Information seeking behaviour of the farmers of Haryana for the adoption of newly released wheat varieties

Abstract

Agriculture, with its allied sectors, is unquestionably the largest livelihood provider in India. Wheat is a prominent crop of India from the point of view of food security. It is a grass widely cultivated for its seed, a cereal grain which is a worldwide staple food. Despite recent industrial developments, Haryana is primarily an agricultural state, with approximately seventy per cent of residents engaged in agriculture, and it ranks second in the country in terms of food grain production. The study was conducted in Hisar, Sirsa and Fatehabad districts of Haryana state as maximum FLD's were disseminated in these areas. A well-structured questionnaire was distributed among the farmers for data collections. Purposive statistical measures such as percentages and frequency distribution were employed for data analysis. A total of 180 respondents were selected from six villages i.e. 30 respondents from each village where maximum seeds of newly released wheat varieties of CCSHAU were selected purposively. Communication profile of the respondents was measured in terms of source of information and credibility of sources was measured. majority of the respondents used localite information sources, which was followed by cosmopolites and also found that cosmopolite sources were more credible to gather information regarding wheat varieties released by CCSHAU. Kisan Call Centre was least used for information but their credibility was very high.

KEYWORDS: Agriculture, wheat, communication profile, source of information and credibility.

Introduction

Wheat *(Triticum aestivum)* is mainly grown in the Rabi season (October–December to March–May) along with barley, lentils, peas, mustard and potatoes. It comes in two primary varieties i.e. *Triticum aestivum* vulgare, usually referred to as bread or common wheat, is the most popular kind. The other variety is durum wheat or *Triticum turgidum* durum. Durum wheat is mostly used to make pasta. Wheat is a prominent crop of India from the point of view of food security. It is a grass widely cultivated for its seed, a cereal grain which, is a worldwide staple food. Many species of wheat together make up the genus *Triticum*; the most widely grown is common wheat (*Triticum aestivum L.*). Despite recent industrial developments, Haryana is primarily an agricultural state, with approximately seventy per cent of residents engaged in agriculture, and it ranks second in the country in

terms of food grain production. Haryana has an arable land area of approximately 86 percent and a cultivated land area of approximately 96 per cent (Aggarwal and Moudgil, 2015).

"The future of each nation as well as that of mankind is based now more than ever before on information and knowledge gained rather than on any other material or resources," as stated by Birdan et al. (2003). However, some of the issues and shortcomings could be resolved by effectively managing and making use of the current resources.

Agriculture is the primary occupation of the majority of Indians living in rural areas, contributing approximately 17-18 per cent of the country's Gross Domestic Product (GDP) and employing more than 50 per cent of the total workforce in India (Sunder, 2018). Agriculture, with its allied sectors, is unquestionably the largest livelihood provider in India, Steady investments in technology development, irrigation infrastructure, emphasis on modern agricultural practices and provision of agricultural credit and subsidies are the major factors contributing to agriculture growth.

Wheat is the cereal grain that is traded internationally the most after maize in terms of production. There were 760 million tonnes of wheat produced worldwide in 2020. With around 41 percent of the global wheat production, China, India and Russia are the top three individual producers of the grain. The fourth-largest individual producer of wheat worldwide is the United States. But, if the European Union were considered a single nation, it would produce more wheat than every other nation except China. World trade in wheat is greater than for all other crops combined. The demand for India's wheat as a cereal in the world undergoes a rising trend wherein, India has exported 7,239,366.80 million tonnes of wheat to the world for the worth of Rs. 15,840.31 crores/ 2,121.72 USD Millions during the year 2021-22. (APEDA, 2022). The present study was conducted in Hisar district with the objectives to measure the communication profile of the respondents was in terms of source of information and credibility of sources for the adoption of newly released wheat varieties of CCSHAU was also measured.

Methodology

The present study is carried out among farmers of Hisar, Sirsa and Fatehabad districts of Haryana state. One village from each block was selected where maximum seeds of newly released wheat varieties were distributed was selected purposively. From all the six villages namely Chiraud, Kuleri, Majra, Bhuna, Rania and Mirzapur, thirty farmers were selected randomly thus, making a total sample of 180 respondents. A list of wheat varieties released by CCSHAU, Hisar was selected in consultation with Agronomist and Wheat Breeder from Wheat and Barley Section, Department of Genetics and Plant Breeding, College of Agriculture, CCSHAU, Hisar.

