

Original Research Article

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## Correlates of Utility Perception of AgroTech VNMKV Mobile App by the User Farmers

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### ABSTRACT

#### Keywords

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The present study was undertaken with objective to study the profile of the user farmers of AgroTech VNMKV mobile app and its correlation with utility perception of the mobile app. A total of 120 respondents were selected as sample respondents for the study. Data revealed that majority of user farmers of the mobile app belonged to middle age group (63.33%) having secondary level education (40.00%) belonged to medium family size (65.84%) with small size land holding (25.83%) having medium level of annual income (73.33%), social participation (68.33%), extension contact (61.67%), innovativeness (80.84%), source of information (49.17%) and possess good network connectivity (72.50%). Results regarding correlation between profile of user farmers with their utility perception indicated that out of ten variables, the variables *viz.*, education, land holding, annual income, social participation, extension contact, innovativeness and source of information were positively and significantly related to utility perception of AgroTech VNMKV mobile app. Whereas, family size and network connectivity did not show any significant relationship with utility perception of AgroTech VNMKV mobile app. However, age of the respondents was significantly negative relationship with utility perception of AgroTech VNMKV mobile app.

### Introduction

The use of Information and Communication Technology (ICT) to support the transmission of localized information and services working towards making farming socially, economically and environmentally sustainable, while contributing to the delivery of food for all – this comprises Digital Agriculture. This has also led to the rise and development of mobile apps which are helping existing government schemes, and

other agriculture-based information to reach farmers in rural India. This digital change is acting as a game-changer for Indian agricultural conditions. Information gaps between rural and urban areas have jeopardize the ability of rural people to realize their full potential and improve their economic, social and environmental conditions. These implications on the rural people were three fold such as loss of income, time and opportunity. Hence, efforts are to be made to empower farmers with the information. India

possesses technical resources which can empower the farmers with the information they need and in turn help them improve their productivity and livelihood.

Smart phones have penetrated in almost all the area where people carry out their everyday activities, and perform tasks that are normally run on personal computers. Also, mobile literacy is higher than computer literacy, even though mobile devices might have inconvenient user interfaces. Hence mobile applications are good option for transmitting information to the people in villages and rural areas. Today farmers are receiving diverse information about farming like seeds, crop selection, crop processes, weather, fertilizer, pesticides from various resources which are distributed on many different locations according to its origin, its processors, producers *etc.* It is true that the information is available by means of several applications, videos, images, but the problem lies in the fact that the information is not available at the same platform - a system which covers all the important information about all the domains of agriculture and available at their location. (Sunidhi Sharma *et al.*, 2018). Mobile apps in the arena of agriculture can be the best option to increase agriculture production. The inventions in technology in agriculture domain are not getting to the farmers; because of either most of them are illiterates or due to unawareness of the location from where they can have information. Therefore, utmost of the farmers is being failed in acquisition of the possible production rate.

It is required to develop a system from where the required information is available to the farmer directly from scientific community. New opportunities are shaped by smart phone technology for farmers. Farmers are capable with a low cost smart phone and the particular software to gain facilities which couldn't available on their hands before. In the days of

financial crisis, farming is becoming more and more vigorous and much more important to be completed efficiently during the time period. The rapid expansion and use of mobile apps has created a new field in the digital ecosystem, which consists of thousands of developers, popular software platforms and millions of users. Mobile apps are typically available through native distribution platforms, so-called App stores that are operated by the owners of the mobile operating system. Mobile apps increasingly constitute complete ecosystems to support business, such as entertainment, health, tourism, shopping, education and farming. The mobile agricultural apps show significant potential for the modernization of the agriculture. There are varieties of mobile applications, utilized over the globe for different segments, including farming, but here the usage is still is limited. We have elaborated various agricultural mobile applications which potentially can be used in farming and allied activities as indicated by their source and usage. In India, there are enormous opportunities for utilizing the smart phones as a part of agribusiness improvement. Its utilization is vital for quick growth and easy access to information to Indian agriculturists, farmers and growers. Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhani have developed eleven mobile apps related to the different technologies, AgroTech VNMKV is one of them. AgroTech VNMKV mobile application is launched in the month of 29th May, 2017 by the University. This mobile application gives complete details about farming and its technologies recommended by the University particularly for the farmers of Marathwada region in local language i.e. Marathi. The App provide information about cultivation of important crops *viz.*, *Kharif* crop, *Rabi* crop, fruit crops, vegetable crops *etc.* Farmer get information about different varieties related to cereals, pulses, oil seed and commercial

