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Constraints faced by farmers and suggestions for effective utilization of ICT services in agriculture in central UP

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Abstract
ICT infrastructure has the potential to drastically improve the quality of life and thus it has become an increasingly essential dimension of rural development. ICT in agriculture offers a wide range of solutions to some agricultural problems. The present study explored the constraints faced by farmers and suggestions for effective utilization of ICT services for agricultural information. The study was conducted in six villages of Bakshi kaTalab block in the central UP (Lucknow district) in 2018. Responses from the 120 farmers were collected through well-structured interview schedule. It was revealed that that lack of knowledge about ICT tools, poor condition of equipment, relevant information not received in time and awareness of new ICT service among farmers about the use of ICTs for the educational and agricultural purpose were the major constraints in ICT use. All these constraints can be overcome by implementing suggestions by farmers like; proper and improved infrastructural facilities at the village level, providing relevant information at a time and skill development updating with training, creating awareness regarding use of ICTs for educational and agricultural purpose.

Keywords: Agricultural extension, constraints, information and communication technology, rural development

Introduction
India is a developing country where agriculture is the main occupation of millions of people. The Indian agriculture in recent year has shown encouraging sign on changing from traditional to modern one through conversing agricultural technology with the production accomplishment. The transfer of new ideas is also an important aspect of the agricultural sector. Now a day, it makes so easy due to the innovation of many communication channels and mediums. There are many information servers available in online communication services at grass root levels; some of them are effective in the transfer of agricultural technology in online communication services. The telephone, computer and internet and other ICT services are more effective for the transfer of agricultural technologies. ICT is a crucial requirement for sustainable economic development in rural areas. ICT, when applied to rural-based businesses, can help improved communications, increase participation, and disseminate information and share knowledge among the small business community (Narula & Arora, 2010) [7]. ICT in agriculture is an emerging field focusing on the enhancement of agriculture and rural development. It involves applications of innovative ways to use ICT in the rural domain. The advancement in ICT can be utilised for providing accurate, timely, relevant information and services to the farmers, thereby facilitating an environment for more remunerative agriculture. ICT in agriculture is also known as 'E- agriculture' is developing and applying innovative ways to use ICTs in rural areas, with the primary focus on agriculture. ICT in agriculture offers a wide range of solutions to some agricultural problems. It is seen as an emerging and field focusing on the enhancement of agricultural and rural development through improved information and communication processes. In broad terms, ICT is an umbrella term that covers all advanced technologies in manipulating and communicating information. ICT infrastructure has the potential to drastically improve the quality of life and thus it has become an increasingly essential dimension of rural development (Leatherman, 2000) [2].

Advantages of ICT in agriculture

- Access to information enhances the advance knowledge and income of farmers.
- Increased production efficiency through information on production techniques.
- Increasing profitability by market price information.
- Increased sales by market supply and demand information.
- Information for political and social inclusion.

Challenges of ICT

The common problems in the adoption of ICT in rural segments are ICT illiteracy, availability of relevant and localize contents in their own languages, easy and affordable access and other issues as awareness and willingness for the adoption of new technologies among the rural peoples, etc.

Methodology

The present study was carried out in Lucknow district of Uttar Pradesh. One block namely Bakshi kaTalab selected with full-fledged activities were working till March 2018. A simple random sampling technique was employed in this study, and the researcher can assume that the characteristics of the sample approximate the characteristics of the total population (Leedy & Ormrod, 2005) [3]. Random sampling approach was taken due to its ability in providing much information on given sample size (Bryman & Bell, 2003) [3]. A simple random sampling technique was applied to select villages. So, a total of six villages from the same block Bakshi ka Talab were selected for the present study. Twenty farmers from each village were selected randomly. Therefore, a total of one hundred twenty (120) farmers were selected, purposively. The sample size should be adequate for the research by being large enough to approximate the characteristics of the population satisfactorily and provide a credible result (McMillan & Schumacher, 2001). Perceived constraints faced by farmers and suggestions for effective utilization of ICT services for agricultural information were studied. The constraint in the present study was operationalized as any condition or factor, which might hinder or restrict the use of it. The data were collected by using a well-structured interview schedule technique. The data collected were coded, compiled and analyzed using frequencies, percentages, and rank.

