

SMART SYSTEM TECHNOLOGY USE IN AGRICULTURE SECTOR

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Abstract

In today's modern world smart phone technologies are gaining importance because of various advance characteristics. They are smaller in size with linear and quicker response with easy handling ability. Smart sensors use is increasing in every applications. The smart sensors enhances the work performance of the systems. Smart sensors are equipped with very intelligent sensors which always makes the system most promising regarding the output measurement. There results helps to improve the farming and industrial automation in various ways. The sensors like motion, position, recording, measurement, sensation, etc have much importance in field of science. The smart systems are now a day's employed towards the agriculture purpose which is need of an hour to improve the food production to feed the growing population. Side by industrial atomization is also helping to improve the finished goods in the required time to manage the required need for the agriculture. The smart systems gives easy access of queries of farmers, weather report, various types of crops information and its diseases. The smart systems like mobile smart phones are used by many users for getting the easy access of the required information regarding the agriculture. In this article the use of the smart phone in agriculture survey for different applications in Sangli District is taken. The sample data is taken from the Sangli District. The data is collected from personal interview, through questionnaire, mobile, SMS, internet mails, Whatsup as well as from the information centre Sangli. The use of smart system/phones are its purpose is represented graphically.

Key words Smart phone, sensors, sensor system, modern agriculture technique.

INTRODUCTION

Agriculture is main occupation in India and also in food producing sector. In order to feed 125 cores population of India new modern technologies must be used. The traditional methods do not support food security to the people. In traditional methods, the information in the villages were given by observers and its method of use is passed by tradition to the next generation. These methods do not support for the various environmental conditions which are changing very fast and causes frequent problems in agriculture like weather, water, diseases, flood, temperature, modern agriculture practices, etc. This hampers the productivity and to avoid this well in time the smart phone or systems are helpful. These systems gives the better solution to the problem existing. The monitoring s also possible through the smart systems or phones.

The farmers can use this type of technology for [1]-

1. Agriculture Management
Management activities like farm management and its resources like, water, land availability, labour availability, fertilizers, cropping pattern, etc.
2. Information management.
This deals with the information regarding the knowledge of environment and market.
3. Extension services management.

This gives the knowledge of traditional to new techniques, use of canals and irrigation, etc.

4. Smart farming management

Some of the sensors play important role in agriculture are

1. Light sensor – for measuring ambient light level.
2. Barometer – to measure the atmospheric pressure.
3. Humidity - humidity of the environment.
4. GPS - To know longitude and latitude of the location
5. Temperature sensor – to measure the temperature or room as well as environment.

Likewise every sensors have some or the other use in the system.

Sample data analysis

The data is collected from the various parts of the Sangli district [2-3] and represented in the graphical format. From the data collection the predictions are represented. Initially data collected is tabulated in the table format and then from the tabular data bar graphs are represented.

Data head	No. of users
Total population of Sangli District	2820575
Number of Mobile users	993820
Number of Internet users	451220
Number of smart phone users	150032
Number of persons who use smart devices for agriculture as well as Industrial application	20018

Table 1 Sample data for the mobile, smart phone and internet users of Sangli district.

