A Study on agriculture information seeking behavior of farmer's through mobile of West Champaran District, Bihar, India

ABSTRACT:-

This study explores the information-seeking behavior of farmers in West champaran District, Bihar, specifically through mobile devices. The research was conducted with 120 randomly selected respondents from 18 blocks in the district. The study found that the majority of farmers were young, with middle school education, belonging to the OBC category. Most lived in single-family systems, had families with 7 to 15 members, and small land holdings. Agriculture farming was their main occupation, with an annual income of Rs. 1-2 lakh. Medium levels of knowledge, seeking behavior, and interview schedule assessment were observed regarding information and communication technology tools. Constraints faced by farmers included lack of knowledge about agricultural advisory services on mobile phones, smart phone proficiency, details about advisory sources, linguistic barriers, lack of literacy, and call drop problems. Significant associations were found between certain variables (age, caste, land holding, annual family income, family type, family size, social participation, mass media exposure, and extension contact) and the information-seeking behavior of farmers. This study provides insights into the information-seeking behavior of farmers through mobile devices in West Champaran District, Bihar. It emphasizes the need to address constraints and improve access to agricultural information for farmers in the region.

Keywords: agriculture information, socio-economic, seeking behavior of farmers

INTRODUCTION:-

India is primarily an agriculturally based economy. In India, more than two third populations live in villages and securing their livelihood from agricultural and its allied enterprises for their livelihood. Farming is being undertaken by a huge section of population under extremely diverse and changing agro climatic conditions. Mostly, farmers are small and marginal who do not have access to desirable and timely information that adversely affect agricultural growth and productivity. All efforts are directed towards the end-users, i.e. farmers who are required to access right agricultural information and utilize in their farm land. More emphasis is required to disseminate scientific and technological information related to farming and allied sector from agricultural research institutions to farmers. "Information is the

collection, storage, processing, and dissemination of new data, pictures, facts, messages, opinions, and comments required to understand and react accurately to personal, environmental, national, and international conditions, as well as to be in a position to take appropriate decisions"**.** . By using this technology; extension is succeeding in reaching greater audience especially the disadvantaged groups **(Mittal *et al,* 2010).** Today with enhanced operating systems and small processor based phones, the mobile world has now become a smartphone world. Smart phones are not only dominating the segment of most expensive phones today but are also having low cost categories which are affordable by many people **(Agrawal *et al,* 2013).** In the past 2-3 years there has been a rise in this low cost segment of smartphones as their price has continuously fallen, and today these phones appear to be in greater reach of rural people as well. There are two types of ICT viz. old ICT like radio, television, video, films, slides, pictures, print media, telephone, drama, dance, group discussion, meetings, exhibitions and demonstrations etc., whereas, the new ICT includes digital devices such as computers, e-mail, internet, multimedia, video conference, mobile phones etc., which have the potential of providing vast amount of relevant information to rural population in timely, comprehensive and cost effective manner **.** The new ICTs are considered as the driving forces of globalization. They are bringing people and decision makers together with unprecedented new tools for development. Modern information and communication technologies which are considered as result of breakthrough in information technology ; have greater implication in rural areas and can help to disseminate information, improve farmers' knowledge, increase their participation in different activities and also helps in sharing knowledge with others.

MATERIALS AND METHODS:-

A research work was conducted in the purposively selected area which is West Champaran district of Bihar. West Champaran district comprised of 18 blocks respectively. Out of this Madhubani block will be selected by purposive sampling due to the reason maximum respondents are using A Study on agriculture information seeking behavior of farmer's through mobile programme. Appropriate number of villages will be selected through purposive sampling based on the maximum area cover under A Study on agriculture

information seeking behavior of farmer's through mobile Programme (Barwa, Kataha, Rampur, Taulaha and Urdabi). From each village, 24 respondents were selected through random sampling method. Thus, constitutes the 120 respondents from 5 villages forms the respondents of the study.

RESULTS AND DISCUSSION:-

- The young age category ranging below 35 years has highest number of farmers i.e. 48.33 %, followed by farmers of young age category (40.33 %) and old age category (10.84%).
- Out of total 120 respondents 29.17 % have completed education middle school level followed by high school (26.67 %), primary school (20.00 %), intermediate (7.50 %), and graduation level education (1.67 %) , Whereas 15.00% of farmers were found illiterate with no formal education.
- Out of total respondents studied majority of farmers belongs to Other Backward Class Category (59.17%) followed by farmers of General category (26.67%) and SC/ST Category (14.17%).
- The indicates that 68.33 per cent respondents were observed residing in single family system as against joint family i.e. 31.67 per cent. Hence, it pointed that joint family system is dominantly prevailing in the study area.