Review of literature

Jalaja and Kala (2015) stated that farmers in Attappady tribal block, Palakkad district, Kerala state need agriculture information." According to this study, respondents needed access to government programs (62.59%), lending facilities (54.96%), marketing knowledge on agriculture (25.95%), crop productivity (90.7%), pesticide availability (80.91%), and transportation facilities (18.32%).

Maratha and Badodia (2016) conducted study on "Information sources and utilization behaviour of vegetable grower at Swai Madhopur district in Rajasthan India" and revealed that most utilized sources of information by the farmers from radio and television (22.50%), information utilized from libraries (15.83%). It was also noted that 40 percent of the farmers information utilized from friends while most (47.50%) of vegetable growers.

Danappa *et al.* (2017) observed that respondents needed information about farming activities and that they relied on both official and informal agencies for that information. 38.9% checked the store for Krishi Mela's agriinformation. Elders are consulted by 28.7% of respondents, whereas Raith Samparka Kendra is consulted by 28.5%.

Chandrakant *et al.* (2017) conducted a study on "Agriculture information need and their fulfillment as perceived by the farmers in changing agriculture scenario in Maharashtra in India" and that study revealed soil, weather, market price of seed, income generating activity are the prime needed aspect related to agriculture inputs.

Kumar and Swain (2017) conducted study on "Information seeking behaviour and use of information sources by farmers of Haryana state India". The study found that farmers need on agriculture seed variety and seed availability (74.29%), Krishi Sewa Kendra (70.86%), crop production (70.86%), fertilizer availability (64.58%) and water management (34.28%).

Results and discussion

Numerous organizations, including field intermediaries and various other types of media are involved in the dissemination of information. In comparison to the rest, some of the organizations or media are much more effective in communicating messages. Communication profile of the respondents typically refers to their preferred methods and styles of communication. The results are discussed under the following heads:

- Source of information regarding newly released wheat varieties
- Credibility of information sources

Source of information regarding newly released wheat varieties

Sources of information are supposed to directly associate with the adoption of any innovation. These information sources provide different information to the respondents regarding newly released wheat varieties. For assessing this variable, different sources of information were identified under the categories localite sources, cosmopolite sources and mass media. Data is presented under following heads:

Distribution of respondents according to their information seeking behavior

Information seeking behavior refers to the way people search for and utilize the information. In present context it is information regarding newly released wheat varieties in agriculture.

Localite source

With regards to localite source, the data given in Table 1 reveal that overwhelming majority (98.3%) of the respondents used friends for the information in, which most of the respondents (90.5%) seldom got information followed by 7.8 per cent of the respondents often collect information from this source. Further, data reported in Table 1 depicts that maximum number of respondents (97.7%) collected information from the neighbours, in which maximum respondents (81.6%) seldom seeks information, which was followed by the respondents (16.1%) who occasionally seeks information respectively. Albeit, majority of the respondents (96.1%) were seeking information from relatives where, three- fourth of the respondents (74.4%) seek information on seldom basis followed by very often (21.7%). Furthermore, most of the respondents (82.7%) gathered information from progressive farmers in which more number of respondents (67.7%) got information seldom, whereas only fifteen percent of the respondents often used this source of information. Howbeit, nearly three-fourth of the respondents (72.2%) gathered information from rural leader in which nearly half of the respondents (48.3%) often collect information, whereas, 28.9 percent of the respondents seldom used this source for information. Further, 42.7 percent of the respondents seek information from their spouse on seldom basis (21.6%) and often basis (21.1%) respectively.

Devi and Verma (2011) also found that t the respondents more frequently used neighbours, family members and friends as localite source of information. Most of the respondents used cosmopolite and mass media sources of information least frequently and only radio, television and cassette recorder were frequently used by the farm women. On the other hand, neighbours, family members and friends were found very useful localite source. None of the cosmopolite sources were perceived as very useful/useful whereas radio, television and cassette recorder were found useful mass media sources of information.

