# Literature Review on Farmers' Perception Towards Information &Communication Technology (ICT)

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**Abstract**

*The role of Information & Communication Technology (ICT) is important to educate the farmers about the agriculture productivity and the agriculture market. The farmers are not able to access the market properly but ICT provides the helps to the farmers to improve their marketing skills. The ICT is the important pillar of the communication transfer to the farmers. The various studies have examined the perception of the farmers towardsInformation & Communication Technology (ICT). The paper intends to review the literature on Information & Communication Technology (ICT).The present study focuses on the conceptual framework about the farmers' perception towards ICT.*

**Keywords:** *Farmers, Perception, ICT, Agriculture, Literature Review.*

## Introduction

Agriculture sector is the only sectors that ensures food securities and play an important role to reduction poverty. Agriculture sector growth is vital for the development of the economy. Information about the market and the product prices are essential for the growth of the agriculture sector (Tomar, A. et al., 2016). The farmers face problem for enhance the productivity due to lack of information about the quality, price input, market and credit resources. ICT services are the most prevailing to provide agriculture information to the farmers. The access of information through ICT, the farmers enhance the productivity and get high price of the products (Adegbidi, A. et al.,2012). The study is based on the adoption of ICT services by the farmers for access the information. The ICT applications are useful to the farmers for provide information about the input and output product price and helpful to increase the income (Dey, B. L.et al., 2008). ICT play a significant role to transfer the information with the three technologies –Computer,

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Communication & Information Management Technology.

These technologies are supportive to transformation the information & knowledge, managing data and give the chance to facilitate the information for farming. It has many applications according to the farmers' requirement and the use of ICT applications have been recognize an important mechanism of agriculture extension (Dhaka, B. L., & Chayal, K., 2016).

ICT application is known as e-agriculture, develop for the purpose of agriculture extension. It is the innovation in the field of agriculture to enhance the income of the farmers. ICT devices are internet, mobile, SMS services, television, radio, satellites and wireless technology. In the changing world, many interventions have been tested timely with the degree of success.

**Review of Literature:**

Zaman, M. (2006) the study entitled "ICT for Dissemination of Agricultural Information to Rural Farmers of Bangladesh" discussed the constraints for use of ICT tools with cost effective manners. The paper has studied about the modernization and new equipment for the internet. The major draw fall to adopt the ICT was the shortage of electricity and the telecommunication in the villages. The Government of Bangladesh was committed to provide internet access only in the urban area (470 Sub-district) for. The study found that the dial-up connections were highly expensive and microwave or VSAT was the suitable for internet in rural areas for the farmers.

Dey, B. L.et al. (2008) the study stated the behavior of the farmers towards use of ICT tools to enhance the quality of life. The study collected the data through interview, group discussion, personal observation form Bangladesh. The study found that agriculture information through telecentre projects had limited impact but internet, computer have the positive impact to provide information to the farmers.

Gakuru, M., Winters, K., & Stepman, F. (2009)the study indicated that progress of ICT has been extraordinary in the filled of agriculture in Africa .Many projects of ICT have been extended to increase the agriculture information to the African farmers. The article has discussed about the various innovative projects of ICT for provide the information to the farmers, mostly focused on the 'Mobile telephony', where the internet access was limited.

Mwakaje, A. G. (2010) the study examined the impact of ICT on the farmers to provide Information. A sample of 200 farmers was collected from Rungwe District in Tanzania. The data was collected through questionnaire. The study found that the significance relationship with the product quality, income, crop marketing. The farmers who used ICT information for the market received high price of the product.

Aleke, B., Ojiako, U., & Wainwright, D. W. (2011) the study examined that the impact of the ICT on the 'social augmented parameters' in Southern Nigeria. The data was collected through the focus group. The result found the social network were strongly active, government has provide full support for ICT adoption by the farmers.

Dhaliwal, R. K. et al. (2011) the study examined the potential of the different agencies for the development of agriculture and humans. The study has discussed about the 3 types of electronic media- simple, advance and Modern and the KIOSKS, GIS, e- library, rural cams innovative technologies for dissemination

agriculture productivity. The study also discussed the E-agriculture market, Video text, multimedia modern technologies helpful for the farmers.

Banerjee, A. (2011) the study found that before the World War II, development communication was not new concept in the study of mass communication but with the beginning of the globalization, immense changes have seen in the development communication. The paper was focused on the ITC implementation through ICT. ICT provided the information through e-chopal, Gyandoot and agropedia to the rural area.

Chauhan, N. M. (2012) the study indicated the farmers expectation about the Community Internet Center (CIC) at panchayat office and government was bear all expenses for CIC. The study was selected data from four village of Anand district, Gujarat state and collected the data from 25 respondents in each village. The study concluded that the most of the farmers expected proper training of the internet access.

Adegbidi, A.et al.(2012) the study examined that farmers access of the market was very poor and not able to negotiate the commodity price in the Market. The study revealed the various factors influence for usage of ICT. A sample of 360 rice farmers was collected from the Benin, Africa. The study was analyzed the result with the help of Logit, Probit and passion regression techniques. The model of the study found that the two derive: First - Transportation Cost & Second - participated farmers have positive influence of the use of ICT tools.

