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Utilization Pattern and Problems faced by Farmers in using PAU Kisan App

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Abstract

Agriculture is the backbone of India because primary occupation of majority (58%) of Indian population is agriculture. Agricultural apps play a major role in information dissemination in all sectors including agriculture. The current study was conducted with the specific objective to find out the usage pattern of app, problems faced by them in using PAU Kisan App and to get suggestions from the users for further improvement in the app. the study was conducted on 150 user farmers selected from 10 districts. The results showed that less than half of the respondents used the app for one to two years and 32 per cent of the respondent got information of app from Kisan Mela. The pattern of usage of app showed that more than half of the respondents used the app sometimes only and consulted the app for the information of interest, when they needed. Majority of respondents shared the information like varieties and disease pest management with others. More than 50 per cent of the respondents found the sentence as moderate in length and somewhat satisfied and motivated to apply the recommendations given. Less than half of the respondents found the language used was easy to understand. The study recommended to make the app more user friendly according to the suggestions given by respondents.

Keywords: Agriculture, Utilization pattern, Communication behaviour

JEL classification: Q1, D12, Q16

Introduction

Information and communication technologies are enabling access and exchange of information in a quicker way. Mobile phone use among all ICTs has increased in recent time, and a variety of services are now offered by different organizations. India is on an enthusiastic digital adventure. A variety of mobile applications have been created by government agencies, agricultural institutions, and the business sector for bridging the digital divide.(Ghanghas*et al* 2021)

Farmers struggle to get the highest price for their products due to lack of supply and inadequate market knowledge. Lack of marketing information, high transportation costs, the role of mediators, and unlawful checkpoints are the main causes of poor profit margin. Farmers lacked sufficient knowledge on the types of quality and quantity that the market wanted, as well as the price levels that were prevalent. This was due to a poor communication system. (Kumari 2022). Major mobile apps provide services like text and video messaging for agricultural advisories, access to real-time weather information such as temperature, rainfall, sunshine hours, and other factors that directly influence decisions on agricultural practices, provide information on the prices, quality, and quantity of agricultural commodities arriving at various markets around the nation, market intelligence etc. Mobile apps also provide online administration of fisheries, livestock, and other agricultural and allied activities. It is also possible to take feedback from farmers and other stakeholders and thus creates an opportunity to develop an effective need-based service. (Raman *et al* 2021)

In order to explore and fully utilize the potential of mobile apps, farmers' competence must be increased through specialized training in their use. After that, farmers will be able to fully utilize the mobile phone applications and ICT-related capabilities to enhance their livelihoods from agricultural operations (Abdullahi *et al* 2021). The current study was focused on the pattern of usage of PAU Kisan App which has been developed by Punjab Agricultural University for farmers welfare. The findings of study will provide information about the deficiency and adequacy of the PAU Kisan App and the problems faced on using the app. The feedback can help further improvement in current app

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in terms of both content and technical features.

Data Sources and Methodology

The research was conducted among the farmers residing within the territorial jurisdiction of the Punjab state. The research was conducted among users of PAU Kisan App from different districts. The two districts having maximum area of cultivation under each crop was purposively selected. Thus, the districts, Sangrur and Ludhiana for Rice, Hoshiarpur and Rupnagar for Maize, Bathinda and Ludhiana for Wheat, Hoshiarpur and Rupnagar for Sugarcane, Fazilka and Bathinda for Cotton was selected for the study. List of users who have downloaded PAU Kisan App was procured from Directorate of Extension Education, Punjab Agricultural University, Ludhiana. According to selected districts farmers were segregated and separate list was prepared. From the prepared list, 15 farmers cultivating each selected crop were selected randomly from each selected district. Thus, total sample for the study was 150 farmers. The data was collected and analysed with the help of appropriate statistical tools.

Results and Discussion

The respondents were categorized based on the number of years they have been using PAU Kisan App. The app was launched in 2019, so the number of years of usage of app was counted since 2019. The number of years of using app can influence the perception, attitude and reactions towards the app.

Table 1. Number of years of using PAU Kisan App

Sr. No	Category (Year)	Frequency	Percentage
I	< 1	39	26.00
II	1 – 2	66	44.00
III	2 – 3	36	24.00
IV	> 3	9	6.00

A close examination of data shown in Table 1 reported that less than half of the respondents (44%) were using the app for one to two years, while one fourth of them (26%) used app for less than one year. Other 24 per cent used PAU Kisan App for two to three years and only 6 per cent used it for greater than three years. This result clearly indicates that the maximum diffusion of the information about app among farmers happened after one year of launching.