- It is evident from that 65.83 percent respondent families were observed such who had 7 to 15 members followed by 21.66 per cent families up to 6 members and 12.5 per cent respondent's families were found having 16 and above members in the families. The average member of family was observed to 10.53.
- Out of 120 respondents the the more respondents (47.50 %) were found in the land holding category *i.e.* small farmers (1 to 2 ha.) and 31.67 per cent respondents found in medium farmers (2-4 ha.). The marginal farmer (below 1 ha.) farmers were found having 20.83 per cent farmers found in this study.
- Main occupation, the Agriculture farming was emerged as main occupation (60.00 %) followed by Farming+ labour (29.17 %), Farming + Allied (Business)(6.67 %) and Farming + Service(4.17) adopted respectively.
- Out of the 120 respondents 64.17 per cent belong to the annual income Rs. 1-2 lakh whereas 25.00 per cent respondents belong to above 3-4 lakh, and 10.83 per cent respondents belong to upto 1 lakh annual income range.
- External contacts were understood that. Most used formal sources of information (73.33 %) was personnel contact, followed by (13.33 %) was KVK, (10.83 %) was VDO., and (2.50%) was ADO formal sources of information were Agri. College /university had got the rank I, II, III and IV, respectively.

Table. 1 Socio Economic profile of respondents

S.No.	Category	Frequency	Percentage
1	**Age**		
a	Young	58	48.33
b	Middle	49	40.83
c	Old	13	10.84
2	**Education Level**		
a	Illiterate	18	15.00
b	Primary	24	20.00
c	Middle school	35	29.16
d	High school	32	26.67
e	Intermediate	9	07.50
f	Graduation	2	01.67

3	**Caste**		
a	General	32	26.67
b	OBC	71	59.16
c	SC/ST	17	14.17
4	**Land holding**		
a	Marginal farmers	25	20.83
b	Small farmers	57	47.50
c	Medium farmers	38	31.67
5	**Extension Contact**		
a	Low	13	10.83
b	Medium	77	64.17
c	High	30	25.00
6	**Occupation**		
a	Farming	72	60.00
b	Farming + Labourer	35	29.16
c	Farming + Allied (Business)	8	06.67
d	Farming + Service	5	04.17
7	**Family Type**		
a	Nuclear/Single family	82	68.33
b	Joint family	38	31.67
8	**Family Size**		
a	Small (up to 6 members)	26	21.67
b	Medium (7-14 members)	79	65.83
c	Large (15 and above)	15	12.50
9	**House Pattern**		
a	Kachcha	22	18.33
b	Mixed	37	30.83
c	Pucca	61	50.84

(Table. 1 Socio Economic profile of respondents)

The information seeking behavior of farmers through mobile

Data presented in the Table-1 indicates the Information seeking behaviour through mobile among the farmers on different parameters. The table revealed that the information seeking behaviour through mobile among the farmers and channels of agriculture information have offline sources highest parameter was found (48, 61 and 11) was Watching video most available, available and least available respectively followed by Multimedia /Interactive Multimedia (36, 41 and 43), Voice calling (32, 45 and 43), Others (please, specify it) (31, 42

and 47), SMS (25, 35 and 60), Voice mail (5, 6 and 109), Video calling/ conferencing (3, 4 and 113) and Listening audio /FM radio (3, 4, and 113) have most available, available and least available respectively.

Data presented in the Table- 2 indicates the Information seeking behaviour through mobile among the farmers on different parameters. The table revealed that the information seeking behaviour through mobile among the farmers and channels of agriculture information have Online sources highest parameter was found (44, 51 and 25) was YouTube available, available and least available respectively followed by whatsapp (32, 35 and 53), Agricultural Websites (if yes, its name) (21, 23 and 76), Apps (18, 29 and 78), Agricultural Portals (17, 25 and 73), Others (13, 21 and 86), Facebook (11, 15 and 94) and Email (1, 1 and 118) have most available, available and least available respectively.

