

## Attitude & Perceived effects of ICT tools used by Farm Women

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**ABSTRACT:** In the present study results revealed that 76 per cent respondents had favourable and 9 per cent had highly favourable attitude towards ICT while only 15 per cent respondents had least favourable attitude. Regarding attending training 94 per cent respondent did not receive any training related to mobile phone. Almost 70 to 72 per cent of the respondents faced problems associated with use of ICT. The perceived effects of ICTs on improving information access, it was found that almost all the effects have been perceived by more than 50 per cent of the respondents as ICT improves information access except that ICT improves working habits as it was perceived by only 38 per cent respondents, while 62 per cent respondents reported that it does not improve working habits. There was positive and significant correlation of education (.421), Organizational participation (.231) and mass media exposure (.215) with attitude towards ICTs.

**KEYWORDS:** ICT, highly favourable attitude, Socio-economic, Problem associated, ICT service and Information access.

### **INTRODUCTION:**

Agriculture is a vital sector of Indian economy but face many challenges of enhancing production. In present era, ICT could be a boon for transfer of technology or Information.

ICT not only increase the efficiency but also increase production and helps in sustainability in agriculture sector which is a crucial economic sector. A large segment of population in developing country receives income and food from it. Attitude is operationally defined because the mental disposition of a person to reply favourably or unfavourably to a psychologist object. According to Hogg and Vaughan

(2005) an attitude is a relatively enduring organization of beliefs, feelings, and behavioural tendencies towards socially significant objects, groups, events or symbol. Attitude within the present study is defined as the degree of positive or negative feelings, opinion, belief and action related to the knowledge and Communication technology, where people can differ in varying degree. Attitude of person plays important role in determining one's behaviour with reference to a specific psychologist object. As outcome of this fact the attitude of tribal farmers towards ICT use for transfer of agricultural technology will largely determine the character and extent of their involvement and participation in developmental activities. Kharmudai *et al.* (2018).

Technological innovation is becoming increasingly important day by day in agricultural development and productivity. Mobile is one among the value effective method for sharing and exchanging knowledge in every corner of world. ICTs provide farmers with access to big information, like pest and disease reports, weather market prices, and it can also improve communication between farmers and extensions workers is extremely time cost and quick response are made which help in family action. This successively helps policy makers for improvement in agriculture sector.

ICT can play a key role in disseminating extensionists and rural people with all information needed for his or her work including crop production, credits, input supply, pest and disease control, post-harvest techniques and improving market access. Thus, there's a requirement to seek out that, up to what extent farm women are utilizing information and communication technologies for onward transfer of technology. However, many of those farm women aren't completely utilizing the complete potential of the ICT. There are number of things which hinder the use of the service including the failures to go to farmers, lack of promotion of the service and training of farmers. Language and traditional constraints to make sure adequate ICT infrastructure within the agricultural communities are found to impact on the effectiveness of adoption of ICT by agribusiness. Aleke *et al.* (2011).

Information and communication technologies (ICTs) play inevitable roles in every aspect of human activities today, including agriculture. Nwagwu and Opeyemi (2015) reported that farmers are the key player in agriculture and their ability to use the technologies defines the role of ICT in agriculture generally.

**METHODS & MATERIAL:**

Information Communication and Technology (ICTs) study was mainly associated with the computers and mobile phones which are modern ICT tools. The study was conducted in village Gudli of Mavli block of Udaipur district of Rajasthan State. The study was purposively planned to understand the attitude & perceived effects of the farm women towards ICT in agricultural & allied sector. From among the selected villages, initially an inventory of 100 farm women was prepared supported the multiple usage of those tools for getting farm information like mobile usage, television viewing etc. Using as a single tool or quite one tool. The information was collected from 100 farm women. For measuring attitude of the respondents a 5-point Likert scale was used. There was twenty (20) statements including both positive and negative against the 5-point scale to avoid the biasness of the respondents. The 5-point scale: 'strongly agree', 'agree', 'undecided', 'disagree' and 'strongly disagree' with assigned score 5, 4, 3, 2 and 1 respectively. The perceived effects of ICTs on improving information access were measured by asking them 20 questions regarding ICTs. The right answer for each question was given a score 0 & 1. Thus, the score was calculated from the responses. The statements for attitude measurement were development based on the review of the literature, consultation with specialist within the field of ICT in agriculture and field extension personnel and farmers utilizing the ICT tools for communication of farm information. The statements were further pretested for reliability and validity to get comprehensive from the respondents. Face to face personal Interview technique was used for collection of data from the chosen farm women. Frequency and percentage were used for analysis of knowledge.

