

Original Research Article

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Constraints Perceived by Livestock Farmers in Use of ICTs in Jaipur District of Rajasthan, India

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ABSTRACT

An exploratory study was conducted in Jaipur district of Rajasthan to find out the constraints perceived by livestock farmers in use of Information and Communication Technology (ICTs) and their possible solutions to overcome these constraints. A total of 120 respondents were randomly selected for the study. Data were collected through structured interview schedule and analysed through different statistical tools. The study revealed that high cost of repairing ICTs (66.67%), lack of training and practical exposure towards ICTs (60.00%) and low ICT literacy (58.33%) were found to be 'most serious constraints' while lack of awareness of benefits of ICTs (56.67%), lack of skills in handling ICTs (50.83%), poor finance and erratic power supply (44.17% each) perceived as 'serious constraints'. Low network connectivity (44.17%), unavailability of different ICT tools (32.50%) considered as 'less serious constraints' and Negative attitude towards ICTs was perceived as 'not a constraint' by most of the livestock farmers. Study on possible solutions shows that a great majority of the livestock farmers were in agreement with the possible solutions like subsidy in the procurement of ICT equipments (98.33%), provision of finance facilities (92.50%), setting up of low cost repairing centres in villages (90.83%) and confidence build up through trainings and practical exposure to ICTs (90.00%).

Keywords

Constraints, ICTs, Livestock farmers and Possible solutions.

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Introduction

Livestock sector is the one of the main component of earning source for farmers which ensures food and nutritional security on one hand and provides income and employment opportunities on the other hand (Ravikumar *et al.*, 2006; Borah and Halim, 2014). However, low productivity of animals owing to low knowledge level of the livestock owners remains an unresolved issue and a

major challenge for the future. Farmer to farmer informal exchanges remains the main channel for accessing information and new technologies in India (Anonymous, 2005). The traditional methods of extension approaches have less accountability and effectiveness in terms of time management, larger audience coverage and greater impression on people.

The delivery of information and knowledge to the farmers on the right time and in right way leads to more productivity and more profitability and these goals can be achieved through use of modern tools viz. ICTs. Use of different ICT tools has potential to change the economy of livestock, agriculture and rural artisans in India (Sasidhar and Sharma, 2006). ICT refers to all information and communication systems and technologies including not only the digital formats such as the internet or the World Wide Web (WWW), but also interfaces with radio, cable and wireless television, video, cellular phones and print media (Hazelman and Flor, 2004). ICT tools are the common denominator that links people, irrespective of caste, class, sex, religion, race or political alignments. Information delivered through ICT can be timelier and can reach a greater number of farmers directly (Richardson, 1996). Access to ICTs could reduce transaction costs related to information searching and reduce knowledge and information asymmetries, particularly related to market price information (De Silva and Ratnadiwakara, 2008).

ICT tools can be used to impart information and knowledge, and that in turn will lead to motivation, mobilization and action to do something better in livestock sector. Information, rewarded with success stories, can motivate human to adopt healthy livestock technologies. For instance, information on immunization, calf mortality, maternal mortality, sanitation, nutritional awareness and causes, prevention and treatment of disease can be disseminated far and wide via ICTs. The enhanced and smooth communication results in the overall development of the livestock sector of the country (Saravanan, 2010).

However, it was indicated that due to lack of knowledge and information about these

technologies, farmers are not getting benefit from these technologies in their working places. Furthermore, farmers directly could not communicate with buyers and their customers for selling their production in good prices and track medical expenditure on their livestock as well as expenditure on farm chemicals to receive information from other stakeholders. ICT offers great hope for improving access, quality and efficiency of information dissemination in livestock sector, but there is a need to understand the key issues underlying the problems and to formulate sensible strategies. Here, an attempt has been made to analyze the constraints and their possible solutions towards use of ICTs as a source of reliable and timely information delivery in livestock sector.

