

Corollary of Mobile Phone Applications on Rural Youth Farmers' Information Needs and Seeking Behaviour

Termaric Oinam¹, J.K. Chauhan², R.K. Josmi³ and Ram Singh⁴

1. PhD Scholar, 2 &4. Professor, 3. Asstt. Prof., School of Social Sciences, College of Post-Graduate Studies in Agricultural Sciences (CAU, Imphal), Umiam, Meghalaya.

Corresponding author e-mail: termaric.in@gmail.com

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ABSTRACT

Right information in right time at right place is *sine quo non* for successful farming. Mobile phones being one of the vibrant and reliable Information and Communication Technologies (ICT) gadget, promises to bridge the information gap of the farming population. Information is currently regarded as a factor of production like other factors such as labour, capital and land. Thus, the study was conducted to determine the impact of mobile phone applications on rural youth farmers of Meghalaya by assessing their information needs and seeking behaviour. Market price, subsidies and crop insurance are the most sought information needs of the rural youth farmers. Information seeking behaviour index from the study indicated that friends and neighbours cannot be ignored for gathering information in a rural setting. However, mobile phone applications like whatsapp, YouTube, plantsnap, plantix etc. bridges the information gap of the rural youth farmers. Therefore, more video messages, GIF (Graphic Information Formats) and other interactive messages related to agriculture, credit and subsidies, government schemes etc. which can be easily channelled through mobile phone applications like whatsapp should be created abundantly and richly to influence the rural youth farmers. This can create a psychological impact to them just like the commercial advertisements create. Such innovations will help in retaining rural youth to take up agriculture as their profession which is also in line with Attracting Rural Youth in Agricultural (ARYA) programme.

Keywords: Mobile phone application; Information needs; Information seeking behaviour;

Application of Information and Communication Technologies (ICT) in farming has revolutionized the facet of agricultural production and productivity. Right information in right time at right place is *sine quo non* for successful farming by farmers. Mobile phones being one of the vibrant and reliable ICT gadgets, promises to bridge the information gap of the farming population. Information is currently regarded as a factor of production like other factors such as labour, capital and land (Rao, 2007). If information is combined with other factors of production, it will enhance agricultural production and marketing (Dralega, 2007). Information is vital for agricultural growth giving farmers the ability to make informed decisions pertaining to production, marketing and management of agricultural products and services.

Information seeking behaviour is a broad term

which includes a set of actions that an individual takes to express information needs, seek information, evaluate and select information, and finally, use this information to satisfy his/her information needs (Majid and Kassim, 2000). Ekumankma and Nwankwo, (2002) also stated the importance of information by highlighting the fact that the poor exposure of farmers to appropriate agricultural information is one of the major reasons for low yield in farming. Further, Ali-Olubandwa et al., (2010) opined that, to increase agricultural production, farmers must have good information-seeking behaviour that will enable them to adopt improved production technology.

Keeping the importance of timely and right information in farming, the present study was conducted in the tribal state "Meghalaya" where the upliftment of

tribal economy relies mainly on agricultural production. Farm information and technology dissemination to the tribal farmers provides opportunities for their self development, improves existing knowledge, skills and enhances their capability (Meena and Sharma, 2012). Thus, the main purpose of the study was to ascertain the information needs and information seeking behaviour of the farmers with the view of improving the access to information that will help to produce crop production sustainably with the following specific objectives:

- i. To identify the information needs of the tribal rural youth farmers
- ii. To ascertain the agricultural information seeking behaviour of tribal rural youth farmers

METHODOLOGY

The tribal state of Meghalaya was selected purposively for the present study as the successful mobile phone application research project in agriculture entitled 'm4agriNEI' was being implemented in six districts of Meghalaya viz., Ri-Bhoi, East Khasi Hills, West Khasi Hills, West Jaintia Hills, West Garo Hills and South West Garo Hills. Purposive sampling was followed to select two villages from each district with each village having more than one thousand population thereby entailing twelve villages in total. Snowball sampling was carried out to select twenty respondents to constitute a true representative of the population under research from each village which brought the total respondents to 240.