Table. 2 Information seeking behavior through mobile among the farmers N=120

Sl. No.	Different sources and channels of agriculture information	Most available	Available	Least available
A.	**Offline sources**			
1	Voice calling	32	45	43
2	SMS	25	35	60
3	Voice mail	5	6	109
4	Video calling/ conferencing	3	4	113
5	Watching video	48	61	11
6	Listening audio /FM radio	3	4	113
7	Multimedia /Interactive Multimedia	36	41	43
8	Others (please, specify it)	31	42	47
B.	**Online sources**			
1	Agricultural Websites (if yes, its name)	21	23	76
2	Agricultural Portals (if yes, its name)	17	25	78
3	Apps (if yes, its name)	18	29	73
4	YouTube	44	51	25
5	WhatsApp	32	35	53
6	e-mail	1	1	118
7	Facebook	11	15	94
8	Others (please, specify it)	13	21	86

(Table. 2 Information seeking behavior through mobile among the farmers)

Overall the extent of availability

Table 3 shows that the maximum number of respondents (48.34%) had medium level of knowledge about information and communication technology tools followed by low (27.5%) and high (24.17%), respectively. Similar kind of response was found in study of **Jirli *et al.* (2013)** observed that the current information and extent of availability cantered era, numerous electronic databases are available.

Overall seeking behaviour

The maximum number of respondents (50.83%) had medium level of seeking behaviour about information and communication technology tools followed by low (30.84 %) and high (18.33 %), respectively.

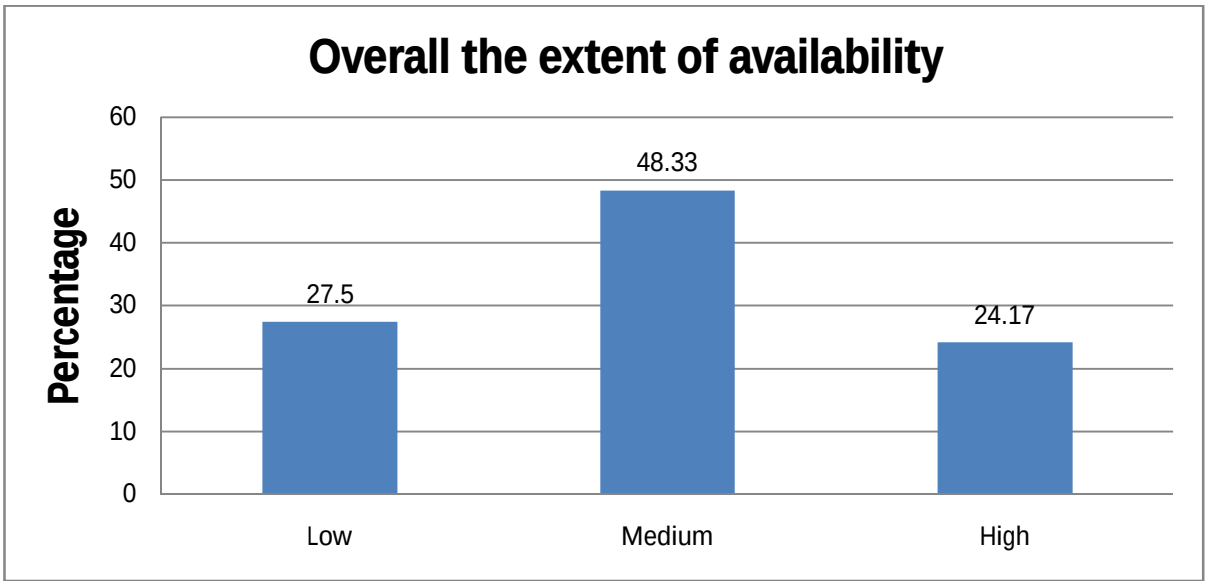
Overall interview schedule

The maximum number of respondents (45.84 %) had medium level of Interview schedule for assessing information needs of farmers about information and communication technology tools followed by low (33.33%) and high (20.83 %), respectively.