Materials and Methods

An exploratory research design was conducted in Jaipur district of Rajasthan, North-East India on constraints perceived by livestock farmers' in the use of ICTs. State was purposively selected through criterion sampling as Rajasthan is rich in livestock wealth and peoples of the state are using various ICT tools in their day to day life to adopt better life style. Further, Jaipur district was selected purposively on the basis of prospective rate of information accessibility, availability, usage, good informative network and livestock wealth status as compared to other districts of Rajasthan. Jaipur district has 16 tehsils out of these tehsils two tehsils viz. Sanganer and Shahpura were selected randomly. In the next stage of sampling, six villages were selected from each selected tehsils and 10 livestock farmers were selected randomly from each village. Thus, total 120 livestock farming were selected for the study who were using ICT tools for accessing information on different aspects of livestock farming. Statistical tools like frequency and percentage were used to draw the inferences.

Constraints perceived by livestock farmers in use of ICTs

It refers to impediments or obstacles in following a particular way. Constraints for the present study have been operationalised as obstacles or hurdles encountered by the livestock farmers in access and usage of ICTs. Fourteen possible constraints were enumerated after reviewing related literature, consultation with subject matter specialists and ICT experts. The constraints were also listed by direct questioning with the livestock farmers. The identified constraints were measured on a four point continuum i.e. most serious constraint, serious constraint, less serious constraint and not a constraint with a scoring system of 4, 3, 2 and 1 respectively. The maximum and minimum obtainable score was 56 and 14 respectively.

Possible solutions of the constraints

ICT offers great hope for improving access, quality and efficiency of information dissemination in livestock sector, but there is a need to understand the key issues underlying the problems and to formulate sensible strategies. Eleven possible solutions were enumerated after reviewing related literature, consultation with subject matter specialists and ICT experts. These possible solutions were also listed by direct questioning with the livestock farmers. The identified possible solutions were measured on a three point continuum i.e. agree, neutral and disagree with a scoring system of 3, 2 and 1 respectively.

Results and Discussion

Constraints perceived by livestock farmers in use of ICTs

The constraint analysis is important to reach out the voice of the livestock farmers and the

problems faced by them in order to enable planners, administrators, development workers and policy makers to implement developmental programmes and interventions which could cater to the needs of the farmers and benefit them in an improved manner. The constraints in the use of ICTs by livestock farmers were measured using four point continuum scales. The results are presented in Table 1 which is discussed below: High cost of repairing ICTs, lack of training and practical exposure towards ICTs and low ICT literacy were perceived as 'most serious constraints' by 66.67, 60.00 and 58.33 per cent livestock farmers, respectively while 'serious constraints' by 26.67, 33.33 and 30.00 per cent respondents, respectively. This might be due the poor economic conditions and low level of educational status of livestock farmers. These findings are in agreement with the finding of Mooventhan and Philip (2012), Shankaraiah and Swamy (2012) and Karunakaran (2004). Lack of awareness of benefits of ICTs, lack of skills in handling ICTs, poor finance, erratic power supply, lack of confidence in operating ICTs, lack of repairing facilities & centres in village and high cost of ICT tools were perceived as 'serious constraint' by 56.67, 50.83, 44.17, 44.17, 42.50, 42.50 and 36.67 per cent livestock farmers, respectively. These findings might be due to lack of knowledge abouts different ICTtools and its benefits in information delivery and unavailability of uninterrupted power supply among livestock farmers of study area. These findings are similar with findings of Rebekka and Saravanan, 2015, Ghasura *et al.*, 2011 and Agwu, 2008. Among the 'less serious constraints' were low network connectivity (44.17%), insufficient regional specific language (38.33%) and unavailability of different ICT tools (32.50%). Negative attitude towards ICTs was perceived as 'not a constraint' by 80.00 per cent of livestock farmers.

