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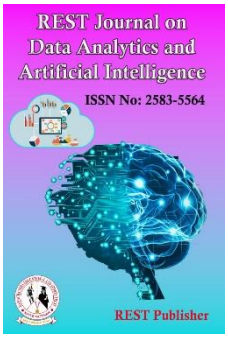


# Smartphone Application to Assist Farmers in Agriculture Sector

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**Abstract:** *An essential component of any nation's economy is agriculture, which is currently undergoing major changes thanks to technology. Farmers can now more easily access essential information, consult with experts, and manage their crops more effectively thanks to smart phones and the programmers that run on them. This essay looks into the advantages and drawbacks of the many Smartphone applications for farmers that are available in the agriculture industry. A thorough assessment of the relevant literature was used in the study, and conclusions were drawn after analyzing the data. The study found that Smartphone applications for farming have a lot of potential and can raise profitability, lower expenses, and increase agricultural output. Cost, restricted internet connectivity, and farmers' low technology knowledge all pose barriers to their adoption, though.*

**Key words:** *Smart phones, Agricultural Sector, Applications, Farmers, Productivity.*

## 1. INTRODUCTION

The economies of many nations rely heavily on the agriculture sector. Climate change, infestation by pests and diseases, and shifting market conditions are just a few of the difficulties faced by farmers. Farmers now have access to a variety of programmers that might help them manage their farms more effectively thanks to the development of smart phones. Farmers may access a plethora of information on weather patterns, pest and disease control, soil health, and market prices using Smartphone applications. This essay will examine the many Smartphone applications for farmers in the agricultural industry, as well as their advantages and drawbacks. The agricultural industry plays a significant role in many economies throughout the world, and thanks to the development of technology, farmers have been able to overcome numerous obstacles. With access to real-time weather information, soil testing, pest and disease control, market prices, and crop management services, smart phones and their applications have revolutionized the way farmers manage their crops. The different Smartphone applications that farmers might use in the agricultural industry will be looked into in this essay, along with their advantages and drawbacks. We'll also look at some potential barriers to the uptake of these applications, particularly in poorer nations. We can find strategies to assist and encourage the adoption of Smartphone applications by evaluating their potential to raise agricultural output, lower expenses, and increase profitability.

## 2. LITERATURE REVIEW

On the usage of Smartphone applications in the agriculture industry, a thorough literature analysis was done. The study found that farmers all across the world are using more Smartphone applications. Various services, including weather updates, soil testing, pest and disease control, market prices, and crop management, are provided to farmers through these applications. A 2019 study by Qadir et al. found that farmers that employ Smartphone applications in agriculture see considerable gains in productivity, cost savings, and profitability. The study also showed that a number of problems are impeding the use of Smartphone applications in agriculture. These include the price of Smartphone, the availability of the internet, and farmers' low technological literacy. Many farmers in underdeveloped nations don't have access to Smartphone or the internet, so they can't use Smartphone applications

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to their advantage. According to a study by Paudel et al. (2020), farmers in Nepal had trouble using Smartphone applications because there was little internet connectivity available to them and the devices were expensive.

## 3. METHODOLOGY

An organized review of the literature on Smartphone applications in agriculture was used in this study. The study comprised peer-reviewed academic papers, books, and conference proceedings. The relevance of the papers to the subject and the caliber of the study were considered in the selection process. Several internet resources, including Google Scholar, Pub Med, and Scopus, were used in the research. The main goal of our project proposal is to create an application that aids users in crop cultivation by providing them with the relevant information via an app. The user must first register by providing personal information, which is then saved in the database. Using the specified username and password, the user can access the app. when they registered. Users can buy crops directly from farmers by utilizing their addresses listed in the app, and the primary information gained through this app relates to weather forecasts. If a user needs to do something for this, like sell crops they have grown, they must publish their current farming position on a map, the crops they are now growing, their address information, crop images, etc. in the app. Therefore, everyone who wants to purchase crops must view the posted information in the App in order to find the place where the desired crops are offered for sale. As a result, companies can purchase the crops directly from the farmers without the need for a middleman. Additionally, the application offers treatments for numerous diseases that affect specific crops, enabling farmers to take the appropriate steps in the event that a sickness develops. By publishing the information and owner addresses, users can also rent or buy agricultural equipment. Here, the administrator or expert can post news and update market prices for various crops in various locations. The expert can also answer users' questions and clarify their doubts.

