CONSTRAINTS FACED IN THE USAGE OF ICT TOOLS BY FARMERS IN ANANTAPUR DISTRICT OF ANDHRA PRADESH, INDIA

Abstract

The study investigated into the constraints encounter by farmers while using information and communication technology (ICT) in the Anantapur district of Andhra Pradesh. The study was performed in a purposefully chosen district, and respondents were chosen via proportional random selection. The ex-post facto research design was employed; several kinds of constraints were gathered through a literature study and expert opinion. They were given an interview schedule. The acquired data was analysed, and ranks were assigned based on frequency and percentages. The major constraints faced by the farmers in use of ICT tools were high cost of ICT gadgets like smart phones, computers etc (92.50%), high cost of servicing charges of ICT gadgets (90.83%), lack of sufficient skills in usage of ICT tools by rural communities (85.00%), lack of uninterrupted power supply (84.16%), lack of servicing centres of ICTs in villages (76.66%) and difficulty in understanding the language of ICT gadgets (75.00%). Some major suggestions drawn from the respondent farmers were reduce the costs of ICT tools (96.66%), Provide subsidies on ICT gadgets (90.83%), Reduce servicing charges (86.66%), Giving continuous power supply (84.16%), Providing of messages in local languages (79.16%) and Establish service centres in villages (76.66%).

Keywords:- Agricultural Extension, Constraints, Farmers, Information Communication Technology.

INTRODUCTION

Information and Communication Technology (ICT) is the combination of three magical words, ‘Information’, ‘Communication’ and ‘Technology’.

Information and Communication Technologies (ICTs) are the technologies that are used to link technological devices such as personal computers and mobiles with communication technologies such as telephones and their telecommunication networks. PC,

laptop and mobile phone with e-mail and Internet provides the best example. ICTs are range of electronic technologies which when converged in new configurations are flexible, adaptable, enabling and capable of transforming organisations and redefining social relations. The range of technologies is increasing all the time and there is a convergence between the new technologies and conventional media. This rapid and ongoing convergence means that devices such as web camera, digital cameras, digital video cameras and players, personal digital assistants, slide projectors and mobile telephones are also compatible with more traditional media such as radio (digital, satellite), television (cable, digital, satellite). Thus most devices can now be linked to others to share and exchange information and allow it to be used in such a way that they can also be categorised as ICTs. Even books are being incorporated into ICTs either through the potential for informal web publishing or more formal digital book publishing with designated readers or e-books, e-journals, e-magazines, e-newspapers, e-library, etc. ICTs, therefore, are an expanding assembly of technologies that can be used to collect, store and share information between people using multiple devices and multiple media.

ICT has brought revolutionary changes in the lives of millions of Indian populace. Due to progress in fields of computer science and telecommunication, large amount of information can be acquired, processed, and delivered at any place and time to a person who needs it. (Gill, G. S.2022).

ICT when applied to rural based business can help improved communications, increase participation, disseminate information and share knowledge among the small business community (Narula and Arora, 2010).

ICT tools serve as a unifying force that brings people together, regardless of caste, class, race, religion, sex or political identity. The delivery of ICT-based information delivery has the potential to be more timely and directly reach more farmers (Rajoria, et al.2022). Access to ICTs could lower the costs associated with seeking the information and knowledge and asymmetric information, particularly about market prices (Rajoria, et al.2022). ICT can deliver fast, reliable and accurate information in a user-friendly manner for the end user. The information disseminated facilitates the farmers to decide when and what to plan, when and how to cultivate, how to harvest, what post-harvest management practices should be followed, when and where the produce should sell in market etc. (Anand, et al.2019; Balu et al. 2018).

Obstacles to ICT use were generally structural i.e, time, location, illiteracy etc. and not personal (Micheal and Maier, 2007)

Low outreach is due to lack of sufficient staff and low operational budgets which posed constraints on the ability of extension staff to visit farmer's field. Only 6 states have operating village level extension staff and 40 per cent of extension posts are vacant overall. (Sulaiman, R and Van den Ban, 2003)

Lack of knowledge and low literacy are the major constraints for accessibility of technology tools by the farmers (Avilesh *et al.* 2017), high charges for electricity bills, poor ICT infrastructure development, poor connectivity and accessibility for internet, TV, radio etc., high cost of ICTs facilities, high charges for ICTs facilities, poor knowledge on ICTs usage especially internet and computer, poor supply of electricity, illiteracy and lack of training on ICTs use are the constraints for using of ICTs by the rural women (Obiora, 2014), infrastructure (81%) is the major problem against the use of ICTs by the farmers followed by lack of awareness, irrelevant content, technical skill, and interest and literacy level of the farmers (Sobalaje, 2013), high cost of ICT infrastructure, low income earning , frequent power failure, lack of necessary skill among others are the major constraints. Others include household commitment and hindrances, unavailability of ICT hardware (Ogbonna and Agwu, 2013), majority (20%) of the respondents were not using television due to not available at their residence (Sharma, 2012).