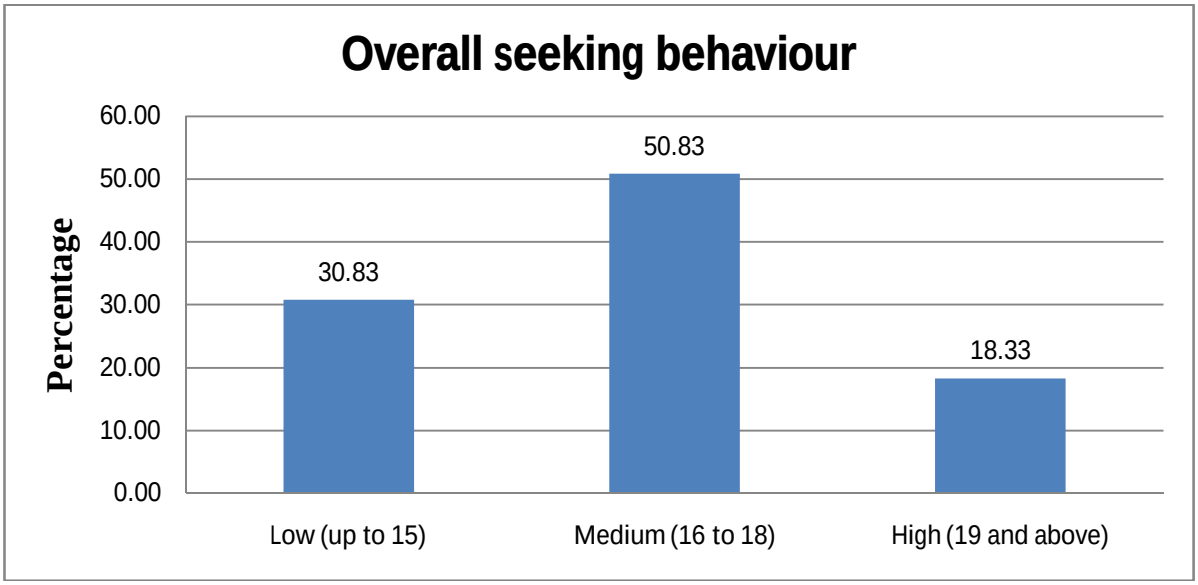
Table 3:- Information seeking behaviour of farmers through mobile (N= 120).

Extent of availability	**Number**	**Percentage**	
Low (up to 15)	33	27.5	Mean =16.81,
Medium (16 to 18)	58	48.33	SD=1.98
High (19 and above)	29	24.17	CD=0.74
Overall seeking behaviour	**Number**	**Percentage**	
Low (up to 15)	37	30.84	Mean =15.71,
Medium (16 to 18)	61	50.83	SD=1.94
High (19 and above)	22	18.33	CD=0.91
Overall interview schedule	**Number**	**Percentage**	
Low (up to 15)	40	33.33	Mean =16.94,
Medium (16 to 18)	55	45.84	SD=1.51
High (19 and above)	25	20.83	CD=0.71

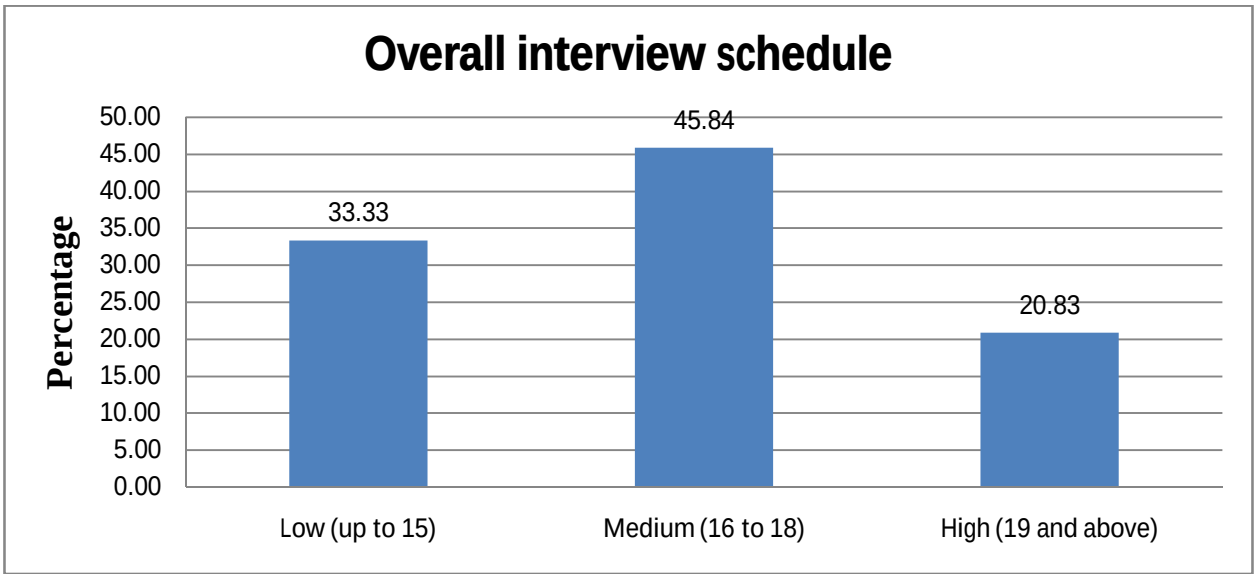
(Table 3:- Information seeking behaviour of farmers through mobile)