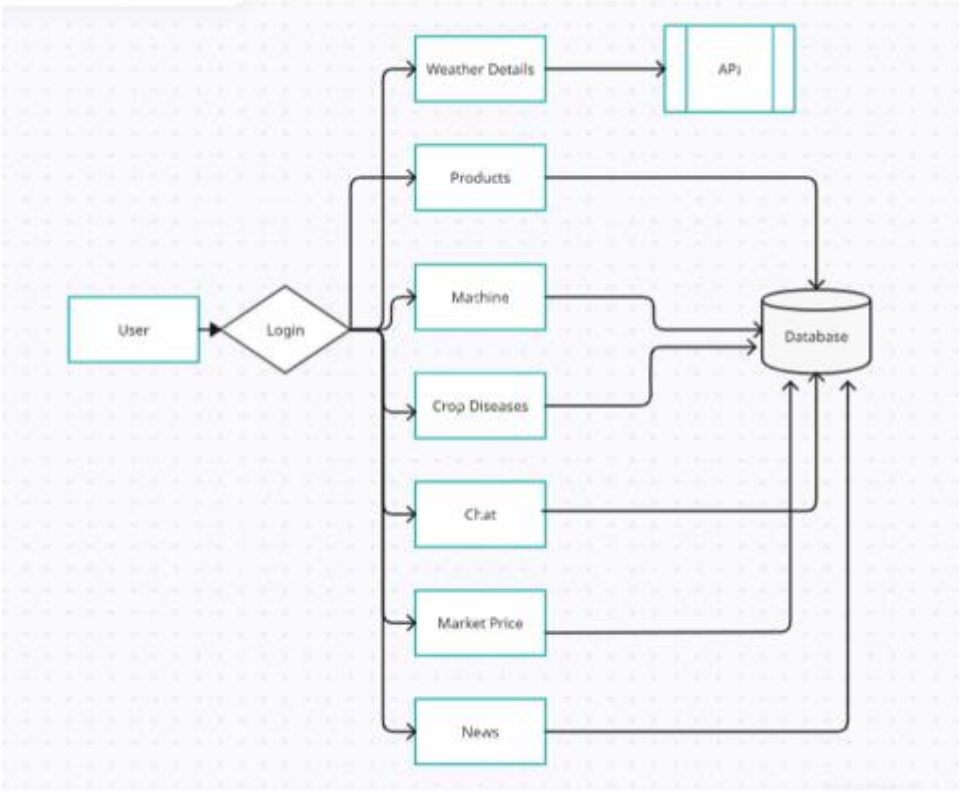


**FIGURE 1.** black diagram

## 4. RESULT ANALYSIS

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According to the study, Smartphone apps have the potential to greatly raise agricultural output, lower expenses, and boost profits. Smartphone applications give farmers access to vital information that can aid in better decision-making. Farmers can access weather information, soil testing, pest and disease management, market prices, and crop management services via Smartphone applications. Farmers who use these services can manage their crops more successfully and efficiently. However, a number of factors prevent the widespread use of Smartphone applications in agriculture. These include the price of Smartphone, the availability of the internet, and farmers' low technological literacy. Farmers in poor nations have a difficult Time using cell phones and the internet, which prevents them from taking full use of Smartphone applications.

