Original Research Article

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

ABSTRACT:-

The present study entitled with the general objective as "A Study on agriculture information seeking behavior of farmer's through mobile of West Champaran District, Bihar" conducted with four working objectives.West Champaran district of Bihar was selected as local of research purposively. Eighteen blocks were selected randomly. Three villages from each block and 24 respondents from each village have been selected randomly. Thus, a total number of 120 respondents were constituted as the sample for the present study. For studying information-seeking behaviour of farmers through mobile, there are thirteen variables considered as independent and one dependent variable, i.e. information-seeking behaviour farmers through mobile. Data were collected by personally interviewing the respondents with the help of a structured interview schedule. For data processing, analysing and making inferences various statistical tools such as frequency, percentage, arithmetic mean, standard deviation and Pearson's Product Movement Correlation method have been used. The young age category ranging below 35 years has highest number of farmers i.e. 48.33 %, 29.17 % have completed education middle school, majority of farmers belongs to OBC Category (59.17%), 68.33 per cent respondents were observed residing in single family system as against joint family, 65.83 percent respondent families were observed such who had 7 to 15 members, average member of family was observed to 10.53, 47.50 % were found in the land holding category i.e. small farmers (1 to 2 ha.) found in this study. Main occupation, the Agriculture farming was emerged as main occupation (60.00 %), 64.17 per cent belong to the annual income Rs. 1-2 lakh, 43.33 per cent respondent participate in one organization, Mass media that nearly three-fourth of the respondents had medium level of mass media exposure (70.00%), External contacts were understood that Most used formal sources of information (73.33 %) was personnel contact. Overall Distribution of the respondents on the basis of source of agriculture information seeking behavior of farmers 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.

The maximum number of respondents (50.83%) had medium level of seeking behavior about information and communication technology tools followed by low (30.84 %) and high (18.33 %), respectively and 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 and constraints faced of respondents information divided into four groups secondly technical constraints of farmers have found 80.83 percent was Lack of knowledge about availability of agricultural advisory services on mobile phone followed by Lack of smart phone proficiency 72.50 percent, Lack of details (number/websites etc.) of agricultural advisory sources 60.00 percent, Linguistic barriers 29.17 percent, Lack of literacy 28.33 percent and Call drop problem 18.33 percent have found respectively. The study also revealed that variables age, cast, land holding, annualfamily income, family type, family size, social participation, mass media exposure and extension contact significantly associated at 1% level. Rest of the independent variables don't show any kind of significantrelationship with the dependent variable.

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 Lakhs 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 profile of respondents

S.No.	Category	Frequency	Percentage
1	**Age**		
a	Young	58	48.33
b	Middle	49	40.83
c	Old	13	10.83
2	**Education Level**		
a	Illiterate	18	15.00
b	Primary	24	20.00
c	Middle school	35	29.17
d	High school	32	26.67
e	Intermediate	9	7.50
f	Graduation	2	1.67
3	**Caste**		
a	General	32	26.67
b	OBC	71	59.17
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	29.17
c	Farming + Allied (Business)	8	6.67
d	Farming + Service	5	4.17
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

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-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 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

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

5.4 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)	29	24.17	Mean =15.71,
Medium (16 to 18)	76	63.33	SD=1.94
High (19 and above)	15	12.5	CD=0.91
Overall Interview schedule	**Number**	**Percentage**	
Low (up to 15)	63	52.5	Mean =16.94,
Medium (16 to 18)	35	29.17	SD=1.51
High (19 and above)	22	18.33	CD=0.71

