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# Evaluating the Impact of Mobile Disseminated Agricultural Services on Farmers' Attitudes in Dindigul District, Tamil Nadu, India

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***Authors' contributions***

*This work was carried out in collaboration between both authors. Both the authors read and revised the manuscript.*

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## ABSTRACT

Mobile phone plays a vital role to share the various information related to agricultural activities. The method of communication is very easy and understandable for the farming community and helps them to disseminate the information in timely manner and they directly keep in touch with the marketing agencies. Especially the mobile phone is used for to get aware about the marketing prices and weather forecast for agricultural operations. The research was conducted in Cuddalore district of Tamil Nadu. The respondents were 120 farmers selected by using the random sampling technique and collected information by using the interview schedule. The major findings of the study

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revealed that majority of the farmers 43.33 per cent had favourable attitude about agricultural services disseminated through mobile phone. And the relationship of profile characteristics with attitude revealed that out of ten characteristics, five characteristics namely - educational status, mass media exposure, extension agency contact economic motivation and Innovativeness were found to have positive and significantly correlated with the attitude of farmers towards the agricultural services disseminated through mobile phone.

*Keywords: Agricultural services; attitude; communication; mobile phone; profile; characteristics.*

## 1. INTRODUCTION

"Information communication Technology advancements can be used to provide farmers with accurate, timely, and relevant information and services, facilitating a more profitable agricultural environment. However, all the ICT initiatives are not uniform with disparities between regions in the level and quality of telecommunications, information and the effort of individuals, public and private organizations and differentiated nature of demand of the farmers in different areas" [1]. "Among the all ICT tools mobile phone plays a vital role in exchanging and sharing the information, mobile phone is becoming one of the basic necessities now a days for all types of rural and urban people. A mobile phone is an Information Communication Technology (ICT) tool used for two-way communication" [2].

"This rapid growth of mobile telephony has emerged as a successful communication tool which has not only transformed the working style of many sectors but also created new professional dimensions in various businesses including agriculture" [3]. "It was widely recognized as a potentially transformative technology platform for developing nations" [4]. "Mobile phones are transforming the lives of many users in developing countries and are widely recognized as an important current and future technology platform for developing nations. Mobile technology has emerged as a transformative tool in agriculture, offering new opportunities for information dissemination and communication" [5]. The use of mobile phones, smartphones, and associated applications in farming activities has become increasingly prevalent, enabling farmers to access real-time information, market prices, weather forecasts, and agronomic tips [6]. The integration of mobile technology in agriculture began in the early 2000s with the proliferation of mobile phones and the advent of GSM networks in rural areas [7]. Initial applications were simple, often limited to voice calls and text messages. With the advancement of mobile internet and smartphone technology, a wide array of agricultural apps and services have been developed, ranging from precision farming tools to online marketplaces for agricultural products [8].

"The Government of India spent nearly USD 60 million on public agricultural extension programs from 2009 to 2010. The Indian Council of Agricultural Research, state agricultural universities, and networks of public extension agents make up the government's extensive research and development infrastructure. However, fewer than 10% of farmers say they receive agricultural technology information from public extension agents. One potential alternative to costly individual extension agents going from village to village is to deliver agricultural information to farmers via low-cost information and communications technologies (ICT) like mobile phones" [9]. The study was taken up with following objectives.

- To study the profile characteristics of farmers using mobile phones.
- To access the attitude of farmers about agricultural services disseminated through mobile phone.
- To study the relationship between profile of the farmers and their attitude.

## 2. METHODOLOGY

The study was conducted in Dindigul district of Tamil Nadu, since the district had highest, production and productivity. Hence, the study was conducted in Vedasandur taluk of Dindigul district. Snowball sampling procedure was followed to select the respondents of the study. The study was an ex-post-facto survey research. Standardized data collection tools were utilized to collect the data from farmers. The responses were coded, tabulated and subjected to descriptive statistical analysis comprising percentage analysis.

Correlation coefficient was used to find out the relationship between profile of the farmers and their attitude.

## 3. RESULTS AND DISCUSSION

### 3.1 Profile of Farmers using Mobile Phone

#### 3.1.1 Age

Majority (58.33 %) of the respondents belonged to the middle age group followed by 33.33 per cent belonged to old age group and 8.34 per cent were found in young age group. This finding is in line with findings of Hashemi [10].

#### 3.1.2 Educational status

As regards with education, the majority (54.16%) of the respondents had higher secondary school followed by primary school (33.33%) and collegiate (12.50%). It may be inferred that majority of the respondents had completed the school education.

#### 3.1.3 Occupational status

“It is evident from the Table 1 that cent per cent of the respondents were engaged in agricultureand opting as their main occupation for their livelihood. It is needless to say that farmers had agriculture as the major occupation since ages. This finding is in parallel with the findings of Priyanka and Jayasankar” [11].

#### 3.1.4 Farm size

As regards with farm size, majority (53.33%) of respondents belonged to the category of small farmers followed by 25.83 per cent of the respondents were big farmers and 20.83 per cent of the respondents were marginal farmers.

#### 3.1.5 Farming experience

On the facet (56.66 per cent) of respondents had medium level of farming experience followed by 25 per cent of respondents belonged to low level of farming experience and 18.33 per cent exhibited to high level of farming experience

#### 3.1.6 Mass media exposure

Major portion (58.33%) of respondents had medium level of mass media exposure followed by 25 per cent of the respondents with low level of mass media exposure and 16.66 per cent with high level of exposure towards mass media.

