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Attitude of Farmers Towards Farm Mechanization

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ABSTRACT: *Farm mechanization is the need of the days to produce more from the same piece of land avoiding delay in observing the various package of practices of different crops, considering this in view the study was conducted in Akola district of Maharashtra as one of the Agricultural Universities is located at Akola. It is observed that a two-third of the respondents (65.83%) had favourable attitudes towards the farm mechanization. In the attitude of the respondents towards the farm mechanization majority of the farmers showed the medium level of the attitude towards farm mechanization i.e. (65.83%), followed by high level of attitude i.e. (18.33%). In case of statement wise attitude majority (91.67%) of respondents were agreed with the statement 'Improved farm implements and machineries save much time and labour' followed by the statements 'Use of farm implements equipments and machineries increase production' (90.83%), 'Improved farm implements make a good tilth' (88.33%) and 'Improved farm implements cut weeds and turn it under soil' (85%). It was observed that credit sources, sources of information, risk preference, scientific orientation and extension contact were positively and significantly correlated the attitudes towards farm mechanization. It was further revealed that source of information, risk preference and scientific orientation had significant effect on attitude.*

Keywords: *Attitude, Farm Mechanization.*

INTRODUCTION

Agriculture productivity has increased by about four times during the last four decades in our country. By the year 2020, the demand for food grains is expected to increase to about 325 million tons from the same land from the current productivity of 226 million tons per year. This will call for taking up more crop in a year, thereby reducing the turnaround time. This will again call for greater farm power and would require the introduction of high capacity, reliable and energy efficient equipments and machinery to save time and labour.

Considering this, the study was conducted to know the attitude of the farmers towards the farm implements and machineries available, study the relationship between attitude and selected characteristics of the farmers and to assess the contribution of independent variables in changing the attitude of the farmers towards farm mechanization.

MATERIAL AND METHODS

The present investigation was confined to the Akola district (M.S.). Two talukas *viz.*, Akola and Akot were selected purposively. Six villages from each taluka were selected. A total sample of 120 farmers, ten from each selected village was drawn by random method of sampling. The exploratory design of social research was used. statistical tools like frequency, percentage, mean, standard deviation, t-test of correlation coefficient and regression were used for analysis of the data. The content of attitude scale was composed of statement called items and the respondents were asked to react spontaneously to each item in the scale. Their responses, in the form of reactions will be rated on three point continuum *viz.*, favourable, undecided and unfavourable with the score of 3, 2 and 1 respectively.

The scores of all the items of the attitude scale administered to an individual will be summed up which indicate the attitude score for that particular respondent and were ascertain on the basis of the

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Table 1
Distribution of respondents according to their statement wise response to their attitude towards farm mechanization

Sr. No	Statements	Agree		Undecided		Disagree	
		n	%	*n*	%	*n*	%
1.	Improved farm implement save much time and labour.	110	91.67	8	6.67	2	1.67
2.	Improved farm implements cuts the weeds and turns them under the soil making the field quite clean.	102	85	10	8.33	8	6.67
3.	Improved farm implements are difficult to use as compare to traditional farm implements.	28	23.33	32	26.67	60	50
4.	Improved farm implements renders the soil poor because it turns over the fertile surface soil to the sub surface and the unfertile subsurface soil to the surface.	47	39.17	19	15.83	44	36.67
5.	Improved farm implements make a good tilth.	106	88.33	17	14.17	7	5.833
6.	Improved farm implements are beneficial only to big cultivators not to small ones.	48	40	28	23.33	44	36.67
7.	Improved farm implements are not costly as compared to their benefits.	86	71.67	12	10	22	18.33
8.	There are limitations in use of improved farm implements.	43	35.83	39	32.5	38	31.67
9.	Improved farm implements require very high draft and the bullocks to week work.	60	50	37	30.83	30	25
10.	Use of improved farm implements increases production.	109	90.83	5	4.17	6	5

attitude index. The attitude index will be worked out by the following formula.

Attitude index

$$= \frac{\text{Actual obtained score}}{\text{Max. possible obtainable score}} \times 100$$

RESULTS AND DISCUSSION

(A) Attitude of the Farmers

In order to know the attitude of farmers towards farm mechanization, ten statements including five positive and five negative were developed with the help of experts. The statements were exposed to the farmers for their responses. Statementwise response presented in Table 1 as given below.

