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Factors Influencing Effective Use of Information and Communication Technology (ICT) Tools By Various Animal Husbandry (A.H.) Organizations in Andhra Pradesh

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ABSTRACT: Data was collected from 33 organizations which were actively involved in Animal Husbandry activities and elicited through a questionnaire following an exploratory research design on “Utilization of Information and Communication Technology (ICT) tools by various organizations in Animal Husbandry – A study in Andhra Pradesh.” Majority of the organizations agreed that ICT tools are functional at all times, sufficient number of ICT tools are available in the organization, the connectivity is good and access to the ICT tools is always available. As regards to affordability of ICT tools majority indicated that the organization is able to afford the ICT tools, has sufficient funding for purchase and maintenance of ICT tools, has adequate technical support for maintenance of ICT tools. Responses were varied for the statement that organization is providing loans for the purchase of ICT tools. Regarding the knowledge of computer applications, majority of the users have medium level of knowledge.

KEY WORDS: ICT, Affordability of ICT, infrastructure availability of ICT tools, Animal Husbandry organizations

I. INTRODUCTION

Livestock sector is one of the allied sectors which has proved to be an integral part of livelihood system of rural families and continues to be a major source of rural economy. There is rapid growth in the overall livestock production of our country which can be attributed to the technological revolution in A.H. and the successful adoption of recommended technologies by the rural farmers through different channels of information dissemination by the extension agencies. Apart from the conventional methods of information dissemination like traditional extension methods, electronic and print media, the recent foray into information gateway is the initiative of ICT tools in Agriculture and allied sectors.

In order to transform livestock sector into information driven, modern and competitive sector, the role of Information and Communication Technology (ICT) cannot be overruled. They provide faster and newer ways of delivering and accessing information. The people working in the livestock sector are least equipped with proper tools to deal with rapidly changing livestock production scenario and international competitive environment. At present, the ratio of the farmers to the extension workers is 1000:1 (Kumar, 2005), also the existing transfer of technology mechanisms and extension programmes run by the government departments are slow and in many cases ineffective in view of the vast gaps between the research and farmers linkages. This is partly due to inadequate use of new areas of information dissemination in various development programmes. The introduction of ICT helps in upgrading the information at least cost.

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Information technology has demonstrated its utility and advantages in all elements of human life and especially in vocations of agriculture and allied sectors enhancing the productivity either directly or indirectly. The extension activities in Indian scenario are traditional in nature and suffer from certain drawbacks such as expensive in nature, irrelevancy of the content, inadequate coverage, one way information system, erosion of messages in passing through different layers, extension personnel's ineffective communication, neglect of extension in livestock development etc. (Sasidhar and Sharma, 2006). Information technology can help to overcome the barriers of traditional extension system to a greater extent. Earlier the mindset of extension system is of transferring technology packages, now with the initiation of ICT tools, the mindset has changed to transferring knowledge or information packages. By this, extension system will become more knowledge intensive and demand driven, and thus more effective in meeting farmer's information needs.

Without communication capabilities, access to information, analyze and share the information in the livestock sector remains at the mercy of global market forces. At this juncture, a rural friendly ICT policy that recognizes the Government's fibre network as a national asset and offers concession to those who extend the network to rural India will certainly prove to be a big boost to the rural GDP in the coming years. Complementing the new ICT revolution, it is important for the Government to recognize the need for the establishment of Community Information centers at both village and block level that have the potential to reach out to rural communities, which will extend the Government's audiovisual and publicity efforts on various entitlements and programmes and information on technical, socio-economic and health related issues, while empowering the rural community to communicate and develop structure for a knowledge intensive rural production system.

OBJECTIVES OF THE STUDY

1. To study the qualitative indicators of infrastructure availability of ICT tools of the Animal Husbandry organizations.
2. To find out the affordability of ICT tools utilized by the Animal Husbandry organizations.
3. To know the knowledge about computer applications of Animal Husbandry organizations utilizing the ICT tools

II. METHODOLOGY

The study was purposively conducted in Hyderabad and Rangareddy districts of Andhra Pradesh as most of the Animal Husbandry organizations are located in these two districts. A total of 33 organizations which are actively involved in Animal Husbandry activities were selected for the purpose of study. Several organizations involved in the livestock development either directly or indirectly in Andhra Pradesh were ascertained in consultation with various sources viz. consultation with experts, secondary sources such as reports, literature, documents etc. The questionnaire for the organizations was developed in consultation with experts in the field of Animal Husbandry extension and those involved in computer applications. Rapport with the representatives of organizations is very essential so as to get accurate responses. In the present study the investigator established initial rapport with the organizations selected for the study and got acquainted with the officials personally. Later after the development of the questionnaire the investigator handed over the questionnaire to the concerned officials of the selected organizations and elicited their responses through the questionnaire. Questionnaire was prepared in English and data was collected from 33 organizations. It was made sure that all the questions in the questionnaire were self explanatory. Statistical tools used for analysis of data included frequency and percentages.