(Fig. 1 Extent of availability)



(Fig 2 Overall seeking behavior)



(Fig 3 Overall interview schedule)

Table- 4: Correlation coefficient (r) between different independents variables and extent of availability information of farmers, Information seeking behaviour through mobile among the farmers and interview schedule for assessing information needs of farmers respectively.

Sl. No	Independent variables	Extent of availability	Information seeking behavior	Interview schedule
1	Age	0.996**	0.008*	0.969**
2	Cast	0.561**	0.142*	0.981**
3	Education	-0.576**	-0.963**	-0.799**
4	Land holding	0.922**	0.31*	0.998**
5	Occupation	0.5**	0.919**	0.601**
6	House Pattern	0.522**	-0.36*	-0.561**
7	Annual income	0.926**	-0.45*	0.749**
8	Family type	0.085*	0.986**	0.409*
9	Family size	0.998**	0.003*	0.477*
10	Social Participation	0.809**	0.258*	0.777**
11	Extension contacts	0.415*	0.872**	0.692**
12	Mass Media Exposure	0.994**	-0.18*	0.905**

***- Significant at 0.05% probability level 0.197 ** -Significant at 0.01% probability level 0.257**

The analysis of Table 4 revealed that among the 12 variables, age, land holding, annual income, family size, source of information, and mass media exposure exhibited a positive and highly significant correlation with the extent of availability of information for farmers. Additionally, caste, housing pattern, occupation, and extension contact showed a positive and moderately significant correlation with the extent of information availability. Family type displayed a positive correlation but lacked statistical significance, while education and source of credit showed a negative correlation with innovativeness level, but it was not statistically significant.

Implications and Suggestions:-

Despite such limitations, there was an immense scope to conduct further investigation in the same field. Based on observation of limitations in the present study researcher suggested the areas for further research in this field of investigation:

- Participatory action research can be conducted to determine required information which may help to communication planner to satisfy farmers need for information in agriculture.
- There is a need for content analysis to as certain kind and form of information preferred by farmers through mobile, to know time preference, the sources of information perceived relatively more credible by the farmers etc.
- The presented study was intended to assess the information-seeking behaviour; however, on the contrary, information dissemination behaviour through mobile can be studied.
- There is a lot of scopes to assess the relative effectiveness of mobile phone communication in agriculture solely and in companion with other ICT tools.

Conclusion:-

The study concluded that the majority of respondents were middle-aged, with an intermediate and above level of education. Most of the farmers belonged to the OBC caste and had agriculture as their main occupation. They had a medium level of landholding and income, and lived in semi-cemented houses. The farmers had medium levels of exposure to mass media, with personnel contact being the most common formal source of information.Regarding information-seeking behavior, the majority of respondents had a medium level of knowledge about

information and communication technology tools. Mobile phones were the most commonly used medium for seeking agricultural information, with offline sources being the most available, followed by available and least available sources respectively. Weather forecasting was found to be strongly needed, highly needed, needed, and less needed respectively when assessing the information needs of farmers.Socioeconomic characteristics such as age, family type, type of house, landholding, occupation, mass media exposure, and extension contacts were positively and significantly correlated with information-seeking behavior. On the other hand, caste and annual income were found to be non-significantly correlated with the seeking behavior of farmers.The major constraints identified were infrastructural constraints, problems with timeliness (lack of timely availability of agricultural information), lack of electricity supply, issues with the busy network of Kisan Call Center, lack of access to the internet, and fluctuating telecommunication network.

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