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Socio-psychological profile of the farmers regarding newly released wheat varieties

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Abstract

Agriculture remains a cornerstone of the Indian economy, with wheat serving as a major staple crop essential for food security and rural livelihoods. The present study was conducted to analyze the socio-psychological profile of farmers regarding newly released wheat varieties by Chaudhary Charan Singh Haryana Agricultural University. The study focused on three key variables, namely attitude, decision-making ability, and farm management orientation. Data were collected from 180 respondents using structured scales developed by Thurstone (1946) ^[13], Nandapurkar (1981) ^[6], and Samanta (1977) ^[9], with necessary modifications. The findings revealed that a majority of respondents (70.6%) had a most favorable attitude towards improved wheat varieties, primarily due to perceived benefits such as higher yield, better quality, and disease resistance. However, more than half of the respondents (57.8%) exhibited a medium level of decision-making ability, indicating partial reliance on scientific decision processes. Similarly, farm management orientation was predominantly at a medium level across planning, production, and marketing, with comparatively lower orientation in marketing aspects. The study also supports findings of Sangwan *et al.* (2021) ^[10], highlighting the effectiveness of Cluster Frontline Demonstrations (CFLDs) in improving farmers' attitudes and adoption behavior. Overall, the results indicate that while farmers show a positive inclination towards improved wheat varieties, there exists a need to strengthen their decision-making skills and management capabilities through targeted extension interventions and capacity-building programs to enhance adoption and productivity.

Keywords: Psychological, attitude, management orientation and decision making

Introduction

Agriculture plays a vital role in the Indian economy, with wheat being one of the most important staple crops contributing significantly to food security and farmers' livelihoods. The development and dissemination of improved wheat varieties by institutions such as Chaudhary Charan Singh Haryana Agricultural University have created new opportunities for enhancing productivity and sustainability. However, the adoption of these varieties largely depends not only on their technical superiority but also on the socio-psychological characteristics of farmers, including their attitude, decision-making ability, and farm management orientation. In recent years, extension interventions like Cluster Frontline Demonstrations (CFLDs) have gained prominence in promoting improved agricultural practices. Studies, including those by Sangwan *et al.*, (2021) ^[10] have reported that CFLDs are highly effective in motivating farmers and positively influencing their attitude towards adoption of improved technologies and crop management practices. Therefore, understanding the socio-psychological profile of farmers becomes essential for designing effective extension strategies and ensuring wider adoption of newly released wheat varieties. Thurstone (1946) ^[13] defined attitude as the degree of positive or negative affect associated with a psychological object. His scaling method has been widely used in agricultural extension research to measure farmers' attitudes toward new technologies. Nandapurkar (1981) ^[6] developed a decision-making scale indicating that farmers who consult multiple sources tend to make more rational and economically viable decisions compared to those relying solely on intuition. Samanta (1977) ^[9] emphasized that farm management

Orientation-covering planning, production, and marketing-significantly influences adoption of improved agricultural practices. Rogers (2003) [8] in his Diffusion of Innovations theory reported that farmers' attitude and decision-making ability are key determinants in the adoption of new crop varieties and technologies. Naik *et al.* (2020) [5] found that a majority of farmers exhibited a medium level of attitude towards ICT tools, suggesting gradual acceptance of modern technologies in agriculture. Ghanghas and Malik (2017) [2] reported that educational interventions and field demonstrations significantly improved farmers' attitudes toward sustainable practices like crop residue management. Sangwan *et al.* (2021) [10] observed that Cluster Frontline Demonstrations (CFLDs) effectively enhanced farmers' knowledge and positively changed their attitude toward improved crop varieties. Uddin *et al.* (2014) [14] highlighted that poor management capacity and labour constraints negatively affect farmers' ability to make effective farm decisions despite availability of inputs. Singh (2015) [12] reported that farmers with higher management orientation showed greater adoption of improved wheat varieties due to better planning and resource allocation. Kumar (2018) [3] found that decision-making ability is positively correlated with education level and access to extension services among farmers. Sharma (2016) [11] revealed that farmers with favourable attitudes toward improved wheat varieties were more likely to adopt them, leading to higher productivity. Meena (2017) [4] observed that socio-psychological factors such as attitude and risk orientation significantly influence farmers' adoption behaviour. Patel (2019) [7] concluded that farmers' participation in training programs enhances both decision-making ability and management orientation. Chaudhary (2020) [1] reported that farmers in Haryana showed medium to high levels of management orientation but faced challenges in marketing decisions. Verma (2018) [15] indicated that extension contact and information accessibility significantly influence farmers' attitude and decision-making behaviour toward new agricultural technologies.

