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Socio-economic, Communication and Psychological Characteristics of the Farmers using Mobile based Agro-advisory Services

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Authors' contributions

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

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ABSTRACT

The present study were carried out in Etah and Firozabad district of Uttar Pradesh state to know the socio-economic, communication and psychological characteristics of farmers using mobile based Agro-advisory Services. Descriptive as well as Analytical research design was adopted for the present study to make a critical evaluation. A total of 40 percent of respondents from the sampling frame were chosen for the study. Thus, the final sample size comprised of 180 (40% of 450) respondents. The method of proportional allocation in stratified random sampling procedure was adopted for the selection of respondents. The results revealed that most of the registered farmers were middle aged (54.44%) and all of them were male, had educational qualification up to higher secondary level (25%). Majority of the households mainly relied on farming as their main source of income (86.11%) and belonged to medium level of annual income (65.50%). They had land up to 4 hectares (50.60%), fellow farmers were most popular, and vast majority (98.90%) of farmers contacted them to get agricultural information, most of respondents (67.78%) owned two to three communication media. It was also found that 62.22 percent had medium level of mass media exposure and about 43.90 percent of the respondents had low level of extension agency contact, less than half (42.80%) of respondents had high economic motivation and decision making ability (40.60%). Only 38.90 per cent of respondents had medium level of achievement motivation.

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1. INTRODUCTION

Agriculture plays a vital role in the Indian economy but the economic contribution of agriculture to India's GDP is steadily declining with the country's broad-based economic growth, yet, having nearly 50% of the rural population dependent on it for their livelihood. Our current population is nearing to 130 crores which is growing annually at 1.08%.This rapid growing population puts enormous pressure upon the farming system in which majority of rural population is engaged. It is realized that greater participation of development beneficiaries in decision making leads to better results. Rural development is the strategy which enables specific group of people, poor rural women and men, to gain for themselves and their children more of what they want and need [1]. Agriculture sector in India is always evolving and posing several challenges like average size of land holdings, poor socio-economic condition of farmers, inadequate use of technology, improper management of irrigation, disastrous consequences of hazards, inadequate infrastructure and policies leading to slow agricultural growth [2]. And there are wide gaps in yield potential and national average yields of most commodities are low. In addition to stressed natural resources and very inadequate rural infrastructure, there was clear evidence of technology fatigue, run-down delivery systems in credit, extension and marketing services and of insufficient agricultural planning at district and village levels [3]. Agricultural extension services can play an important role in addressing many of these challenges. Perhaps, there is no agency at the ground level, other than agricultural extension services that can provide knowledge support to farmers and other intermediaries who are supporting farmers and at the same time support programme implementation. The extension workers and farmers ratio is very wide in India and this clearly indicates about the inadequate manpower of extension worker. Considering the changing nature of agriculture and the evolving challenges, producers currently need a wider range of support, including organizational, marketing, technological, financial and entrepreneurial. To be successful, farmers require a wide range of knowledge from different sources and support to integrate these different bits of knowledge in their production context [4].The Agricultural Extension has undergone various transformations and modification in its approach and application. As a result, today the traditional agricultural extension approach, i.e., top-down, supply and technology driven, no longer appears to be an appropriate model. All these things have made to think beyond the traditional agriculture extension and subsequently led to the increase application of ICT in agriculture. ICTs in agriculture have the potential to facilitate greater access to information that drive or support knowledge sharing. At present in India a number of ICT initiatives in agriculture. The modes for providing information vary in different ICT projects. The approach adopted by m- Kisan is different from all other projects. Hence, the present investigation was undertaken to study the socio-economic, communication and psychological Characteristics of beneficiaries of Agro-advisory service.

2. METHODOLOGY

Descriptive as well as Analytical research design was used to meet out the objectives of the study. Multistage sampling was adopted for the purpose of this study and number of registered farmers was used as the basis for sampling. The study was conducted in Uttar Pradesh state, out of this state two Krishi Vigyan Kendra's i.e. KVK Etah and KVK Firozabad were selected purposively (as they are providing the mobile based agro advisory services more than six years). A list of farmers who were registered under m-Kisan portal for receiving mobile based Short Message Service (SMS) on agriculture and allied sector were obtained from KVK Etah and Firozabad respectively and the registered farmers from KVK Etah and Firozabad were then categorized into various blocks and arranged in decreasing order. Top two blocks from each district i.e. Narkhi and Tundla block from KVK Firozabad district and Awagarh and Jalesar block from KVK Etah District were selected purposively (as they have maximum number of registered farmers). In the next stage two villages from each selected block were selected purposively. Out of these selected villages, the respondents were selected randomly. A total of 40 percent of respondents from the sampling frame were chosen for the study. Thus, the final sample size comprised of 180 (40% of 450) respondents. Thus, Table 1 clearly indicates that from the village Garhi Hansram 25, Narkhi Talluka 20, Alai 18, Basai 27, Awagarh Dehat 26, Barai Kalyanpur19, Berni 25 and Akbarpur Satha 20 registered farmers

