**PROBLEM AND CHALLENGES FACED BY THE “UZHAVAN APP” USERS IN TAMIL NADU TO OPERATE UZHAVAN APPLICATION (FARMERS AND EXTENSION OFFICERS)**

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**ABSTRACT**

The Uzhavan mobile application, developed by the Agriculture Department of Tamil Nadu, is a pioneering tool aimed at empowering farmers by providing real-time information on crucial agricultural aspects. As the first app of its kind in India, Uzhavan offers farmers access to government schemes, crop advisory, weather updates, market prices, and more, helping them make informed decisions. However, a study on the app reveals several challenges faced by both farmers and extension officers in maximizing its potential. Key issues include difficulties in operation and limited accessibility due to the lack of an offline mode. Suggestions for improvement include the development of a "Uzhavan Lite" version to cater to users with limited Smartphone access or mobile data. Despite these challenges, the app has successfully enhanced farmers' knowledge, reduced the time needed to find information, and increased awareness of government schemes. With a focus on user education, improved connectivity, expanded outreach, and regular content updates, the Uzhavan app can play a transformative role in advancing agriculture across Tamil Nadu.

**Keywords:** Uzhavan, Mobile Application, Agricultural, Government Schemes

**INTRODUCTION**

The Uzhavan mobile application is a groundbreaking tool designed to empower farmers by providing real-time information on various crucial aspects of agriculture. Developed by the Agriculture Department of Tamil Nadu, this app offers comprehensive details on government schemes and subsidy patterns, enabling farmers to make informed decisions. As the first of its kind in India, Uzhavan stands out for its unique features and user-friendly interface.

One of the app's key features is the ability for farmers registered under the Crop Insurance Scheme to track the progress of their applications until they receive compensation. This enhances transparency and keeps farmers informed throughout the process. Additionally, the app provides up-to-date information on the availability of seeds and fertilizers at nearby government, private, and cooperative outlets, ensuring that farmers have easy access to essential agricultural inputs.

Uzhavan also offers information on Customer Hiring Centers, where farmers can rent farm machinery as needed, promoting the efficient use of resources. The app's market price updates from 277 regulated markets help farmers make strategic decisions about selling their produce, thereby optimizing profits. Furthermore, weather forecast advisories available through the app assist farmers in planning their cultivation practices, helping them mitigate the risks associated with adverse weather conditions.

Another valuable feature is the information on extension officers' visits to villages, facilitating effective communication and knowledge sharing between farmers and agricultural experts. By integrating all these features, the Uzhavan app revolutionizes how farmers access vital information, enabling them to take up farming activities at the right time and tackle challenges such as seasonal adversities, input shortages, and natural calamities.

The app is available for download on both the App Store and Google Play, and users can access it by registering on the AGRI-Uzhavan website to obtain a username and password. Overall, Uzhavan is a powerful tool that significantly enhances the agricultural practices and decision-making capabilities of farmers in Tamil Nadu.

**Purpose of the Uzhavan App**

The Uzhavan app is designed to provide farmers with real-time information, empowering them to engage in farming activities at the most opportune times. Its primary purpose is to assist farmers in overcoming challenges such as seasonal adversities, timely access to inputs, availability of farm machinery, and natural calamities. By offering comprehensive information on various aspects of agriculture, the app serves as a vital tool for farmers.

Key features of the app include detailed information on government schemes and subsidy patterns, the ability to register for scheme benefits on a priority basis, and the option to track the status of Crop Insurance Scheme applications. Additionally, the app provides updates on the availability of seeds and fertilizers at nearby government, private, and cooperative outlets, as well as information on Customer Hiring Centers for renting farm machinery. Farmers can also access current market prices, helping them make informed decisions about selling their produce.

Developed by the Agriculture Department of Tamil Nadu, the Uzhavan app is available for download on both the App Store and Google Play. By offering a comprehensive platform for sharing agricultural information, the app equips farmers with the knowledge and resources they need to enhance their farming practices and achieve better outcomes.

**To use the subsidy schemes feature in the Uzhavan application**

Farmers need to follow the steps below:

1. Download the Uzhavan application from Google Play store or Apple store.
2. Register on the AGRI-Uzhavan website to obtain a username and password to access the app.
3. Log in to the app using the username and password.
4. Click on the "Subsidy Schemes" option on the app's home screen.
5. The app will display information on all the Agriculture and Sister Departments subsidy schemes available.
6. Farmers can register in advance to avail the high-value input subsidy on a priority basis

**Review of Literature**

The advent of mobile technology in agriculture has revolutionized the way farmers access information and resources. Mobile applications like the Uzhavan app have been developed to bridge the gap between farmers and essential agricultural services.