Results and Discussion

1. Constraints faced by farmers for utilizing ICT services

There were several constraints found which are responsible for the low use and low level of achieving benefits by farmers about utilizing ICT services. The farmers were asked for prevalent constraints in receiving and use of the information, which is presented in table 1.

Table 1: Constraints faced by farmers for utilizing ICT services. (N=120)

S. No.	Constraints	Frequency	Percentage	Rank
1.	Sometimes right and appropriate information not received	61	50.83	1
2.	ICT sources are not user-friendly	57	47.50	2
3.	Lack of education resulting in a lack of awareness	56	46.67	3
4.	Poor conditions of equipment	54	45.00	4
5.	Lack of knowledge about online communication services and helpline numbers	51	42.50	5
6.	Total information about ICT sources not provided by officers	50	41.67	6
7.	Information not received in time	49	40.84	7
8.	Lack of knowledge of information communication technology sources	47	39.17	8
9.	Too much distance from villages	46	38.34	9
10.	Lack of belief in Government programmes	45	37.50	10

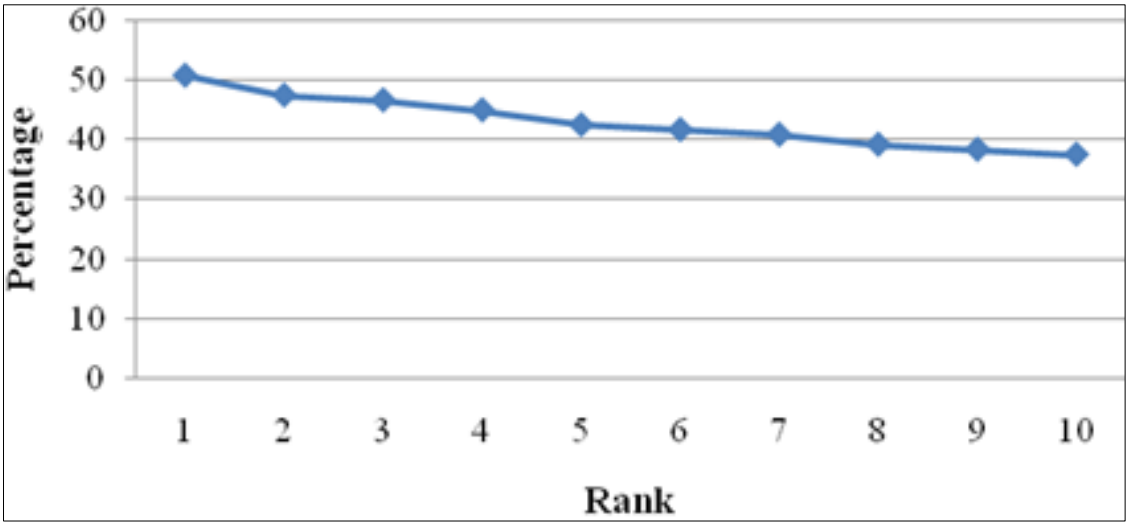

Fig 1: Constraints faced by farmers

According to rank wise ordering based on frequency and percentage, the data in table 1 indicates that the majority of the respondents (50.83%) reported sometimes right and appropriate information not received as major constraint followed by (47.50%) respondents reported ICT sources are not user-friendly. Furthermore, the higher percentage of respondents i.e. (46.67%), (45%) and (42.50%) reported Lack of education resulting in lack of awareness, Poor conditions of equipment and Lack of knowledge about online communication services and helpline numbers; respectively.

Significant numbers of respondents (41.67%, 40.84% and 39.17%) reported total information about ICT sources not provided by officers, Information not received in time and Lack of knowledge of information communication technology sources; respectively. A quite low percentage of respondents reported too much distance from villages (38.34%) and a lack of belief in Government programmes (37.50%).

2. Suggestions for effective utilization of ICT services

To make the proper suggestions for the effectiveness of ICT tools regarding the development of the agriculture sector the planning should be need-based on its users in rural areas. Taking the consideration of this fact some suggestions of opinion survey has been conducted and the discussion of the fact are presented in table 2.