Table 1: Distribution of respondents according to their information seeking behavior

N= 180

Source of information	**Types of information seeking behavior**			**Overall information seeking behavior f(%)**	**Rank**
	Often f (%)	**Seldom f(%)**	**Never f(%)**		
Localite					

Spouse	38 (21.1)	39 (21.6)	103 (57.3)	77 (42.7)	IX
Friends	14 (7.8)	163 (90.5)	3 (1.7)	177 (98.3)	I
Neighbors	29 (16.1)	147 (81.6)	4 (2.3)	176 (97.7)	II
Relatives	39 (21.7)	134 (74.4)	7 (3.9)	173 (96.1)	III
Progressive farmer	27 (15.0)	122 (67.7)	31 (17.3)	149 (82.7)	IV
Rural leader	87 (48.3)	52 (28.9)	41 (22.8)	139 (72.2)	VI
Cosmopolite					
Co-operative societies	41 (22.8)	57 (31.7)	82 (45.6)	98 (54.4)	VII
ADOs/ BAOs/ Supervisors	34 (18.9)	142 (78.9)	4 (2.2)	176 (97.7)	II
SDAOs/ SMS, Agriculture Department	48 (26.7)	86 (47.8)	46 (35.6)	134 (74.4)	V
Agricultural Scientists/ SMS,KVK	0 (0.0)	27 (15.0)	153 (85.0)	27 (15.0)	XVI
Mass media					
Radio	14 (7.8)	27 (15.0)	139 (77.2)	41 (22.7)	XIII
Television	17 (9.4)	27 (15.0)	136 (75.5)	44 (24.4)	XI
Newspaper	50 (27.8)	11 (6.1)	119 (66.1)	61 (33.8)	X
Farm Magazines	0 (0.0)	41 (22.7)	139 (77.3)	41 (22.7)	XIII
Books	18 (10.0)	21 (11.7)	141 (78.3)	39 (21.6)	XIV
Kisan Call Centre	0 (0.0)	29 (16.1)	151 (83.9)	29 (16.1)	XV
Leaflets/ Pamphlets/Handouts	0 (0.0)	43 (23.8)	137 (76.2)	43 (23.8)	XII
Smart phones	17 (9.4)	70 (38.8)	93 (51.7)	87 (48.3)	VIII
Computer with internet	0 (0.0)	14 (7.7)	166 (92.3)	14 (7.7)	XVII
Conference/ Seminar	0 (0.0)	7 (3.8)	173 (96.2)	7 (3.8)	XVIII

Data based on multiple responses

*Figures in parentheses indicate percentage, f= frequency, %= percentage

Cosmopolite source

Regarding cosmopolite source, the data given in Table 1 indicates that overwhelming majority of the respondents (97.7%) collected information from ADOs/ BAOs/ supervisor in which, most of the respondents (78.9%) seldom collected information regarding newly released wheat varieties, whereas only 18.9 percent of the respondents often used this source for information. Further, analysis of the Table, results shows that nearly three fourth of the respondents (74.4%) seek SDAs/SMS as a source for getting information pertaining to newly released wheat varieties, in which nearly half of the respondents (47.8%) seeking information seldom and often (26.7%). Whilst, more than half of the respondents (54.4%) collected information from Cooperative societies, in which 31.7

percent of the respondents seldom collected information, whereas, 22.8 percent of the respondents often gained information from this source. Only 15 percent of the respondents seek information from the agricultural scientists/KVK in which, all the respondents (15%) collected seldom collected information from this source and remaining 85 percent were not seeking information from this source. The similar findings have been reported by Sharma *et al.* (2015) and Singh *et al.* (2020) and) also asserted that the respondents gathered information from neighboring farmers and village level agricultural workers. Similarly, Ithika *et al.* (2013) also indicated that information seeking behavior of different categories of farmers was totally different based on the size of their enterprises and the larger enterprise possessed better knowledge base and better resourcefulness.

