

Volume 7, Issue 4, April 2019

International Journal of Advance Research in Computer Science and Management Studies

Research Article / Survey Paper / Case Study

Available online at: www.ijarcsms.com

An Analytical Study of Digital Agriculture

Dr. Hitesh A. Kalyani

Assistant Professor
Department Of Commerce
S.N.Mor College
Tumsar, Dist. Bhandara
Maharashtra – India

Abstract: Agriculture is considered as the backbone of the Indian Economy. The majority of the total population in India is living in rural areas. Agriculture is considered as the main source of primary occupation as a huge size of rural population of the country is depending on agriculture. Thus the development of agriculture should receive top priority in our developmental programmes. Traditional techniques applied in agriculture, the productivity is very poor. Other Countries adopt new technologies in agriculture and thus it is time to change the techniques in agriculture. Agricultural policy of a country is designed by the government for raising agricultural production and productivity and also for raising the level of income and standard of living of farmers. Now, it's time to change the new agricultural policy. In this paper, attempt has been made to the study proposed to conduct opportunities in Digital Agriculture.

Keywords: Yield Mapping, Predictive Analytics, Robotics, CIPRA, Agriculture software.

I. INTRODUCTION

Digital Agriculture means agriculture activities done by smart way. In Digital Agriculture, electronic tools are used to collect data, store, analyze and share electronic data to the farmers. Digital Agriculture is advanced technology for farmers to improve agriculture inputs. In Digital Agriculture the farmers used modern and advanced tools in fields to improve the production. In Digital Agriculture farmer's collects data accurately from external sources and thus the farmer take right decision. Digital Agriculture is applying precision location methods and decision quality agronomic information. Digital Agriculture manage crops in efficient method. In Digital Agriculture the farmers use GPS, Yield mapping and other modern tools to increase the production.

II. TECHNOLOGY OF DIGITAL AGRICULTURE

In Digital Agriculture new and advanced technologies used in the field such as

- Geographic Information System (GIS): In this system farmer decide that what to plant and where to plant in the field by using mapping technology. This technology helps farmers to take correct decision what to plant in the field.
- Drones: Drones are used to monitoring crop in the field. It is difficult to monitor the field but drone can monitor the field easily. Drones can draw 3D image also predict soil quality through analysis and planning seed planting patterns. Drones can spray chemicals in the field.
- Robotics: With the robotics, farmers can spray the field, identifying and removing weeds without human intervention, fruit picking and nut harvesting done by the robotics.

- RFID Sensors and Tracking: With the help of RFID Sensors and Tracking farmers can track food from the field to the store. The consumer know the location from where is was purchased.
- Cattle Monitoring: In Digital Agriculture the farmers can monitor the cattle digitally by using sensors (Collar tags) to deliver health, nutrition insights of each cattle.
- Predictive Analytics: Machine learning models track and predict various environmental impacts on crop yield such as weather changes.
- Agricultural Robots: Companies are developing autonomous robots to handle essential agricultural tasks such as harvesting crops.
- Digital Communication: Digital communication like mobile phones use by farmers to know the weather condition and other useful data.
- Smart Agriculture Sensors: Smart sensors use for weather conditions, soil quality, crop's growth progress or cattle's health.
- Smart Agriculture Gadgets: Smart agriculture gadgets like weather stations, combining various smart farming sensors located across the field, they collect various data from the field.
- Agricultural Software: Computer Centre for Agricultural Pest Forecasting (CIPRA) is software which can easily predict the development of insects and diseases based on weather data.

III. STATEMENT OF THE PROBLEM

Modern Agriculture implementation have been widely attracted significant from various groups including farmers, Government & Agricultural Universities. Therefore it is the need of time to have the study on the public awareness, knowledge and understanding of Digital Agriculture in India.

IV. OBJECTIVE OF THE STUDY

- To study the Digital Agriculture India.
- To analyses the Farmer's opinion about awareness on Digital Agriculture.
- To study on the Farmer's level of expectations from the implementation of Digital Agriculture.
- To give suggestions on the relevant subject.

V. NEED FOR THE STUDY

There are many research projects regarding the Agriculture. A Study on Awareness towards Digital Agriculture in Bhandara Region is an untouched topic, hence the present study has been undertaken to fill up that gap.

VI. RESEARCH METHODOLOGY

- Primary data: A structured questionnaire is used to collect the primary data.
- Secondary data: Secondary data is collected by referring related books, journals and web sites.