**Mobile Applications in Agriculture:** Mobile apps are increasingly recognized as valuable tools for providing farmers with real-time information, thus aiding in decision-making processes. A study by **Gichamba and Lukandu (2012)[[3]](#footnote-3)** highlights the potential of mobile applications to disseminate information on crop management, market prices, and weather forecasts, significantly improving farmers' productivity and income levels .

**Digital Tools in Indian Agriculture:** In the context of Indian agriculture, digital tools have gained prominence in addressing challenges such as low productivity, limited access to markets, and climate variability. **Jha and Pal (2016)[[4]](#footnote-4)** discuss how mobile apps can empower farmers by providing timely information and facilitating access to government schemes and subsidies . The Uzhavan app, specifically, is part of this digital revolution, aiming to make agriculture more efficient and responsive to farmers' needs.

**Uzhavan App: Features and Impact:** The Uzhavan app, developed by the Agriculture Department of Tamil Nadu, provides comprehensive information on various agricultural aspects, including crop insurance, seed and fertilizer availability, market prices, and weather forecasts. **Kumar and Sharma (2019)[[5]](#footnote-5)** emphasize the app’s role in enhancing transparency and accessibility for farmers, particularly in accessing government schemes and subsidies . The app's real-time updates on market prices and weather conditions have been particularly noted for helping farmers make better-informed decisions, thereby improving their overall productivity.

**Challenges and User Experience:** While the Uzhavan app has been lauded for its innovative approach, studies also point to challenges in its adoption. **Rajesh and Thomas (2020)[[6]](#footnote-6)** note that issues such as digital literacy, smartphone access, and internet connectivity can hinder the effective use of the app among rural farmers in Tamil Nadu . Additionally, the study highlights the need for localized content and language options to make the app more user-friendly for a diverse user base.

**Comparative Studies:** Comparative analyses with other agricultural apps in India reveal that the Uzhavan app is unique in its comprehensive coverage of services, but similar to others in facing challenges related to user engagement and technology adoption. **Singh and Verma (2021)[[7]](#footnote-7)** suggest that ongoing user education and training are essential to maximize the app's potential benefits .

**OBJECTIVES OF THE STUDY**

* To identify the key challenges faced by farmers and extension officers in using the Uzhavan app
* To assess the effectiveness of the app in delivering agricultural services
* To explore potential solutions to improve user experience and app functionality

**METHODOLOGY AND ANALYSIS OF THE STUDY**

An ex-post facto research design was employed for this study, with sampling conducted in December 2019. At that time, Tamil Nadu had 32 districts, with Villupuram district having the highest number of Uzhavan app users according to AGRISNET (2020). However, after Villupuram district was bifurcated into Villupuram and Kallakurichi districts in November 2019, data on Uzhavan app users specific to the newly formed Villupuram district was not available. Consequently, Thanjavur district, which ranked second in the state for the number of Uzhavan app users, was purposively selected for the study.

Thanjavur district comprises 14 blocks, and two of these blocks, Pattukkottai and Peravurani, were chosen for the study due to their relatively higher number of Uzhavan app users. The list of app users in these two blocks was obtained from the Assistant Director of Agriculture, Thanjavur. From this list, a total of 90 Uzhavan app users were selected using a proportionate random sampling method, with 60 users from Pattukkottai block and 30 from Peravurani block.

The study also involved various cadres of Extension Officers from the Department of Agriculture, Government of Tamil Nadu, who played a key role in raising awareness and encouraging farmers to download the Uzhavan app. Specifically, three cadres were considered for the study: Agricultural Officers (AOs), Assistant Agricultural Officers/Assistant Horticultural Officers (AAOs/AHOs), and Block Technology Managers (BTMs). These officials were instrumental in helping farmers register for subsidies through the app. A total of 30 extension officials were selected as respondents, with 15 from Pattukkottai block and 15 from Peravurani block. The sample included nine AAOs/AHOs, four BTMs, and two AOs from each block.

Data collection was conducted through personal interviews with the selected Uzhavan app users (both farmers and Extension Officers) using a well-structured and pre-tested interview schedule. The collected data was then analyzed statistically using SPSS version 16.0.

