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Study on use of information and communication technology by extension personnel of Bihar

Akanksha Singh, Meera Singh, Komal Kriti and Chandani

Abstract
In the last 50 years, Indian agriculture has made huge strides, showing single resilience in being a major contributor to Indian economy. Now it is widespread having agreed that sound agricultural development is necessary for most developed countries overall economic results. Agricultural production depends to a large extent on good research framework for need-based and demand-driven technologies in accordance with efficient transfer of technology programme to liaise researchers with extension staff together with end users. India has undergone significant changes in the framework of agricultural extensions since the start of the 21st Century. The goal of many countries, where ICT has increased significantly in the agricultural extension provide adequate access to agricultural information through medium. If extension staff use ICT efficiently and effectively, it will their work is simpler and, in addition, enables their distribution of information. ICT allows them analyze data, prepare work plan and budgets, and easily reach farmers. Grass root state level extension activities are largely based on the Agriculture coordinators and Kishan Salahkar. Since we know this is the digitalization age, the basic aim of the study is analyze the use of ICTs by the Agriculture coordinator and Kishan Salahkar, who are separate identified as the agriculture para-extension worker. In order to carryout their job effectively and successfully, the agriculture coordinator and kishan salahkar must have awareness, e-readiness and positive attitude towards use of ICT tools, proper training and availability of ICT tools which makes them competent and fast in carrying out their duties in the work.Based on the present study, it can be inferred that one of the respondents did not have adequate ICT training, the majority of respondents expressed low ICT infrastructure and other resources and low e-readiness level and faced different constraints in the use of ICTs. To prevent problems and enhance the e-readiness of extension staff, it is therefore important to provide proper training and proper care and management of the use of ICTs.

Keywords: E-readiness, constrints, training, awareness, extension personnel, ICT, agriculture extension

Introduction
The world is moving quite rapidly. The changes are evident in every aspect of life, It is politics, culture or economy and one of the most important change drivers in the technology. Information is important for technology growth. Information consists of the compilation of facts collected by different means of communication and plays a critical role in the Fast-growing generation. At the same time, technology allows quick and quick collection of information fast. Information and technology together have developed a new division called Information Technology (IT). IT requires data processing on a network. That's it. can be achieved by using the hardware, software, facilities and support infrastructures manage the knowledge and distribute it. IT has dramatically changed our everyday lives over the recent years. ICT is an acronym that can be commonly defined as communication and Processing technologies that facilitate communication and the processing and transition of information by electronic means. Kumari Navarathne (2003), described ICT as recording, processing, storing, electronically communicating information on a digital medium. It makes an efficient and cost- effective movement of information items, individuals, and resources across national and regional borders. Rajashri (2008) [5], ICTs can play a significant role in making information available at fair cost to the farming community. Raj *et al*. (2016) [4], stated that the slogan of agricultural extension and education is to transfer information related to scattered and often anecdotal research lessons to specific individuals, ICT has emerged very quickly and widely adopted by the future generation of India. Therefore ICT holds great promise for the transition of the agricultural sector.

These comprise the contact mechanism and tools, disseminate, store and manage information. Time required for knowledge transfer and problem solving has declined by integrating ICT agriculture. A Strong Agricultural extension linkage complemented by perfect flow of knowledge strengthened by efficient use of ICTs can greatly improve agricultural production and productivity revenues in developing countries, and improve rural livelihoods (Arokoyo, 2005) [1]. Since we know this is the digitalization age, the basic aim of the study is analyze the use of ICTs by the Agriculture coordinator and Kishan Salahkar, who are separate identified as the agriculture para-extension worker. In order to carryout their job effectively and successfully, the agriculture coordinator and kishan salahkar must have awareness of and the use of ICT tools which makes them competent and fast in carrying out their duties in the work. Use of ICT in agriculture at present by extension Workers are far from satisfaction. Keeping the current research in mind "Study on Use of Information and Communication Technology by Extension Personnel of Bihar" was undertaken with fallowing specific objectives

- To study the socio-economic and personal profile of extension personnel.
- To assess the attitude of agricultural extension personnel towards the use of ICTs.
- To measure the e-readiness of agricultural extension personnel towards the use of ICT.
- To identify the constraints of extension personnel towards use of ICTs.
- To assess the relationship between independent variables with dependent variables