VII. SAMPLE SIZE

The sample size of the study is 200.

VIII. TOOLS AND TECHNIQUES

Simple percentage

IX. LIMITATIONS

- The survey was restricted to Bhandara region.
- The number of respondents was limited to 200 only.

X. RESPONDENT'S DATA

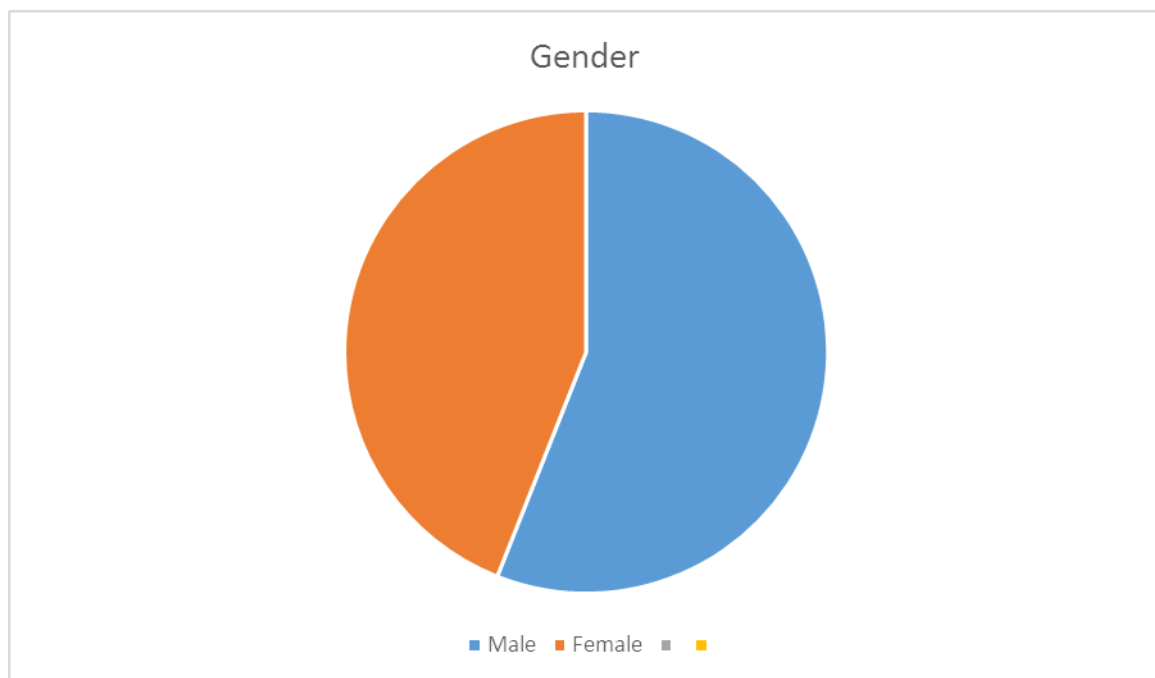
Question no.1

Gender of the respondents

Gender	No. of Respondent	Percentage
Male	112	56
Female	088	44
Total	200	100

(SOURCE: PRIMARY DATA)

The above table shows the gender of the respondents. Out of the total respondents taken for the study, 56 % are male and the remaining 44% are female. Majority of the people are male.