Though agriculture and IT are at the economic background, farmer's distress is at raise due to knowledge gap between the scientists and the farmers. The gap prevails because of the short supply of extension personnel. In order to provide the farmers with the attest technologies and improve their farm income, ICT plays a vital role. But this is not the real case at the ground level as farmers are facing several issues regarding the ICT utilization. Realizing this problem, a study was undertaken to know the constraints faced by farmers in utilization of ICT tools.

Methodology

The present study was conducted in Anantapur district of Andhra Pradesh during the year 2017-18. An Ex-post facto research design was used in the present investigation. The Anantapur district was selected purposively for the study due to large area (19.13 lakh ha) in Andhra Pradesh. Out of five divisions, three divisions were selected randomly. Three mandals from each division were selected by using random sampling technique. From each of

the selected mandal, four villages were selected following random sampling procedure. Thirty four farmers from Gandlapenta mandal, forty seven farmers from Bukkarayasamudram mandal and thirty nine farmers from Beluguppa mandal were selected from the villages by proportionate random sampling method. Thus a total of 120 farmers were selected for the study.

Data was collected through a well-structured interview schedule which was developed keeping in view of the objective of the study. The collected data were coded, classified and tabulated. The statistical tools such as Frequency, Percentage, Mean, Standard Deviation and Rank Based Quotient were used for meaningful interpretation of findings and for drawing conclusions.

The data are collected pertaining to the problems faced by the respondents with regard to ICT tools and also for suggestions given by the respondents was quantified in terms of the number of respondents who gave the rank. The ranks apprehended to the various problems as well as the frequency of respondents which were assigned by the respondents is utilized to calculate the Rank Based Quotient (RBQ). The formulas for the calculation of RBQ are as follows:

$$\text{RBQ} = \frac{\sum_{i=1}^{n}(Fi)(n+1-i)}{N_n} X100$$

Where,

F_i = Frequency of respondents for i^{th} rank

N = Number of respondents

n= Number of ranks

$\sum_{i=1}^{n}$ = it directs to sum multiple factors

$\sum_{i=1}^{n}(F_i)(n+1-i)$ = $F_1 \times n + F_2 \times n\text{-}1 + F_3 \times n\text{-}2 \ldots\ldots\ldots\ldots F_n \times 1$

Results and Discussion

Table 1: Constraints faced by the farmers in utilization of ICT tools

S. No.	Constraint	F	%	Rank
1	High cost of ICT gadgets like smart phones, computers etc.	111	92.50	I
2	Inadequate infrastructural facilities for	63	52.50	XIV

	maintenance of ICT tools.			
3	Lack of sufficient skills in usage of ICT tools by rural communities.	102	85.00	III
4	Low level of education.	77	64.16	IX
5	Inadequate internet facilities.	65	54.16	XIII
6	Lack of uninterrupted power supply	101	84.16	IV
7	Insufficient training and practical exposure towards ICTs.	75	62.50	X
8	Lack of awareness of benefits of ICTs.	70	58.33	XII
9	Insufficient servicing centres of ICTs in villages.	92	76.66	V
10	High cost of servicing charges of ICT gadgets.	109	90.83	II
11	Difficulty in understanding the language of ICT gadgets.	90	75.00	VI
12	Non-availability of ICT gadgets and spare parts in local markets	74	61.66	XI
13	Poor connectivity of internet in villages.	83	69.16	VII
14	Poor economic condition of rural people	61	50.83	XV
15	Lack of subsidies on ICT gadgets.	80	66.66	VIII

It is evident from the Table 1 that high cost of ICT gadgets like smart phones, computers etc. were ranked I with percentage of 92.50 was the major constraint, which was followed by high cost of servicing charges of ICT gadgets stands rank II with 90.83 per cent, with 85.00 per cent of respondents expressed lack of sufficient skills in usage of ICT tools by rural communities ranks III due to owing to a lack of exposure and understanding on how to appropriately use ICTs to reap their benefits, lack of uninterrupted power supply ranked IV with a percentage of 84.16, lack of servicing centres of ICTs in villages ranks V with a per cent of 76.66 as a result, farmers were forced to fix their things and transport them to town at a considerable cost, incurring additional fees and loss for the farmer.. This implies that the government should provide the subsidies for purchasing of gadgets and also reduce the cost of servicing charges and do not lack motivation to learn the skills, but they do require an effective support structure of more frequent trainings and skill development programmes, as well as continuous government regulations.