**RESULTS AND DISCUSSION:****Table 1: Distribution of respondents according to their training undergone related to ICT and their duration**

n= 100

| ICTs               | Participation |       | Duration * |       |                  |   |         |       |         |       |                   |       |
|--------------------|---------------|-------|------------|-------|------------------|---|---------|-------|---------|-------|-------------------|-------|
|                    | Yes           | No    | 1-3 days   |       | 4 days to 1 week |   | 15 days |       | 1 month |       | More than 1 month |       |
|                    | f / %         | f / % | f          | %     | f                | % | f       | %     | f       | %     | f                 | %     |
| Mobile phones      | 6             | 94    | 5          | 83.33 | 0                | 0 | 1       | 16.66 | 0       | 0     | 0                 | 0     |
| Basics of Computer | 17            | 83    | 0          | 0     | 0                | 0 | 2       | 11.76 | 1       | 5.88  | 14                | 82.35 |
| Use of Internet    | 13            | 87    | 0          | 0     | 0                | 0 | 8       | 61.53 | 2       | 15.36 | 3                 | 23.07 |

\* Percentage were calculated based on the number of respondents participated in the training

Table 1 depicts that 94 percent respondent did not receive any training related to mobile phone, only 6 per cent respondents attended training of 1-3 to 15 days duration. While 17 per cent respondents attended training on basics of computer of 15 days to more than one month duration, while 13 per cent received training on use of internet. The duration varied from 15 days to more than 1 month.

The results are supported by Khamoushi and Gupta (2015) stated that majority (67.53%) of the respondents had not received any ICT training, 22.73 per cent of them were in low category of ICT training, while 5.2 per cent of them had of them were in high category of ICT training category.

**Table 2. Per cent distribution of respondents according to their problems associated with use of ICTs**

| Statements                                      | n= 100         |               |
|---|----------------|---------------|
|   | Yes<br>f / (%) | No<br>f / (%) |
| ICT Services are unaffordable                   | 48             | 52            |
| Poor network connectivity                       | 60             | 40            |
| Lack of awareness about ICTs                    | 57             | 43            |
| Erratic power supply                            | 48             | 52            |
| Lack of knowledge on operating ICTs             | 66             | 34            |
| Lack of training on use of ICTs                 | 72             | 28            |
| Lack of repairing centres in the area           | 32             | 68            |
| High cost for repairing ICTs                    | 37             | 63            |
| Technical illiteracy (Computer)                 | 65             | 35            |
| Language problem                                | 70             | 30            |
| Cultural taboos                                 | 5              | 95            |
| ICT services(Kiosks/Internet Cafe ) are faraway | 26             | 74            |
| High cost of net packs                          | 55             | 45            |

Table 2 depicts the problems associated with use of ICT, majority of the respondents i.e. 70 to 72 per cent reported that they face language problem and do not know the use of ICTs i.e. lack of training on use of ICTs while 60 to 66 per cent reported that they face poor network connectivity problem, illiteracy of computer and lack of knowledge on operating ICTs. While nearly half of them (55 %) reported that high cost of net package was the problem. Nearly half of them i.e. (48%) told that they had erratic power supply and ICT services are unaffordable for them. One third of them i.e. 26 to 37 per cent reported that ICT services mainly Kiosks/Internet Cafe are far away from them and lack of repairing centres in the area. Only 5 per cent reported that they have some cultural taboos like parda pratha, behind the use of ICT tools.

The major constraints Perceived by Vijayoragavam (2006) in internet use were poor connectivity, inadequate infrastructure facilities and lack of qualified professionals to develop educational materials.

A study on “Television viewing behaviour of rural women” Ramakrishna (2012) revealed that major constraints experienced by rural women in television viewing as affecting studies of children (64.89%), lack of adequate time (56.00%), tiredness due to work load (24.44%), gender biasness (20.89%), technical problems (2.89%), low economic status (2.67%) illiteracy and low educational qualification (2.44%).

Kiambi (2018) revealed that ICT initiatives were uncoordinated and scattered. He summarized the main challenges and factors that influence the use of ICTs as high cost of technologies, low ICT skills, and inadequate infrastructure, lack of knowledge on operating ICTs, poor and expensive connectivity, language barriers, inappropriate ICT policies, in adequate and/or inappropriate credit facilities and systems. Arokoyo and Orokoyo (2005) reported major constraints which severely restricts the use of ICTs in agricultural extension are poor ICT infrastructure, erratic power supply, high illiteracy among information users (farmers) and low computer literacy of information providers.