Material and Methods

The research was conducted in the Samastipur district of the state of Bihar. The district has 20 blocks from which the total number of respondents was 100 For study. Extension workers at grass root level, agriculture coordinator (26) and Kishan Salahkar (74) were picked at random from 10CD blocks on the basis of their availability. In the light of objectives set for study, three dependent variable was selected for the study i.e. extent of utilization, attitude towards use of ICTs and e-readiness. The variables age, gender, education, nativity, marital status, experience, training received on ICT, possession of ICT gadgets, source of information, source of awareness and utility in extension and perceived attributes of ICTs were the independent variables. A well structured questionnaire was used for research collection of respondents' data by personal interview method. The data collected from the was edited, tabulated and analyzed using the appropriate statistical instruments, such as the frequency, percentage, mean and coefficient of correlation.

Result and Discussion

Bearing in mind the objectives, the empirical evidence collected in the objective context appropriate statistical analysis was carried out on results. Therefore the research findings are presented here in the subheadings below, centered on the various study objectives. Individual out line of the interviewee, ICTs outline of the interviewee, Extent of the use of ICTs, Attitude of respondents, e-readiness of respondent and constraints faced in using ICTs.

Individual outline of the interviewee: The respondents' individual outlines provide basic information on age, gender, education, nativity, experience and responsibility for jobs. The same was set out in Table 1and 2. It could be summarized from table 1 and 2 that in the category of Agricultural Coordinators, most of the interviewee were middle-aged, masculine gender, graduate, married, from both rustic and urban areas, had 3-9 years of experience in work and farm visits, provide technical advice to farmers, collect soil samples and meet farmers were main responsibilities. From the Kishan Salahkar group, most of the respondents were middle-aged, male, middle-aged, rural hailing, 3-6 years of experience and record keeping, demonstration of advanced technology, providing technical advice to farmers, database of farmers, collection of soil samples, completion of subsidy forms and meeting of farmers were the main responsibility.

Table 1: Personal profile of respondents

S. No.	Characteristics	Category	Agriculture Coordinator (n=26)	Kishan Salahkar (n=74)	Total(n=100)
1.	Age	Young (up to 30) Middle (31-50) Old (above50)	7(26.92%) 12(46.15%) 7(26.92%)	16(21.62%) 53(71.62%) 5(6.75%)	23(23%) 65(65%) 12(12%)
2.	Gender	Male Female	25(96.15%) 1(3.84%)	65(87.83%) 9(12.16%)	90(90%) 10(10%)
3.	Education	Intermediate Graduate Post –Graduate Doctorate	- 16(61.53%) 10(38.46%) -	64(86.48%) 10(13.51%) - -	64(64%) 26(26%) 10(10%) -
4.	Nativity	Rural Semi –urban Urban	12(46.15%) 5(19.23%) 9(34.61%)	48(64.86) 10(13.51%) 16(21.62%)	60(60%) 15(15%) 25(25%)
5.	Marital Status	Married Unmarried	20(76.92%) 6(23.07%)	65(87.83%) 9(12.16%)	85(85%) 15(15%)
6.	Experience	Upto 3years 3-6years 6-9years Above 9year	2(7.69%) 8(30.76%) 12(46.15%) 4(15.38%)	8(10.81%) 45(60.81%) 21(28.37%) -	10(10%) 53(53%) 33(33%) 4(4%)

Table 2: Responsibilities

Category	Agriculture Coordinators	Kishan Salahkar	Total
Farm visit.	26(100%)	70(94.59%)	96(96%)
Provision of farm inputs.	18(69.23%)	72(97.29%)	90(90%)
Record keeping.	22(84.61%)	74(100%)	96(96%)

Group formation.	22(84.61%)	70(94.59%)	92(92%)
Demonstration of improved technologies.	22(84.61%)	74(100%)	96(96%)
Provide technical advice to farmers.	26(100%)	74(100%)	100(100%)
Farmers Databank	14(53.84%)	74(100%)	88(88%)
Soil sample collection	26(100%)	74(100%)	100(100%)
Formation of FIG	24(92.30%)	52(70.27%)	76(76%)
Input distribution	24(92.30%)	72(97.29%)	96(96%)
Completion of subsidies forms	24(92.30%)	74(100%)	98(98%)
Farmer meeting	26(100%)	74(100%)	100(100%)
Crop cutting	10(38.46%)	48(64.86%)	58(58%)

ICTs out line of the interviewee: ICTs outline of the interviewee had detailed information on ownership of ICTs, origin of information, sources of awareness about ICTs, perceived attributes of ICTs utility of ICTs in extension, and trainings received.