From Table 1, it is revealed that majority of the respondents were agreed with the statement that, improved farm implement save much time and labour (91.67%), followed by statement that, use of improved farm implements increases production (90.83%), then, Improved farm implements make a good tilth (88.33%), Improved farm implements cuts the weeds and turns them under the soil making the field quite clean (85%), Improved farm implements were not costly as compared to their benefits (71.67%), Improved farm implements require very high draft and the bullocks to week to work (50%), Improved farm implements were beneficial only to large cultivators and not to small ones (40%), Improved farm implements renders the soil poor because it turns over the fertile surface soil to the sub surface and the unfertile subsurface soil to the surface (39.17%), There were limitations on use of improved farm implements (35.83%), and lastly for statement that, improved farm implements were difficult to use as compared to traditional farm implements (23.33%),

From Table 1, it is revealed that majority of the respondents were disagreed with the statement that, 'improved farm implements were difficult to use as compare to traditional farm implements' (50%), followed by statement that, 'improved farm implements renders the soil poor because it turns over the fertile surface soil to the sub surface and the unfertile subsurface soil to the surface' and improved farm implements are beneficial only to big cultivators not to small ones (36.67%), then, There are large limitations on use of improved farm implements (31.67%), Improved farm implements require very high draft and the bullocks to week (25%), Improve farm implements are not costly as compared to their benefits (18.33%), Improved farm implements cuts the weeds and turns them under the soil making the field quite clean (6.67%), Improved farm implements make a good tilth (5.83%), Use of improved farm implements increases production (5%), and very few respondents has disagree with statement that, improved farm implement save much time and labour (1.67%).

In case of statement number nine, six and three the considerable proportion of respondents has quoted, 'undecided, this was obvious because of their non exposure to the various implements, equipments and machineries used in farm mechanization. The trial on the part of respondents to use some farm

Table 2
Attitude of respondents towards farm mechanization.

Sr. No.	Attitude	Respondents (n = 120)	
		n	%
1.	Less favorable (Up to 53)	19	15.83
2.	Favourable (54 to 83)	79	65.83
3.	Highly favourable (84 and above)	22	18.34
	Total	120	100.00

Mean = 68.33334, S.D. = 15.37493

mechanization tools is needed to form the attitude about it. This indicates the efforts may be done to popularize this equipments and machineries amongst the farmers.

It is interesting to see statement number four, six, eight and nine where around 30 percent of the respondents were disagreed with the statement basically these were negative statements use in the scale which also inferred the positive attitude towards the maintained statements.

Collectively it can be says that the mechanization on first side was favours by almost all the farmers because, of its need in today's agriculture. These findings are in line with findings of Jalak 2002 [1] and Salunke 1994 [2]. *i.e.* Majority of the farmers agree to statement ' farm mechanization save much time and labours.

The data pertaining to attitude of the respondents towards farm mechanization has been presented in Table 2. It is seen from Table 2 that two third of the respondents (65.83%) had favourable attitudes towards the farm mechanization, while remaining (18.34%) of the respondents had highly favourable and (15.83%) of the respondents had less favourable attitude towards farm mechanization. It is clear from the data that around 85 percent of the respondents were having favourable to highly favourable attitude towards the farm mechanization. Though some of the farmers were not having their own equipments and machineries they made it available on custom hiring basis. Accordingly they might have come across the various operations to the added advantages of drudgery reduction and ease in work. Little section of respondent quoted the responses as unfavorable as it may be due to their non exposure to the equipments and machineries used under farm mechanization.

These findings are supported to the findings revealed by Sinha 1993 [3] and Salunke 1994 [2]. i.e. majority of the farmers shows positive or favourable attitude towards farm mechanization.