III. RESULTS AND DISCUSSION

A total of 33 organizations which are actively involved in Animal Husbandry activities were selected for the purpose of study. Based on the nature of work, functions, type of administration, the organizations considered for the study were grouped into five categories for better presentation of the results and subsequent discussion. They are:

1. Service Providers
2. Financial Organizations
3. Educational and Research Organizations



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4. Non Governmental Organizations and Cooperative Organizations
5. Private Organizations

The different organizations were categorized into the above five categories are detailed below.

I. Service Providers:

1. State Animal Husbandry Department
2. Commissionerate of Rural Development -Rural Livelihood project
3. Andhra Pradesh Livestock Development Agency (APLDA)
4. Andhra Pradesh Meat Development Corporation (APMDC)
5. State Management Institute for Livestock Development in Andhra Pradesh (SMILDA)

II. Financial Organizations:

1. National Bank for Agriculture and Rural Development (NABARD)
2. Andhra Pradesh Cooperative Bank (APCOB)
3. State Bank of India -Agri business unit (SBI)
4. Bharatiya Samruddhi Investments and Consulting Services Limited (BASIX)

III. Educational and Research Organizations:

1. National Institute of Rural Development (NIRD)
2. National Academy of Agricultural Research Management (NAARM)
3. Project Directorate on Poultry (PDP)
4. Central Research Institute for Dryland Agriculture (CRIDA)
5. National Research Centre on Meat N(NRC on Meat)
6. Sri Venkateswara Veterinary University -College of Veterinary Science, Hyderabad (SVVU)
7. Veterinary Biologicals Research Institute (VBRI)
8. Indian Immunologicals

IV. Non Governmental Organizations and Cooperative Organizations:

1. JK Trust Gram Vikas Yojana
2. ANTHRA
3. Watershed Support Services and Activities Network
4. InterCooperation Social Development
5. Andhra Pradesh Dairy Development Cooperative Federation (APDDCF)
6. National Egg Coordination Committee (NECC)

V. Private Organizations:

1. Venkateswara Hatcheries
2. Suguna Poultry
3. IndBro Research and Breeding farms
4. Poshak Feeds Private Limited
5. Vimala feeds Private Limited
6. Miracle Feeds Private Limited
7. Intas Pharmaceuticals Limited
8. Neospark drugs and chemicals Limited
9. Sarabhai Zydus Animal Health Limited
10. Natural Remedies Private Limited

Qualitative indicators of infrastructure availability of Animal Husbandry Organizations

The quality of infrastructure was measured by ascertaining their response on a three point continuum i.e. agree, undecided, disagree for four statements reflecting on accessibility, functional status, connectivity and sufficiency of ICT tools. The response for each statement was rated on a three point continuum i.e. agree, undecided, disagree with weightages of 3, 2 and 1 respectively. The maximum score an organization could get was 12 and minimum score could be 4. Frequencies and percentages were calculated.

1.1 Qualitative indicators of infrastructure availability of Service Providers

From Table 1, it was clear that cent percent of the organizations agreed that access to the ICT tools is always available and that ICT tools are functional at all times was agreed by 60% and 40% of the users were undecided where as 80% agreed that connectivity is good and the same was undecided by 20% of the users. The statement on availability of sufficient number of ICT tools in the organization was agreed by 60% and an equal percent of 20% of the users were undecided and disagreed. This indicated that majority of the organizations were satisfied with the infrastructure availability made for ICT.

Table 1: Qualitative indicators of infrastructure availability of Service Providers

n= 5

S.No.	Statements	Agree		Undecided		Disagree	
		f	%	F	%	f	%
i.	Access to the ICT tools is always available	5	100	–	–	–	–
ii.	ICT tools are functional at all times	3	60	2	40	–	–
iii.	Connectivity is good	4	80	1	20	–	–
iv.	Sufficient number of ICT tools are available in the organization	3	60	1	20	1	20

1.2 Qualitative indicators of infrastructure availability of Financial Organizations

From Table 2 it was inferred that all of the Financial Organizations agreed that access to the ICT tools is always available, functional at all times, connectivity is good, sufficient number of ICT tools are available in the organization. This indicated that all the Financial Organizations possessed all the important ICT tools and used for the required purpose and as such satisfied with the infrastructure provided to it.