All of the respondents were rural youth farmers between 19-35 years of age and socio-economic profiles like agricultural land holding were classified into five broad classes based on the procedure followed by Department of Agriculture (GOI, 2011). Annual income was categorised in line with the guidelines provided by National Council of Applied Economic Research (NCAER, 2011). Also variables like Mass Media Exposure, Cosmopolitaness, Social Participation, Decision Making, Perceived Ease of Use, Perceived Usefulness, Mobile Phone Service Reliability and Amount Spent on Mobile Phone (monthly) has been classified into low, medium and high with the help of mean and standard deviation.

Information need of the farmers was measured by placing 16 (sixteen) information dimensions and making rank order of the dimensions. Further, Standardized

Information Need Index (SINI) was computed by the following formula.

$$INI = IN_h \times 4 + IN_m \times 3 + IN_l \times 2 + IN_n \times 1$$

Where,

INI = Information Need Index

IN_h = No. of respondents with high information need

IN_m = No. of respondents with medium information need

IN_l = Number of respondents with low information need

IN_n = Number of respondents with no information need

Since the total numbers of the respondents were 240, the INI of each dimension thus could range from 240 to 960. But, to express the INI in a meaningful way, it has been converted as Standardized Information Need Index (SINI) by using the following method.

$$SINI = \frac{\text{Computed INI}}{\text{Highest possible INI}} \times 100$$

SINI of each of the dimension ranged from 0 to 100, whilst 0 indicating no need and 100 indicating highly need of the farmers.

Information seeking behaviour of the farmers was measured by placing 19 (nineteen) information source dimensions and making rank order of the dimensions. Further, Standard Information Seeking Behaviour Index (SISBI) was computed following the same procedure used to compute the Standardized Information Need Index (SINI).

Content validity was estimated by gathering a group of experts to review the test items. Accordingly, the experts were given the list of content areas specified in the test blueprint, along with the test items intended to be based on each content area. The experts were then asked to indicate whether or not they agree to each item. Then, based on the experts' comments, some of the items were revised and others were dropped from the list.

Reliability of the scales was measured with Cronbach Alpha (Cronbach, 1951), the Cronbach's Alpha results showed values all above 0.5, suggesting good internal consistency reliability (Julie, 2007).

Prior to actual data collection, the interview schedule was pre-tested, and piloting was used to refine the questionnaire with 30 non-sampled rural youth farmers who were selected randomly from non-sampled area. Finally, suitable modification was made and reliability was tested. The final interview was conducted by recruiting enumerators under close supervision of the

researcher. The primary data were gathered from 240 respondents using an interview schedule. Statistical tools such as frequency count and percentage were used to analyze the collected data.

RESULTS AND DISCUSSION

A perusal of Table 1 below divulged that 29.60 per cent of the respondents have completed their secondary education while a considerable amount of farmers (25.80

Table 1. Socio-economic and socio-psychological profile of the respondents (N=240)

