

UTILIZATION OF SMARTPHONE APPLICATIONS BY FARMERS IN AGRICULTURE

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ABSTRACT

Telecommunication in agriculture is an emerging field focusing on the empowerment of agricultural and rural development in India. The advancements in telecommunication can be utilized more smartly using smart mobile phone technology for providing accurate, timely, relevant information and services by user friendly ways to the farmers. The research study was conducted among random sample of 120 farmers of Anand district of Gujarat state who having smartphone. Ex-post research design was used and the data were collected through personal interview technique. Utilization of smartphone was conceptualized as the degree of smartphone use experience in terms of frequency of its utilization by the farmers for agricultural applications. This is one of the important components needed for a farmer to get required agricultural information by using various mobile applications. The study revealed that less than one-third (30.84 per cent) of the farmers had high level of smartphone utilization for agricultural applications, 30.00 per cent of them had low level of smartphone utilization for agricultural applications and 25.83 per cent of them had medium level of smartphone utilization for agricultural applications. Only 13.33 per cent of the farmers had very high level of smartphone utilization for agricultural applications. It means that more than half (56.67 per cent) of the farmers had high to medium level of smartphone utilization for agricultural applications.

Keywords: *smartphone, utilization, application, telecommunication*

INTRODUCTION

The 21st century agriculture is highly knowledge based. Information now has become one of the most critical inputs for profitable and sustainable agricultural development. Not only but in all aspects of human life, to make efficient decision and for securing best opportunity information is must. In today's situation all the data are on the tip of your finger, you can collect them in a fraction of moment.

Agriculture extension workers do not reach every farmer and every farmer cannot contact extension workers on regular basis (Chaudhari et al., 2020). Hence, there is limited flow of information about the latest agricultural technologies. However, there are multiple channels available for the transfer of knowledge from the laboratory to farmers. With the availability of multi-disciplinary information for integrated agricultural development and availability of technology-based multi-media information systems, opportunities are

available for easy transfer of knowledge from the information generators to the information users.

Today with enhanced operating systems and small processor based phones, the mobile world has now become a smart phone world. We can now see phones rich in multimedia and processing power. Most of the tasks of a computer can now be performed on a phone itself. While Smartphone dominate as the segment of most expensive phones today, they also have low cost categories which are affordable for many. In India particularly, in the past 2-3 years, there has been a rise in this low cost segment of Smartphone. The recent introduction of a number of mobile-enabled information services suggests that it is timely to take a look at their impact on agriculture sector in India. These services deliver a wide range of information to farmers. So, Utilization of smartphone was conceptualized as the degree of smartphone use experience in terms of frequency of its utilization by the farmers for agricultural applications.

OBJECTIVES

- (1) To study the profile of farmers having Smartphone
- (2) To measure the utilization of smartphone applications by farmers in agriculture
- (3) To ascertain relationship between profile of the farmers and their utilization of smartphone applications in agriculture

METHODOLOGY

The present study was carried out in Anand district of Gujarat State. A list of the registered farmers at KVK, Anand, who were receiving the agricultural information

under mobile services was taken. The farmers registered at KVK, Anand was the highest in Sojitra taluka among all eight talukas of Anand district. As such Sojitra taluka was purposefully selected for the study. A random sampling was adopted for the selection of farmers. Thus, total 120 farmers were selected for the study. An interview schedule based on objective of the study was developed and respondent were personally interviewed for collection of information. Ex-post facto research design was used for the research study (Kerlinger, F. N., 1976). The data were collected by personal contact method with the help of structured interview schedule and collected data were coded, classified, tabulated and analyzed in light objectives and in order to make the findings realistic for drawing meaningful interpretation.

