



ISSN (E): 2277-7695
ISSN (P): 2349-8242
NAAS Rating: 5.23
TPI 2022; SP-11(7): 3379-3381
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www.thepharmajournal.com
Received: 24-04-2022
Accepted: 29-05-2022

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A study on perceived constraints and suggestions in utilization of ICT by the KVK scientists of NE region of India

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Abstract

The present study was conducted to study the constraints and suggestions perceived by the KVK scientists for effective utilization of ICT in KVK activities in NE region of India. The study was conducted with the randomly selected 110 nos. of KVK scientists of the region. The study revealed that poor ICT based infrastructure facilities at KVK (95.45%), time management problems in learning to use ICT (96.36%), slow functioning of internet/server break down (100%), lack of fund for ICT (80.91%), no network coverage for mobile (98.18%), lack of learner motivation towards using ICT (82.73%) were the major constraints perceived by the respondents. All these constraints may be overcome by implementing suggestions received from KVK scientists, viz., provision of alternate power source for electricity, provision of ICT facilities at individual level, provision of training regarding various use of ICT in agriculture and at village level information KIOSK should be developed.

Keywords: NE region, constraints, information and communication technology (ICT), KVK

Introduction

Information and Communication Technology (ICT) is considered as one of the driving forces of globalization of extension system. It is observed that integration of ICT is rapidly transforming the way of agricultural technology transfer (Kale *et al.*, 2017) [8]. Krishi Vigyan Kendra (KVK) system is the main public sector agency for agriculture extension in India. The KVK is an innovative science-based institute which undertakes assessment and refinement of technologies, frontline demonstrations to promptly demonstrate the latest agricultural technologies to the farmers as well as the extension workers and conducts trainings for farmers, farm women, rural youth and extension personnel (Nath *et al.*, 2017b) [4]. ICAR had launched the scheme as the training institutes in the country were not sufficient to meet the training needs of the farmers and consequently the process of transfer of technology had been slowed down (Nath *et al.*, 2017a) [3]. Based on the recommendations of the Education Commission (1964-66) and Inter Ministerial Committee (1973), the ICAR decided to establish KVK in the country, as they observed the KVKs are of national importance and would help in accelerating the agricultural production and also in improving the socio-economic conditions of the farming community (Nath *et al.*, 2016b) [2]. On the basis of Education Commission Report, the first KVK was established at Pondicherry under the management of Tamil Nadu Agricultural University, Coimbatore in 1974 (Nath *et al.*, 2016a) [1]. The first KVK in NE region was established in Kolasib district of Mizoram in February, 1979 to impart training and to equip the farmers with skill and knowledge required for practicing advanced agricultural and allied practices (Nath *et al.*, 2017c) [5]. Presently, NE region has 90 KVKs spread over eight states of the region. KVK scientists are using ICT tools in their day to day activities (Nath *et al.*, 2017d) [6]. Similar to any other technology, use of ICT in agricultural extension is also having constraints; and the constraints of any communication system can be accessed through involvement of its real users. Therefore, the study was conducted to elicit the constraints perceived by the KVK scientists of NE region of India while using ICTs in the process of dissemination of agricultural technologies.

Materials and Methods

Ninety ((90) nos. of KVKs covering all the North Eastern (NE) states under different administrative control were the universe for the study. This region consists of eight states, viz, Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and Sikkim.

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One hundred and ten (110) scientists of KVKs were selected randomly for the study to represent all NE states. The perceived constraints in utilization of ICTs were categorized as organizational, personal & technical constraints and perceived farmer's level constraints regarding ICT utilization were also measured in terms of frequency and percentage. Suggestions for effective utilization of ICT were also tabulated. Data collection was done through a survey schedule.