crops. Information about control measures of pest and disease is also included in the app. Information about watershed development program, modern irrigation techniques, soil and water conservation, allied enterprises, weather and soil report in Marathwada region, protection of plant varieties and farmers right are also available in this mobile app. It also deals with home science, extension education and agricultural economics. The present study was undertaken with objective to study the profile of the user farmers of AgroTech VNMKV mobile app and its relationship with utility perception of the mobile app.

## **Materials and Methods**

The study was conducted purposively in the Marathwada region of Maharashtra State, for the reason that AgroTech VNMKV mobile App is primarily meant for the region. The study was conducted purposively in the Parbhani district, as headquarter of the University. Ten villages were randomly selected from the Parbhani and Manwath taluka of Parbhani district. List of user farmers of AgroTech VNMKV mobile App was collected from university authorities, twelve user farmers of the mobile App were selected randomly from each village.

Thus a total of 120 respondents were selected as sample respondents for the study. Ex-post facto research approach was used for the present study and one shot case study research design was used. The variables which were perceived as relevant to the study selected. The term utility perception is defined as the degree to which an AgroTech VNMKV App is perceived as useful to gain required technological information. The total of scores given by an individual to each item or component was taken as his overall perceived utility score. Utility perception scale developed by Jondhale (1989) was used with

slight modification in the study. Fourteen components *viz.*, readability, credibility, timeliness, understandability, practicability, accuracy of information, coverage of subject matter, clarity, terminology, brevity, directness, illustrativeness, factuality and satisfaction in reading were included in the scale to measure utility perception of AgroTech VNMKV mobile App related to information content. The data were collected through personal interview method and were analysed with the help of frequency, percentage, mean, standard deviation and correlation coefficient.

## **Results and Discussion**

### **Profile of the users of AgroTech VNMKV mobile app**

The different profile of user farmers of AgroTech VNMKV mobile App were selected for present study *viz.*, age, education, family size, land holding, annual income, social participation, extension contact, innovativeness, source of information and network connectivity. The data pertaining to profile of the user farmers are presented in Table 1.

#### **Age**

Table 1 revealed that majority of the respondents (63.33%) were middle aged (26-46 years), followed by 21.67 per cent and 15.00 per cent of them were young (upto 25 years) and old age (47 years & above), respectively.

#### **Education**

It has been reported from Table 1 that maximum (40.00%) respondents had secondary level education, followed by college level (30.84%) higher secondary 23.33%) primary (05.00%) and illiterate (0.83%).

**Family size**

It has been also observed that majority of the respondents (65.84%) belonged to medium family size. Whereas 23.33 per cent of them were from small family size and 10.83 per cent were came from large family size.

**Land holding**

Data regarding land holding revealed that maximum number of respondents (25.83%) had small size land holding (1.1 to 2 ha), followed by marginal farmers (24.17 %), medium farmers (23.33%), semi medium farmer (21.67%) and big (5.00 %).