Abdullah, F. A., & Samah, B. A. (2013) the study discussed that technology adoption was the important component in the Malaysian economy. The study was explained the farmers' perception and benefit gained through new technology. The study concluded that the education level, knowledge of extension programme were the factors, which influence the adoption of new technology.

Ganesan, M.et al. (2013) the study found that the most of the agencies using the modern information technology for generating information to the researchers, farmers and clients but the study was focused on the Mobile Multimedia Agricultural Advisory System (MAAS) to provide the advisory for the agriculture purpose. The study concluded that farmers seeming the information about pest and diseases control and focused on the three aspect of information with quality, timely and reliability.

Amin, M. K., & Li, J. (2014) the study examined the behavior of the farmers towards online peer to peer (P2P) lending through Technology Acceptance Model (TAM) to use the ICT for the farmers. The study had discussed Technology Acceptance Model (TAM) to understand the perception of the farmers in Bangladesh and China. A sample of 80 farmers was collected from both the countries. The study concluded that self-efficiency, occupation, innovativeness, social influence have the positive impact to use the ICT.

Kabir, K. H. (2015) the study entitled "Attitude and Level of Knowledge of Farmers on ICT based Farming" examined the benefit of the agriculture sector through ICT in Bangladesh. The extensive used of the ICT for the farm level growth with low cost. 90 farmers were selected through simple random sampling technique for the study and the paper concluded that 37.8 % farmers were carried the input service information and the socio-economic factors have the positive attitude towards the ICT.

Singh, R. K., & Raghav, D. K. (2015)the study

stated that the Kisan Mobile Advisory Services (KMAS) scheme was introduced to provide agriculture information in Hindi through SMS for the farmers. A sample of 150 farmers was selected for the study. The study revealed that the maximum of the farmers gained the benefit through KMAS and only 15 % farmers were not utilized the KMAS services because of the content length of the SMS.

Dhaka, B. L., & Chayal, K. (2016) the study indicated that ICT potential increase in distributed the agriculture technology to the farmers. The study was conducted in the Bundi district of Rajasthan. A sample of 75 respondents was selected for the study. The study examined the farmers' reaction for provided the information timely by ICT. The result found the positive perception towards the ICT to increase the Agriculture development and the factors - the farmers education, innovativeness, Mass media exposure have positively connected for adopting the ICT services. The age of the farmers & landholding has the negative influence to use the ICT services.

Chauhan, N. M. (2016)the study entitled "Farmers' Perception about ICT Application: A Case study of Gujarat state" found the effectiveness of the satellite based internet communication for the farmers. The farmers expected CIC (Community Internet Center) at village level. The farmers were collected the information about the government program, agriculture information and market price through ICT. The farmers were expressed the need for the internet usage on daily basis. The study concluded that the farmers education, landholding, internet usage, connection with NRI, mass media, the variable were positively connected with the usage of ICT.

Tomar, A. et al.(2016) the study examined the relationship between the socio-economic characteristics and the use of the ICT by the farmers in Udham Singh Nagar, Uttrakhand. The study was collected the data from 120 farmers. The study found the positive relationship between the education, income, mass media, and information seeking behavior with the use of ICT but the negative relationship between the age, landholding and socially involvement with the use of ICT by the rural farmers.

Kafura, R. A. et al.(2016) the study examined that the ICT has explored the agriculture field. The study has collected the sample of 100 respondents from Gazipur district. The study found that the farmers were seeking information through television as ICT tools and CD/DVD and Grameen phone community services were not used frequently in dissemination of the agriculture information. The farmer income, education, innovations and ICT information of agriculture have the positive association with the use of ICT tools and age and experience have negative association with the use of ICT tools.

Raksha & S. N. M. (2016) studied that the factors affecting the attitude of the farmers for the use of ICT in an effective manner. The study was selected 150 respondents form Ranga Reddy District in Andhra Pradesh. The result found that the farmers' income, education, awareness & information received by ICT and farmer experience, all the factors have the positive relationship agriculture information while age of the farmers found negative relationship towards use of ICT in dissemination of agriculture extensive system.

**Research Gap**

Farmers' income depends on the agriculture production growth and ICT applications are providing information to the farmers for agriculture productivity. Numbers of studies

have been emphasized on Farmers perception towards ICT and only focused on the socio-economic characteristics with uses of ICT information. The major gap found that studies have not discussed about the comparative analysis of the countries and between the states and also no study discussed about that which agency working in which area for ICT applications to the farmers.

**Objective of the Study**

The study aims to review the literature on the farmers' perception towards Information &Communication Technology in various countries.

**Methodology**

This systematic review of literature is completed form the various published research journals, Articles, PhD thesis.

**Result and Conclusion of Literature Review**

Reviews of the studies were done to know the farmers perception towards ICT. Majorities of the studies focused on the farmers understanding the use of ICT. The constraints found during the studies were electricity problem in the villages and illiterate. The most of the studies were done in the form of quantitative. The study concluded that the farmers should educate themselves to take more benefit from the scheme.

**Future Study:**

The future study will be based onthe comparative analysis of the countries and between the states and also which agency working in which area for ICT applications to the farmers.

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