Mass media

Regarding mass media exposure, the data presented in Table 1 reveals that nearly half of the respondents (48.3%) used smart phones to collect information regarding newly released wheat varieties, in which 38.9 percent of the respondents seldom collected information and 9.4 percent often used the same source to gain information. Further, one- third of the respondents (33.8%) used information from the newspaper to collect information regarding newly released wheat varieties in which, 27.8 percent of the respondents often collected information from this source and whereas, only 6.1 percent of the respondents seldom collected information from the same. Albeit, 24.4 percent of the respondents used television for the information in which, only 15 percent seldom seek information from the television, whereas 9.4 percent often gathered information from the same. Further, 23.8 percent of the respondents gained information from the leaflets/ pamphlets/ handouts, in which all the respondents seldom seek information from the source and remaining 76.2 percent did not used this source. As far as radio is concerned, 22.7 percent of the respondents used the same in which only 15 percent of the respondents seldom gained information from radio whereas, 7.8 percent of the respondents often used same for the information. Also, 22.7 percent of the respondents used farm magazines in which, all the respondents (22.7%) seldom used the source for collecting the information and remaining (77.3%) had not used radio to gain information. Howbeit, 21.6 percent collected information from books, in which 11.7 percent of the respondents seldom collected information, whereas, 10 percent of the respondents often gained information from this source.

Nevertheless, 16.1 percent of the respondents seek information from Kisan Call Centre, in which all the respondents (16.1%) seldom seek information whereas, remaining (83.9%) does not seek information from the same source. Only, 7.7 percent of the respondents gained information from the computer with internet, in which all the respondents (7.7%) seldom collected information from this source and remaining 92.3 percent were not in the view of seeking information from this source. Nevertheless, only 3.8 percent of the

respondents gathered information from the conference/ seminar in which all the respondents (3.8%) gained information from the same source where, remaining overwhelming majority of the respondents (96.2 %) did not used this source to gain information regarding newly released wheat varieties.