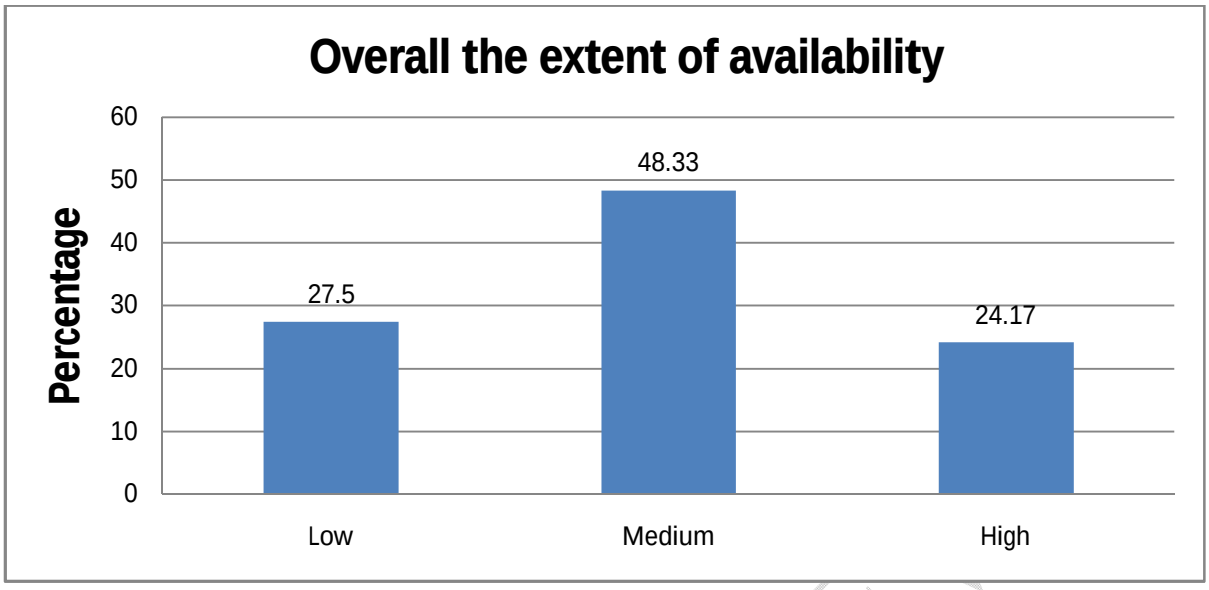

Fig. 1 Extent of availability

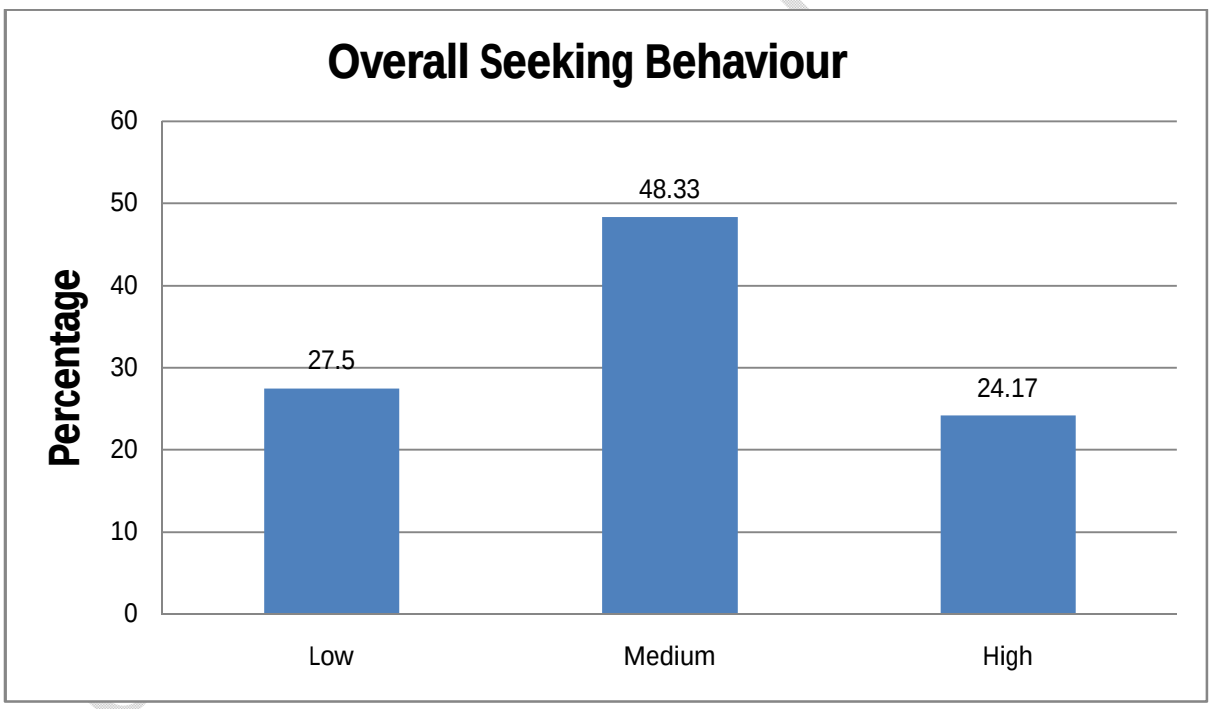

Fig 2. Overall seeking behaviors

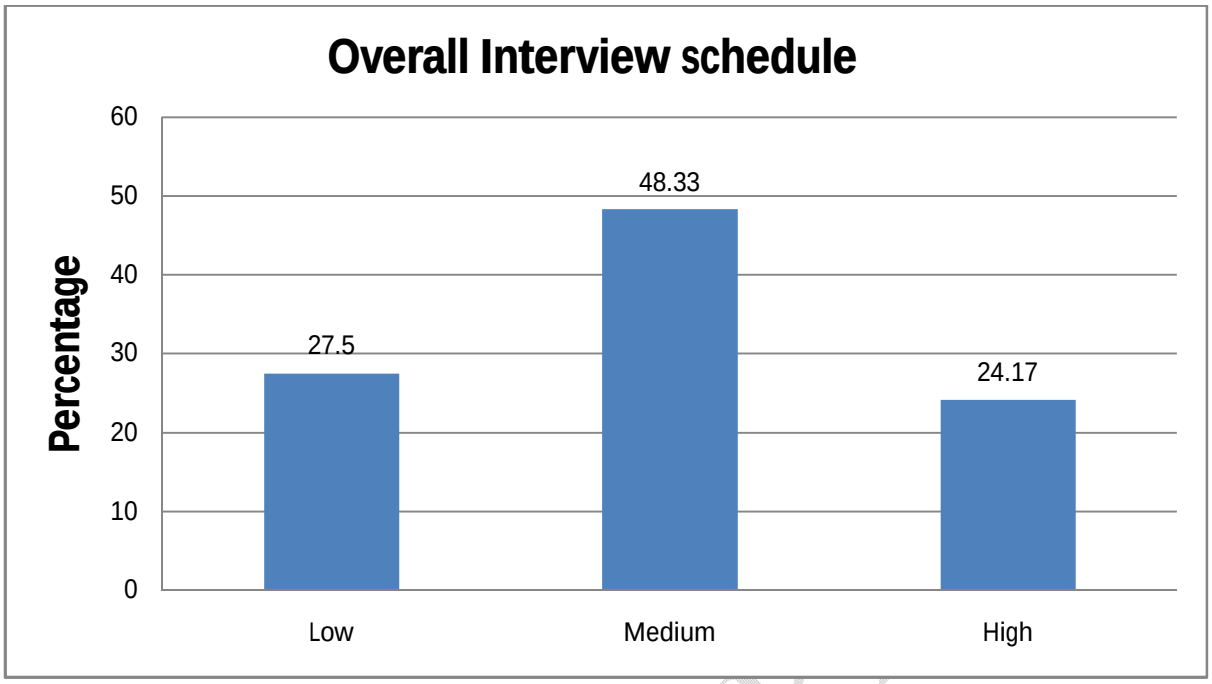

Fig 3. Overall Interview schedule

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.

So. 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**

It was observed from the Table- 4 that out of 12 variables age, land holding, annual income, family size, source of information and mass media exposure had positive and highly significant correlation with source of the extent of availability information of farmers level and caste, housing pattern, occupation and Extension contact had positive and moderately significant correlation with source of the extent of availability information of farmers level.