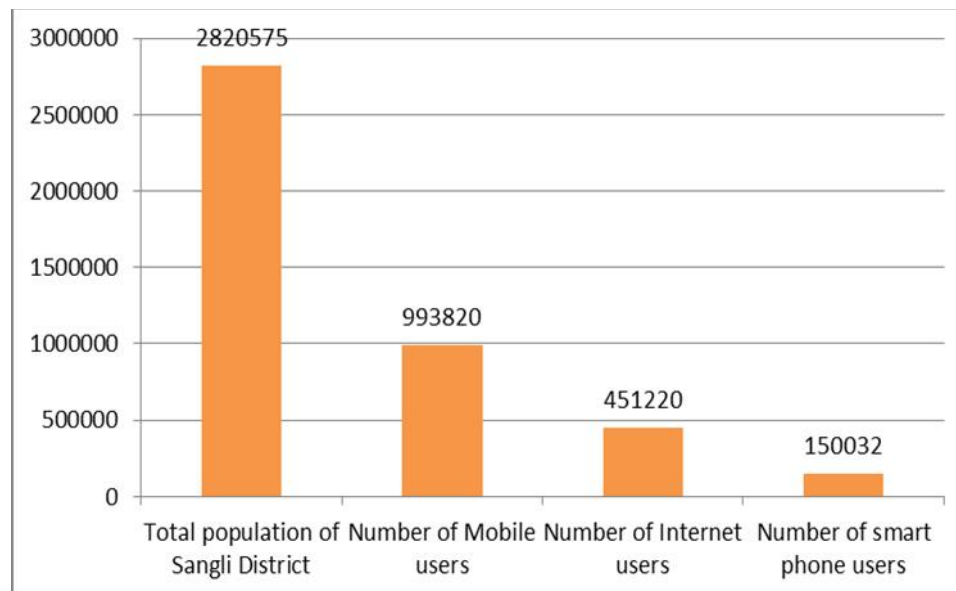


Fig.1 Bar graph of mobile, smart phone and internet users of Sangli district with total population..

Fig. 1 shows the bar graph of data samples collected from the Sangli district for total population, number of mobile users, number of internet users and the smart phone users. From the graph it is observed that one third of the population uses the mobile for the communication purposes. However, one sixth of total population uses the internet for the advanced information. But the number of smart phone user are very less as compared to the total population of the Sangli district. It is also observed that during the last five years the use of smart phone is increasing. The sensor technology and smart phone along with the dedicated applications are playing important role in agriculture. Now a days with every click user gets information within a fraction of second from any corner of the world.

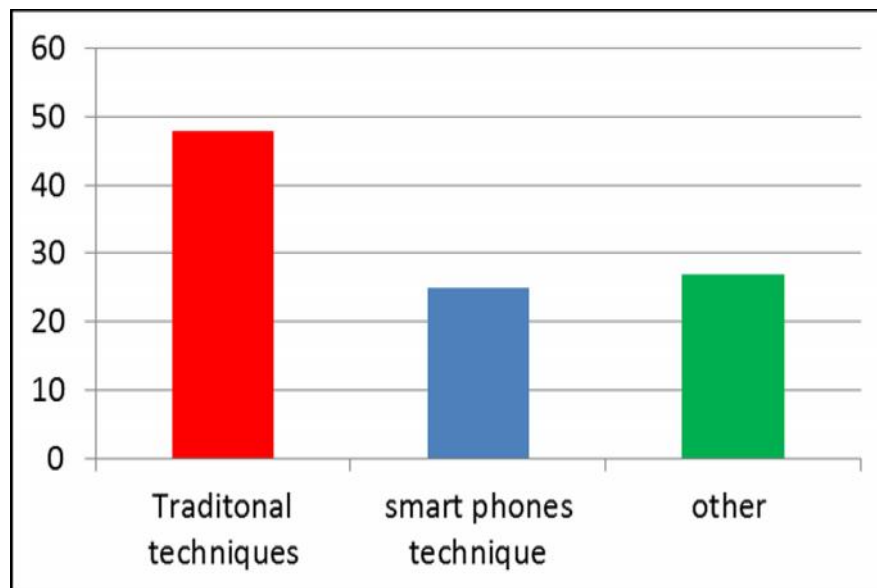


Fig. 2 bar graph of User of traditional techniques, smart phone and other technique users for the agriculture purpose

From the above figure it is observed that still many people are using traditional techniques in the farming. But the smart phone use is also day by day increasing. Other than the smart phone like internet, TV, Radio, newspaper is also dominating the advanced use of agriculture devices and methods to get high yield.

The fig. 3 shows the graphical representation of % of willingness of users to use the smart phones for the purpose of getting information of irrigation, modern tools, disease and cropping pattern. Most of the users uses phones for getting information of modern tool technology and irrigation.