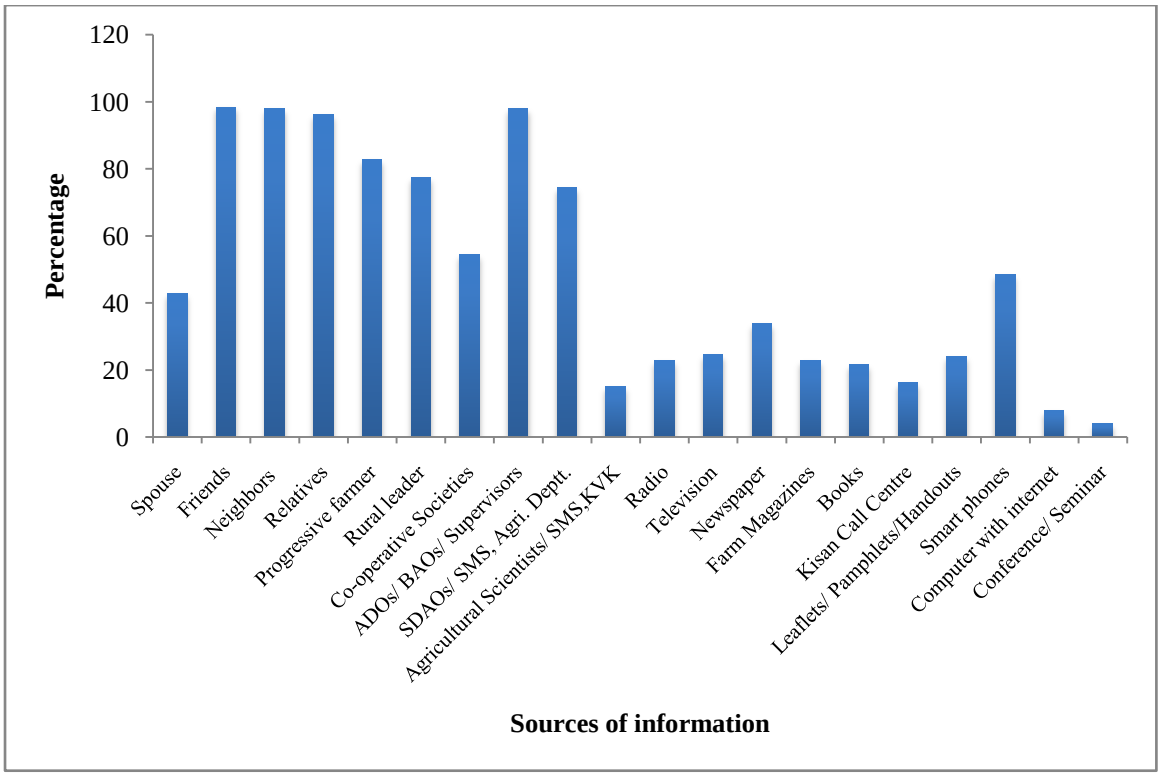

Fig. 1: Distribution of respondents according to their information seeking behavior

Credibility of information sources

Credibility means trustworthiness or the quality of being believable. Regarding credibility of information sources, the data given in Table 2 reveal that under localite sources, the highest (63.7%) full credibility was recorded for progressive farmer followed by rural leader (11.5%), friends (9.6%), spouse and neighbours (9.1% each) and relatives respectively. Whereas, regarding partial credibility, overwhelming majority of the respondents (95.9%) recorded partial credibility for relatives which, was followed by neighbours, friends, spouse, rural leader and progressive farmer (90.9%, 90.4%, 90%, 88.5% and 36.3% respectively). Under cosmopolite sources, highest credibility (83.5%) was recorded for ADOs/BAOs/Supervisors which was, followed by Agricultural Scientists/KVK (81.5%), SDAOs/SMS (61.8%) and Cooperative societies (41.8%) respectively. Howbeit, a highest (58.2%) partial credibility was observed for Cooperative societies followed by SDAOs/SMS (38.2%), Agricultural Scientists/KVK (18.5%) and ADOs/BAOs/Supervisors (16.5%).

Albeit, mass media exposure, the data in Table 2 depicts that cent percent of the respondents had full credibility for Kisan Call Centre followed by television (45.4%), newspaper (44.2%), radio (36.6%), farm magazines (32.3%), computer with internet (14.2%), leaflets/ pamphlets/ handouts (45.4%, 44.2%, 36.6%, 32.3%, 14.2% and 13.9%) respectively and only 8.1 percent of the respondents having full credibility for smart phones.

Table 2: Distribution of respondents according to credibility of information sources

N=180

Source of information	Level of credibility			Total obtained score	Maximum obtained score	Overall credibility (%)	Rank
	Full f(%)	Partial f(%)	Nil f(%)				
A. Localite							
Spouse	7 (9.1)	70 (90.0)	103 (57.3)	77	154	50.0	XVIII
Friends	17 (9.6)	160 (90.4)	3 (1.7)	194	354	54.8	XIV
Neighbors	16 (9.1)	160 (90.9)	4 (2.3)	192	352	54.5	XV
Relatives	7 (4.1)	166 (95.9)	7 (3.9)	180	346	52.0	XVII
Progressive farmers	95 (63.7)	54 (36.3)	31 (17.3)	244	298	81.8	IV
Rural leader	16 (11.5)	123 (88.5)	41 (22.8)	155	278	55.7	XIII
B. Cosmopolite							
Co-operative Societies	41 (41.8)	57 (58.2)	82 (45.6)	139	196	70.9	VIII
ADOs/ BAOs/ Supervisors	147 (83.5)	29 (16.5)	4 (2.2)	323	352	91.7	II
SDAOs/ SMS, Agriculture Department	84 (61.8)	52 (38.2)	46 (35.6)	220	272	80.8	V
Agricultural Scientists/ SMS,KVK	22 (81.5)	5 (18.5)	153 (85.0)	49	54	90.7	III
C. Mass media							