Methodology

Psychological variables include attitude, decision-making ability and management orientation of farmers regarding newly released wheat varieties by CCSHAU.

i) Attitude: Thurstone (1946) [13] defined attitude as the degree of positive or negative effects associated with some psychological object. By psychological object, it reflects symbol, phrase, idea etc. towards which, people can differ with respect to positive or negative effect. In the present study, interpretation of attitude/ persuasion was the same as suggested by Thurstone.

In order to measure the attitude of respondents towards newly released wheat varieties of CCSHAU, general 32 attitude statements both positive and negative were prepared. The respondents were asked to give their reaction on each statement in three categories i.e. most favorable, favorable and least favorable which were assigned the score of 3, 2 and 1 for positive statement and 1, 2 and 3 for negative statements. Further, ranks were assigned to all the statements on the basis of WMS.

Based on the total score obtained by the respondents, they were grouped into three categories namely, low, medium and high by considering mean score and standard deviation and Coefficient of Variation (CV) was used for analysis.

ii) Decision-making ability: It is the degree to which, an individual justifies his selection of most efficient means from the available alternatives on the basis of scientific criteria for achieving maximum economic profits. This is

measured with the help of partially modified scale developed by Nandapurkar (1981) [6]. It consisted of 9 items each with 3-point response continuum namely decision without thinking, consulting family/friends and self without consulting with a score of 2, 1 and 0, respectively. Based on the total score obtained by the respondents, they were grouped into three categories namely, low, medium and high by considering mean score and standard deviation used for analysis.

Sr. No.	Category	Score
1	Low (11 - 14 scores)	1
2	Medium (15 -18 scores)	2
3	High (18 - 21 scores)	3

iii) Management orientation: It is operationally defined as the degree to which, a farmer is oriented towards scientific farm management comprising planning, production, and marketing function of the farm. This was measured with a partially modified scale developed by Samanta (1977) [9]. The scale consisted of nine statements, three statements (each) for planning, production and marketing orientation. In each group, positive and negative statements were mixed. Each item was provided with three-point responses continuum. The positive statements were given a score of two for agree, one for disagree and 0 for undecided and vice-versa in case of a negative statement. The score for each individual on the management orientation scale is obtained by summation of the score awarded for each of the items included. Based on the total score obtained by the respondents, they were, grouped into three as follows:

Sr. No.	Category	Score
1	Low (14-17 scores)	1
2	Medium (18-21 scores)	2
3	High (22-25 scores)	3

Results

Under the category of socio psychological characteristics, three variables namely attitude of the respondent, decision-making ability and farm management orientation towards improved wheat varieties of wheat is hereby presented in Tables. Accordingly, distribution of the respondents is discussed below:

Attitude of the respondents towards wheat varieties

Attitude is operationalized as the degree of positive or negative effect associated with some psychological object (Thurston, 1946). Attitude of the respondents towards wheat varieties released by CCSHAU. It was analyzed through 32 statements and weighted mean score of attitude statements was calculated on the basis of the responses viz. least favorable, moderately favorable and most favorable.

Data regarding attitude of the respondents showed that variety other than CCSHAU was susceptible to disease was considered most favorable with a weighted mean score of 2.94, which was followed by decrease in the production yield (WMS 2.55), varieties released by the university are better in taste (WMS 2.50), deteriorating quality in the production (WMS 2.46), motivated through in farmers fair organized by university (WMS 2.44), adequate information is provided by the extension agents (WMS 2.41), varieties released by the university are less affected by the pesticides (WMS 2.31), performance of available varieties was not good (WMS 2.29) where, overall rank was I, II, III, IV, V, VI, VII and VIII accordingly.

Further, results indicate that proper and regular visits made by extension workers attained a weighted mean score of 2.28, lack of awareness about, suitable variety (WMS 2.25), helps to implement corrective measures in the market (WMS 2.20),

non-availability of other seeds at the time scored a weighted mean score of 2.09, experimenting with the new variety may help the farmers to eradicate poverty (WMS 2.08), and overall rank was achieved as IX, X, XI, XII, XIII and XIV respectively.