**Table 3. Overall attitude of respondents towards ICT**

| n= 100            |               |                          |       |      |
|-------------------|---------------|--------------------------|-------|------|
| Category          | Score range   | Frequency/<br>Percentage | Mean  | SD   |
| Highly favourable | 54.66 – 60.00 | 9                        | 49.28 | 5.37 |
| favourable        | 43.92 – 54.65 | 76                       |       |      |
| Least favourable  | 0 – 43.91     | 15                       |       |      |

Table 3(a) shows that 76 per cent respondents had favourable and 9 per cent had highly favourable attitude towards ICT while only 15 per cent respondents had least favourable attitude. The overall mean was observed as 49.28 and SD was 5.37.

Lokeswari (2016) in a study on the utilization of ICT among rural farmers, depicted that the farmers are having positive attitude towards Information Communication Technology. The frequent usage and exposure to ICT must be considered if someone wants to make a positive attitude to ICT. When people frequently use and expose to ICT, it'll inform them that ICT is useful and beneficial to them thus creating a positive attitude towards ICT usage. Utilization of ICT services in agriculture and rural development is in the take off stage and farmers experienced many problems.

**Table 4. Per cent distribution of respondents according to their attitude towards ICTs**  
n= 100

| S. No. | Statements   | SA | A  | UD | D  | SD | Mean score |
|--------|--|----|----|----|----|----|------------|
| 1.     | I feel updated whenever using ICTs to find any information | 60 | 40 | 0  | 0  | 0  | 4.6        |
| 2.     | Use of ICTs is a wastage of time                           | 15 | 50 | 8  | 27 | 0  | 3.53       |
| 3.     | ICTs helps the farmers in decision making                  | 53 | 36 | 8  | 3  | 0  | 4.39       |
| 4.     | Use of ICTs makes life more complicated                    | 9  | 44 | 18 | 29 | 0  | 3.33       |
| 5.     | ICTs improves the farmers output                           | 43 | 45 | 6  | 6  | 0  | 4.25       |
| 6.     | ICTs helps farmers to acquire needed knowledge             | 49 | 44 | 4  | 3  | 0  | 4.39       |
| 7.     | Serve as a link between government and farmers             | 27 | 58 | 11 | 4  | 0  | 4.08       |
| 8.     | ICTs motivate farmers to adopt new technology              | 47 | 42 | 6  | 5  | 0  | 4.31       |
| 9.     | ICTs demonstrate improved technologies to farmers          | 45 | 44 | 7  | 4  | 0  | 4.3        |
| 10.    | Use of ICTs creates isolation from the other population    | 10 | 66 | 12 | 10 | 0  | 3.8        |
| 11.    | I feel proud to be able to access the internet at any time | 28 | 51 | 13 | 8  | 0  | 3.99       |
| 12.    | ICTs connect people with latest trends of technology       | 43 | 50 | 2  | 5  | 0  | 4.31       |

\* SA- Strongly Agree, A- Agree, UD- Un-decided, D-Disagree, SD- Strongly disagree

The data in the table reveals that just for the statement, I feel updated whenever using ICTs to seek out any information, the respondents had highly favourable attitude which is additionally reflected in the distribution of the respondents as majority of the respondents (60%) were falling in strongly agree category. For the statements like ICTs helps the farmers in deciding (4.39%), ICTs helps farmers to accumulate needed knowledge (4.39%), ICTs motivate farmers to adopt new technology (4.31%), ICTs connect people with latest trends of technology (4.31%), ICTs demonstrate improved technologies to farmers (4.3%), ICTs improves the farmers output (4.25%), serves as a link between government and farmers (4.08%), I feel proud to be ready to access the web at any time (3.99%), Use of ICTs creates isolation from other population (3.8%) the respondents were having favourable attitude as the scores were ranging between 3.53 to 4.39. The distribution of respondents from strongly comply with disagree also reveals that a decent number of respondents or approximately equal no. of respondents were

falling in strongly agree and agree columns. While few respondents expressed were in undecided or disagreement category. Therefore, it reflects that respondents generally had favourable attitude towards ICTs. Here it's also important to notice that respondents had undecided attitude towards the statement i.e. use of ICTs makes life more complicated as reflected in percentage distribution of respondents and also the MWS (3.33).