The variables *i.e.* family type had positive correlation but not significant with source of the extent of availability information of farmers level, whereas education and source of credit had negative correlation with innovativeness level but not significant.

It was observed from the Table-4 that out of 12 variables the two variables *i.e.* Family type, extension contact and occupation were found positive and highly significant correlation with Information seeking behaviour through mobile and land holding and social participation was found positive and moderate significant correlation with Information seeking behaviour through mobile.

The variables *i.e.* age, cast and family size were found positive correlation with Information seeking behaviour through mobile but not significant, whereas the variables *i.e.* eduaction, house pattern, annual income, mass media information and source of credit were found negative correlation with Information seeking behaviour through mobile but not significant.

It was observed from the Table 4 that out of 12 variables, age, cast, land holding, occupation, annual income, social participation, extension contact and mass media exposure with information source were found positive and highly significant correlation with Interview schedule for assessing information needs of farmers and family size and family type were found positive and moderate significant correlation with risk bearing ability.

The variable like education, house pattern and source of credit were found negative correlation with Interview schedule for assessing information needs of farmers but not significant.

Conclusion:-

It is concluded that most of the respondents were middle aged, educated intermediate and above level of education, majority of farmers belonged to OBC caste, had agriculture was the main occupation, had medium level of land holding, medium level of income, had semi cemented type of house, medium level of mass media exposure, most used formal sources of information was personnel contact. Overall Distribution of the respondents on the basis of source of agriculture Information seeking behavior of farmers the maximum number of respondents had medium level of knowledge about information and communication technology tools and the information seeking behavior through mobile among the farmers and channels of agriculture information have offline sources highest parameter was most available, available and least available respectively and the assessing information needs of farmers have highest found was Weather forecasting strongly needed, highly needed, needed and less needed respectively Socio economic characteristics like age family type, type of house, land holding, occupation, mass media exposure, extension contacts are positively and significantly correlated with seeking behavior like caste, annual income, are non-significantly correlate with the seeking behavior level of farmers. The major constraints information, Infrastructural constraints of farmers, Problem of timeliness (Lack of timely availability of agricultural information) and Lack of electricity supply, Busy network of Kisan Call Center, Lack of access to internet and Fluctuating telecommunication network have found respectively.

References:-

Agarwal, V., Sahoo, R. and Agarwal, A.(2013) A Study on Factors Affecting Mobile Phone Buying Behaviour in Bhubaneswar and Cuttack. **DOI**: 10.17010/ijom/2019/v49/i11/148274.

Babu, S. C., Glendenning, C. J., Okyere, K. A., and Govindarajan, S. K. (2012). Farmers'information needs and search behaviours: Case study in Tamil Nadu, *India* (No.1007-2016-79468).

Jirli, B., Rai, A., Deoraj, P. S., Singh, M., Kumar, A., Kumar, A., & Kumar, P. (2016). e-Readiness of development functionaries for agricultural development. Indian Research Journal of Extension Education, 13(2), 113-115.

Mittal, S., Gandhi, S., and Tripathi, G. (2010). Socio-economic impact of mobile phones on Indian agriculture. Indian council for research on international economic relations. Working Paper No. 246.

Sichoongwe, K., Mapemba, L., Tembo, G. and Ng'ong'ola, D. (2014) The Determinants and Extent of Crop Diversification Among Smallholder Farmers: A Case Study of Southern Province Zambia. Journal of Agricultural Science. 6. 10.5539/jas.v6n11p150.

Sousa, F., Gian, N., and Home, R. (2016). Information technologies as a tool for agricultural extension and farmer-to-farmer exchange: Mobile-phone video use in Mali. *International Journal of Education and Development Using Information and Communication Technology*, *12*(3): 19-36.

Swaroop, B. J., (2016). Accessibility and extent of utilization of information and communication technologies in adoption of improved agricultural practices by farmersin Visakhapatnam district of Andhra Pradesh. Journal of global communication. Special issue 2016. pp. 134-140