Table 2: Suggestions for effective utilization of ICT services. (N=120)

S. No.	Strategies	Frequency	Percentage	Rank
1.	Education status of farmers should be improved	63	52.50	1
2.	Always right and appropriate information should be provided	60	50.00	2
3.	Helpline numbers should be made available to each and every farmer	58	48.34	3
4.	Equipment should be maintained properly	55	45.84	4
5.	Every farmer should be trained for making ICT tools user-friendly	54	45.00	5
6.	Information about ICT sources should be provided by officers	53	44.17	6
7.	Information centres should be in the village	46	38.34	7
8.	Government programmes should be highly advertised	45	37.50	8
9.	Knowledge about ICT sources should be provided through campaigns and training	43	35.83	9
10.	Information should receive in time	42	35.00	10

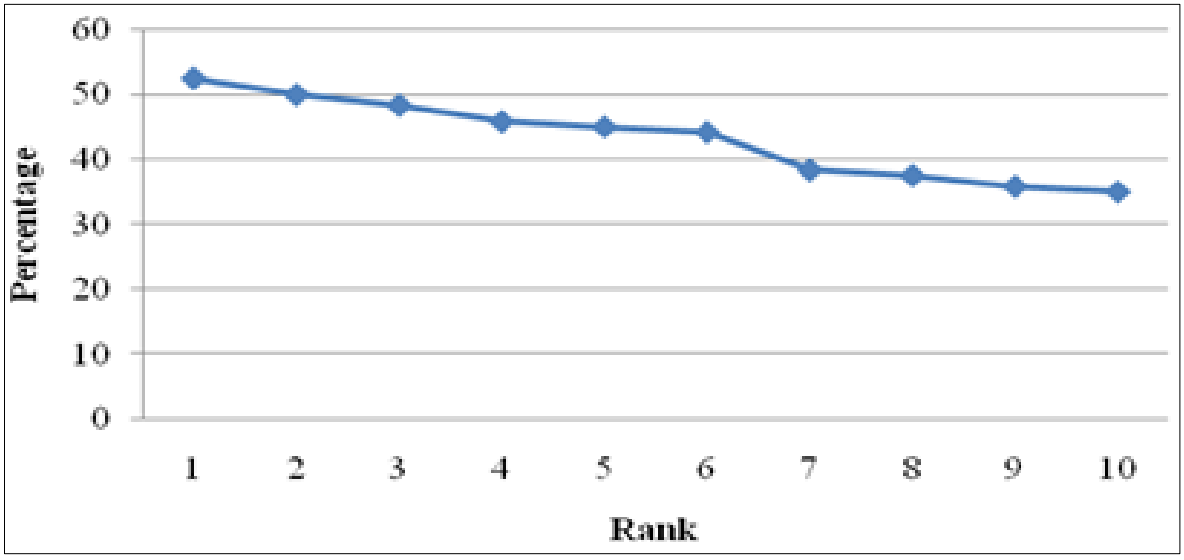

Fig 2: Suggestions for effective utilization of ICT services

The data in table 2 indicates that the majority of the respondents (52.50%) offered Education status of farmers should be improved followed by Always right and appropriate information should be provide (50.00%), helpline numbers should be made available to each and every farmers (48.34%), equipment's should be maintained properly (45.84%), every farmers should be trained for making ICT tools user-friendly (45.00%), information about ICT sources should be provided by officers (44.17%), Information centres should be in village (38.34%), government programmes should be highly advertised (37.50%), knowledge about ICT sources should be provided through campaigns and trainings (35.83%) and Information should receive in time (35%).

Conclusion

Every technology in the world is like two sides of the coin, each and everything has benefits as well as constraints. It is beyond any doubt that Information and Communication Technology is the gift of science. Along with all the benefits, there are certain problems, which the user faces in his or her day-to-day life. Results of the study indicated that constraints faced by farmers of different types in varying degrees. Majority of them face that lack of knowledge about ICT tools, poor condition of equipment, relevant information not received in time and awareness of new ICT service among farmers about the use of ICTs for educational and agricultural purpose. All these constraints could be overcome through implementing suggestions by farmers like; proper and improved infrastructural facilities at the village level, providing relevant information at a time and skill development updating with training, creating awareness regarding use of ICTs for educational and agricultural purpose

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