Table 3: Possession of ICT gadgets

S. No.	Smart Gadgets	Agriculture Coordinator	Kishan Salahkar	Total
1	Personal Computer/Laptop	14 (53.84%)	06 (8.10%)	20(20%)
2	Mobile phone/Smart phone (whatsApp, phone calls)	26 (100%)	74 (100%)	100 (100%)
3	Internet facility in personal computer	08	02	10
	Laptop	(30.76%)	(2.70%)	(10%)
4	Internet facility in smart phone	26 (100%)	54 (72.97%)	80 (80%)
5	Radio	06 (23.07%)	14 (18.91%)	20 (20%)
6	Television	24 (92.30%)	56 (75.67%)	80 (80%)
7	E-mail account	26 (100%)	74 (100%)	100 (100%)
8	Video camera	nil	nil	nil
9	E-news paper	nil	nil	nil
10	E-magazine	nil	nil	nil
11	Google /Chrome/Mozilla firefox	25 (96.15%)	45 (60.81%)	70 (70%)
12	E –chaupal portal	nil	nil	nil

Table 4: Source of Informatioon

S. No.	Source	Agriculture Coordinator	Kishan Salahkar	Total
1	Interpersonal communication(family/friends/relatives)	6(23.07%)	16(21.62)	22(22%)
2	Mass media(newspaper/magazine/office/institution)	10(38.46%)	28(37.83%)	38(38%)
3	Trainings	nil	nil	nil
4	Internet	10(38.46%)	30(40.54%)	40(40%)

Table 5: Source of awareness

S. No	Class	Frequency	Percentage
1	Low (3-4)	0	0
2	Medium (5-6)	18	18%
3	High (7-8)	82	82%

Table 3 gives an image of the respondents' owenership of ICTs. From the table it is clear that all (100 percent) respondents have mobile phone / smart phone and respondents use mostly smart phones for whatsapp and phone call. Approximately 80 per cent of respondents have mobile Internet facilities. Twenty percent of respondents have personal computers / laptops, while only ten percent have internet facilities on their personal computers and laptops. The 100 per cent e-mail account of respondents. From Table 4 displays category wise sources of ICT knowledge. With relation to the various sources, agricultural coordinators received information through interpersonal communication channels (23.07%), internet (38.46%) and mass media (38.46%) while Kishan Salahkars had internet (40.54%) as the key origin of knowledge about ICTs followed by mass media (37.83%) and interpersonal communication channels (21%). None of the respondents had some sort of ICT handling experience. Table 5 provides a clear picture of respondent categorization based on the source of ICT awareness. From the table it is clear that most (82 percent) of respondents belonged to the high category followed by the medium (18 percent) and each and every respondent was aware that ICT, does not belong to the low category of any single respondent. The findings in Table 6 illustrated the usefulness of ICT resources by agriculture coordinator and Kishan Salahkar in extension. The utility pattern was categorized into six categories such as knowledge gain / recent information, technology transfer, training / teaching, report making and sending, information sharing with related organizations including input agencies, and contact with other related organizations. Extension workers (Agriculture Coordinator & Kishan Salahkar) in the order of priority were; "gaining knowledge / having information" the resources used were; television (80%), telephone/mobile (100%), internet (80%), email (60%) and computer (40%).In comparison, the methods used for "information transition" were: internet (60 percent), telephone/mobile (75 percent), computer (20 percent), e-mail (40 percent).In addition, the ICT resources used for "training

and teaching" were: internet (60 percent), telephone/mobile (60 percent), email (40 percent), computer (40 percent) and not all of the respondents used any of the resources for the purposes set out above. The methods used for "making / sending files" were not used: e-mail (90%), telephone (80%), computer (40%), internet (80%) and other resources. The findings also showed that the methods used to "share knowledge with the organization concerned, including feedback agencies" were: e-mail (40%), telephone/mobile (80%), internet (40%), machine (40%).In addition, the methods used to connect with other organizations were: e-mail (40%), telephone (80%), internet (50%), machine (20%). Furthermore, it could be observed from the table that the extension staff did not use any of the ICT resources mentioned for the purposes set out above. There is not any training related to ICT received by the respondents that affect their performance.