Radio	15 (36.6)	26 (63.4)	139 (77.2)	56	82	68.2	IX
Television	20 (45.4)	24 (54.6)	136 (75.5)	64	88	72.7	VI
Newspaper	27 (44.2)	34 (55.8)	119 (66.1)	88	122	72.1	VII
Farm Magazines	11 (32.3)	23 (67.7)	139 (77.3)	45	68	66.1	X
Books	0 (0)	39 (100.0)	141 (78.3)	39	78	50.0	XVIII
Kisan Call Centre	29 (100.0)	0 (0.0)	151 (83.9)	58	58	100.0	I
Leaflets/ Pamphlets/ Handouts	6 (13.9)	37 (86.1)	137 (76.2)	49	86	56.9	XII
Smart phones	7 (8.1)	80 (91.9)	93 (51.7)	94	174	54.0	XVI
Computer with internet	2 (14.2)	12 (85.8)	166 (92.2)	18	28	64.2	XI
Conference/ Seminar	0 (0)	7 (100.0)	173 (96.2)	7	14	50.0	XVIII

Whereas, cent per cent of the respondents had partial credibility for books and conference/seminar followed by smart phones (91.9%), leaflets/ pamphlets/handouts, computer with internet, farm magazines, radio, newspaper and television (86.1%, 85.8%, 67.7%, 63.4%, 55.8% and 54.6 % respectively) as a mass media exposure.

Nevertheless, results further indicate that the information seeking behavior along with their credibility. On the basis of overall findings regarding information seeking behavior and their credibility, it was found that the highest information regarding wheat varieties was received from friends followed by ADOs/BAOs/Supervisors, agricultural scientists and progressive farmers, whereas, credibility was found to be maximum for Kisan Call Centre, which was followed by ADOs/ BAOs/ Supervisors and Agricultural Scientists/ SMS, KVK respectively. Thus, it can be concluded that Kisan Call Centre was least used for information but their credibility was very high.

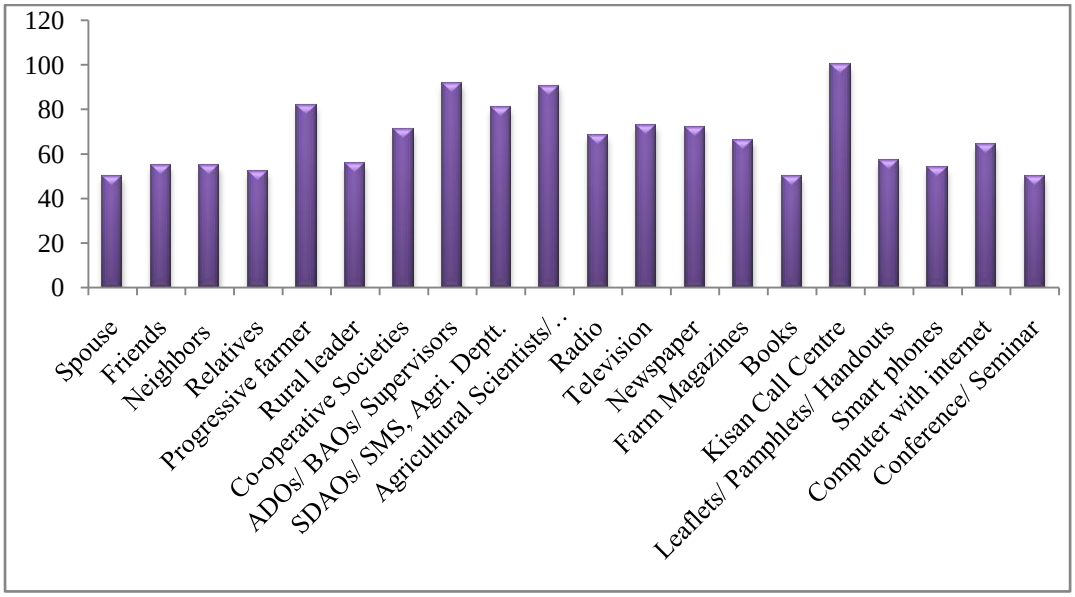

Fig. 2: Distribution of respondents according to credibility of information source

Findings of the present investigation, shows that in Fig. 3, majority of the respondents used localite information sources, which was followed by cosmopolites and also found that cosmopolite sources were more credible to gather information regarding wheat varieties released by CCSHAU. Kisan Call Centre was least used for information but their credibility was very high. The findings of the present study are in line with Painkra *et al.* (2018) which states that in order for the IGKV issued varieties to be adopted quickly, attention needed to be paid to cosmopolitans. It was also shown that some respondents had knowledge gaps and did not completely utilize the information sources because most respondents were interested in non-IGKV rice varieties due to seeds availability and high yield, information sources for these rice varieties were only partially accessed and concluded that the adoption area of IGKV cannot grow without an emphasis on information diffusion.