**Table.1** Profile of the user farmers of agrotech VNMKV mobile app (n=120)

S. No.	Profile of the user farmers	Frequency	Percentage
<b>A</b>	<b>Age</b>		
1	Young (Up to 25 years)	26	21.67
2	Middle (26 to 46 years)	76	63.33
3	Old (47 years& above)	18	15.00
<b>B</b>	<b>Education</b>		
1	Illiterate	1	0.83
2	Primary (1 <sup>st</sup> to 4 <sup>th</sup> std)	6	5.00
3	Secondary (5 <sup>th</sup> to 10 <sup>th</sup> std)	48	40.00
4	Higher Secondary (11 <sup>th</sup> to 12 <sup>th</sup> std)	28	23.33
5	College level (Above 12 <sup>th</sup> std)	37	30.84
<b>C</b>	<b>Family size</b>		
1	Small (Up to 4)	28	23.33
2	Medium (5 to 8)	79	65.84
3	Large (9 and Above)	13	10.83
<b>D</b>	<b>Land holding</b>		
1	Marginal (Up to 1 ha)	29	24.17
2	Small (1.1 to 2 ha)	31	25.83
3	Medium (2.1 to 4 ha)	28	23.33
4	Semi medium (4.1 to 10 ha)	26	21.67
5	Big (10.1 ha & above)	06	5.00
<b>E</b>	<b>Annual Income</b>		
1	Low (up to Rs 41340/-)	11	09.16
2	Medium (Rs 41341-277552/-)	88	73.33
3	High (Above Rs 277553/-)	21	17.50
<b>F</b>	<b>Social Participation</b>		
1	Low (Up to 4)	21	17.50
2	Medium (5 to 10)	82	68.33
3	High (11 and above)	17	14.17
<b>G</b>	<b>Extension contact</b>		
1	Low (up to 10)	21	17.50
2	Medium (11 to 15)	74	61.67

<b>3</b>	High (16 and above)	25	20.83
<b>H</b>	<b>Innovativeness</b>		
<b>1</b>	Low (up to 3)	19	15.83
<b>2</b>	Medium (4 to 6)	97	80.84
<b>3</b>	High (7 and above)	04	03.33
<b>I</b>	<b>Source of information</b>		
<b>1</b>	Low (up to 18)	38	31.67
<b>2</b>	Medium (19 to 24)	59	49.17
<b>3</b>	High (25 and above)	23	19.16
<b>J</b>	<b>Network connectivity</b>		
<b>1</b>	Poor (up to 8)	28	23.33
<b>2</b>	Good (9 to 12)	87	72.50
<b>3</b>	Excellent (13 and above)	5	04.16

**Table.2** Correlation between profile of the users farmer with utility perception of agrotech VNMKV mobile app

S. No.	Profile of the respondents	'r' value
<b>1</b>	Age	<b>- 0.201*</b>
<b>2</b>	Education	<b>0.208*</b>
<b>3</b>	Family size	<b>0.004<sup>NS</sup></b>
<b>4</b>	Land holding	<b>0.252**</b>
<b>5</b>	Annual Income	<b>0.198*</b>
<b>6</b>	Social participation	<b>0.221*</b>
<b>7</b>	Extension contact	<b>0.219*</b>
<b>8</b>	Innovativeness	<b>0.202*</b>
<b>9</b>	Source of information	<b>0.232*</b>
<b>10</b>	<b>Network connectivity</b>	<b>0.165<sup>NS</sup></b>

\*Significant at 0.05 level of probability

\*\*Significant at 0.01 level of probability

**Table.3** Problems faced by the users farmers in usages of AgroTech VNMKV mobile app (n=120)

S. No.	Problems faced by user farmers in usages of AgroTech VNMKV app	Frequency	Percentage	Rank
<b>1</b>	Absence of App grievances Centers	107	89.16	<b>I</b>
<b>2</b>	No complete information about App usages	74	61.67	<b>II</b>
<b>3</b>	Lack of skill to use an app	21	17.50	<b>III</b>
<b>4</b>	<b>Low network connectivity</b>	<b>05</b>	<b>4.16</b>	<b>IV</b>