Table 6: Utilization in extension

S. No.	ICT Tools	For gaining knowledge /recent information	For transfer of technology	For training/ teaching	For making/ sending reports	For sharing info. With concerned org. including input agencies	For communication with other organizations
1	Television	80(80%)	nil	nil	nil	nil	nil
2	Radio	nil	nil	nil	nil	nil	nil
3	Telephone	nil	nil	nil	nil	nil	nil
4	Mobile	100 (100%)	75(75%)	60(60%)	80(80%)	80(80%)	80(80%)
5	Computer	40(40%)	20(20%)	40(40%)	40(40%)	40(40%)	20(20%)
6	E-mail	60(20%)	40(40%)	40(40%)	90(90%)	40(40%)	40(40%)
7	Internet	80(80%)	60(60%)	60(60%)	80(80%)	40(40%)	50(50%)
8	Video confrencing	nil	nil	nil	nil	nil	nil
9	Tele confrencing	nil	nil	nil	nil	nil	nil
10	Video camera	nil	nil	nil	nil	nil	nil
11	Kiosks/common service centre (CKS)	nil	nil	nil	nil	nil	nil
12	Community Radio	nil	nil	nil	nil	nil	nil
13	Land line(kishan call centre)	nil	nil	nil	nil	nil	nil
14	Special knowledge portal	nil	nil	nil	nil	nil	nil

Table 7: Perceived attributes of ICTs

S. No.		Perceived Attributes	Component	Agriculture Coordinator n=26	Kishan Salahkar n=74	Total n=100
	i		Time saving	26 (100%)	74 (100%)	100 (100%)
	ii		Economical	22 (84.61%)	60 (81.08%)	82 (82%)
1.	iii		Informative	26 (100%)	70 (94.59%)	96 (96%)
	iv v	Relative advantages	No Time limitation (24x7service) Low investment	26 (100%) 05 (19.23%)	74 (100%) 20 (27.02%)	100 (100%) 25 (25%)
	vi		Upto date	24 (92.30%)	70 (94.59%)	94 (94%)
	vii		Easy to use	20 (76.92%)	50 (67.56%)	70 (70%)
	viii		Social recognition	20 (76.92%)	60 (81.08%)	80 (80%)
2	i		Needs skills and expertise	26(100%)	74(100%)	100 (100%)
	ii		Difficult to grasp and care	20 (76.92%)	58 (78.37%)	78 (78%)
	iii	Complexity	Difficult to support	18 (69.23%)	60 (81.08%)	78 (78%)
	iv		Difficult to access	14 (53.84%)	40 (54.05%)	54 (54%)
3	i		No language impediments	10 (38.46%)	40 (54.05%)	50 (50%)
	ii	Compatibility	No institutional bottlenecks	20 (76.92%)	60 (81.08%)	80 (80%)
	iii		No Obstacles to the Social	20 (76.92%)	60 (81.08%)	80 (80%)
4	i	Trail ability	Try without even buying	16 (61.53%)	50 (67.56%)	66 (66%)
	ii		Simple to test most features	20 (76.92%)	50 (67.56%)	70 (70%)
5	i	Observability	Immediate feedback	24 (92.30%)	66 (89.18%)	90 (90%)

	Ii		Gives accurate information most of the times	20 (76.92%)	68 (94.59%)	88 (90%)
6	i	Predictability	Impacts may predictable easily	18 (69.23%)	70 (94.59%)	88 (88%)
	ii		Results may easily	16	60	76
			predictable	(61.53%)	(81.08%)	(76%)
	iii		Future needs can be identified, due to the impact of ICTs	20 (76.92%)	70 (94.59%)	90 (90%)