Characteristics	Categories	No.	%	Mean	SD
Age	Continuous (19- 35 years only)	240	100		
Gender	Male	131	54.60		
	Female	109	45.40		
Educational Status	Illiterate	21	8.75		
	Primary	61	25.40		
	Secondary	71	29.60		
	Higher Secondary	62	25.80		
Land Holding	Graduate and above	25	10.40		
	Marginal	127	52.90		
	Small	83	34.60		
	Semi-Medium	29	12.10		
	Medium	1	0.42		
Annual Income	Large	0	0		
	Low	32	13.30		
	Medium	189	78.80		
Mass Media Exposure	High	19	7.92		
	Low = Mean – SD	37	15.42		
	Medium = Mean± SD	170	70.83	17.16	3.89
Cosmopolitaness	High = Mean + SD	33	13.75		
	Low = Mean – SD	40	16.67		
	Medium = Mean± SD	161	67.08	12.99	2.33
Social Participation	High = Mean + SD	39	16.25		
	Low = Mean – SD	89	37.08		
	Medium = Mean± SD	98	40.83	1.91	0.89
Decision Making	High = Mean + SD	53	22.08		
	Low = Mean – SD	47	19.58		
	Medium = Mean± SD	172	71.67	20.75	4.45
Perceived Ease of Use	High = Mean + SD	21	8.75		
	Low = Mean – SD	16	6.67		
	Medium = Mean± SD	165	68.75	10.88	1.90
Perceived Usefulness	High = Mean + SD	59	24.58		
	Low = Mean – SD	23	9.58		
	Medium = Mean± SD	181	75.42	10.39	1.66
Mobile Phone Service Reliability	High = Mean + SD	36	15.00		
	Low = Mean – SD	34	14.17		
	Medium = Mean± SD	161	67.08	9.20	1.60
Amount Spent on Mobile Phone (monthly)	High = Mean + SD	45	18.75		
	Low = Mean – SD	47	19.58		
	Medium = Mean± SD	133	55.42	2.05	0.67
	High = Mean + SD	60	25.00		

Table 2. Rank order of Information needs based on SINI

Info Need Dimensions of the Farmers	High	Medium	Low	Never	INI	SINI	Rank
Market information	154	60	12	14	834	86.88	I
Crop insurance	124	94	10	12	810	84.38	II
Farm credit/subsidy schemes	90	84	60	6	738	76.88	III
Announcements related to farmers trainings programmes	50	100	69	21	659	68.65	IV
Input (seeds, planting, materials, fertilizer)	29	120	74	17	641	66.77	V
Animal Husbandry (piggery, poultry, livestock.)	54	50	130	6	632	65.83	VI
Govt Scheme (on Agriculture, horticulture, processing)	30	112	75	23	629	65.52	VI
Disease and pest management	11	117	94	18	601	62.60	VIII
Fishery	40	50	118	32	578	60.21	IX
Integrated farming System	30	60	127	23	577	60.10	X
Soil and water conservation	0	120	94	26	574	59.79	XI
Post harvest technique	0	20	100	120	380	39.58	XII
Irrigation/drip irrigation	0	20	40	180	320	33.33	XIII
Apiculture	0	0	74	166	314	32.71	XIV
Farm machinery	0	0	51	189	291	30.31	XV
Suitable crop varieties	0	0	44	196	284	29.58	XVI

Note: Scale; High=4, Medium=3, Low=2 and Never=1

Reliability Statistics: Cronbach's Alpha =0.730; No. of Items = 16

Table 3. Rank order of Information Seeking behaviour based on SISBI

Information Sources	High	Medium	Low	Never	ISI	SISBI	Rank
Friends	140	50	50	0	810	84.38	I
Neighbours	101	119	20	0	801	83.44	II
Mobile phone	130	50	50	10	780	81.25	III
Village head	110	10	100	20	690	71.88	IV
Progressive Farmers	0	20	180	40	460	47.92	V
Television	0	30	120	90	420	43.75	VI
Radio	13	7	60	160	353	36.77	VII
Newspaper	12	20	30	178	346	36.04	VIII
ICAR	0	40	20	180	340	35.42	IX
Computer with internet	0	40	10	190	330	34.38	X
NGO	0	0	42	198	282	29.38	XI
Pesticide dealers	0	0	40	200	280	29.17	XII
Seed dealer	0	0	34	206	274	28.54	XIII
KVK	0	0	26	214	266	27.71	XIV
Farm literature	0	0	20	220	260	27.08	XV
ADO/HDO/ATMA	0	0	19	221	259	26.98	XVI
CAU	0	0	17	223	257	26.77	XVII
ATIC	0	0	10	230	250	26.04	XVIII
Cooperative societies	0	0	8	232	248	25.83	XIX

