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Benefits perceived by farmers in utilization of ICTs in Kota district of Rajasthan

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Abstract

The farmer's concern has shifted from high production to high returns, and hence issues like quality, timeliness and post-harvest technology and storage are gaining prominence in the farmer queries. Given the demand for agricultural growth, evolutionary changes in technology transfer have been made to effectively reach the farming community. Information and communication technology (ICT) is one of the important counterparts that have made the expansion of agriculture more realistic and interesting. A Study on perceived benefits by the farmers in utilization of ICT tools in Kota district of Rajasthan was conducted on the year 2021-2022. A multistage sampling technique was used for the study. A total of 399 sample size was taken. The result of the study showed that "ICT provide direct access to information" was emerged as most important benefit perceived by the respondent farmers.

Keywords: Agricultural growth, farmers. ICT, post-harvest technology, utilization

Introduction

Information is a valuable input through which farmers apply new technologies to make farming more profitable. The application of ICT offers broader opportunities by strengthening technology transfer between research and advisory systems and dissemination to end-users. Due to the decreasing strength of field officials at the gross root level, it becomes a challenging task for the concerned authorities to reach the farmers with the latest technical know-how. It is moderately evident that the initiation of the ICT revolution is being well harnessed by sectors other than agriculture. Therefore, the use of ICT for agricultural communication plays a crucial role in bridging this gap in rural areas, which is why access to these ICT tools is a crucial prerequisite for the sustainable development of the agricultural community. It is obvious that many of the bottlenecks impede the free flow of information through these tools. Therefore, it is time to deal seriously with these issues in order to make the future communication system more sustainable.

The practice of ICT for economic development and poverty reduction is actively promoted. Today, ICT can improve smallholder farmers' access to timely advisory information while addressing many of these challenges by reducing the cost of advisory visits and enabling more frequent two-way communication between farmers and advisory staff. Nowadays, the importance of information and access to information is becoming more important in the market and in society, as new technologies in this world give great importance to ICT in agriculture and can make agriculture more profitable. The convergence of ICT with the traditional advisory system can strengthen the bond of R-F-E (Researcher-Farmer-Extensionist). By improving communication links between farmers, advisors and research centers, ICT can improve the flow of relevant information between all these authorities. The application of ICT in the agricultural sector can create many opportunities and chances for easy technology transfer at the lower level. In many other sectors, ICT play a crucial role in the communication and transfer of technologies to the course, grass-roots level. In agriculture, it becomes quite a challenge for authorities (government and non-government) that ICT and its tools can be much better than other sources for easy access and transfer of technologies at the rough root level of the agricultural society.

Materials and Methods

The study was conducted in Kota district of Rajasthan to study the "Perceived Benefits by The Farmers in Utilization of ICT Tools in Kota District of Rajasthan". Kota district was selected purposively and in Kota district Ladpura block was selected purposively from 5 blocks of the district and 6 villages from Ladpura block namely; Rasulpur, Bhimpura, Aarampura,

Bhojpura, Jakhora, Mawasa were selected randomly. Proportional sampling method was used to obtain total households from each village. Data were collected through the face-to-face interview method following a pre-tested structured interview plan, and various statistical tools were used wherever necessary. To measure the “perceived benefits by the farmers in utilization of ICT tools, it was studied on a five-point continuum viz., ‘Strongly Agree’, ‘Agree’, ‘Undecided’, ‘Disagree’, and ‘Strongly Disagree’ with scores of 5, 4, 3, 2, and 1, respectively for statements. Respondents were asked to choose from this five-point continuum and based on the total responses obtained from the respondents about each statement were recorded and analyzed and rank were given on the basis of mean, which is as follows:

$$\bar{x} = \frac{\sum fx}{N}$$

Where;

\bar{x} = Arithmetic Mean

f = Frequency in each class

x = Midpoint of each class

N = Total no. of scores

Results and Discussion

Perceived benefits by the farmers in utilization of ICT tools

Perceived benefits construct is defined as an individual's belief that specific positive outcomes will result from a specific behavior. There was increasing awareness of the potential of ICT in the dissemination of agricultural technology. The farmers came to regard the ICT as an important source of information on agriculture and allied area for all with their own perception and priorities. An attempt was made to find out the perceived benefits by the farmers in utilizing ICT tools and presented in Table 1.