Sharma *et al.* (2016) found that field demonstrations were relatively less utilized by the farmers and this information channel was not perceived much credible source. The respondents awarded high credibility to the mass media. The increasing literacy rate and easy accessibility of the newspaper in Hindi in the villages were making the newspaper an

important information channel for utilization with high credibility. Chandawat (1997), Gunawardana and Sharma (2006) and Hai *et al*. (2003) also reported similar findings.

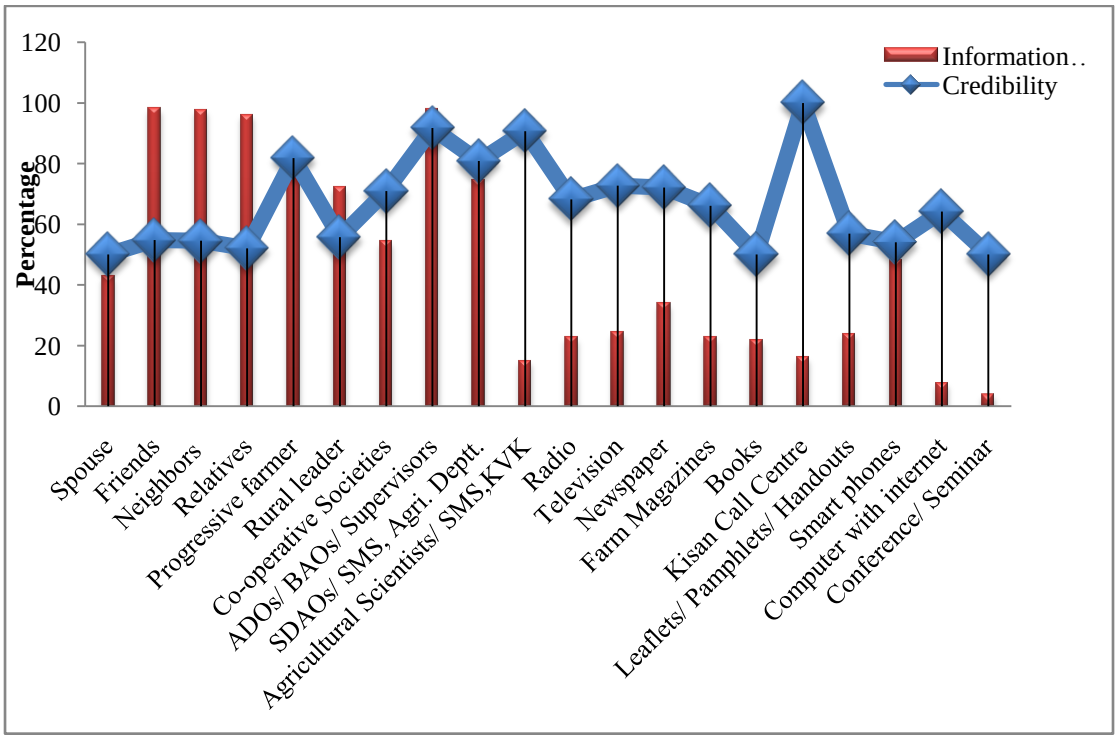

Fig. 3: Information seeking behavior along with credibility

Overall information seeking behavior along with overall credibility of information sources

The data in Table 3 depicts the overall information seeking behavior and overall credibility of information sources. The results illustrate that maximum number of the respondents had highest (85.37%) information seeking behavior for newly released wheat varieties by CCSHAU from localite information group followed by behavior recorded for cosmopolite group (72.36%) and mass media (35.38%) respectively.

Table 3: Overall information seeking behavior along with overall credibility of information sources

Sr. no.	Information source group	Overall used information sources			Overall credibility of information sources		
		Obtained score	Obtainable score	%	Obtained score	Obtainable score	%
1.	Localite	922	1080	85.37	1190	1612	73.82
2.	Cosmopolite	521	720	72.36	769	1042	74.00
3.	Mass media	637	1800	35.38	1041	1532	68.00

Data based on multiple responses

Further, it can be noted that highest credibility was observed for cosmopolite (73.8%) to localite (74%) and mass media (68%) respectively.