Note: Scale; High=4, Medium=3, Low=2 and Never=1

Reliability Statistics: Cronbach's Alpha =0.744; No. of Items = 19

%) and (25.40 %) have completed their higher secondary and primary education respectively (Table 1). Further, 10.40 per cent of the respondents were graduate and above while only 8.75 per cent of the total respondents were illiterate. Data also revealed that more than half of the farmers (52.60 %) were marginal followed by small (34.60 %), semi-medium (12.10 %), medium (0.42 %) with no large farmers among the respondents. Further, majority (78.70 %) of the respondents have medium level of annual income, followed by low (13.30 %) and high (7.92 %). It can also be seen that a large portion of the respondents (70.83 %), (67.08 %), (71.67%), (68.75%), (75.42%), (67.08%) had medium level of mass media exposure, cosmopolitaness, decision making, perceived ease of use, perceived usefulness and mobile phone service reliability respectively.

Information Needs of the Farmers: The SINI presented in Table 2 below indicated that among sixteen information need dimensions, market related information needs ranked first with SINI 86.88 and crop insurance related information followed closely with SINI 84.38. Credit/subsidy schemes with SINI 76.88 ranked at third place.

Announcements related to farmers trainings programmes ranked at fourth with SINI 68.65, followed by inputs (seeds, planting, materials, fertilizer) with SINI 66.77. Animal Husbandry (piggery, poultry, livestock), Govt Scheme (on Agriculture, horticulture, processing), Disease and pest management, Fishery, Integrated farming System, Soil and water conservation, Post harvest technique, Irrigation/drip irrigation, Apiculture, Farm machinery ranked sixth, seven, eight, ninth, tenth, eleventh, twelfth, thirteenth, fourteenth and fifteenth respectively. On the other hand, information regarding suitable crop varieties ranked lowest with SINI 29.58 only.

The information need index clearly reveals that market price is the top information needs expressed by the rural youth which is also one of the determining factors that can significantly help them to take well informed decisions, which can give them better bargaining power. It can also be deduced that they are eager to know the market price of agricultural inputs such as fertilizers so that they can arrange the capital in advance if they are willing to purchase the same.

Another important dimension is that they are worried if in case their crop fails to return their investment and therefore they long for crop insurance and subsidies.

Most of the respondents show little interest towards other dimensions like farm machineries, suitable crop varieties etc. This may be because they are more inclined towards Indigenous Technical knowledge (ITK) and probably they are adapted to the existing crop varieties they have been cultivating since the time of their forefathers.

Information Seeking Behaviour of Farmers: Information sources based on SISBI from Table 3 reveals that the most viable source used by the respondents to seek agriculture related information was through friends with SISBI 84.38, trailed very closely by neighbours with SISBI 83.44. Mobile phone also followed closely with SISBI 81.25 as another information source which ranked at third place.

However, it can be clearly seen from the table that the information seeking behaviour of the respondents sharply declined starting from progressive farmers (SISBI 47.92) till cooperative societies which ranked last with SISBI 25.83 only.

The result of the study is in line with the findings *Orojobi (1980)* which also opined that the main sources of agricultural information for Nigerian farmers include private sources like friends, other farmers, local leaders, commercial farms, traditional meetings and ceremonies.

Another study by *Lahiri (2016)* also highlighted that friends and neighbours still remain the main source of information seeking behaviour of the farmers. Additionally, mobile phone applications also act as bridge to fill the information gap of the rural youth farmers.

CONCLUSION

In such scenario, more video messages, GIF (Graphic Information Formats) and other interactive message related to agriculture, credit/subsidies, government schemes etc. which can be easily channelled through mobile phone applications like WhatsApp should be created abundantly and richly. This can influence and bring a more positive attitude towards the use of mobile phone applications in farming. In this regard, various line departments like KVK, ATMA, ATIC etc. should pro-actively engage to deliver the desired information to the end user. Professionals of such agencies should be geared up through training programmes if they are not well equipped with such modern technological applications.

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