Table.1 Constraints faced by the uzhavan application users to operate uzhavan application

(n\*= 120)

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Constraints** | **Numbers** | **Percent** |
| **1.** | Insufficient training provided to users | 108 | 90.00 |
| **2.** | Inadequate agricultural news coverage | 98 | 81.66 |
| **3.** | Weather forecasts not provided in real-time | 89 | 74.16 |
| **4.** | Uzhavan app operates exclusively in online mode | 76 | 63.33 |
| **5.** | Lack of information on allied agricultural activities | 98 | 81.66 |
| **6.** | Content updates are infrequent | 75 | 62.50 |
| **7.** | Absence of an e-commerce platform | 45 | 37.50 |
| **8.** | No videos or gallery available on agricultural practices | 58 | 48.33 |
| **9.** | Agricultural news is not tailored to specific regions | 40 | 33.33 |

n\* - multiple response

From Table 1, an overwhelming majority (90%) of users identified insufficient training in operating the Uzhavan app as the primary constraint in using it effectively. During the harvest season, farmers face a high demand for combine harvesters, with the need for this machinery peaking during this critical time. As a result, farmers often have to pay a premium for the equipment. To address this issue and reduce costs, the Uzhavan app includes a custom hiring center section. However, despite this feature, many farmers are unaware of how to utilize it effectively, highlighting the lack of training as a significant barrier. Additionally, 81.66% of users reported that the agricultural news coverage within the app is inadequate. Many felt that more agricultural information is available on social media platforms than on the Uzhavan app. Although the agricultural news section is regularly updated, users found the quantity of information provided to be insufficient. The third major constraint, experienced by over three-fourths (74.16%) of users, was that weather forecasts are not provided in real-time. Many users questioned why the weather forecasts had not been digitalized to deliver real-time updates, reflecting a significant gap in the app's functionality. About 63.33% of users identified the Uzhavan app’s reliance on online mode as a significant limitation. This is particularly problematic because if users lose network connectivity while registering for benefits in the app, they must restart the registration process once connectivity is restored. Additionally, 81.66% of users noted that the app lacks information on allied activities such as animal husbandry, fishery, and apiculture. More than half (62.50%) of users felt that the content in sections like seed stocks, fertilizer stocks, and market prices was not updated regularly. Furthermore, 37.50% of users pointed out the absence of a platform for e-trading agricultural products, indicating a notable gap in the app’s e-commerce capabilities (Table-1)

Chart No: 1 Constraints faced by the uzhavan application users to operate uzhavan application

**Table.2** Constraints faced by the uzhavan application users (Extension Officers) while operation uzhavan application (n= 60)

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Constraints** | **Numbers** | **Percent** |
| **1.** | Insufficient training provided to users | 56 | 93.33 |
| **2.** | Weather forecasts are not digitalized | 52 | 86.66 |
| **3.** | Uzhavan app lacks an offline mode | 51 | 85 |
| **4.** | No dedicated section for value addition of agricultural products | 42 | 70 |
| **5.** | Low IT literacy levels among end users | 40 | 66.66 |
| **6.** | No warnings or notifications about seasonal pests | 38 | 63.33 |
| **7.** | Some app content is not regularly updated | 23 | 38.33 |
| **8.** | No user feedback mechanism post-app usage | 19 | 31.66 |

n\* - multiple response

Similarly, a majority (93.33%) of extension officers highlighted that insufficient training provided to users was a major hindrance to fully utilizing the Uzhavan app. Furthermore, 86.66% of the extension officers felt that the lack of a digitized weather forecast section was a significant drawback. About 85% of the officers pointed out that the absence of an offline mode in the Uzhavan app made it difficult to reach farmers who do not use smartphones or those with limited mobile data access.

Chart No: 2 Constraints faced by the uzhavan application users (Extension Officers) while operation uzhavan application

Table.3 Suggestions provided by the Uzhavan application users for improving Uzhavan application (n= 120)

|  |  |  |  |
| --- | --- | --- | --- |
| **S. No** | **Suggestions** | **Nos.** | **Percent** |
| **1.** | Conduct comprehensive training programs for farmers on effectively using the Uzhavan app | 116 | 96.66 |
| **2.** | The agricultural news section should deliver timely updates on farming techniques, crop advisory, and market trends | 105 | 87.50 |
| **3.** | Implement a real-time, dynamic weather forecast system with tailored updates for farmers' needs | 94 | 78.33 |
| **4.** | Develop an offline Uzhavan app to provide key information to farmers without internet access | 91 | 75.88 |
| **5.** | Promote the Uzhavan app widely on social media to reach a larger audience | 89 | 74.66 |
| **6.** | Implement push notifications for farmers to receive updates on weather, agriculture news, and government schemes | 83 | 69.16 |
| **7.** | Launch campaigns to educate farmers on the Uzhavan app's features and benefits to increase user engagement. | 76 | 63.33 |
| **8.** | Regularly update Uzhavan app content to reflect recent developments in agriculture, market prices, policy changes | 64 | 53.33 |
| **9.** | Create an integrated e-commerce platform in the app for farmers to buy&Sell agricultural products,equipment directly | 53 | 44.16 |
| **10.** | Create a video section featuring agricultural practices, tech tutorials, and demonstrations to help farmers adopt modern techniques | 38 | 31.66 |

n\* - multiple response

Table 3 reveals that 96.66% of users recommended conducting comprehensive training programs for farmers on effectively using the Uzhavan app. Users found the app useful but needed guidance on certain features, such as the customer hiring center and crop insurance. Thus, training on the app's various sections is crucial.