Table.1 Constraints in the use of ICTs among livestock farmers (n=120)

S. No.	Constraints	MC		C		LC		NC	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
1.	Unavailability of different ICT tools	22	18.33	34	28.33	39	32.50	25	20.83
2.	High cost of ICT tools	41	34.17	44	36.67	33	27.50	2	1.67
3.	Lack of confidence in operating ICTs	23	19.17	51	42.50	37	30.83	9	7.50
4.	Erratic power supply	9	7.50	53	44.17	26	21.67	32	26.67
5.	Low Network connectivity	10	8.33	26	21.67	53	44.17	31	25.83
6.	Lack of awareness of benefits of ICTs	13	10.83	68	56.67	29	24.17	10	8.33
7.	Lack of skill in handling ICTs	31	25.83	61	50.83	21	17.50	7	5.83
8.	Low ICT literacy	70	58.33	36	30.00	9	7.50	5	4.17
9.	Lack of repairing facilities and centres in villages	41	34.17	51	42.50	18	15.00	10	8.33
10.	Negative attitude towards ICTs	0	0.00	11	9.17	13	10.83	96	80.00
11.	Poor finance	39	32.50	53	44.17	25	20.83	3	2.50
12.	Lack of training and practical exposure towards ICTs	72	60.00	40	33.33	7	5.83	1	0.83
13.	High cost of repairing ICTs	80	66.67	32	26.67	5	4.17	3	2.50
14.	Insufficient regional specific language	27	22.50	38	31.67	46	38.33	9	7.50

MC: Most serious constraint, C: Serious constraint, LC: Less serious constraint, NC: Not a constraint

Table.2 Possible solution of constraints in the use of ICTs (n=120)

S. No.	Possible Solutions	Agree		Neutral		Disagree	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
1.	Facility of different ICT tools and services	95	79.17	3	2.50	22	18.33
2.	Confidence build up through trainings and practical exposure to ICTs	108	90.00	2	1.67	10	8.33
3.	Provision of continuous power supply or power backup	83	69.17	14	11.67	23	19.17
4.	Enhancement in network connectivity	83	69.17	14	11.67	23	19.17
5.	Creation of awareness regarding benefits of ICTs	107	89.17	4	3.33	9	7.50
6.	Improvement in ICT literacy	105	87.50	10	8.33	5	4.17
7.	Setting up of low cost repairing centres in villages	109	90.83	3	2.50	8	6.67
8.	Counteracting negative attitude towards ICTs through proper motivation	24	20.00	3	2.50	93	77.50
9.	Provision of finance facilities	111	92.50	7	5.83	2	1.67
10.	Subsidy in the procurement of ICT equipments	118	98.33	2	1.67	0	0.00
11.	Development of different ICT tools with regional specific languages	107	89.17	6	5.00	7	5.83

Possible solution of constraints in use of ICTs

Perusal of Table 2 shows that a great majority of the livestock farmers were in agreement with the possible solutions like subsidy in the procurement of ICT equipments (98.33%), provision of finance facilities (92.50%), setting up of low cost repairing centres in villages (90.83%) and confidence build up through trainings and practical exposure to ICTs (90.00%). In contrast to these solutions government need to do something requisite steps viz. subsidy procurement, handiness of finance and setup of different training cum repairing centers at village level. This will contribute to much more turnout from livestock sector in term of production, yield and returns etc. Majority of the respondents were also in agreement with the possible solution like development of different ICT tools with regional specific languages (89.17%), creation of awareness regarding benefits of ICTs (89.17%), improvement in ICT literacy (87.50%), facility of different ICT tools and services (79.17%), provision of continuous power supply or power backup (69.17%) and enhancement in network connectivity (69.17%). This table further reveals that majority of the respondents (77.50%) disagreed with the statement 'counteracting negative attitude towards ICTs through proper motivation'.

The livestock farmers were facing lots of constraints in using different ICT tools. Most important among them were high cost of repairing ICTs, lack of training and practical exposure towards ICTs, low ICT literacy, high cost of ICT tools and lack of repairing facilities and centres in villages. Further in the study it was found that most of the livestock farmers were in agreement with the considered possible solutions for the constraints in the use of ICTs viz. development of different ICT tools with

regional specific languages, creation of awareness regarding benefits of ICTs and improvement in ICT literacy etc.

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