RESULTS AND DISCUSSION**Profile of the farmers****Table 1: Distribution of farmers according to their profile**

(n = 120)

Sr. No.	Category	Frequency	Percent
1	Age		
	Young age (Up to 30 year)	14	11.67
	Middle age (31 to 50 year)	96	80.00
	Old age (Above 50 year)	10	08.33
2	Education		
	Illiterate	00	00.00
	Primary (1 st to 7 th standard)	19	15.83
	Secondary (8 th to 10 th standard)	12	10.00
	Higher secondary (11 th and 12 th standard)	66	55.00
	Graduate	23	19.17
	Post Graduate	00	00.00
3	Farming experience		
	Very low (Up to 5 years)	12	10.00
	Low (6 to 10 years)	38	31.67
	Medium (11 to 15 years)	31	25.84
	High (16 to 20 years)	20	16.67
	Very High (21 and above)	19	15.82
4	Annual income		
	Very Low (Up to ₹ 50,000)	23	19.16
	Low (₹ 50,001 to ₹ 1,00,000)	78	65.00
	Medium (₹ 1,00,001 to ₹ 1,50,000)	14	11.67
	High (₹ 1,50,001 to ₹ 2,00,000)	05	04.17
	Very High (Above ₹ 2,00,001)	00	00.00
5	Size of land holding		
	Marginal (Up to 1.00 ha)	12	10.00
	Small (1.01 to 2.00 ha)	47	39.17
	Medium (2.01 to 4.00 ha)	29	24.16
	Large (above 4.00 ha)	32	26.67

Sr. No	Category	Frequency	Percent
6	Social participation		
	No membership	09	07.50
	Membership in one organization	61	50.84
	Membership in two organizations	38	31.67
	Membership in more than two organizations	02	01.66
	Membership along with position holding	10	08.33
7	Extension participation		
	Very low (Up to 6.40 score)	00	00.00
	Low (6.41 to 12.81 score)	22	18.34
	Medium (12.82 to 19.22 score)	68	56.66
	High (19.23 to 25.63 score)	30	25.00
	Very High(25.64 to 32.00 score)	00	00.00
8	Mass media exposure		
	Very Low (Up to 3.60 score)	00	00.00
	Low (3.61 to 7.20 score)	12	10.00
	Medium (7.21 to 10.80 score)	69	57.50
	High (10.81 to 14.40 score)	39	32.50
	Very High (Above 14.41 score)	00	00.00
9	Scientific orientation		
	Very low (6.00 to 10.80 score)	00	00.00
	Low (10.81 to 15.60 score)	19	15.83
	Medium (15.61 to 20.40 score)	39	32.50
	High (20.41 to 25.20 score)	38	31.67
	Very high (25.21 to 30.00 score)	24	20.00
10	Economic motivation		
	Very low (6.00 to 10.80 score)	00	00.00
	Low (10.81 to 15.60 score)	00	00.00
	Medium (15.61 to 20.40 score)	17	14.17
	High (20.41 to 25.20 score)	62	51.67
	Very high (25.21 to 30.00 score)	41	34.16
11	Innovative proneness		
	Very low (8.00 to 14.40 score)	00	00.00
	Low (14.41 to 20.80 score)	00	00.00
	Medium (20.81 to 27.20 score)	08	06.67
	High (27.21 to 33.60 score)	47	39.16
	Very high (33.61 to 40.00 score)	65	54.17
12	Self confidence		
	Very low (9.00 to 16.20 score)	00	00.00
	Low (16.21 to 23.40 score)	00	00.00
	Medium (23.41 to 30.60 score)	00	00.00
	High (30.61 to 37.80 score)	30	25.00
	Very high (37.81 to 45.00 score)	90	75.00
13	Knowledge about computer applications		
	Very low (Up to 2 score)	54	45.00
	Low (3 to 4 score)	40	33.33
	Medium (5 to 6 score)	15	12.50
	High (7 to 8 score)	11	09.17
	Very high (above 8 score)	00	00.00