Sources of Awareness about PAU Kisan App

The analysis of sources of information is very important because it can contribute to the further effective extension of PAU Kisan App through finding the channel of diffusion. According to the data presented in Table 2, it was found that 32 per cent of respondents got information about the app from Kisan Mela conducted by Punjab Agricultural University. Other 24.66 per cent got the knowledge from cooperative society. The other major sources of the information were extension agents (17.33%), PAU seed centre (11.33%), fellow farmers (10%) and PAU website (4.66%) respectively.

It can be concluded that the respondents had comparatively high participation in Kisan Mela. Due to the same reason almost one third of them got information about PAU Kisan App from Kisan Mela. Moreover, PAU experts helped them in downloading the app during Kisan Melas. Second major source was cooperative society in which highest participation of respondents were found among all other social organisations.

Table 2. Distribution of respondents according to the source of awareness about PAU Kisan App.

Sr. no	Sources	Frequency	Percentage
I	Kisan mela	48	32.00
II	Fellow farmers	15	10.00
III	Cooperative society	37	24.66
IV	Website	7	4.66
V	Extension agents	26	17.33
VI	PAU Seed centre	17	11.33

Pattern of Usage of PAU Kisan App

Pattern of usage of app was measured in terms of frequency of using app, time of consulting the app, content reading pattern and pattern of sharing information with others.

The data regarding frequency of usage, presented in Table 3 showed that 52 per cent of the respondents only sometimes used the app while 25.33 per cent and 22.66 per cent used the app frequently and rarely respectively. The data shown regarding time of consulting app revealed that almost half (50.66%) of the respondents used the app when they needed particular information. Other 37.33 per cent checked the information randomly and 12 per cent used app in their free times.

Regarding the content reading pattern, the data showed that more than half of the respondents (51.33%) read the information of interest only. Some of them (30%) read the whole information regarding specific crop and the rest (18.66%) of the respondents followed the quick reading pattern.

Sharing of information is another important factor which can extent the latest information among farmer community. The study revealed that 64 per cent of the respondents share information obtained from PAU Kisan App with fellow farmers or others. The major types of information shared by respondents were varietal information (93.75%), about disease/ pest/ rodent management (76.04%), agricultural machineries (44.70%), other cultivational practices (23.95%) and weather information (21.33%).

Table 3. Reaction towards pattern of usage of PAU Kisan App

Sr.no	Particulars	Category	Frequency	Percentage
I	Frequency of using PAU Kisan App	Frequently	38	25.33
		Sometimes	78	52.00
		Rarely	34	22.66
II	Pattern of consulting the app	In free time	18	12.00
		Check the information randomly	56	37.33
		In time of need of information	76	50.66
III	Content reading pattern	The information of interest only	77	51.33
		The whole information regarding specific crop	45	30.00
		Quick reading of whole information	28	18.66
IV	Sharing of information with others	Yes	96	64.00
		No	54	36.00
	Type of information shared*	Varietal	90	93.75
		Agricultural Machineries	43	44.70
		Disease/pest /rodent management	73	76.04
		Other cultivation practice	23	23.95
		Weather	32	21.33

**Multiple responses*

The majority were widely depending on other media such as social media for seeking agricultural information. This may be the reason for the low usage of app by respondents. They mainly used the app for that information which were not completely available from other preferred sources. The major types of information shared by the respondents shows the most needed information for them which were varietal information and plant protection measures.

General Reactions of Users

The data exhibited in Table 4 deals with general reactions of users towards the length of sentences used, easiness of language used, extent of motivation in adopting the recommendations given and level of satisfaction with the app. All the above factors may affect the overall perception about PAU Kisan App.

It can be seen from the data that more than half of the respondents (53.33%) opinioned that the sentences used in app was of moderate in length while the rest 46.66 per cent felt the sentences short in nature. None of the respondents opinioned that the sentences were long.

The analysis about the perceived easiness of language revealed that, 49.33 per cent of respondents agreed that the language used was easy to understand while 46 per cent of them found it as somewhat difficult and very less percent (4.66%) of respondents found it difficult.