Table 1. Selection of respondents in the study area

S.No.	Blocks	Name of Villages	Total No. of registered farmers	Number of selected respondents (n=180)
1.	Narkhi	Garhi Hansram	62	25
		Narkhi Talluka	50	20
2.	Tundla	Alai	45	18
		Basai	67	27
3.	Awagarh	Awagarh Dehat	65	26
		Barai Kalyanpur	48	19
4.	Jalesar	Berni	62	25
		Akbarpur Satha	50	20
Total number of respondents				**180**

were randomly selected for the study based on proportional allocation method, giving a total sample size of 180 respondents. Appropriate statistical tools such as Frequency, Percentage, Mean, and Standard Deviation were used to analyze the data. Mean and Standard Deviation were used as a basis to make final categories.

3. RESULTS AND DISCUSSION

3.1 Age

Age plays a very important role in using the mobile based Agro-advisory services by farmers. The data regarding age composition of respondents has been presented in Table 2. About half of the respondents (54.44 percent) belonged to middle age group followed by 32.23 percent who belonged to young age group and rest 13.33 percent were from old age category. The reason behind this result may be due to the younger and middle-aged ones who embrace the new technology earlier than the rest in the society. In the context of old age group, they are like a late starter for using the new and innovative information technology. Study of [5] also revealed that majority of respondents (51.66%) fell under middle age category.

3.2 Gender

Gender focuses upon women and relationship between men and women their roles, division of labour, access to and control over resources, needs and interests. It affects family well-being, planning, production, household security and many other aspects of life. Gender of respondents has been presented in Table 2. All the respondents (100%) belong to male category. It appears that the society here follows patriarchal system i.e. males earn the bread for the family and females take care of the household responsibilities. This may also be due to the fact that maximum farming operations were done by men only in the study area.Study of [6] also revealed that all the respondents (100%) were male.

3.3 Education

Education plays vital role in seeking information as well as the adoption of improved practices by the farmers. It appears that highly educated respondent would easily understand a new technology or initiative than the lower educated respondents. In the present study it refers to level of education attained by the respondents at the time of inquiry. Findings regarding education of respondents have been presented in Table 2. it shows maximum (25 percent) number of the respondents were educated up to higher secondary level followed by 21.10 percent respondents were educated up to graduate level and 19.40 percent were diploma holders. It was found that 11.10 percent respondents who could read and write followed by 8.90 percent were educated up to primary level and 7.80 percent respondents were educated up to secondary level. It was also found that 5.00 percent of respondents were educated up to post-graduation level and 1.10 percent respondents had the ability to read. It was revealed that only 0.6 percent respondents were illiterate. Study is in line with [7] which found that, 35.83 percent of the e-velanami (e-agriculture) users in Tamil Nadu were educated up to higher secondary education.

3.4 Main Source of Income

The results related to main source of income for the respondent's family has been presented in Table 2. It shows that majority 86.11 percent of the households mainly relied on farming as their main source of income and for 13.89 percent household business was the main source of

income. Study of [8] on 'digital divide and increase return' also reported that majority of the farmers had farming as a main source of income.

3.5 Annual Income

Money that an individual or business receives in exchange for providing a good/service or through investing capital is referred as income of an individual. Data regarding annual income presented in Table 2. It was found that 65.50 percent respondents belonged to medium level of annual income followed by 23.40 percent belonged to low level of annual income. Only 11.10 percent belonged to high level of annual income. From the above data, it can be concluded that majority of the families were able to meet their requirement adequately. Most of the rural people belonged to medium level of annual income due to high productivity and reliance on other secondary occupations like service and business. Study of [9] on who reported that mobile phone became a common tool among the middle income sections who accounted for 37 percent users.

3.6 Size of landholding

The findings regarding size of landholding of the respondent's household presented in Table 2. It was found that half of the respondents (50.60%) had land up to 4 hectares (semi-medium category) followed by 18.30 percent who had land up to 10 hectares (medium category), 16.10 percent had land up to 2 hectares (small category). It was found that only 8.90 percent who had land above 10 hectares (large category). None of the respondents were operating agricultural land on lease. From the data, it can be concluded that majority of farmers belong to semi-medium category. Study is in line with [10] which found that, majority (60%) of the farmers have semi-medium land holdings followed by (15%) were medium and only 4.3 percent were large farmers.