Additionally, 87.50% of users suggested enhancing the agricultural news section to provide timely, region-specific updates on farming techniques, crop advisory, and market trends. About 78.33% recommended implementing a real-time weather forecast system with tailored updates for farmers.

Despite having good mobile connectivity, 75.88% of users supported developing an offline version of the Uzhavan app for those without internet access. Around 74.66% advocated for wider promotion of the app on social media to reach more farmers and highlight its unique benefits compared to other m-agri applications.

69.16% of users proposed implementing push notifications to keep farmers informed about weather updates, agricultural news, and government schemes. More than half (63.33%) suggested increasing awareness of the app’s features. About 53.33% recommended regularly updating the app’s content to reflect the latest in agriculture, market prices, and policy changes.

Additionally, 44.16% of users proposed creating an integrated e-commerce platform within the app for farmers to buy and sell products directly. Finally, 31.66% suggested adding a video section featuring agricultural practices, tech tutorials, and demonstrations to aid farmers in adopting modern techniques. These were the key suggestions from Uzhavan app users in the study area.

**Table.4** Suggestions provided by the extension officers for improving uzhavan application n=60

|  |  |  |  |
| --- | --- | --- | --- |
| **S. No.** | **Suggestions** | **Number** | **Percent (%)** |
| **1.** | Training is needed on how to operate the Uzhavan app. | 56 | 93.33 |
| **2.** | Weather forecasts should be digitalized and provided in real-time. | 53 | 88.33 |
| **3.** | An offline version of the Uzhavan app should be developed. | 51 | 85.00 |
| **4.** | A dedicated section for value addition of agricultural products is required. | 49 | 81.66 |
| **5.** | A farm calculator feature could be introduced. | 46 | 76.66 |
| **6.** | Seasonal pest warnings/notifications should be implemented. | 45 | 75.00 |
| **7.** | In addition to market prices, market forecasts could be included. | 40 | 66.66 |
| **8.** | The content in the Uzhavan app needs regular updates. | 38 | 63.33 |

Table 4 shows that, similar to the Uzhavan app users, the majority of extension officers (93.33%) recommended training on how to operate the app so they could better guide farmers in using it. Additionally, 88.33% of the officers suggested digitalizing weather forecasts and delivering them in real-time. An offline mode for the app, or at least features like subsidy schemes, crop insurance, and reservoir levels, was recommended by 85.00% of the officers.

Over two-thirds (81.66%) suggested adding a section on value addition of agricultural products. In the study, 76.66% recommended creating a farm calculator to help farmers compute inputs like fertilizers, seed rates, and herbicides. Furthermore, 75.00% of the officers emphasized the need for notifications on seasonal pests, tailored to specific regions. Although a smaller proportion (33.33%) of officers proposed including market forecasts alongside market prices to help farmers select profitable crops, 66.66% emphasized the importance of frequently updating the app, particularly the market price section. These were the key suggestions provided by the extension officers in the study area.

**CONCLUSION**

The study on the "Uzhavan app" in Tamil Nadu highlights several challenges faced by both farmers and extension officers in maximizing the app's potential. Although the app offers valuable resources, such as crop advisory, weather forecasts, market prices, and government schemes, users face difficulties in its operation. Extension officers noted that the lack of an offline mode limits the app's accessibility to farmers who either don't use smartphones or have limited mobile data. To address this, the creation of a "Uzhavan Lite" version, similar to Facebook Lite, could better serve these users. Despite these challenges, the app has successfully enhanced users' knowledge across various topics, reduced the time needed to find information, and increased awareness of government agricultural schemes. As a result, the Uzhavan app has emerged as a reliable and timely source of quality information and services for farmers. Its robust content has effectively supported agricultural extension efforts, making it a valuable resource across the state. In conclusion, while the Uzhavan app has the potential to revolutionize agriculture in Tamil Nadu, overcoming the current challenges is essential for realizing its full benefits. By focusing on user education, improving connectivity, expanding outreach, and regularly updating content, the app can become an indispensable tool for advancing agriculture in the region.

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