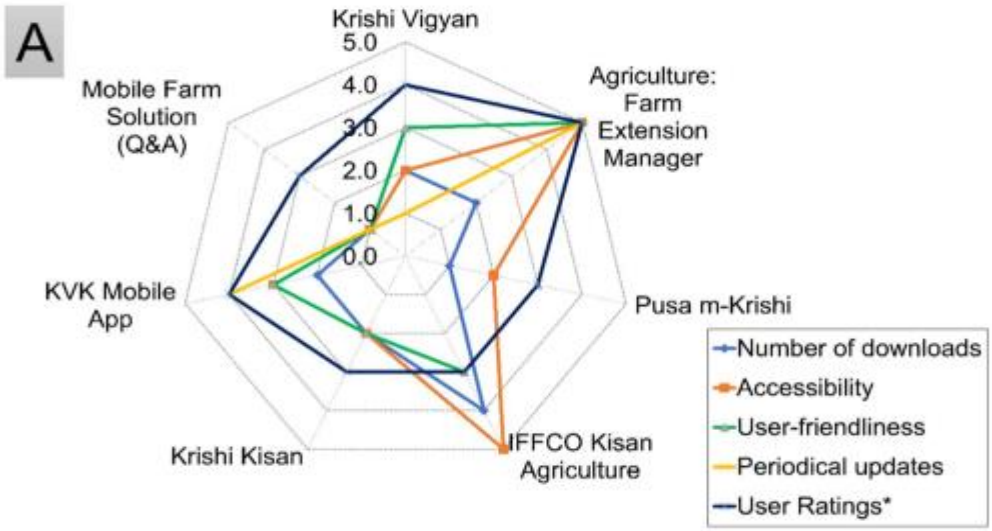


**FIGURE 2.** (A) Radar chart comparison of extension-related Smartphone applications performance

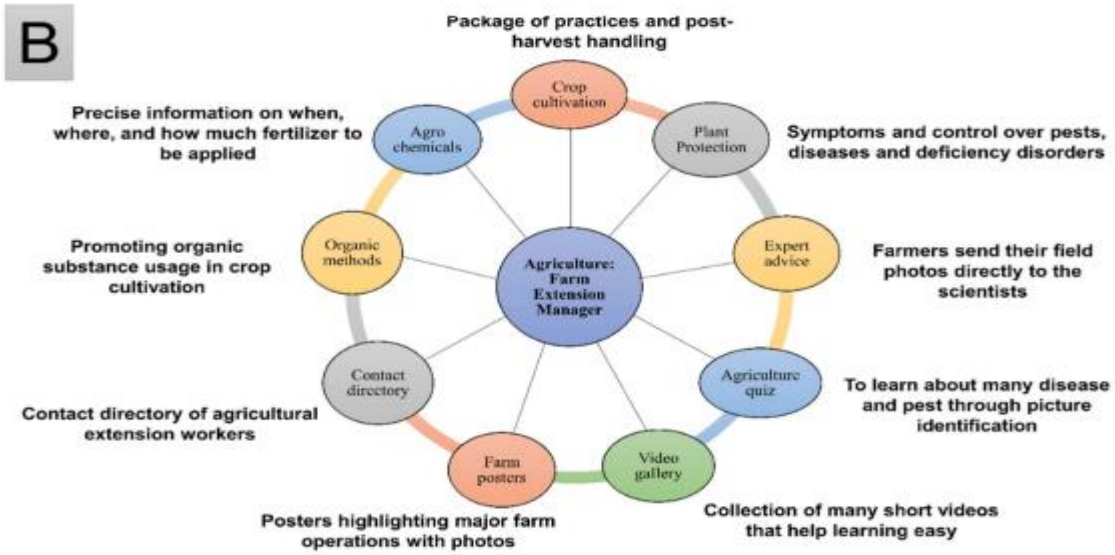


**FIGURE 3.** (B) Salient features of Agriculture: Farm Extension Manager

## 5. CONCLUSION

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Applications for Smartphone offer a lot of potential to boost agricultural output, cut expenses, and boost profitability. Smartphone applications give farmers access to vital information that can aid in better decision-making. However, a number of factors prevent the widespread use of Smartphone applications in agriculture. These include the price of Smartphone, the availability of the internet, and farmers' low technological literacy. Governments and other interested parties should cooperate to address these issues.

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