There is an attempt to know the presumed qualities of ICTs, so the assigned categories are divided into six categories, which are relative advantages, difficulty, reliability, trialability, observability and predictability. Table 7 indicates the respondents perceived attributes of ICTs. Under Relative benefit, time savings and no time limit were seen as the most advantageous qualities of ICTs. The relative advantage of ICTs thus shows that ICTs are advantageous technologies in terms of time-saving, economic, information-rich, ease etc. The complexity of ICTs was calculated in the present analysis, using four indicators. According to 100% of respondents, skills are much required to manage ICTs and lack of skills would hinder their use and acceptance by respondents. The majority of respondents viewed ICTs as difficult to manage (78%), learn and treat (78%), and understand (54%). Only when it is compatible with the social system will an invention / technology be implemented. Compatibility on parameters such as physical, cultural, and language barriers was studied. The table reveals that adopting ICTs have no applicability barriers because of no social barriers (80 percent), no cultural barriers (80 percent) and no language barriers (50 percent). Trialability characteristic of the product has had two parameters. The respondents agreed that ICTs can be checked without buying (66 percent) and attempted with ease (70 percent). This function is very good indicator when ICTs are implemented and used. An innovation / technology 's positive results / effects improve the acceptance of the technology. The same is true of the ICTs, too. Like immediate feedback (90 percent) in the use of ICTs, the observability attribute is a major parameter accompanied by accurate information (88 per cent). The last attribute of ICTs on the Predictability was calculated. It is good to see from the table that the respondents was agree with the predictable quality of ICTs in terms of impacts (88 percent) and future needs (90 percent) and outcomes (76 percent).

Extent of utilization of ICTs

Table 8: Extent of utilization

S. No.	ICT Tools	Extent of Utilization							
	Very frequently		Frequently		Rarely		Never		
1	Radio	Frequency nil	Percentage -	Frequency 10	Percentage 10%	Frequency 10	Percentage 10%	Frequency 80	Percentage 80%
2	Television	60	60%	20	20%	10	10%	10	10%
3	Telephone	nil	-	nil	-	5	5%	95	95%
4	Mobile	100	100%	nil	-	nil	-	nil	-
5	Computer	10	10%	40	40%	40	40%	10	10%
6	Internet	90	90%	10	10%	nil	-	nil	-
7	E-mail	20	20%	70	70%	10	10%	nil	-
8	Video camera	nil	-	nil	-	60	60%	40	40%
9	Video Confrencing	nil	-	nil	-	30	30%	60	60%
10	Kiosk	nil	-	nil	-	20	20%	80	80%
11	E-news paper	nil	-	nil	-	20	20%	80	80%
12	E-agri magzine	nil	-	nil	-	30	30%	70	70%
13	Google	4	4%	80	80%	16	16%	nil	-
14	Mozilla firefox	nil	-	30	30%	40	40%	30	30%
15	E-chaupal	nil	-	nil	-	20	20%	80	80%
16	Chrome	5	5%	60	60%	15	15%	20	20%

Table 8 showed the degree to which the extension workers used individual ICT resources. The findings showed the degree to which ICT resources were used in the priority range; telephone (100 percent) was followed by internet (90 percent), television (60 percent), e-mail (20 percent), computer (10 percent) and chrome (5 percent), Google (4 percent). Whereas Google (80 percent), e-mail (70 percent), chrome (60 percent), device (40 percent), Mozilla firefox (30 percent), internet television (20 percent), and radio (10 percent) were the "frequently" used resources. Though 'Rarely' used ICT resources were: video camera (60 percent), machine (40 percent), mozilla firefox (40 percent), e-agrimagazine (30 percent), kiosk and e-news (20 percent), google (15 percent) and chrome (16 percent), radio, television and e-mail (10 percent) telephone (5 percent). The data also shows that some of the "Never" resources used were: telephone (95 percent) radio, kiosk, e-news document, e-magazine (80 percent), e-magazine (70 percent), video conference (60 percent), video camera (40 percent), mozilla firefox (30 percent), chrome (20 percent) television and computer (10 percent).

Table 9: Categorization of respondents extent of utilization

S. No.	Class	Frequency	Percentage
1	Low(upto25%)	0	0%
2	Medium (26-50%)	50	50%
3	High (51-75%)	45	45%
4	Very high (above 75%)	5	5%

The results presented in Table 9 revealed that, 50 per cent of the extension personnel belonged to medium category followed by (45%) belonged to high and (5%) very high category respectively. The relation between independent variables and the extent of the extension personnel's use of ICTs. From the results it was clear that education, nativity, gender, source of information and source of awareness, possession of smart gadgets, were positively correlated with the extent of use of ICTs while age, marital status, experience were negatively correlated with the extent of use of ICTs. The vector possession of ICT gadgets is positively and significantly correlated with the use of ICTs at a meaningful level of 5 per cent.