Question on. 2

Awareness about Digital Agriculture

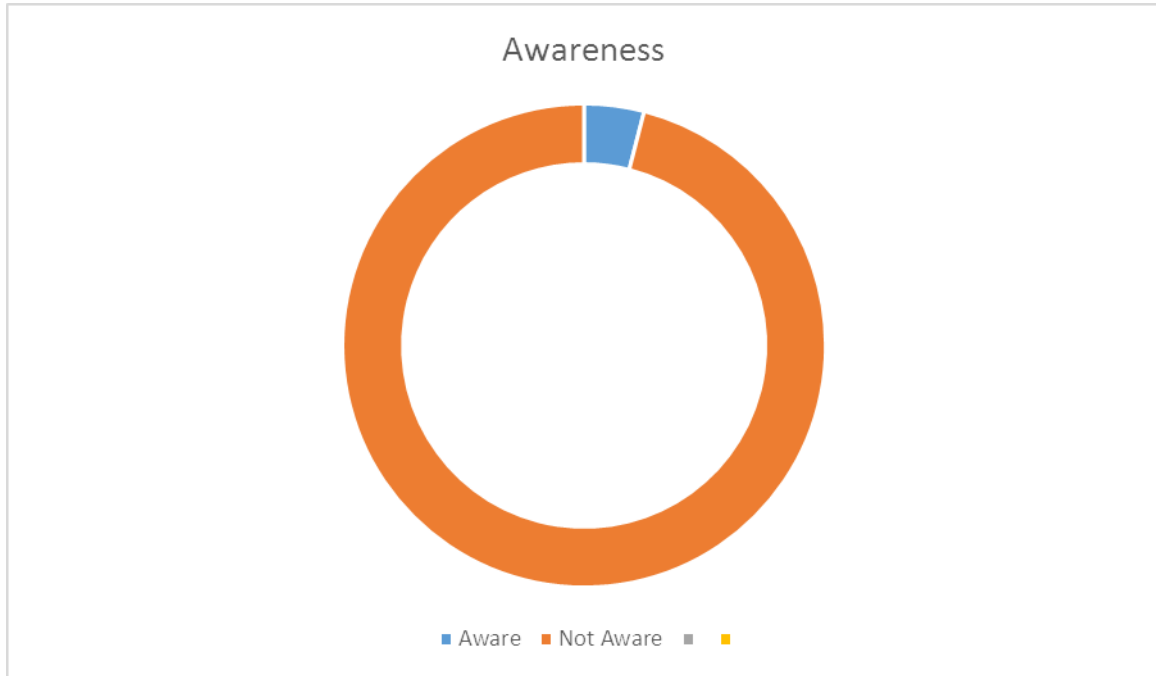
Awareness	No. of Respondent	Percentage
Aware	004	02
Not Aware	196	98
Total	200	100

(SOURCE: PRIMARY DATA)

The above table shows the respondents source of awareness about Digital Agriculture.

Out of the total respondents taken for the study, 02 % are aware about digital agriculture and

98 % are not aware about digital agriculture. Majority of the farmers are not aware about Digital Agriculture.



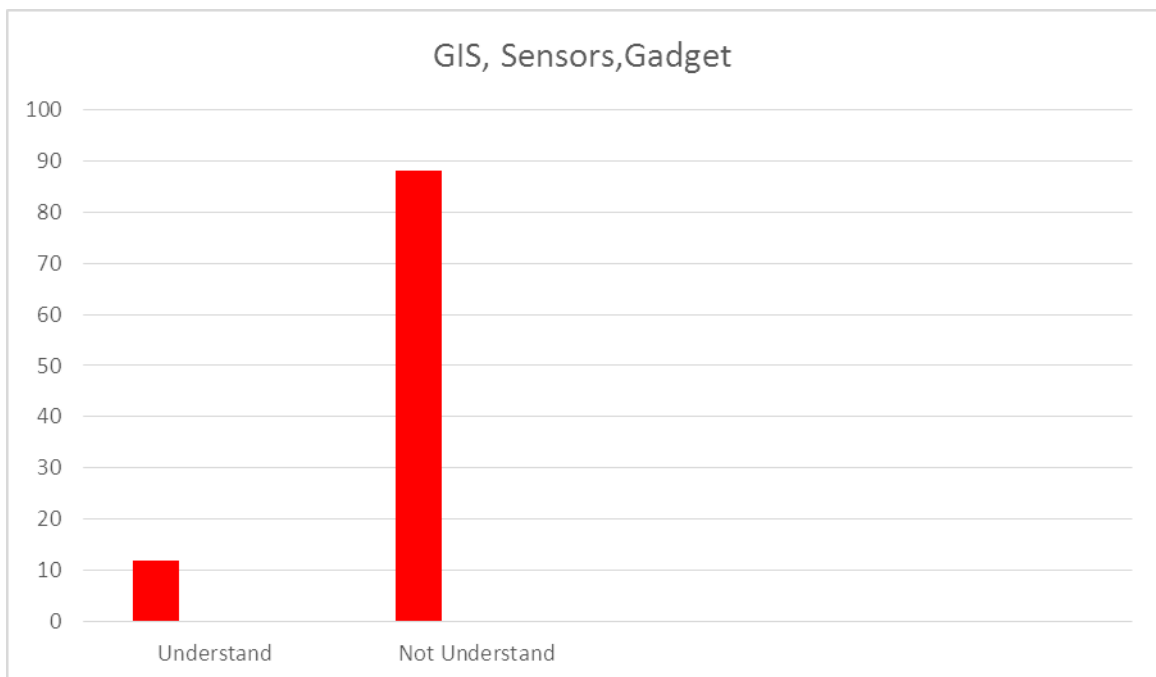
Question no. 3

Understanding Geographic Information System (GIS), Sensors, Gadgets.

