEARCH METHODOLOGY

Descriptive research design was used for this study. The study was conducted in the purposively selected two districts of Uttar Pradesh state i.e. Allahabad and Kanpur Dehat. These districts were reported to have some agriculture related activities by the Common Service Centres. One block each was purposively selected from selected districts. Thus, Chaka block from Allahabad district and Dilipnagar block from Kanpur Dehat district were selected for the study. Four Panchayats from each block were selected randomly. Thirty Five farmers from the operational area (Panchayat) of each selected panchayats were also randomly selected. Thus, the sample size constituted 280 farmer respondents from eight selected panchayats. In the selected districts two ICT based extension services in the form of mobile phones in terms of IKSL from Allahabad and m-kissan from Kanpur Dehat where chosen based on easy accessibility of information to the users. There is widespread use of mobile phones by farmers and extension personnel during information exchange which is very useful to both parties in improving the agriculture

activities along with bringing out the changes in behavioural complex of farm communities desirably. Based on calculated mean (= 43.95) and standard deviation (= 20.17) the score of constraints were calculated and based on score of constraints faced by farmers they were categorized into three levels of constraints faced by the farmers *i.e.* low level of constraints, medium level of constraints and high level of constraints

RESULTS AND DISCUSSION

All the constraints faced by farmers in the use of ICT services were categorized into infrastructural, technical, economic and miscellaneous constraints. The results are presented under different four headings as given below.

Infrastructural Constraints

Table 1 Infrastructural constraints faced by farmers in the use of ICT services

Infrastructural constraints	MPS	Rank
Fluctuating telecommunication network	67.50	I
Lack of electric supply	48.75	IV
Lack of maintenance	33.33	V
Lack of access to internet	64.17	II
Non availability of recommended inputs in the market	60.00	III
Non availability of ICT services on Sunday and holidays	12.92	VI

MPS = Mean per cent score

The table above depicts that the different Infrastructural constraints perceived by the respondents in use of mobile phone for getting agriculture information are “Fluctuating telecommunication network” with MPS 67.50, “Lack of access to internet” with MPS 64.17 and “Non availability of recommended inputs in the market” with MPS 60.00 were ranked I, II and III, respectively followed by “Lack of electric supply” with MPS 48.75, “Lack of maintenance” with MPS 33.33 and “Non availability of KCC services on Sunday and holidays” with MPS 12.92 were ranked IV , V and VI, respectively. This study is inclined with the findings of Van Stam *et al*(2005)

Technical Constraints

Table 2 Technical constraints faced by farmers in the use of ICT services

Technical constraints	MPS	Rank
Inability to operate mobile phone	30.83	VIII
Inability to read text SMS and e-mail (Illiteracy)	38.33	VII
Inability to understand language of service provider	11.67	IX
Inability to use GPRS and 3G/4G services	89.17	I
Complexity in using internet and video messages	64.17	IV
Non availability of details of information given in text SMS format	56.67	V
Difficulty in making use of given theoretical information	70.00	III
Lack of practical knowledge about given new recommendation	56.25	VI
Lack of timely availability of agriculture information	77.50	II

The table above shows that the different technical constraints perceived by the respondents in use of ICT services for getting agriculture information are “Inability to use GPRS and 3G services” with MPS 89.17, “Lack of timely availability of agriculture information” with MPS 77.50 and “Difficulty in making use of given theoretical information” with MPS 70.00 were ranked I, II and III, respectively and followed by “Complexity in using internet and video messages” with MPS 64.17, “Non-availability of details of information given in text

SMS format” with MPS 56.67, “Lack of practical knowledge about given new recommendation” with MPS 56.25, “Inability to read text SMS and e-mail (Illiteracy)” with MPS 38.33, “Inability to operate mobile phone” with MPS 30.83 and “Inability to understand language of service provider” with MPS 11.67 were ranked IV, V, VI, VII, VIII, and IX, respectively.

This study is similar with the findings of John Forth and Geoff Mason (2004).