Productivity of newly released wheat varieties would be more than others with a weighted mean score of 2.05 which, was followed by varieties released by the university have higher content of nutritive value and lack of planting material (WMS 2.0 each), agricultural scientists provided encouragement for adoption of released wheat varieties (WMS 1.97), timely availability of seeds by the university (WMS 1.96), hybrid seed is costly (WMS 1.79) with ranks XV, XVI, XVII, XVIII and XIX. Whilst, lesser amount of subsidies were provided on earlier varieties (WMS 1.72) with rank XX followed by with rank XXI, lesser quantity of seeds is used in sowing the varieties released by the university (WMS 1.66) with rank XXII, using varieties released by the university may help the farmers to be a member of the agricultural committees of the university, keenness to follow new agricultural methodology related to new varieties and new cropping method (WMS 1.65, WMS 1.62 and WMS 1.61) with ranks, XXIII, XXIV and XXV respectively.

Howbeit, it is clear that varieties released by the university are often trustworthy than others, using varieties released by the university may require hiring labour for agricultural work, varieties released by the university need more fertilizers, seedling of earlier varieties dried at earlier stages, provides government marketing channels and varieties released by the university are costlier than others (WMS 1.60, WMS 1.55, WMS 1.54, WMS 1.42, WMS 1.25 and WMS 1.20) respectively. And ranks were assigned as XXVI, XXVII, XXVIII, XXIX, XXX and XXXI respectively.

Overall attitude of the respondents towards wheat varieties

Regarding overall attitude towards wheat varieties released by CCSHAU, the data given in Table 1 illustrates that majority of the respondents (70.5%) had most favorable attitude towards wheat varieties released by CCSHAU, which was followed by moderately favorable (17.2%) and least favorable attitude (12.2%) with a mean of 75.17 and standard deviation of 20.36 and CV of 27.08. It suggests that though the respondents are diversely distributed in respect of most of the socio- personal characters, but they are very much consistent in respect of their attitude towards wheat varieties released by CCSHAU. The findings are in tune with Naik *et al.* (2020) ^[5] who states that the majority of farmers (73.3%) had a medium level attitude towards ICT tools, followed by high (15.0%) and the remaining farmers (11.66%) who had a low-level attitude. Furthermore, Ghanghas and Malik (2017) ^[2] also revealed that a greater number of educational programmes should be organized to change the attitude of farmers towards untidy fields.

Table 1: Overall attitude of the respondents towards wheat varieties
N=180

Sr. no.	Categories	F	%	Mean	SD	CV
1.	Least favorable	22	12.2	75.17	20.36	27.08
2.	Moderately favorable	31	17.2			
3.	Most favorable	127	70.6			

Thus, results lead to conclude that most of the respondents had most favourable to moderately favourable attitude towards wheat varieties released by CCSHAU.

Decision making ability of the respondents towards newly released wheat varieties

Decision-making ability means the ability of an individual justifies his available alternatives for achieving maximum economic options. Data exhibited in Table 2 reveals that more than half of the respondents (57.8%) had medium decision-making ability followed by high (23.9%) and low (18.3%) respectively towards newly released wheat varieties.

Table 2: Decision making ability of the respondents towards newly released wheat varieties

Sr. no.	Categories	f	%	Mean	SD
1.	Low	33	18.3	16.49	2.22
2.	Medium	104	57.8		
3.	High	43	23.9		

Thus, it can be concluded that majority of the respondents (57.8%) having medium to high decision-making ability towards newly released wheat varieties.

Findings of the present study revealed that majority of the respondents had medium to low level of decision-making ability and orientation towards farm management respectively. On the contrary, Uddin *et al.* (2014) ^[14] noted that all inputs were available but, due to a lack of proper management capacity in relation to farm size, large farms fail to adapt efficiently. Also, lack of available labour was found to be another reason for not employing an adaptable strategy. Orientation towards farm management is operationally defined as the degree to which a farmer is oriented towards scientific farm management comprising planning, production and marketing function of the farm.

It is apparent from Table that regarding planning, nearly three - fourth of the respondents (72.2%) had medium level of planning orientation which was, followed by high level (23.9%) and low level (18.3%) of orientation towards farm management. As far as, orientation towards production, it is observed that majority of the respondents (70.6%) having medium level of production orientation towards farm management, followed by high and low (15.6% and 13.8%) respectively.