Understanding GIS, Sensors, Gadgets	No. of Respondent	Percentage
Yes	024	12
No	176	88
Total	200	100

(SOURCE: PRIMARY DATA)

The above table shows the respondents source of Understanding Geographic Information System (GIS), Sensors & Gadgets. Out of the total respondents taken for the study, 12 % are aware about Understanding Geographic Information System (GIS), Sensors & Gadgets and 88 % are not Understanding Geographic Information System (GIS), Sensors & Gadgets. Majority of the farmers are not Understanding Geographic Information System (GIS), Sensors & Gadgets.



Question no.4

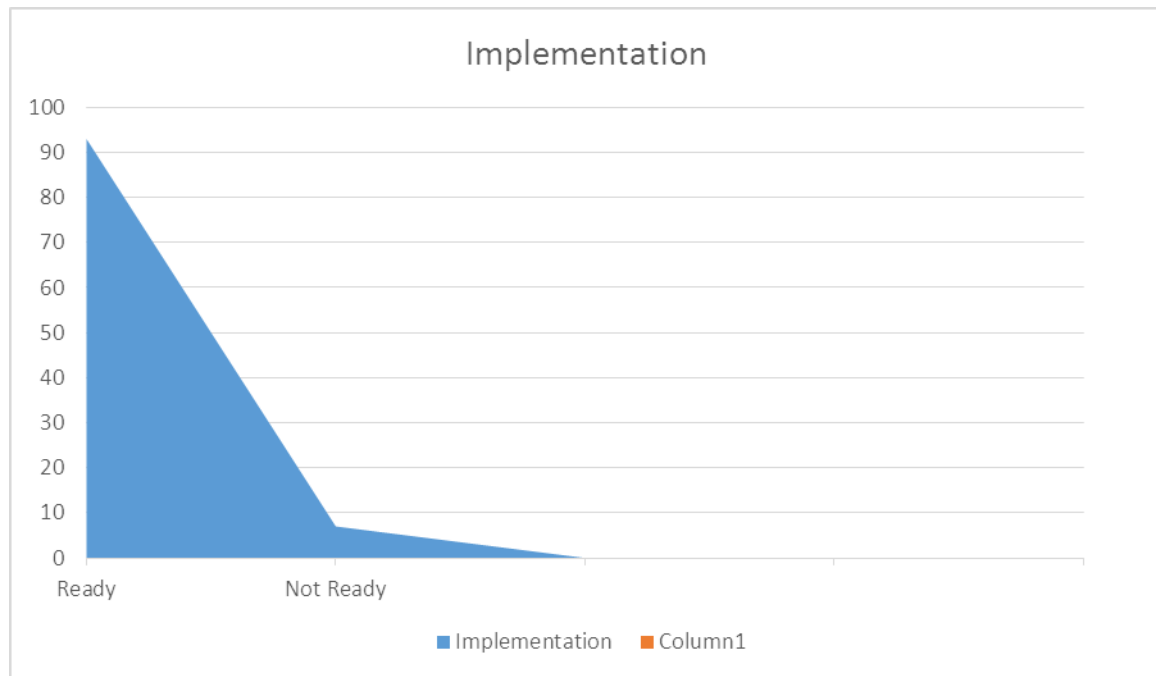
Ready to Implement Digital Agriculture

Implement Digital Agriculture	No. of respondents	Percentage
Yes	186	93
No	014	07
Total	200	100

(SOURCE: PRIMARY DATA)

The above table states the opinion about the farmers are ready for implementing Digital Agriculture.

Out of the total respondents taken for the study, 93 % of the farmers are ready for implementation of Digital Agriculture Remaining 7% of the farmers are not ready for implementation of Digital Agriculture. Majority of the farmers are ready for implementation of Digital Agriculture.