Table 2: Qualitative indicators of infrastructure availability of Financial Organizations

n= 4

S.No.	Statements	Agree		Undecided		Disagree	
		f	%	F	%	f	%
i.	Access to the ICT tools is always available	4	100	–	–	–	–
ii.	ICT tools are functional at all times	4	100	–	–	–	–
iii.	Connectivity is good	4	100	–	–	–	–
iv.	Sufficient number of ICT tools are available in the organization	4	100	–	–	–	–

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1.3 Qualitative indicators of infrastructure availability of Educational and Research Organizations

From Table 3, it was revealed that cent percent of the Educational and Research Organizations agreed that access to the ICT tools is always available which are functional at all times while 87.5 % and 12.5 % indicated they agreed and undecided that connectivity is good. 75% of the users agreed that sufficient number of ICT tools are available in the organization as against 25% who were undecided on the above statement. This trend revealed that majority of the organizations had good infrastructure facilities for ICT and satisfied with its requirement.

Table 3: Qualitative indicators of infrastructure availability of Educational and Research Organizations
n= 8

S.No.	Statements	Agree		Undecided		Disagree	
		f	%	F	%	f	%
i.	Access to the ICT tools is always available	8	100	–	–	–	–
ii.	ICT tools are functional at all times	8	100	–	–	–	–
iii.	Connectivity is good	7	87.5	1	12.5	–	–
iv.	Sufficient number of ICT tools are available in the organization	6	75	–	–	2	25

1.4 Qualitative indicators of infrastructure availability of Non Governmental and Cooperative Organizations

Table 4: Qualitative indicators of infrastructure availability Non Governmental and Cooperative Organizations
n= 6

S.No.	Statements	Agree		Undecided		Disagree	
		f	%	f	%	f	%
i.	Access to the ICT tools is always available	6	100	–	–	–	–
ii.	ICT tools are functional at all times	6	100	–	–	–	–
iii.	Connectivity is good	4	66.7	–	–	2	33.3
iv.	Sufficient number of ICT tools are available in the organization	5	83.3	–	–	1	16.6

A cursory look at the Table 4 revealed that cent percent agreed that access to the ICT tools is always available and ICT tools are functional at all times, 66.7% agreed and 33.3% disagreed that connectivity is good while 83.3% and 16.6 % showed their agreement and disagreement to the statement that sufficient number of ICT tools are available in the organization.

1.5 Qualitative indicators of infrastructure availability of Private Organizations

The findings from Table 5 showed that cent percent of them agreed that ICT tools are functional at all times. 90% of them agreed and 10% were undecided to the statement that the connectivity is good and access to the ICT tools is always available while 70% of them agreed and 30% were undecided that sufficient number of ICT tools are available in the organization.

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Table 5: Qualitative indicators of infrastructure availability of Private Organizations

n= 10

S.No.	Statements	Agree		Undecided		Disagree	
		f	%	f	%	f	%
i.	Access to the ICT tools is always available	9	90	1	10	–	–
ii.	ICT tools are functional at all times	10	100	–	–	–	–
iii.	Connectivity is good	9	90	1	10	–	–
iv.	Sufficient number of ICT tools are available in the organization	7	70	3	30	–	–

Affordability of ICT tools by Animal Husbandry Organizations

It was operationally defined as the opinion of an organization to pay for possession of ICT tools and or accessing the information through various ICT tools.

It consisted of 4 statements and the response for each statement was obtained on a three point continuum i.e. agree, undecided and disagree with weightages of 3, 2 and 1 respectively. The maximum score an organization could get was 12 and the minimum score could was 4. Frequencies and percentages were calculated according to the response.

2.1 Affordability of ICT tools by Service Providers

Table 6 brought out that among Service Providers, 60% and 40% of the users agreed and undecided that the organizations are able to afford ICT tools and that the organization has sufficient funding for the purchase of ICT tools. 20% of the users agreed, 60% were undecided while 20% disagreed that the organization has adequate technical support for maintenance of ICT tools. 20% agreed and 80% disagreed that the organization is providing loans for purchase of ICT tools. It is a good sign that majority of the organizations shifting from traditional methods to modern methods and also majority stated that organization has sufficient funding for the purchase of ICT tools. Majority of the organizations are quite regularly using ICT tools such as computers, mobile phones, fax etc.