The other problems faced by the farmers on utilization of ICT tools were, difficulty in understanding the language of ICT gadgets ranks VI with 75.00 per cent this is because most mobile phones have English language menus, Poor connectivity of internet in villages ranks VII with 69.16 per cent because connection is extremely restricted and confined to only a few networks. As a result, farmers do not see mobile phone use as dependable and reputable when inadequate network access is a barrier to their use, Lack of subsidies on ICT gadgets ranks

VIII with 66.66 per cent, Low level of education ranks IX with 64.16 per cent some respondents stated that they are unable to use most of the fundamental capabilities of mobile phones, such as SMS, due to illiteracy and a lack of expertise in utilising them, Insufficient training and practical exposure towards ICTs ranks X with 62.50 per cent, Non-availability of ICT gadgets and spare parts in local markets ranks XI with 61.66 per cent, Lack of awareness of benefits of ICTs ranks XII with 58.33 per cent they believed that they required some training to educate and teach them how to use ICTs for agricultural and rural development., Lack of internet facilities ranks XIII with 54.16 per cent, Inadequate infrastructural facilities ranks XIV with 52.50 per cent and Poor economic condition of rural people ranks XV with 50.83 per cent. Other problems faced by respondents regarding the use of ICT tools will be addressed by increasing access to internet connectivity in rural areas, creating awareness among farmers through training and practical sessions, and establishing ICT hubs in villages to update farmers' knowledge of agricultural and allied sectors. The study is also in line with the findings of Agwu et al., (2008); Chilimo (2008), Reddi and Sinha (2009); Shankariah and Swamy (2012); and Olaniyi (2013).

Table 2: Suggestions to Overcome the Constraints

S. No.	Suggestions	F	%	Rank
1	Reduce the costs of ICT tools.	116	96.66	I
2	Provide infrastructure facilities.	61	50.83	XIII
3	Provide trainings on development of skills in usage of ICT tools.	81	67.50	VIII
4	Provide educational facilities near village.	58	48.33	XIV
5	Providing of internet facilities.	69	57.50	XI
6	Giving continuous power supply.	101	84.16	IV
7	Provide trainings on ICT tools usage.	89	74.16	VII
8	Create awareness campaigns on benefits of ICT tools.	79	65.83	IX
9	Establish service centres in villages.	92	76.66	VI
10	Reduce servicing charges.	104	86.66	III
11	Providing of messages in local languages.	95	79.16	V
12	Establishment of large markets.	66	55.00	XII
13	Strengthen the internet connectivity.	75	62.50	X
14	Provide remunerative prices to their produce.	56	46.66	XV
15	Provide subsidies on ICT gadgets.	109	90.83	II

Based on the constraints, the suggestions were drawn from the respondent farmers to overcome them were presented in Table 2 based on their magnitude. Suggestions were ranked based on frequency percentage.

A perusal of the Table 2 indicated that, majority of the respondents were suggest reduce the costs of ICT tools stands rank I with percentage of 96.66, followed by Provide subsidies on ICT gadgets ranks II with 90.83 per cent, Reduce servicing charges ranks III with 86.66 per cent, Giving continuous power supply ranks IV with 84.16 per cent, Providing of messages in local languages ranks V with 79.16 per cent, Establish service centres in villages ranks VI with 76.66 per cent, Provide trainings on ICT tools usage ranks VII with 74.16 per cent, Provide trainings on development of skills in usage of ICT tools ranks VIII with 67.50 per cent, Create awareness campaigns on benefits of ICT tools ranks IX with 65.83 per cent, Strengthen the internet connectivity ranks X with the percentage of 62.50, Providing of internet facilities ranks XI with 57.50 per cent, Establishment of large markets ranks XII with 55.00 per cent, Provide infrastructure facilities stands rank XIII having 50.83 percentage, Provide educational facilities near village ranks XIV with 48.33 per cent and Provide remunerative prices to their produce stands rank XV with 46.66 per cent.

CONCLUSION

In the present study it was found that farmers faced many constraints such as high cost of ICT gadgets and high cost of servicing charges of ICT gadgets. To prevail over these constraints the government should subsidise the expenses of obtaining the ICT services, particularly for rural farmers who cannot afford them also reduce the costs of gadgets. Strengthening and motivating farmers to use the technologies such as smart phones, internet, apps, computer etc. will increase their usage level. Based on suggestions given by farmers, extension personnel's should provide trainings on usage of ICT tools to the farmers.

If current ICT capabilities are not fully integrated into the mainstream of the Indian agricultural extension system, the distribution, exploitation, and application of scientific agricultural knowledge is likely to stagnate. Farmers have recognised that ICT tools have a better potential for supporting them in the advancement of their farming activities. Thus, in order to boost the efficiency with which ICTs are used by farmers in India, ICT training must be implemented.

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