Table 3
Correlates and determinants of attitudes of respondents towards farm mechanization

Sr. No.	Characteristics	Attitude 'r' values	Attitude 't' value
1.	Age	0.0110	0.1195
2.	Education	0.0534	0.5810
3.	Family type	0.1659	1.8275
4.	Family size	0.0848	0.9247
5.	Land holding	0.1120	1.2243
6.	Irrigation source	0.1469	1.6129
7.	Cropping pattern	0.1132	1.2379
8.	Annual income	0.0942	1.0274
9.	Credit sources	0.3886	4.5808**
10.	Possession of implements	0.1379	1.5129
11.	Social participation	0.0070	0.07557
12.	Sources of information	0.2275	2.5373*
13.	Extension contact	0.1842	2.0361*
14.	Scientific orientation	0.3603	5.4642**
15.	Risk preference	0.2335	2.6090**

* Significant at 0.05 level of probability.
** Significant at 0.01 level of probability.
For 120 respondents tabulated '*t*' value at 0.01% level was 2.617 and at 0.05% level is 1.980 respectively.

(B) Relationship between the Selected Characteristics and Attitude of Farmers Towards Farm Mechanization

An attempt has been made in the present study to find out the relationship between the characteristics of respondents with their attitude towards farm mechanization.

Information regarding the relationship between the independent and dependent variable is given in Table 3.

The data were subjected to correlation analysis. It was observed that credit sources (0.3886), sources of information (0.2275), risk preference (0.2335), scientific orientation (0.3603) and extension contact (0.1842) were positively and significantly correlated the attitudes towards farm mechanization. Whereas, the variables age (0.011), education (0.0534), family type (0.1659), family size (0.0848), land holding (0.1120), irrigation source (0.1469), cropping pattern (0.1132), annual income (0.0942), possession of implements (0.1379), social participation (0.0070) having non-significant relationship with attitudes towards farm mechanization.

The present results were somewhat supported by Sinha 1993 [4], Hiremath 1992 [4], Salunke 1994 [2] and Kausadikar 2002 [5], *i.e.* sources of information and extension contacts shows positive and significant relationship with attitude.

Table 4
Multiple regression and determinants of attitude of farmers towards farm mechanization

		Attitudes		
Sr. No.	*Variables*	*Reg. Coeff.*	*S.E. (B)*	*'t' values*
1.	Age	0.1075	0.1163	0.9243
2.	Education	0.3785	0.4538	0.8341
3.	Family type	4.5098	3.0207	1.4930
4.	Family size	0.3658	0.4586	0.7977
5.	Land holding	0.1510	0.1928	0.7831
6.	Irrigation source	0.5804	0.3398	1.7081
7.	Cropping pattern	0.2608	0.5492	0.4749
8.	Annual income	1.174E05	1.2696E05	0.9250
9.	Credit source	0.3403	1.6703	0.2037
10.	Implement and machinery possession	2.5385E02	0.9189	0.2763
11.	Social participation	0.2795466	0.553001	0.5055
12.	Source of information	0.4482814	0.2130628	2.1040*
13.	Extension contact	0.4935235	0.3435126	1.4367
14.	Scientific orientation	1.9049665	0.81748	2.4070**
15.	Risk preference	1.902926	0.8098	2.3499*

Total R^2 = 0.2269045, '*F*' value = 2.034942 (Figures in parenthesis indicates SE (B)
** Significant at 0.01 level of probability,
* Significant at 0.05 level of probability.
For 120 respondents tabulated '*t*' value at 0.01% level is 2.617 and at 0.05% level is 1.980 respectively.

(C) Multiple Regression Analysis

Multiple regression analysis, using linear model was carried out to know the important variables with their predictive abilities in expanding the variation in dependent variable *i.e.* attitude towards farm mechanization.

The result from Table 4 showed that a set of fifteen independent variables under study had explained 22.69 percent variation in attitude of farmers towards farm mechanization, remaining 87.31 per cent variation may be due to factors not included in present study.

It was further revealed that out of fifteen variables under study only source of information, scientific orientation and risk preference had significant effect on attitude of the respondents towards farm mechanization. The 't' value for source of information (2.1040) and risk preference (2.3499) was significant at 0.05 level of probability. While, the '*t*' value of scientific orientation (2.4070) was significant at 0.01 level of probability. Regression coefficient indicated that one unit change in source of information, scientific orientation and risk preference would affect (0.4483) units, (1.9050) units and (1.9029) units change in attitude of respondents towards farm mechanization, respectively. This findings is supported to findings of Sinha 1993 [3] and Kausadikar 2002 [5], *i.e.* sources of information, scientific orientation and risk preference had significant effect on attitude of the respondents.

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