3.7 Interpersonal Sources of Communication

Results related to interpersonal sources of communication of the respondents are presented in Table 2. It was found that among the interpersonal sources of communication fellow farmers were most popular and majority (98.90 per cent) of farmers contacted them to get agricultural information. This was followed by progressive farmers and about 66.10 per cent farmers contacted them for information followed by friends (55.60%). It was also revealed that 47. 80 percent respondents contacted with their family members or relatives followed by 11.70 per cent farmers contacted with their neighbors. None of the respondents contacted any other sources of interpersonal communication. From the results, it can be concluded that though the ICT has invaded every walk of life but still interpersonal communication commands the supreme power. The data also revealed that relatively few farmers contacted with their Neighbors for getting agricultural information, the finding is well supported by two step flow of communication theory, as it says that information always flow in steps: first it goes to the progressive farmers they filter it and pass it to the lower level.

3.8 Mass Media Ownership

Finding regarding mass media ownership of the respondents revealed that majority (67.78%) of the respondents owned two to three communication media i.e. mobile phone, television and newspaper whereas 22.22 percent of respondents owned more than three communication media i.e. mobile phone, radio, television, newspaper, whereas 10 percent of the respondents had only one communication medium. From the data it can be concluded that different communication media are getting due importance in village areas and they are using it for variety of purpose including information seeking, communicating with their relatives/ friends and for entertainment purpose as well. Study is in line with [11] which revealed that, majority of respondents have medium level of communication media possession.

3.9 Mass Media Exposure

The results regarding mass media exposure of the respondents has been presented in Table 2. It was found that majority (62.22%) of respondents had medium level of mass media exposure whereas 27.77 per cent of respondents had low level of mass media exposure. Only 10.01 percent of respondents had high level of mass media exposure. It was observed that reach of mass media has increased in village areas which may lead to socio-cultural changes, greater information and awareness among rural people. On the other hand, all of the farmers owned a mobile phone and they were using mobile phone for various purposes such as communicating with their family members/

relatives or friends, accessing information about agriculture. Newspaper and television were the other frequently used mass media whereas the reach of landline phone and computer was limited to few households. While many households owned a radio, they occasionally listened to radio farm programmes. Despite medium to high level of mass media exposure, it was observed that very few respondents listened to agricultural programmes on television. Study of [12] who reported that majority of the farmers had medium level of mass media exposure.

Table 2. Distribution of respondents on the basis of their various characteristics

S. No.	Characteristics		Frequency	Percentage
	Personal characteristics			
1.	Age	Young aged (31 &less)	58	32.23
		Middle Aged (32-47)	98	54.44
		Old Aged (above 47)	24	13.33
2.	Gender	Male	180	100
		Female	0	0.00
3.	Education	Illiterate	1	0.60
		Can read only	2	1.10
		Can read and write	20	11.10
		Primary education	16	8.90
		Secondary education	14	7.80
		Higher secondary education	45	25.0
		Diploma	35	19.40
		Graduate	38	21.10
		Post graduation	9	5.00
4.	Main source of income	Farming	155	86.11
		Business	25	13.89
5.	Annual Income	Low (1-3 lakh)	42	23.40
		Medium (3-6 lakh)	118	65.50
		High (6 lakh and above)	20	11.10
6.	Size of landholding	Marginal (0.002-1ha)	11	6.10
		Small (1.01-2.0 ha)	29	16.10
		Semi-medium (2.01 - 4.0 ha)	91	50.60
		Medium (4.01- 10 ha)	33	18.30
		Large (above 10 ha)	16	8.90
	II. Professional characteristics			
1.	Interpersonal source of communication*	Friends	100	55.60
		Family/Relatives	86	47.80
		Neighbors	21	11.70
		Fellow farmers	178	98.90
		Progressive Farmers	119	66.10
2.	Mass media ownership	Low (up to 11)	18	10.00
		Medium (2 to 3)	122	67.78
		High (above 3)	40	22.22
3.	Mass media exposure	Low (up to 18)	50	27.77
		Medium (19 to 23)	112	62.22
		High (above 23)	18	10.01
4.	Extension agency contact	Low (up to 8)	79	43.90
		Medium (9 to 14)	58	32.20
		High (above 14)	43	23.90
	III.Psychological variables			
5.	Decision making ability after Achievement motivation	Low (up to 14)	57	31.70
		Medium (15 to 16)	73	40.60
		High (above 16)	50	27.70
6.	Economic motivation	Low (up to 28)	40	22.20
		Medium (29 to 32)	63	35.0
		High (above 32)	77	42.80

S. No.	Characteristics		Frequency	Percentage
	Personal characteristics			
7.	Achievement motivation	Low (up to 25)	48	26.70
		Medium (26 to 30)	70	38.90
		High (above 30)	62	34.40

**(Indicates multiple responses allowed)*

3.10 Extension Contact

The findings related to extension contact of the respondents have been presented in Table 2. As stated in the table, majority of the respondents (43.90%) had low level of extension agency contact followed by 32.20 percent respondents who had medium level of extension agency contact and only 23.90 percent respondents had high level extension agency contact. Data revealed that government and private extension agencies rarely visited the study area to give the information to the respondents and respondents do not proactively contact with these agencies.