Pehu *et al.* (2011) has strongly revealed during a study that ICT also can cause more optimal use of inputs. Increasing producers' knowledge of the way to use and manage water, equipment, improved seed, fertilizer, and pesticide has improved the intensification of farm practices round the world. Supported what has been completed by Sharma (2015), the agricultural communities have a really positive attitude towards ICT and that they welcome any ICT project to be developed in their areas. However, their lack of ICT knowledge prohibits them from using ICT frequently. Aldosari *et al.* (2019) in his study revealed that 37.2 per cent of the farmers agreed and 33.9 per cent of the respondents strongly agreed that mobile are often a useful source for agricultural information.

**Table 5. Distribution of respondents according to their perceived effects of ICTs on improving information access**

| S. No. | Effects  | n= 100       |             |
|--------|--|--------------|-------------|
|        |  | Yes<br>f / % | No<br>f / % |
| 1.     | Enhanced timely feedback                               | 100          | 0           |
| 2.     | Reduced male-female digital divide                     | 64           | 36          |
| 3.     | Improves quality of information                        | 92           | 8           |
| 4.     | Improves access to agricultural inputs                 | 77           | 23          |
| 5.     | Reduces rural-urban digital divide                     | 48           | 52          |
| 6.     | Improves cultural compatibility of agricultural issues | 60           | 40          |
| 7.     | Improves record keeping                                | 90           | 10          |
| 8.     | Enhances timeliness of information                     | 86           | 14          |
| 9.     | Improves information seeking behaviour                 | 66           | 34          |
| 10.    | Increases the information flow                         | 72           | 28          |
| 11.    | Improves awareness of agricultural events and news     | 80           | 20          |
| 12.    | Enhances accuracy of information                       | 83           | 17          |
| 13.    | Helps in data sharing and dissemination                | 88           | 12          |
| 14.    | Increases General Knowledge                            | 84           | 16          |
| 15.    | Helpful in learning concept                            | 78           | 22          |
| 16.    | Improves reading habits                                | 55           | 45          |
| 17.    | Improves working habits                                | 38           | 62          |
| 18.    | Helpful in collecting lot of information within time   | 95           | 5           |
| 19.    | Reduce the need of face to face meetings               | 76           | 24          |
| 20.    | Helpful in time saving                                 | 68           | 32          |

The table 4 shows the perceived effects of ICTs on improving information access, which reflects that nearly all the consequences are perceived by quite 50 per cent of the respondents as ICT improves information access except that ICT improves working habits because it was perceived by only 38 per cent respondents, while 62 per cent respondents reported that it doesn't improve working habits. In-depth review of the information within the table further reveals that ICT enhanced timely feedback (100%), Helpful in collecting lot of data within time (95%), Improves quality of data (92%), Improves record keeping (92%). Next to the present 80-88 per cent respondents perceived that ICT helps in data sharing and dissemination (88%), Enhances timeliness of data (86%), Increases public knowledge (84%), Enhances accuracy of data (83%), Improves awareness of agricultural events and news (80%). ICT also are helpful in learning concept (78%), Improves access to agricultural inputs (77%), Reduce the necessity of face to face meetings (76%), Increases the knowledge flow (72%) were also perceived by 72-78 per cent respondents.

Oladele (2015), findings are similar during which extension officers had high perception of the effect of ICT on agricultural information access. Prominent statement perceived highly positive by extension officers within the study area on the effect of ICT on agricultural information access include: increase information availability, increase knowledge on farming activities, improve quality of data and record keeping respectively, improves awareness of agricultural events, news and knowledge flow respectively, enhances accuracy of data, enhances capacity building agricultural markets, enhances timeliness of data and improve the relevance of research respectively.

Similarly the ICT were also reported to be helpful in time saving (68%), Improves information seeking behaviour (66%), Improves cultural compatibility of agricultural issues (60%), Improves reading habits (55%) etc. by 55 to 68 per cent respondents. The effect of ICT as reduces rural-urban digital divide was perceived by 48 per cent respondents whereas, 52 per cent respondents perceived that it doesn't reduce rural urban digital divide. Overall it is often concluded that majority of the respondents have perceived various effects of ICT on improving the knowledge access.