#### 3.1.7 Extension agency contact

As regards with extension agency contact, major portion (54.16%) of respondents had medium level of extension agency contact followed by low level (25%) and 20.83 per cent had high level of extension agency contact. This finding is in line with the findings of Priyanka and Jayasankar [12].

#### 3.1.8 Economic motivation

The results revealed from Table 1, that majority (68.33 %) of the respondents were observed to have medium level of economic motivation followed by 24.16 per cent of the respondents spotted in high level of economic motivation and remaining 7.50 per cent of respondents had low level of economic motivation.

#### 3.1.9 Innovativeness

From Table 1 the results concluded that, majority (54.16 per cent) of the respondents were attained to medium level of innovativeness whereas 29.16 per cent of respondents had low level of innovativeness and remaining 16.66 per cent of the respondents had high level of innovativeness.

#### 3.1.10 Training Undergone

It is evident from the Table 1 that more majority (53.33 %) of the respondents have attended two trainings, followed by 30 per cent of respondents undergone one training and 16.66 per cent of respondents had attended more than two trainings.

### 3.2 Attitude of Farmers towards Agricultural Services Disseminated through Mobile Phone

The results observed from Table 2 reveal that majority of the farmers 43.33 per cent had favourable attitude towards agricultural services disseminated through mobile phone. However, 29.17 per cent of farmers had most favourable attitude followed by 27.50 per cent had least favourable attitude. This finding is accordance with the findings of Pudke et al. [1].

The reason may be the farmers are getting timely and accurate messages from mobile phone based on their needs and the scientists are also sending correct messages to the farmers and obtaining feedback from them about efficiency of various applications used in mobile phone.

### 3.3 Relationship between Profile of the Farmers and their Attitude

Out of ten characteristics studied, five characteristics namely educational status, mass media exposure, extension agency contact, economic motivation and Innovativeness were found to have positive and significant relationship with the attitude of farmers towards the agricultural services disseminated by mobile phone. The remaining characteristics like Age, occupation, farm size, farming experience, innovativeness and training undergone were found to be non-significant. This finding is in line with the findings of Chauhan (2010) and Jaswanth Naik et al (2020).

**Table 1. Profile of farmers using Mobile phone (n = 120)**

| S.No | Variables | Categories | No of respondents | Percentage |
|---|---|---|---|---|
| 1 | **Age** | Young | 10 | 8.33 |
| | | Middle | 70 | 58.33 |
| | | Old | 40 | 33.33 |
| 2 | **Educational status** | Primary | 65 | 54.16 |
| | | Higher secondary | 40 | 33.33 |
| | | College | 15 | 12.50 |
| 3 | **Occupation** | Agriculture | 120 | 100 |
| | | Labour | 0 | 00.00 |
| 4 | **Farm size** | Small | 64 | 53.33 |
| | | Marginal | 25 | 20.83 |
| | | Big | 31 | 25.83 |
| 5 | **Farming Experience** | Low | 30 | 25.00 |
| | | Medium | 68 | 56.66 |
| | | High | 22 | 18.33 |
| 6 | **Mass media Exposure** | Low | 30 | 25.00 |
| | | Medium | 70 | 58.33 |
| | | High | 20 | 16.66 |
| 7 | **Extension agency contact** | Low | 30 | 25.00 |
| | | Medium | 65 | 54.16 |
| | | High | 25 | 20.83 |
| 8 | **Economic Motivation** | Low | 9 | 7.50 |
| | | Medium | 82 | 68.33 |
| | | High | 29 | 24.16 |
| 9 | **Innovativeness** | Low | 35 | 29.16 |
| | | Medium | 65 | 54.16 |
| | | High | 20 | 16.66 |
| 10 | **Training Undergone** | One training | 36 | 30.00 |
| | | Two training | 64 | 53.33 |
| | | More than two training | 20 | 16.66 |

**Table 2. Attitude of farmers towards agricultural services disseminated through mobile phone (n = 120)**

| Sl. No. | Category | Frequency | Per cent |
|---|---|---|---|
| 1. | Least Favourable | 33 | 27.50 |
| 2. | Favourable | 52 | 43.33 |
| 3. | Most Favourable | 35 | 29.17 |
| | Total | 120 | 100.00 |

**Table 3. Relationship between profile of the farmers and their attitude (n = 120)**

| S.No | Independent Variable | Correlation Coefficient r value |
|---|---|---|
| 1 | Age | - 0.154NS |
| 2 | Educational Status | 0.327** |
| 3 | Occupation | -0.075NS |
| 4 | Farm Size | 0.052NS |
| 5 | Farming Experience | 0.0137NS |
| 6 | Mass Media Exposure | 0.255** |
| 7 | Extension Agency Contact | 0.227** |
| 8 | Economic Motivation | 0.253** |
| 9 | Innovativeness | 0.031** |
| 10 | Training Undergone | 0.081NS |

## 4. CONCLUSION

The study concluded that majority of the farmers 43.33 per cent had favourable attitude about agricultural services disseminated by mobile phone. And the relationship of profile characterises revealed that out of ten characteristics studied, five characteristics namely educational status, mass media exposure, extension agency contact economic motivation and Innovativeness were found to have positive and significant relationship with the attitude of farmers towards the agricultural services disseminated by mobile phone. Thus the study concluded mobile phone had positive attitude among the farming community and in the field of agricultural extension. Mobile ICT devices and services are rapidly becoming available to rural agriculture communities worldwide, including the poorest and also providing easy timely and convenient access to customized content.

## DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of manuscripts.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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