The result demonstrated in Table 1 indicates that exactly four-fifth (80.00 per cent) of the farmers were in middle age group, more than one-half (55.00 per cent) of the farmers had higher secondary education, less than one-third (31.67 per cent) of the farmers had low farming experience, majority (65.00 per cent) of the farmers had ₹ 50,001 to ₹ 1,00,000 annual income, slightly less than two-fifth (39.17 per cent) of the farmers possessed small size of land holding, slightly one-half (50.84 per cent) of the farmers had membership in one organization, more than one-half (56.66 per cent) of the farmers had medium level of extension participation, more than one-half (57.50 per cent) of the farmers had medium level of mass media exposure. more than three-fifth (64.17 per cent) of the farmers had medium to high level of scientific orientation, great majority (85.83 per cent) of the farmers had high to very high level of economic motivation, more than one-half (54.17 per cent) of the farmers had very high level of innovative proneness, exactly three-fourth (75.00 per cent) of the farmers had very high level of self confidence, more than two-fifth (45.00 per cent) of the farmers had very low level of knowledge about computer applications.

Utilization of smartphone applications by farmers in agriculture

Table 2: Distribution of the farmers according to their utilization of smartphone applications in agriculture n=120

Sr. No.	Category	Frequency	Per cent
1	Very low (up to 4.8)	00	00.00
2	Low (4.81 to 9.60)	36	30.00
3	Medium (9.61 to 14.40)	31	25.83
4	High (14.41 to 19.20)	37	30.84
5	Very high (19.21 to 24)	16	13.33

The study revealed that less than one-third (30.84 per cent) of the farmers had high level of smartphone utilization for agricultural applications followed by 30.00 per cent of them had low level of smartphone utilization for agricultural applications and 25.83 per cent of them had medium level of smartphone utilization for agricultural applications. Only 13.33 per cent of the farmers had very high level of smartphone utilization for agricultural applications. It means that more than half (56.67 per cent) of the farmers had high to medium level of smartphone utilization for agricultural applications.

Relationship between profile of the farmers and their utilization of smartphone applications in agriculture

Table 3: Relationship between profile of the farmers and their utilization of smartphone applications in agriculture (n=120)

Sr. No.	Independent Variables	(‘ r ’value)
X ₁	Age	-0.432**
X ₂	Education	0.539**
X ₃	Experience in farming	0.004
X ₄	Annual income	0.041
X ₅	Size of land holding	0.138**
X ₆	Social participation	0.028
X ₇	Extension participation	0.256**
X ₈	Mass media exposure	0.404**
X ₉	Scientific orientation	0.457**
X ₁₀	Economic motivation	0.126
X ₁₁	Innovative proneness	0.330**
X ₁₂	Self confidence	0.448**
X ₁₃	Knowledge about computer applications	0.314**

**Significant at 0.01 level of probability

Out of thirteen independent variables, nine viz.; education (0.539), size of land holding (0.138), extension participation (0.256), mass media exposure (0.404), scientific orientation (0.457), innovative proneness (0.330), self confidence (0.448) and knowledge about computer applications (0.314) were positively and highly significantly related, while age (-0.432) is negatively and highly significantly related to their utilization of smartphone applications in agriculture. Four variables viz.; experience in farming (0.004), annual income (0.041), social participation (0.028) and economic motivation (0.126) could not establish any significant relationship with their utilization of smartphone applications in agriculture.

CONCLUSION

Mobile phone is considered crucial in enhancing farmers’ access to better understand agricultural information. Farming communities appreciate mobile phone as easy, fast and convenient way to communicate and get prompt answers of respective problems. Nowadays, the mobile phone has generated an opportunity for the farmers especially to get the information about marketing and weather. The study shows that majority of the farmers were in middle age group, higher secondary to graduate level of education, low to medium level

of farming experience and very low to low level of knowledge about computer applications. Majority of the farmers had ₹ 50,001 to ₹ 1, 00,000 of annual income and small to medium size of land holding. Great majority of the farmers had good social participation with membership in one to two organizations, medium to high level of extension participation and medium to high level of mass media exposure. Medium to high level of scientific orientation, high to very high level of economic motivation, very high to high level of innovative proneness and very high level of self confidence. Education, size of land holding, extension participation, mass media exposure, scientific orientation, innovative proneness, self confidence and knowledge about computer applications were positively and highly significantly related to their utilization of smartphone applications in agriculture. The study revealed that more than half (56.67 per cent) of the farmers had high to medium level of smartphone utilization for agricultural applications.

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