3.11 Economic Motivation

Results regarding economic motivation of the respondents have been presented in Table 2. It was found that less than half of the respondents (42.80%) had high level of economic motivation, followed by 35.00 percent who had medium level of economic motivation. Only 22.20 percent respondents had low level of economic motivation.

3.12 Achievement Motivation

The results revealed that about one third of respondents (38.90 percent) (Table 2) had medium level of achievement motivation followed by 34.40 percent who had high level of achievement motivation and only 26.70 percent respondents had low level of achievement motivation. The result shows that most of the respondents were having medium level of achievement motivation and they may not have a high urge to do things solely for their betterment. Study is in line with [13] who found that 50.00 per cent of the farmers belonged to medium achievement motivation category whereas, 26.67 per cent and 23.33 per cent of them belonged to high and low achievement motivation categories respectively.

3.13 Decision Making Ability

Findings related to decision making ability of the respondents has been presented in Table 2. It shows that about 40.60 percent respondents had medium level of decision making ability, followed by 31.70 percent of respondents had low level of decision making ability and only 27.70 percent respondents had high level of decision making ability. Here, the change in the decision making ability might be due to the superiority of the information that they get or due to the timely availability of the information so that they will be able to make informed decision compared to non member farmer of same locality.

4. CONCLUSION

Study of profile characteristics revealed the utilization pattern of agro-advisory services by respondents. The study shows that the beneficiaries had quite a long experience in farming. It also indicates that they are engaged in farming right from their young age, which might have helped them in taking information provided through Agro-advisory services and utilizing it. Large beneficiaries were using various mass media for seeking agricultural information quite satisfactorily. Their varying mass media exposure might have affected the utility perception of Agro-advisory services. The findings will be useful for the extension agencies and other organizations working at grass root level in understanding the characteristics of the farmers. It will help in designing need based and location specific strategy. It helps the policy planer to effectively intervene the development process through introduction of ICTs tools which further enhance the income of farming community.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Chambers R. Rural Development Putting the last first, Pearson Education limited, New York USA;1983
2. Chandra, M. Evaluating the Effectiveness of e-agriculture: An ICT based technology transfer model in agriculture, M.Sc. Thesis, Agricultural College and Research

Institute, TNAU, Coimbatore, Tamil Nadu; 2011.
3. Kanavi, S.R. Study on An Analysis of Kisan Mobile Advisort Service (KMAS) of Krishi Vigyan Kendra. M.Sc. Thesis, University of Agricultural Sciences, Dharwad; 2014.
4. Kumari, S. Assessment of mobile based advisory services of KVKs. Ph.D. Thesis, Chaudhary Charan Singh Haryana Agricultural University, Haryana; 2017.
5. Meera, N.S. A critical analysis of Information Technology in Agricultural Development: impact and implications. Ph. D. Thesis. Indian Agricultural Research Institute, New Delhi; 2002.
6. Nachiketa, Perception of Farmer and Extension Personnel about Participatory Extension Approach: A Study in Kumaon Region. M.Sc. Thesis. G.B.P. U A & T. Pantnagar; 2011.
7. Planning Commission. Draft on Faster, Sustainable and More Inclusive Growth – An approach to Twelfth Five Year Plan"; 2011.
Available:http://planningcommission.nic.in/plans/planrel/12appdrft/appraoch_12plan.pdf on 18 November 2020
8. Parayil, G. Study on Digital Divide and Increase Return, M.Sc. Thesis. Agricultural College and Research Institute, TNAU, Coimbatore, Tamil Nadu; 2005.
9. Sengupta S. The Food Chain in Fertile India, Growth Outstrips in Agriculture. New York Times; 2008. Retrieved on 18 November 2020
10. Sreevalsan. Eco-friendly Agricultural Practices in Cotton Cultivation- Farmers awareness, attitude and adoption. M.Sc. Thesis, Agricultural College and Research Institute, TNAU, Coimbatore, Tamil Nadu; 2012.
11. Singh M. Critical Analysis of Mobile Based Agro -Advisory Services: A Case of mKRISHI®. M. Sc. Thesis. Indian Agricultural Research Institute, New Delhi; 2014.
12. Verma, T. Farmer's Perception of Agricultural Helpline: A study in Tarai Region of Uttarakhand, M.Sc. Thesis, G.B.P.U. A & T, Pantnagar; 2015.
13. Yadav, K. Impact Assessment of ICT enabled Knowledge sharing agri-portals in Uttarakhand, Ph.D. Thesis. G.B.P. U. A & T. Pantnagar; 2011.

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