Table 6: Affordability of ICT tools by Service Providers

n= 5

S.No.	Statements	Agree		Undecided		Disagree	
		f	%	f	%	f	%
i.	Organization is able to afford ICT tools	3	60	2	40	–	–
ii.	Organization has sufficient funding for purchase and maintenance of ICT tools	3	60	2	40	–	–
iii.	Organization has adequate technical support for maintenance of ICT tools	1	20	3	60	1	20
iv.	Organization is providing loans for purchase of ICT tools	1	20	–	–	4	80

2.2 Affordability of ICT tools by Financial Organizations

The results presented in Table 7 showed that 100% of the Financial Organizations are able to afford ICT tools, has sufficient funding for purchase and maintenance of ICT tools, has adequate technical support for maintenance of ICT tools

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and the organization is providing loans for purchase of ICT tools. It is a general notion that the output oriented financial organizations does give importance to infrastructure that facilitates the maximum productivity from its employees. So the results emerged out from the study were corroborating with current trend with reference to the affordability.

Table 7: Affordability of ICT tools by Financial Organizations

n= 4

S.No.	Statements	Agree		Undecided		Disagree	
		f	%	f	%	f	%
i.	Organization is able to afford ICT tools	4	100	–	–	–	–
ii.	Organization has sufficient funding for purchase and maintenance of ICT tools	4	100	–	–	–	–
iii.	Organization has adequate technical support for maintenance of ICT tools	4	100	–	–	–	–
iv.	Organization is providing loans for purchase of ICT tools	4	100	–	–	–	–

2.3 Affordability of ICT tools by Educational and Research Organizations

Table 8: Affordability of ICT tools by Educational and Research Organizations

n= 8

S.No.	Statements	Agree		Undecided		Disagree	
		f	%	f	%	f	%
i.	Organization is able to afford ICT tools	8	100	–	–	–	–
ii.	Organization has sufficient funding for purchase and maintenance of ICT tools	6	75	–	–	2	25
iii.	Organization has adequate technical support for maintenance of ICT tools	6	75	1	12.5	1	12.5
iv.	Organization is providing loans for purchase of ICT tools	5	67.5	1	12.5	2	25

Table 8 brought that cent percent of the Educational and Research Organizations agreed that organizations are able to afford ICT tools while 75% and 25% of them agreed and disagreed that organization has sufficient funding for purchase and maintenance of ICT tools. 75% of the respondents agreed, 12.5 % were undecided and 12.5% showed disagreement that organization has adequate technical support for maintenance of ICT tools while the statement that organization is providing loans for purchase of ICT tools was agreed by 67.5%, undecided by 12.5% and disagreed by 25% of the users. It is a good sign that majority of the organizations shifting from traditional methods to modern methods and funds are also allocated for establishment of required infrastructure for the benefit of their employees.

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2.4 Affordability of ICT tools by Non Governmental Organizations and Cooperative organizations

Table 9: Affordability of ICT tools by Non Governmental Organizations and Cooperative Organizations

n= 6

S.No.	Statements	Agree		Undecided		Disagree	
		f	%	f	%	f	%
i.	Organization is able to afford ICT tools	6	100	–	–	–	–
ii.	Organization has sufficient funding for purchase and maintenance of ICT tools	6	100	–	–	–	–
iii.	Organization has adequate technical support for maintenance of ICT tools	5	83.3	1	16.6	–	–
iv.	Organization is providing loans for purchase of ICT tools	1	16.6	2	33.3	3	49.9

It was inferred from Table 9 that cent percent of the Non Governmental Organizations and Cooperative organizations agreed that organizations can afford ICT tools and have sufficient funding for purchase and maintenance of ICT tools while 83.3% and 16.6% of the users agreed and undecided that the organization has adequate technical support for maintenance of ICT tools. 16.6 %, 33.3% and 49.9% agreed, undecided and disagreed to the statement that the organization is providing loans for the purchase of ICT tools. This positive attitude on ICT indicate that the organizations have realized that ICT tools are advantageous than existing traditional methods.