Thus, it can be concluded that majority of the respondents (85.37%) used localite information sources, which was followed by cosmopolitans and also found that cosmopolite sources were more credible to gather information regarding wheat varieties released by CCSHAU (73.82%).

CONCLUSIONS:

It may be concluded that majority of the respondents used localite information sources, which was followed by cosmopolites and also found that cosmopolite sources were more credible to gather information regarding wheat varieties released by CCSHAU. Kisan Call Centre was least used for information but their credibility was found to be very high.

REFERENCES:

Painkra, V. K., Sharma, M. L. and Khan, M. A. (2018). Information seeking behavior for the adoption of IGKV released rice varieties. *Journal of Pharmacognosy and Phytochemistry*, **7**(2): 2224-2227.

Sharma, K., Dhaliwal, N.S. and Kumar, A. (2015). Analysis of adoption and constraints perceived by small paddy growers in rice production technologies in Muktsar district of Punjab state, India. *Indian Research Journal of Extension Education,* **15**(2): 20-23.

Sunder, S. (2018). India Economic Survey: Farmers gain as agriculture mechanisation speeds up, but more R&D needed. https://www.financialexpress.com/budget/india-economic-survey-2018-for-farmers-agriculture-gdp-msp/1034266

Singh, A. K. and Khan, A. A. (2020). Role of KVK Aligarh in dissemination of farming technologies through ICT tools: ICT interventions of KVK Aligarh and its impact. *Journal of Agricultural Search*, **7**(2): 111-114.

Ithika, C. S., Singh, S. P. and Gautam, G. (2013). Adoption of scientific poultry farming practices by the broiler farmers in Haryana, India. *Iranian Journal of Applied Animal Science,* **3**(2): 417-422.

APEDA (2020). https://apeda.gov.in/apedawebsite/about_apeda/About_apeda.htm

Aggarwal, P. K. and Moudgil, A. (2015). Structural change and growth of agriculture in Haryana. *International Journal of Applied Research,* **1**(13):133-139.

Devi, U. and Verma, S. (2016). Farm women preferences of communication sources for farm information. *Indian Research Journal of Extension Education*, **11**(2): 15-19.

Sharma, A. K., Jha, S. K., Kumar, V., Sachan, R. C. and Kumar, A. (2016). Critical analysis of information sources and channels preferred by rapeseed-mustard farmers. *Indian Research Journal of Extension Education,* **8**(3): 42-45.

Maratha, P. and Badodia, S. K. (2016). Information sources and utilization behaviour of vegetable grower at Swai Madhopur block Swai Madhopur district in Rajasthan. The Journal of Rural and Agriculture Research.

Chandawat, M. S. (1997). Extent of knowledge and adoption about improved practices of cumin production technology in Jalore district of Rajsthan. M.Sc. (Ag.) Thesis, Rajasthan Agricultural University, Campus-Udaipur.

Gunawardana, A.M.A.P.G and Sharma, V.P. (2006). Information source credibility among tribal and non-tribal farmers. *Rajasthan Journal of Extension Education*, 14 : 82-85.

Hai, A., Srivastava, R. M. and Singh, R. P. (2003). Livestock farmers' preference of communication media and their use by extension workers in tribal Bihar. *Indian Journal of Extension Education*, 39(1 and 2): 31-34.

Jalaj, K, and Kala, P. (2015). Case study of tribal farmers agriculture information needs and accessibility in attapady tribal block Karla. Journal of Humanities and Social Science **20**(3): 7-20.

Chandrakant, A., Ghosh, S. and Sigandhup, R. (2017). Agriculture information need and their fulfillment as perceived by the farmer in changing agriculture scenario in Maharashtra. *Indian Journal of Extension Education*, 53(2):11 - 17.

Swain and kumar (2017). Information seeking behaviour and use of information sources by farmers Haryana. *International Journal of Information Movement*, **2**(5):79-84.