Table 10: Attitudes towards use of ICTs

S. No.	Statement		Response	Categories		
		Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1	To-the gap in technology diffusion, ICTs are the best possible bridges between the science and farming systems.	80 (80%)	20 (20%)	0	0	0
2	ICTs help reduce the cost of trainings and demonstrations.	60 (60%)	30 (30%)	10 (10%)	0	0
3	ICTs decrease face to face interaction between extension workers and farmers	40 (40%)	20 (20%)	10 (10%)	30 (30%)	0
4	In agriculture, ICTs need more time and imagination to create ICT meaningful content.	30 (30%)	60 (60%)	0	10 (10%)	0
5	ICTs suggest more installation and maintenance costs	40 (40%)	60 (60%)	0	0	0
6	Feedback is rapid than conventional methods via ICTs.	20 (20%)	50 (50%)	20 (20%)	10 (10%)	0
7	Using ICTs causes difficulties for those extension workers who lack on-line technology expertise and inexperience.	60 (60%)	40 (40%)	0	0	0
8	In the near future ICTs will replace conventional methods of extension in agriculture.	10 (10%)	30 (30%)	20 (20%)	30 (30%)	10 (10%)
9	ICTs allow for cooperation with more workers to disseminate agricultural technology at the same time	40 (40%)	30 (30%)	20 (20%)	10 (10%)	0
10	Using ICTs will boost the working capability and ability of agricultural extension workers	30 (30%)	40 (40%)	0	20 (20%)	10 (10%)
11	ICTs are potentially faster TOT resources for remote and diverse areas where agricultural extension services are not routinely and easily accessible.	40 (40%)	30 (30%)	10 (10%)	20 (20%)	0
12	Transfer of relevant information through ICT is not an easy job.	40 (40%)	40 (40%)	10 (10%)	10 (10%)	0
13	Extension programs focused on ICTs are ideal alternatives to the current and future agricultural extension systems.	20 (20%)	30 (30%)	30 (30%)	10 (10%)	10 (10%)
14	Current ICT infrastructure is not adequate to fulfill the needs of intended users	0	40 (40%)	20 (20%)	40 (40%)	0
15	ICTs alone can't fix all agriculture problems	40 (40%)	30 (30%)	10 (10%)	20 (20%)	0
16	A new knowledge and skills society can be established with the help of ICTs.	60 (60%)	40 (40%)	0	0	0
17	When using ICTs, material must be produced in the local language.	30 (30%)	20 (20%)	20 (20%)	20 (20%)	10 (10%)
18	Excess ICT usage can create health hazards for its users (such as back pain, neck pain, eyesight issues, etc.).	70 (70%)	20 (20%)	10 (10%)	0	0
19	ICTs allow for greater integration of different sources of information for technology dissemination.	30 (30%)	50 (50%)	20 (20%)	0	0
20	Effectiveness of ICTs is impaired by disrupted power supply and lack of funds.	20 (20%)	40 (40%)	30 (30%)	10 (10%)	0