Question no. 5

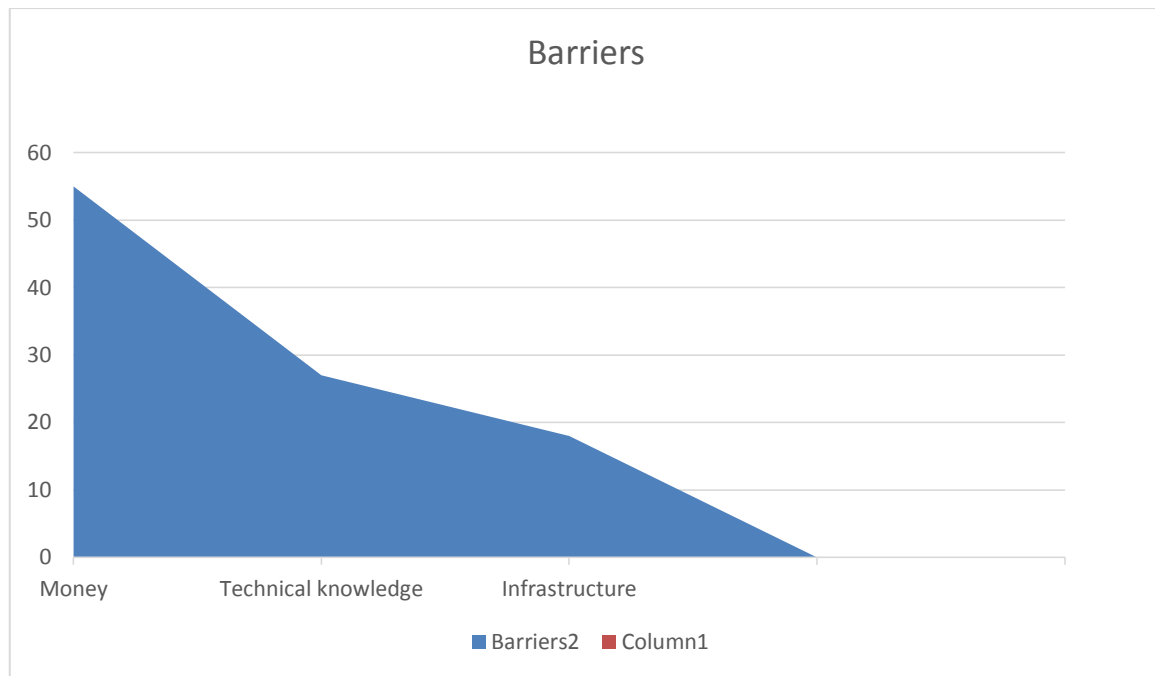
Barriers to Implement Digital Agriculture

Barriers	No. of respondents	Percentage
Money	110	55
Technical Knowledge	54	27
Infrastructure	36	18
Total	200	100

(SOURCE: PRIMARY DATA)

The above table states about the barriers to implementing Digital Agriculture.

Out of the total respondents taken for the study, 55 % of the farmer's opinion that money is barrier for implementation of Digital Agriculture, 27% of the farmer's opinion that Technical Knowledge is barrier for implementation of Digital Agriculture, Remaining 18% of the farmer's opinion that Infrastructure is barrier for implementation of Digital Agriculture. Majority of the farmer's opinion that money is barrier for implementation of Digital Agriculture.



XI. FINDINGS

- Most of the public respondents are Male.
- Majority of the farmers are not aware about Digital Agriculture.
- Majority of the farmers are not Understanding Geographic Information System (GIS), Sensors & Gadgets.
- Majority of the farmers are ready for implementation of Digital Agriculture.
- Majority of the farmer's opinion that money is barrier for implementation of Digital Agriculture.

XII. CONCLUSION

A Study of Awareness towards Digital Agriculture in Bhandara Region prove that farmers are not aware about Digital Agriculture, Even the farmers are surprised about the concept of Digital Agriculture. Government should organise seminars, or organise campaigns not only in Bhandara region but in all India to aware the Digital Agriculture among farmers. Agriculture University and NGO'S play important role to aware the farmers and implement Digital Agriculture in India and strengthen the Indian economy.

References

1. Indian Economy, P.K. Dhar, Kalyani Publishers.
2. Indian Economy, Ruddar datt, K.P.M. Sundharam, S. Chand & Co.
3. Indian Economy, Gaurav Datt & Ashwani Mahajan, S.Chand.
4. Indian Economy, A.N. Agrawal, Wishwa Prakashan.
5. www.indianagriculture.com
6. www.modernagriculture.com
7. www.krishisamachar.com
8. www.indianeconomy.com