Results and Discussion

The perceived constraints regarding ICT utilization by the respondents is presented in Table 1. Data presented in Table 1 reveals that 95.45 percent of the respondents faced poor ICT based infrastructure facilities at KVK as major constraints

under organizational level which ranked I. The II and III ranked were lack of fund for ICT (80.91%) and lack of training facilities to learn ICT (68.18%). The Table 1 also reveals that majority of the respondents (96.36%) perceived time management problems in learning to use ICT as personal constraints followed by lack of learner motivation towards using ICT (82.73%) and lack of expertise to use ICT (71.82%) with rank II and III respectively. Under technical constraints 100 per cent of the respondents perceived slow functioning of internet/server break down as major constraints followed by no network coverage for mobile (98.18%) and irregular supply of electricity (94.45%) with rank II and III respectively.

Table 1: Perceived constraints regarding ICT utilization (N=110)

S. No.	Constraints	Frequency	Percentage	Rank
A. Organizational level				
1.	Lack of fund for ICT	89	80.91	II
2.	Poor ICT based infrastructure facilities at KVK	105	95.45	I
3.	Lack of technical support from organization	57	51.82	IV
4.	Lack of training facilities to learn ICT	75	68.18	III
B. Personal constraints				
1.	Lack of expertise to use ICT	79	71.82	III
2.	Time management problems in learning to use ICT	106	96.36	I
3.	Lack of learner motivation towards using ICT	91	82.73	II
4.	Use of ICT cause health problems like eye pain, body pain etc.	49	44.55	IV
5.	Lack of confidence to use ICT	35	31.82	V
C. Technical constraints				
1.	Slow functioning of internet/server break down	110	100.00	I
2.	Lack of useful software	66	60.00	IV
3.	Irregular supply of electricity	105	94.45	III
4.	No network coverage for mobile	108	98.18	II
5.	High threat of virus	31	28.18	V

The perceived farmer's level constraints regarding ICT utilization is presented in Table 2. Data presented in Table 2 reveals that majority of the respondents (98.18%) highlighted lack of access to ICT at village level as perceived farmer's level constraints. The other constraints found by the

respondents were lack of training facilities to learn ICT (89.09%) and lack of awareness regarding the ICT use for educational and agricultural purpose (80.00%) which ranked as II and III respectively.

Table 2: Perceived farmer's level constraints regarding ICT utilization (N=110)

S. No.	Farmer's level constraints	Frequency	Percentage	Rank
1.	Lack of awareness regarding the ICT use for educational and agricultural purpose	88	80.00	III
2.	Lack of access to ICT at village level	108	98.18	I
3.	Illiteracy among farmers	46	41.82	VI
4.	Lack of training facilities to learn ICT	98	89.09	II
5.	Lack of content in local language on internet	75	68.18	IV
6.	Reluctance to use of ICT	56	50.91	V

D. Suggestions for effective utilization of ICT

The suggestions for effective utilization of ICTs as perceived by the respondents are shown in Table 3. Data presented in Table 3 reveals that 100 percent of the respondents expressed that there should be alternate power source for electricity

which ranked I. Provision of ICT facilities at individual level (91.82%) and provision of training regarding various use of ICT in agriculture (90.00%) is suggested by the scientists of KVKs to enhance their skill and productivity.

Table 3: Suggestions for effective utilization of ICT (N=110)

S. No.	Suggestions	Frequency	Percentage	Rank
1.	At village level information KIOSK should be developed	91	82.72	IV
2.	Provision of training regarding various use of ICT in agriculture	99	90.00	III
3.	There should be Management Information System (MIS) to reduce the paper work and reporting burden	90	81.82	V
4.	There should be provision of voice messages on mobile to be send to illiterate farmers	87	79.09	VI
5.	Provision of ICT facilities at individual level	101	91.82	II
6.	There should be alternate power source for electricity	110	100.00	I

Conclusion

It is beyond any doubt that Information and Communication Technology is the gift of science (Kale *et al.*, 2017) ^[8]. Findings of the study indicated that KVK scientists perceived constraints of different types in varying degrees. The KVK is a grass root level institution launched by ICAR after finding the fact that the training institutes in the country were not sufficient to meet the training needs of the farmers (Kokate *et al.*, 2011) ^[7]. It is concluded, that, a high time has come to strengthen the KVKs as a vital extension and development institute in terms of financial resource and infrastructure for effective functioning. The findings of the study may be utilized for modification of KVK programme and their activities all over the country.

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