Particular	Percentage
Irrigation techniques	34
Modern tools	63
Cropping technology and diseases	03

Table 2 trend to use modern technology data

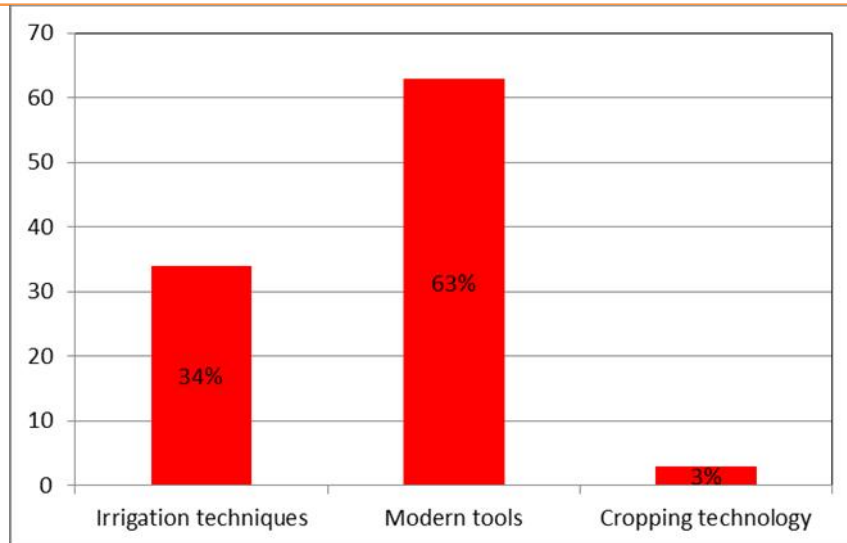


Fig. 3 trend to use smart systems in modern technology

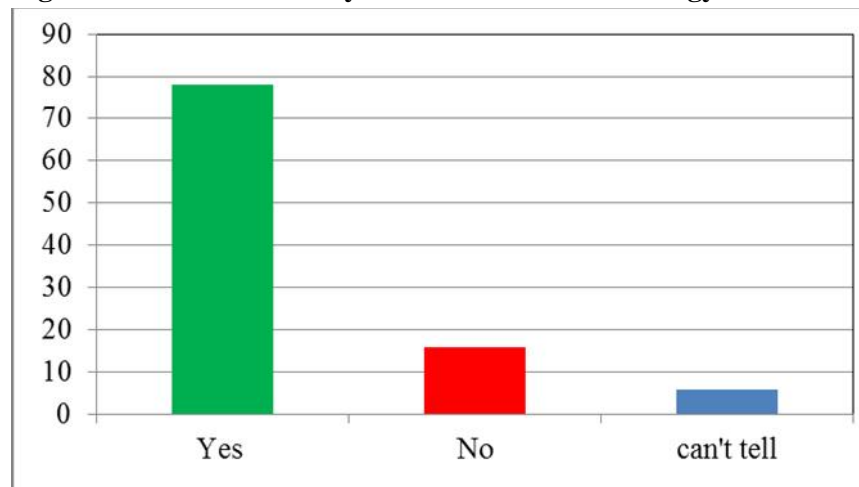
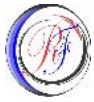


Fig.4 Willingness regarding the smart systems use in future.

The graphical trend shows that most of the people thought that the modern smart phones and sensor technology is better solution for the betterment of the farmers. Almost 77 % people are agree with the usage of smart phone technology and remains are in dilemma or not agree because they are having inadequate knowledge of the modern smart phones and sensor technology.

CONCLUSION

Smart phone prove the better information to the users and the use is also easier. It adds the extra knowledge and the information of modern tools and techniques. Mobile phones have spread rapidly in the rural area during the past five years, providing new opportunities for communicating information that will be helpful to limited-resource farmers and small agricultural businesses. People are willing to use smart phones for the agriculture purpose to improve the food production. Still some traditional techniques are used in many parts of the district for the agriculture purposes. The trend of use of smart sensors in the field of agriculture is welcomed and advantages. More than two third population is still not using mobiles. The literacy rate is moderate in the district and the application users and very less.



To promote the increase in food production smart phone, smart sensor knowledge and updating is necessary to the uses. For this training centers must be established in the vicinity area. The smart phone technology plays vital role in the agriculture however the technology is costly and many people can't afford which restrict the use of smart systems.

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