2.5 Affordability of ICT tools by Private Organizations

Table 10: Affordability of ICT tools by Private Organizations

n=10

S.No.	Statements	Agree		Undecided		Disagree	
		f	%	f	%	f	%
i.	Organization is able to afford ICT tools	9	90	1	10	–	–
ii.	Organization has sufficient funding for purchase and maintenance of ICT tools	8	80	1	10	1	10
iii.	Organization has adequate technical support for maintenance of ICT tools	9	90	–	–	1	10
iv.	Organization is providing loans for purchase of ICT tools	7	70	–	–	3	30

From the overall impressions of various organizations, it can be concluded that there is no dearth of funds to provide the required infrastructure for better efficiency of its employees and provision of loans for purchase of these ICT gadgets for their personal use. All the organizations had perceived the advantages of ICT tools and realized the importance of use of ICT tools in the effective functioning of organizations. A positive attitude was observed in harnessing the ICT tools by various organizations.

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Knowledge about computer applications

It was operationally defined as the knowledge of the organizations on the various basic applications of computer.

A questionnaire was developed for measurement of knowledge of the organizations, which had 8 questions on computer applications. The responses were obtained through dichotomous pattern and fill up the blanks. A score of 1 was given for correct answer and 0 was given for wrong answer. Thus the maximum score and minimum score could be 8 and 0 respectively and the respondents were grouped into three categories as low, medium and high based on their means and standard deviation.

- | | | | |
|----|--------|---|---------------------|
| 1. | Low | – | Below (Mean – SD) |
| 2. | Medium | – | Between (Mean ± SD) |
| 3. | High | – | Above (Mean + SD) |

From the Table 11, it was evident that majority of the organizations (51.5%) had medium level of knowledge about computer applications followed by low level (30.3%) and the remaining 15.1% had high level of knowledge about computer applications which reflects that about 67% of the users have good knowledge on computer applications with mean and standard deviation values of 5.6 and 1.477.

From the above finding it can be inferred that the users in the organization had fair knowledge on computer applications but to make them more knowledgeable, the organizations have to make their staff exposed to training in the latest applications of computer so that the relevance of use of ICT tools is justified.

These findings are in conformity with Salampsis (2004).

Table 11: Distribution of the organizations based on the knowledge about computer applications

n=33			
S.No.	Category	f	%
1	Low	11	33.30
2	Medium	17	51.5
3	High	5	15.10
$\bar{X} = 5.60$			$\Sigma = 1.477$

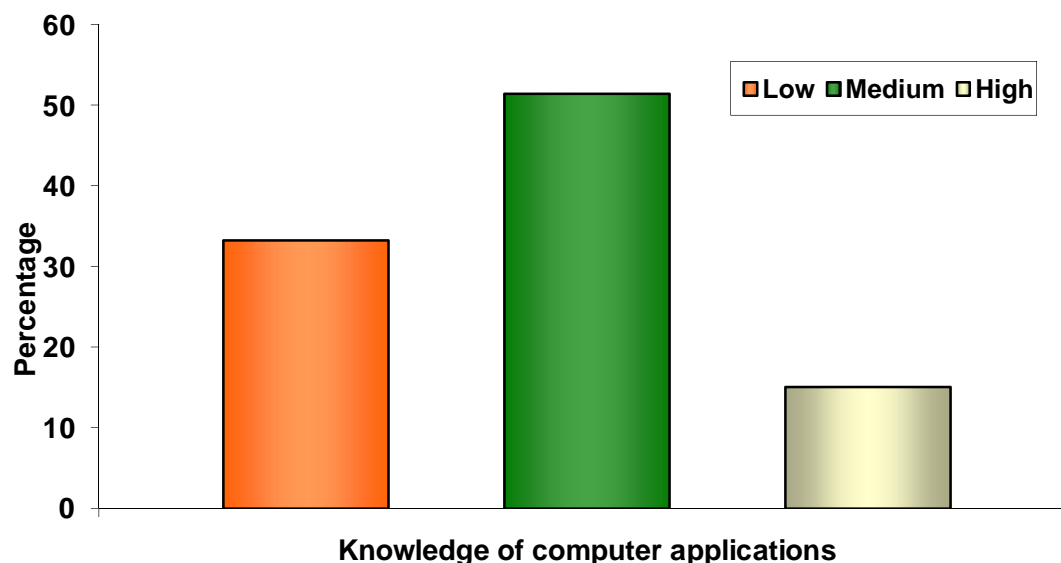


Fig. 1: Distribution of the organizations based on the knowledge of computer applications

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