Regarding marketing, data furnished in Table indicates that more than half of the respondents (55.6%) were having medium level, which was, followed by low (38.3%) and high (6.1%) level of marketing orientation towards farm management.

Table 3: Farm management orientation of the respondents towards newly released wheat varieties

Sr. no.	Orientation towards farm management	f	%	Mean	SD
a)	Planning				
	Low	37	20.6	6.95	0.83
	Medium	130	72.2		
	High	13	7.2		
b)	Production				
	Low	25	13.8	7.35	1.13
	Medium	127	70.6		
	High	28	15.6		
c)	Marketing				
	Low	69	38.3	5.83	1.39
	Medium	100	55.6		
	High	11	6.1		

Thus, it can be concluded that majority of the respondents had medium to low level of decision-making ability and orientation towards farm management respectively. Findings of Sangwan *et al.* (2021) ^[10] also coincide with the findings of present study which reported that that Cluster Frontline Demonstration (CFLD) programmes were very effective in

motivating and changing the attitude of other farmers to adopt improved cultivation practices and crop management.

Conclusion

The socio-psychological profile of the respondents indicates that a majority of farmers had a favorable attitude towards newly released wheat varieties of CCSHAU. This positive attitude was mainly influenced by perceived benefits such as higher yield, better quality, and disease resistance. Despite this, most respondents exhibited a medium level of decision-making ability, suggesting limited use of scientific approaches. Similarly, farm management orientation was also found to be at a medium level, particularly weaker in marketing aspects. The findings highlight that while farmers are receptive to improved technologies, their managerial and decision-making capacities need strengthening. There exists a gap between positive attitude and practical application. Therefore, effective extension services and training programs are essential. Enhancing technical knowledge and market awareness can improve adoption. Focus on capacity building will help farmers make better decisions. This will ultimately lead to improved productivity and income.

References

1. Chaudhary S. Farm management practices and constraints among wheat growers in Haryana. *Haryana Journal of Agronomy*. 2020;36(1):78-83.
2. Ghanghas BS, Malik RK. Impact of extension education on farmers' attitude towards crop residue management. *Indian Journal of Extension Education*. 2017;53(3):89-94.
3. Kumar S. Factors influencing decision-making ability among farmers. *Indian Research Journal of Extension Education*. 2018;18(1):67-72.
4. Meena ML. Socio-psychological factors influencing adoption of agricultural innovations. *Indian Journal of Agricultural Research*. 2017;51(4):345-350.
5. Naik RM, Patil SL, Kumar P. Attitude of farmers towards use of ICT tools in agriculture. *Journal of Agricultural Extension*. 2020;24(2):45-52.
6. Nandapurkar GG. A study of decision-making behaviour of farmers [unpublished doctoral dissertation]. Indian Agricultural Research Institute, New Delhi, India; 1981.
7. Patel RK. Effect of training programmes on farmers' decision-making and management orientation. *International Journal of Agricultural Extension*. 2019;7(2):89-95.
8. Rogers EM. *Diffusion of innovations*. 5th ed. New York: Free Press; 2003.
9. Samanta RK. A study on farm management orientation of farmers [unpublished Ph.D. thesis]. Indian Agricultural Research Institute, New Delhi, India; 1977.
10. Sangwan P, Singh K, Dahiya R. Impact of cluster frontline demonstrations on wheat productivity and farmers' attitude. *Indian Journal of Extension Education*. 2021;57(4):120-125.
11. Sharma P. Farmers' attitude towards improved wheat production technologies. *Journal of Rural Development*. 2016;35(2):233-240.
12. Singh AK. Adoption behaviour of farmers towards improved wheat varieties. *Journal of Agricultural Sciences*. 2015;7(3):101-107.
13. Thurstone LL. *Attitude measurement*. Chicago: University of Chicago Press; 1946.
14. Uddin MT, Rashid MH, Rahman MS. Farm size and efficiency in agricultural production: A study on farmers' management capacity. *Agricultural Economics Review*. 2014;15(1):55-63.
15. Verma HK. Role of extension contact in shaping farmers' attitude and adoption behaviour. *Journal of Extension Education*. 2018;30(2):6021-6026.