Table 1: Perceived benefits by the farmers in utilization of ICT tools (n=399)

Benefits	Mean score	Rank
ICT provide direct access to information	4.76	I
Provide more subject matter coverage	4.73	II
Provides more than one source of information for a subject matter	4.72	III
Minimize time and distance barriers	4.33	IV
ICT provide reliable and timely information	3.89	V
Reduction in transaction cost	3.56	VI
ICTs provide faster question answering services	3.27	VII
Improve the quality of decision making	3.02	VIII
Provide information on different agriculture programmes	2.97	IX
ICT is the quick mode of communication	2.39	X

Based on the data Table 1 revealed that “ICT provide direct access to information” was emerged as most important benefit perceived by the respondent farmers based on total score of the statement recorded by the responses of the respondents given highest priority and rank first with the mean score 4.76. The findings of the study were also supported by study conducted by Dhaka and Chayal (2010) who reported in their research study on “Farmers’ experience with ICTs on transfer of technology in changing agri-rural environment” that most important benefit perceived by the farmers in ICT utilization was ICT provide direct access to information. The next most frequently mentioned priority was “provide

more subject matter coverage” with mean score 4.73 and given rank second. The results of the study were in congruence with the results of Lokeswari (2016)^[5] who revealed in his study entitled “A study of the use of ICT among rural farmers” that ICT has been shown to have an increasing impact on agricultural sector and on the processes associated with food production. This impact has improved the sustainability of agricultural systems in order to provide food for an increasing world population and to improve rural livelihoods. ICT services perceived able to disseminate knowledge intensive information like management of disease and pest, production practices, weather forecasting, early warning, market intelligence, post-harvest management etc.

The third priority was “provides more than one source of information for a subject matter” with the mean score 4.72. The fourth priority was “minimizes time and distance barriers” with mean score 4.33 through linking knowledge system and breaking working hours barriers. These findings were in agreement with the findings of Warthi and Bhanotra (2017)^[4] in their study on “Benefits and constraints of mobile phone use as an ICT tool by dairy entrepreneurs” and observed that “use of mobile phone leads to easy access to veterinary expert” was the most important benefit followed by “mobile phone reduces time and distance barrier” as a second most important factor that determine the high use of android and non-android mobile phone or use of ICT by dairy entrepreneurs. The fifth priority was “ICT provide reliable and timely information” with mean score 3.89. The sixth priority was “reduction in transaction cost” with mean score 3.56. The next priority was “ICTs provide faster question answering services” with mean score 3.27 with seventh rank. It was also reported by the respondent farmers that “improve the quality of decision making” through providing alternative solutions to a set of problematic situations with mean score 3.02 with rank eighth.

One of the important benefit perceived by the respondent farmers was also observed that “It provide information on different agriculture programmes” thorough different source of information with mean score 2.97 and rank ninth. “ICT is the quick mode of communication” with mean score 2.39 and given rank tenth. The findings of the study were also supported by findings of Chikaire *et al.* (2017)^[1] they conducted a study on “Effects of use of information and communication technologies (ICTs) on farmers’ agricultural practices and welfare in Orlu agricultural zone of Imo State, Nigeria” and showed the positive effects of ICT use on respondents’ agricultural practices like adoption of soil conservation practices, ability to adopt better land use practices, ability to use and apply manure/fertilizer, supply chain/risk management, better residue/organic matter management, ability to monitor pest/disease outbreak, to know effective planting strategy on steep slopes, improved/timely weeding, use of appropriate planting material, proper land preparation technique, planting seeds at right rate and date, planting at right depth/density, and improve crop and land rotation course. Similarly, Panda *et al.* (2019)^[7] illustrated that the benefits extracted by the farmers by using ICT tools i.e., most of the farmers (50 per cent) high in using ICT tools or communication and 57 per cent for general information. To know about the new information and improved skill half of the respondents (50 per cent) were using this technology, followed by 43 per cent for marketing of benefit.

The findings of the study were also supported by the studies conducted by Das *et al.* (2020)^[2], Nikam *et al.* (2020)^[6] Khan *et al.* (2019)^[4] and Singh and Burman (2015)^[8].

Conclusion

It can be concluded that direct access to information by ICT is the most important benefit perceived by the farmers surveyed. However, the benefits gained by farmers by using ICT tools mainly for general communication and information are too small to achieve higher prices of products and have a significant impact on profit extraction. Similarly, good ICT infrastructure, adequate ICT skills, good and affordable internet connection and appropriate ICT policies will improve the implementation of ICT in agriculture in developing countries. Sustainability as a key prerequisite for successful use of ICT should be promoted by providing adequate ICT infrastructure, qualified personnel, and constant/sufficient power supply at all levels. Additionally, reliable Internet service providers must provide adequate bandwidth for Internet service.

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