**Table.4** Suggestions of the user farmers for improvement in agrotech VNMKV mobile app (n=120)

S. No.	Suggestions	Frequency	Percentage	Rank
1	There should be facility to provide answer suggested by scientist for problem asked by users.	119	99.16	I
2	Should include Subject specialist contact may be available.	115	95.83	II
3	App should provide information about market prize of different crops	114	95.00	III
4	There should be information about Government Scheme	114	95.00	III
5	App should Include success stories of progressive farmer and information related techniques adapted by them.	107	89.16	IV
6	Acceptance of the crop photograph provided by the farmers and provide solutions of their questions.	94	78.33	V
7	Providing time to time short film / video about information on various crop related technologies in App	84	70.00	VI
8	Training should provide for the use of App	56	46.67	VII
9	<b>Need to Include information about another topic</b>	<b>02</b>	<b>01.67</b>	<b>VIII</b>

### Social participation

Regarding social participation of the respondents, it was observed from Table 1 that majority of the respondents (68.33%) had medium social participation, followed by low level (17.50 %) and high level (14.17%) of social participation.

### Extension contact

It has been observed that majority of the respondents (61.67%) had medium extension contact category, followed by high (20.83%) and low (17.50 %) level of extension contact.

### Innovativeness

Table 1 indicated that majority of the respondents (80.84 %) had medium level of high innovativeness category, followed by low innovativeness category (15.83%) and high innovativeness category (3.33%).

### Source of information

It has been observed that majority (49.17%) of the respondents had medium source of information, followed by low source of information (31.67%) and high source of information(19.16%).

### Network connectivity

Table 1 indicates distribution of respondents according to mobile network connectivity. It was evident that 72.50 per cent of the respondents had good network connectivity, followed by poor network connectivity (23.33%) and excellent network connectivity (4.16 %).

Thus, the majority of user farmers of the mobile app belonged to middle age group (63.33%) having secondary level education (40.00%) belonged to medium family size

(65.84%) with small size land holding (25.83%) having medium level of annual income (73.33%), social participation (68.33%), extension contact (61.67%), innovativeness (80.84%), source of information (49.17%) and possess good network connectivity (72.50%).

### **Correlation between profile of the user farmers with their utility perception of AgroTech VNMKV mobile app**

Correlation between profile of user farmers with their utility perception are presented in Table 2. The perusal of data indicated that out of ten variables, the variables *viz.*, education, land holding, annual income, social participation, extension contact, innovativeness and source of information were positively and significantly related to utility perception of AgroTech VNMKV mobile app.

Whereas, family size and network connectivity did not show any significant relationship with utility perception of AgroTech VNMKV mobile app. However, age of the respondents was significantly negative relationship with utility perception of AgroTech VNMKV mobile app. These findings were in line with the finding of Mangal Shinde (2016) and Teza (2016).

### **Problems faced by the users farmer in usages of AgroTech VNMKV mobile App**

Table 3 revealed that majority of respondents (89.16 %) expressed the constraints of non availability of grievance redressal center regarding AgroTech VNMKV mobile application, whereas 61.67 per cent of the were expressed the problem of difficulty in finding needed information from the mobile app and 17.50 per cent of them expressed the difficulty in handling smartphone and mobile app. While 4.16 per cent of them expressed

that contacts number given in the mobile app are not working.

### **Suggestions of the user farmers for improvement in AgroTech VNMKV mobile app**

From Table 4, it could be found that 99.16 per cent of the respondents had suggested to create facility of chatting with University scientists i.e. develop interactive mobile app and similar percentage of the respondents had suggested to provide helpline number in mobile app and 95.83 per cent of them suggested to provide the mobile number of University scientists related to particular technology. Addition of information related to agriculture market and agricultural government scheme in the mobile app suggested by 95.00 per cent of the user farmers. Whereas, 89.16 per cent of them suggested to add separate column for success stories of progressive farmers with mobile number and 78.33 per cent of them suggested to create facility in mobile app for sharing photographs of infected plant part with University scientists for diagnosis and advice.

Videos, short films, images etc related to various modern technologies should be included in the mobile app suggested by 70.00 per cent of the respondents. Whereas 46.67 per cent of them suggested to organizing training to farmers about handling of mobile app. While few respondents (1.67 %) suggested to include information about more topic related to agriculture.

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