The extent of motivation for adopting recommendations given in app was medium for more than half (69.33%) of the respondents while 17.33 per cent were highly motivated and 13.33 per cent were not at all motivated. It is also evident from the Table 4 that more than half of respondents (56.66%) were somewhat satisfied with the overall performance of the app while 23.33 per cent of them were highly satisfied and the remaining 20 per cent of them were not at all satisfied with the app.

It can be concluded from the table that the respondents found length of sentences as short and medium in length which can be increased in order to increase the understand ability. The majority found the language used easy. Majority of the respondents were not that much motivated to adopt the recommendations from app and this finding was in line with the results of the study done by Kamalakannam (2021) which revealed that there was relatively less acceptance of agricultural innovations and practices by farmers through various forms of mass media. Also, the majority were not that satisfied with the app. This indicates that more detailed explanation of the information should be provided so that the information will be easily understandable and thus adoption and satisfaction can be increased.

Reaction of Users Towards Technical Features of PAU Kisan App

A scrutiny of data in Table 5 revealed that majority of the respondents agreed that the app was easy to download (70%) and operate (64%) while 28.66 per cent and 36 per

Table 4. Reaction towards length of sentence, easiness of language, extent of motivation and satisfaction (n=150)

Sr. no	Particulars	Reaction	Frequency	Percentage
I	Length of sentences used	Short	70	46.66
		Moderate	80	53.33
		Long	-	-
II	Easiness of language used	Easy	74	49.33
		Somewhat difficult	69	46.00
		Difficult	7	4.66
III	Extent of motivation for adopting recommendations from app	Highly motivated	26	17.33
		Somewhat motivated	104	69.33
		Not at all motivated	20	13.33
IV	Level of satisfaction	Highly satisfied	35	23.33
		Somewhat satisfied	85	56.66
		Not at all satisfied	30	20.00

cent respectively, partially agreed to the same. Only 1.33 per cent of respondents didn't agree to the statement that app is easy to download. About 29 per cent of respondents agreed that the app worked in low network connectivity areas. Others felt difficulties in operating rural areas where network speed was comparatively low i.e., about 43 per cent partially agreed and about 29 per cent didn't agree to the statement the app works in low network area. Among total respondents about 31.00 per cent agreed that they didn't face any technical glitches while using app. At the same time 23.33 per cent of respondents didn't agree to the statement as they faced technical glitches. Regarding the responsiveness of the app, more than half of respondents (51.33%) only partially agreed that PAU Kisan App is more responsive than other conventional media like television, you tube etc. Other 28 per cent agreed and 20.66 per cent didn't agree for the same. One of the other important technical features of a mobile app studied was user interactivity. More than half of the respondents (53.33%) only partially agreed that PAU Kisan App provides proper platform to interact with experts.

It can be concluded that majority expressed dissatisfaction regarding the poor performance in rural area. Because agriculture work is more located in rural area the app should be accessible in those area for proper and timely utilisation. Technical glitches should be avoided and more effective platform for users to interact should be included in the app.

Problems Faced While using PAU Kisan App and Suggestions

This section deals with the problems faced by the users while using PAU Kisan App and the suggestions put forward by the respondents.

The problems faced by the users while using PAU Kisan App is presented in Table 6. Studying the major problems faced by users can help to improve the app according to the need of users. Problems were classified into two different sections. First section includes the problems of the app itself and the other section includes other external problems faced by users which restricted the use of app.

It is evident from the data that the major problem faced by

Table 5: Opinion towards technical features of PAU Kisan App

Sr.no	Features	Agree	Partially agree	Disagree
I	Easy to download	105 (70.00)	43 (28.66)	2 (1.33)
II	Easy to operate	96 (64.00)	54 (36.00)	-
III	Working in low network areas also	43 (28.66)	64 (42.66)	43 (28.66)
IV	Not facing technical glitches	46 (30.66)	69 (46.00)	35 (23.33)
V	More responsive than other conventional media.	42 (28.00)	77 (51.33)	31 (20.66)
VI	Greater user interactivity (App provides platform to interact with experts)	39 (26.00)	80 (53.33)	31 (20.66)