Farmers in Imo State have a transparent and favourable perception of the relevance of ICTs in extension delivery. This is often evidenced by their agreement with the



statements which highlight the importance of ICTs in extension delivery like increase in contacts (Mean score 4.57); time-saving contacts (4.53); increase together between extension and input supply agencies (4.20); incorporation of feed-forward and improvement of feed-back (4.10); global cross fertilization of ideas (4.25); increase within the pace of rural development and enhancement of sustainable rural livelihoods (4.36) as revealed by Osondu *et al.* (2015).

**Table 6. Correlation between personal and socio-economic variables of the respondents with attitude towards ICT**

| Variables                    | Correlation coefficient |
|------------------------------|-------------------------|
| Age                          | -.367**                 |
| Caste                        | .107                    |
| Education                    | .421**                  |
| Occupation                   | -.064                   |
| Family Income                | .073                    |
| Family type                  | -.110                   |
| Organisational membership    | .148                    |
| Organizational participation | .231*                   |
| Extension contact            | .149                    |
| Mass media exposure          | .215*                   |
| Ownership of ICT tools       | .195                    |

\*Correlation is significant at the 0.05 level (2 tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed).

There was positive and significant correlation of education (.421), Organizational participation (.231) and mass media exposure (.215) with attitude towards ICTs whereas age was significant but negatively correlated with attitude towards ICT. For rest of the attributes like caste, occupation, family income, family type, organisation membership, extension contact and ownership of ICT, no significant relationship with attitude towards ICT was observed.

Osondu (2015) mentioned that the positive correlation between education level and access to ICTs is in line with *a priori* expectation because the more educated the farmer is, the more exposed and knowledgeable he is and the more his desire to be ICT compliance in line with modern trend. The studies conducted by Raghuprasad *et al.* (2013) found that the relationship between personal, socioeconomic and psychological characteristics of the farmers and their knowledge about ICT tools to media exposure and Cosmo politeness had positive and significant relationship with knowledge of farmers at one per cent level of significance whereas, education and income had positive and significant relationship with knowledge of farmers at five per cent level of significance.

**Table 7. Correlation between personal and socio-economic variables of the respondents with perceived effects of ICTs**

| Variables                    | Correlation coefficient |
|------------------------------|-------------------------|
| Age                          | -.310**                 |
| Caste                        | .018                    |
| Education                    | .374**                  |
| Occupation                   | .100                    |
| Family Income                | .144                    |
| Family type                  | .215*                   |
| Organisational membership    | -.043                   |
| Organizational participation | .006                    |
| Extension contact            | -.090                   |
| Mass media exposure          | .233*                   |
| Ownership of ICT tools       | .290**                  |

\*Correlation is significant at the 0.05 level (2 tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed).

The correlation with perceived effects of ICTs with education ( $r=0.37$ ), ownership of ICT tools ( $r=0.29$ ), mass media exposure ( $r=0.23$ ) and family type ( $r=0.21$ ) had significant and positive correlation whereas with age ( $-0.31$ ) significant and negative correlation was found. Rest of the personal & socio economic variables, had no relationship with perceived effect of ICT.

Raghuprasad *et al.* (2013) reported that the social participation, extension participation and mass media exposure have significant relationship with the farmers since these things will expose farmers to different sources of information where farmers start learning about the ICT tools and techniques. Farmers who have invested more on the purchase of agricultural implements, TV, radio, communication gadgets, inputs and machineries will efficiently utilise them in the field regularly which necessitates them to know or acquire more about the ICT tools.

## CONCLUSION:

It can be concluded that the problems associated with use of ICT, majority of the respondents i.e. 70 to 72 per cent reported that they face language problem and do not know the use of ICTs i.e. Lack of training on use of ICTs while 60 to 66 per cent reported that they face poor network connectivity problem, illiteracy of computer and lack of knowledge on operating ICTs. The distribution of respondents from strongly agree to disagree also reveals

that a good number of respondents or approximately equal no. of respondents were falling in strongly agree and agree columns. While few respondents expressed were in undecided or disagreement category. Therefore, it reflects that respondents in general had favourable attitude towards ICTs. The perceived effects of ICTs on improving information access, it was found that almost all the effects have been perceived by more than 50 per cent of the respondents as ICT improves information access except that ICT improves working habits as it was perceived by only 38 per cent respondents. The correlation with perceived effects of ICTs with education ( $r=0.37$ ), ownership of ICT tools ( $r=0.29$ ), mass media exposure ( $r=0.23$ ) and family type ( $r=0.21$ ) had significant and positive correlation.

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