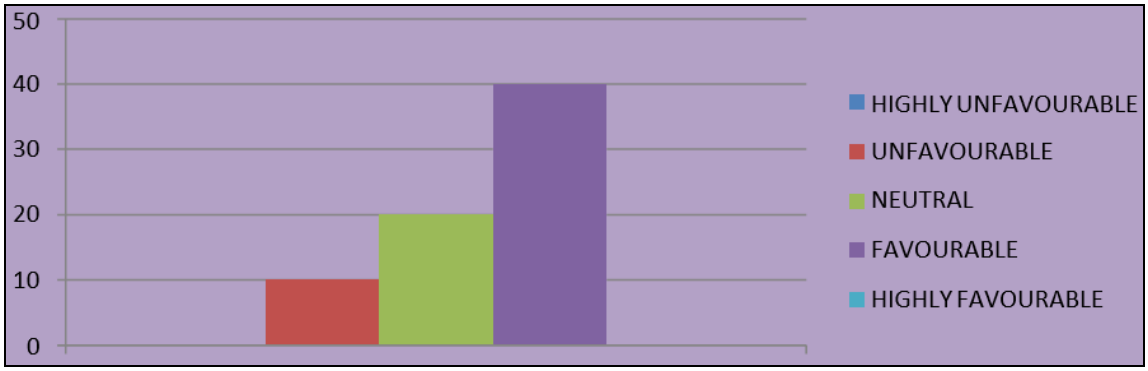

Fig 1: Percentage

it had been clear from above figure. The majority (40%) of respondents had a favorable attitude towards the use of ICTs, followed by a moderately favorable (30%) and neutral (20%) attitude and an unfavorable attitude (10%). possession of ICT devices, sources of knowledge about ICTs are positively and significantly correlated with attitude, whereas age, gender, nativity, marital status, experience and source of information are negatively and irrelevantly correlated with the attitude of extension personnel towards the use of ICTs and are also perceived at the variables possession of ICT gadgets were found to be positively relevant at a meaning level of 5 percent while the source of knowledge was positively and significantly associated with attitude at one percent meaning level.

E-readiness of the respondents: E-Readiness is a measure of the degree to which a region, a nation, is a measure of or the economy may be prepared, willing or unable to receive benefits arising from ICTs. In this research, E-readiness was classified into six components for easy comprehension, i.e., ICT availability, ICT usability, core ICT skills, internet skills, digital literacy skills and motivating factors. These components are carefully designed by bearing in mind the reality that the availability of ICTs is very critical in the first place. Accessibility is critical upon availability. Besides availability and usability, basic skills with internet skills and software literacy are required to effectively use the technology. Motivational factors with other physical components are also significant, so a total of six components were taken to assess the respondents' e-readiness.

Table 11: Categorization of respondents E-readinesss

S. No.	Category	Frequency	Percentage
1	Low (39-47)	50	50%
2	Medium (48-56)	40	40%
3	High (57-65)	10	10%

Table-11 showed distribution of respondents on the basis of e-readiness. It is clear from the table majority of the (50%) respondents have low e-readiness following by medium (40%) and high (10%). The possession of ICT gadgets and Education can be evaluated from as being positively and significantly associated with e-readiness. Considering that the variables *viz.* Age, experience and information source are adversely associated with the respondent's e-readiness. Gender, source of awareness, perceived attributes, nativity, marital status are also positively correlated with e-readiness, but they are meaningless at 5%. The variable possession of ICT gadgets is positively and significantly correlated with e-readiness at a meaning level of 5 percent, whereas the variable education is positively and significantly correlated with the respondent's e-readiness at 1 percent significance level.

The constraints of extension personnel towards use of ICTs

Table 12: Constraints in using ICTs

S. No	Constraints	frequency	Percentage
1	Inadequate computer facility	80	80%
2	Lack of proper training facility	90	90%
3	Insufficient power supply	75	75%
4	Lack of internet facility	82	82%
5	Lack of knowledge	85	85%
6	Eye pain	45	45%
7	Head ache	37	37%
8	Hand ache	15	15%
9	Back pain	52	52%
10	Time spent in social events or gathering outside home	10	10%

outlined the constraints on the use of ICT by extension personnel. The general problems faced by extension workers were 'lack of proper training facility' (90 per cent), lack of information (85 per cent), 'Internet access is poor/slow' (82 per cent), 'insufficient computer facility' (80 per cent) and 'insufficient power supply'. With regard to medical issues, extension workers experienced problems such as back pain (52%), eye pain (45%), head ache (37%), and hand pain (15%). Whereas in the case of Social Issues extension workers reported decreased in the amount of 'time spent in social gatherings or meeting outside the home'.

Conclusion

From the result it can be concluded that any of the respondents (both Farm Coordinator & Kishan Salahkar) did not adequate ICT training has been given while ICT is very necessary for efficient Software Transition. The Government should therefore offer due importance to Extension staff preparation on ICT. Low infrastructure and other resource facilities were reported by a majority of extension personnel. Therefore Governments need to have good infrastructure and other facilities needed for efficient use of ICT instrumentation. To prevent this, careful care and management of the use of ICT resources is necessary problems and boost the e-Readiness of extension personnel. The present research has the time and resources constraints of a single investigator and 100 respondents modest sample size. Hence a detailed, large-scale analysis size can be performed on the same side. This research was confined to the state of Bihar and similar studies can be carried out to generalize in other states of India. Research should be carried out primarily on grass root level extension training needs ICT workers to implement an appropriate capacity building plan for Personnel of grass root level extension.

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