Figures in parenthesis indicates percentage

Table 6. Distribution of the respondents according to problems faced by users

Sr. No	Problem	Frequency	Percentage	Rank
1.	Problems of the app faced by users			
a.	Lack of contact number of subject matter specialists	150	100	I
b.	Lack of in-depth information	113	75.33	II
c.	Faulty feedback options	112	74.66	III
d.	Lack of timely update in publication	96	64.00	IV
e.	Lack of advisory services	95	63.33	V
f.	Lack of user friendliness	76	50.66	VII
g.	Improper organisation of contents	30	20.00	XI
2.	Other problems faced by users which restricts the usage of app			
a.	Poor network connectivity	87	58.00	VI
b.	High cost of internet service	54	36.00	VIII
c.	High cost of smartphone	48	32.00	IX
d.	Low IT literacy	45	30.00	X

users were lack of contact number of subject matter specialists because all the respondents faced the same problem. The second major problem (75.33%) found was lack of in-depth information under different sections. The information was given in comprised form which majority of respondents felt as a difficulty while searching for information. Almost three fourth (74.66%) of respondents felt lack of feedback facilities as a major constraint which restricts fulfilment of needs of user. More than half (64%) of respondents felt there were lack of timely update in the publication section provided in the app. The similar problem of lack of timely and pertinent updates felt as a major problem by users of m- kisan portal which is mentioned in the study done by Saikanth *et al* (2022). More than half of the respondents opinioned there was lack of responsive advisory system (63.33%) and lack of user friendliness (50.66%). Few of the respondents (20%) felt the arrangement of content was not in a proper way because they had to go through several steps to find a particular information.

The respondents faced some other difficulties which restricted the usage of app. Among them more than half of the respondents faced difficulties due to poor network connectivity (58%). The result was in line with Kumari (2016) who also reported that lack of mobile phone network was a major problem while using mobile apps. High cost of internet services and smart phone felt as a problem for 36 per cent and 32 per cent of respondents respectively. This result was in conformity with the study done by Teza (2016) where majority felt expensive internet packages and high cost of smart phone as a major problem. Finally, 30 per cent of the respondents felt low IT literacy as a problem in handling mobile app which can be overcome through proper trainings and guidance from experts which was supported by the study conducted by Giridhar (2017) where 3.33 per cent of the respondents felt the same.

Suggestions

The suggestions given by users are valuable to improve app according to the need of users. Here the suggestions given by respondents other than to rectify the problems faced which were discussed before are analysed. The data shown in Table 7 revealed that 57.33 per cent of the respondents suggested

Table 7: Suggestions given by the respondents

Sr. no	Suggestions	Frequency*	Percentage
I	To include options for posting queries	86	57.33
II	Elaboration in information given	70	46.66
III	To include information about value addition	27	18.00
IV	To include information regarding price and market	53	35.33
V	To include options for online purchase of inputs	23	15.33
VI	To include option for searching particular information	22	14.66

**Multiple responses*

for including options for posting queries directly in app and getting answer from experts. The similar suggestion was given by Kumar and Karthikeyan (2021) that mobile apps should include a section for interactive learning.

Respondents also suggested to elaborate the information (46.66%) given under each section for better understand ability which was recognised as a problem by almost three fourth of the respondents. Other major suggestions put forward by respondents were to include information about processing (18%) which is in important part of agribusiness which was also suggested in the study conducted by Bhaskararrao (2021) to include post-harvest management (68.33%). Other major information farmers search for was price and market of agricultural commodities which was suggested to include by 35.33 per cent of the respondents. The possible reason of lack of market and price information in mobile apps were quoted in study done by Sharma (2011) i.e., since, State Agricultural Universities focus more on research than market trading, they were unable to offer the users any options for export/import facilities, open market sales, and minimum support prices. More than price, options for online purchase of inputs were also suggested by 15.33 per cent of the respondents. Few of the respondents (14.66%) suggested to include search option for easy finding of a particular information because it was taking several steps to reach into a particular section.

Conclusion and Policy Implications

The study concluded that majority prefer to consult the app when they need some information and also, they only check the information of interest only. According to the opinion of the respondents length of sentences used was short and medium, which caused low level of understand ability for many of the respondents. They opinioned that information should be more elaborated. Proper awareness about the authenticity of the information should be given for all the stakeholders which can motivate them to adopt the recommendations given in the app. The technical features can also be improved in order to increase the satisfaction of users. The problems of app raised by users should be resolved and the other problems like IT illiteracy, internet connectivity can also be addressed by concerned authorities. The suggestions given by users should be incorporated further to provide a need-based service.

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