Economic Constraints

Table 3 Economic constraints faced by farmers in the use of ICT services

Economic constraints	MPS	Rank
High cost of multimedia mobile phones	50.00	II
High cost of telecommunication network services	42.08	III
Inability to purchase recharge cards	51.67	I

MPS = Mean per cent score

Different Economic constraints perceived by the respondents in use of ICT services for getting agriculture information are “Inability to purchase recharge cards” with MPS = 51.67, “High cost of multimedia mobile phones” with MPS = 50.00 and “High cost of telecommunication network services” with MPS = 42.08 were ranked I, II and III, respectively. This study is inclined with the findings of Van Stam *et al*(2005)

Miscellaneous Constraints

Table 4 Miscellaneous constraints faced by farmers in the use of ICT services

Lack of knowledge about availability of agricultural advisory	MPS	Rank
Services on mobile phone	30.2	X
Lack of contact details (number) of agricultural advisory system	0.0	XI
Lack of satisfactory solution of individual problem	51.67	VIII
Absence of personal contact (trust) with information provider	61.25	I
Result of earlier recommendation was not satisfactory	54.17	VII
Adoption of prescribed technologies by farmer is very low	54.58	VI
Busy network of Kisan Call Center	60.83	II
Lack of confidence in provided service / information	58.75	V
Lack of availability of timely and accurate marketing and price information	48.75	IX
Call drop problem	59.17	IV
Lack of knowledge about availability of agricultural advisory	58.58	I
	59.58	III

MPS = Mean per cent score

Different Miscellaneous constraints perceived by the respondents in use of ICT services for getting agriculture information are “Lack of satisfactory solution of individual problem” with MPS = 61.25, “Adoption of prescribed technologies by farmers is very low” with MPS = 60.83 and “Call drop problem” with MPS = 59.58 were ranked I, II and III, respectively followed by “Lack of availability of timely and accurate marketing and price information” with MPS = 59.17, “Lack of confidence in provided service/information” with MPS = 58.75, “Result of earlier recommendation was not satisfactory” with MPS = 54.18, “Absence of personal contact (trust) with information provider” with MPS = 54.17, “Inadequate response from the service provider” with MPS = 51.67, “Busy network of Kisan Call Center (KCC)” with MPS = 48.75, “Lack of knowledge about availability of agricultural

advisory services on mobile phone” with MPS = 30.42 and “Lack of contact details (number) of agricultural advisory system” with MPS = 0.0 were ranked IV, V,VI,VII,VIII,IX,X and XI, respectively. This study is similar with the findings of Parida (2010).

Over All Constraints Faced By Farmers in the Use of Ict Service

Furthermore, the overall constraints faced by farmers were also analyzed separately. The relative importance of all the four constraints faced by farmers was highlighted by ranking them on the basis of mean per cent scores (MPS) of use and data is presented in Table.5.

Table 5 Over all Constraints faced by farmers in the use of ICT service

S.N.	Constraints	Mean Percent Score
1	Infrastructural constraints	47.78
2	Technical constraints	55.00
3	Economic constraints	47.92
4	Miscellaneous constraints	49.09
	Average	49.95

The data in Table.5 reveals that among the four categories of constraints i.e. Infrastructural, technical, economic and miscellaneous constraints the technical constraints had shown highest intensity with MPS 55.00 followed by miscellaneous constraints, economic constraints and Infrastructural constraints and were perceived with least intensity with MPS 49.09, 47.92 and 47.78, respectively. The overall average of MPS of all four constraints was 49.95.

Recommendations

- ICT is very important for effective transfer of technology hence Government should give due importance for training of Field level extension personnel.
- Good infrastructure education ICT tools and other required facilities should be provided for the effective use of ICT tools.
- There is a need for Agricultural officer and Field level extension personnel to update their knowledge and skill and Information communication technology (ICT). This will increase their information utilization and dissemination function.

CONCLUSION

The results of study showed that the majority of farmers (60 %) facing medium level of constraints because of less technical knowledge about the use of ICT services like inability to operate mobile phone, illiteracy that affect the use of internet, SMS etc. The study indicated that infrastructural constraints like “Fluctuating telecommunication network” with MPS 67.50 and “Non availability of ICT services on Sundays and holidays” with MPS 12.92 were most and least important constraints respectively. In technical constraints “Inability to use GPRS and 3G services” with MPS 89.17 and “Inability to understand language of service provider” with MPS 11.67 were most and least important constraints respectively. In economic constraints “Inability to purchase recharge cards” with MPS 51.67 and facilities for the investigations.

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