Original Research Article

Attitude of Farmers towards the use of Agricultural Machineries in East Khasi Hills District of Meghalaya

ABSTRACT

This present study has been conducted to ascertain the attitude and proper understanding of the farmers of the benefits and outcomes in using various agriculture machineries in the field. The study was conducted in the Mawryngkneng C&RD Block in East Khasi Hills District of Meghalaya. The primary data was collected from 120 respondents by personal interview method using pre-structured interview schedule. The attitude of the farmers was measured by asking 12 questions with respect to the use of agriculture machineries. Pearson's Product Moment coefficient of correlation (r) was calculated to determine the relationships between the independent variables and attitude of the respondents. After analysis of data, it was observed that the attitude was maximum at medium level i.e. 61.66 per cent, followed by low level at 29.17 per cent and then high level at 9.17 per cent. Co – efficient of correlation (r) analysis indicated that education, yearly income, social contact, extension contact and mass media exposure were found to be positively significant whereas, variables like age, type of house, family type, family size, occupation and land holding were found to have no relationship with the attitude of the farmers.

Keywords: Machineries, Attitude, Meghalaya, Farmers, Respondents

INTRODUCTION

The term ‘farm mechanization’ is used as an overall description of the application of the variety of tools, implements, equipment, machinery, power and other mechanical inputs in the farm. Proper use of mechanized inputs into agriculture has a direct and significant effect on production, productivity and profitability on agriculture farms, along with labour productivity and quality of life of people engaged in agriculture.[3]

Agricultural machinery relates to the mechanical structures and devices used in farming or other agriculture. There are many types of such equipment, from hand tools and power tools to tractors and the countless kinds of farm implements that they tow or operate. Diverse arrays of equipment are used in both organic and inorganic farming. Especially since the advent of mechanised agriculture, agricultural machinery is an indispensable part of how the world is fed. With the coming of the Industrial Revolution and the development of more complicated machines, farming methods took a great leap forward. From a global perspective, the international flow of agricultural technology allows for the increase of agricultural productivity in developed and developing countries alike. [1]

Indian agriculture is dominated by smallholders. With an average holding size of just 1.08 hectares (ha) (in 2015-16), and 86 percent of holdings being of less than 2 ha in size, Indian agriculture transformed the country from functioning ‘ship-to-mouth’ during the mid-1960s to being a net exporter of agri-produce today. This would not have been possible without the onset of the Green Revolution post-1965, which resulted in increased food grain production and productivity. Between the mid-20th century and 2013-14, India witnessed a tremendous shift away from traditional agriculture processes to mechanized processes. Today, 88 percent of the total farm power comes from tractors, diesel engine pump-sets, electric pump-sets and power tillers (2013-14). Additionally, India has emerged as the largest manufacturer of tractors in the world, followed by the USA and China. [5]

The use of improved farm tools and implements is very limited in the hills of the state as compared to other states of India. Manual and animal power is still predominantly used on hill farms. The traditional tools and implements are still in use with hill farmers. They carry out seedbed preparation, sowing, intercultural and harvesting and even threshing/shelling operations by traditional methods, which are more energy and time consuming. [2]

The present mechanization status in the state is among the least in the country. Therefore, to assist the farmers in getting maximum returns from their land, mechanized activities have to be expanded specially in places with low farm power activity. [5] Meghalaya is a hill state and consists of mostly fragmented land holdings especially in the East Khasi Hills district. Mechanical power is largely consumed in big land holdings and is still beyond the reach of small / marginal holdings, as by virtue of their economic condition, the small / marginal farmers are unable to own farm machinery on their own. Through the various 'schemes' being implemented by the Department, Agricultural machineries such as Power Tillers, Tractors, JCBs, Bulldozers and Power Reapers were purchased by the Department for giving out to the farmers on hire at subsidized rates to reduce the input cost of production. Loan-cum-Subsidy Scheme is also being implemented by the Department whereby farmers are being provided with subsidy for purchase of Agricultural Machineries such as Power Tillers, Power Reapers, Power Pumps for Irrigation purpose as well as other machineries available. [6]

RESEARCH METHODOLOGY

Descriptive research design was used for the present study. Descriptive research design describes the characteristics of the population or phenomenon that is being studied. The study has been conducted in the East Khasi Hills district, Meghalaya. Mawryngkneng block has been purposively selected out of 11 blocks. Eight villages have been selected randomly out of 64 villages from this block and a total of 120 farmers were selected randomly for this study. The information was elicited from the respondents with the help of structured interview schedule, pen, pencil; camera was also used during the data collection. The information was elicited from the respondents with the help of pre – structured interview schedule. The primary data was collected through personal interview and secondary data was collected from journals, books, papers and other material of study. The entire data collected was transformed into score for tabulation. Various statistical tests mean, frequency, percentage, correlation co – efficient and multiple regression was used in the study which was then used to interpret the results and to show the relationship between independent variables and dependent variables.

OBJECTIVE

- To understand the attitude towards the use of agriculture machineries.

RESULTS AND DISCUSSION

Table 1 shows the attitude of the respondents towards the use of agriculture machineries. 78.33 per cent of the respondents are undecided based on immediate adoption of new technologies, while 41.67 per cent disagree and 17.50 per cent agree that whenever they get information about a new technology, they adopt it. About 49.16 per cent of the respondents are undecided based on adoption of new technologies in a small area in their farm, while 47.50 per cent agree on it and 3.34 per cent disagree. About 80 per cent of the respondents agree on being eager to know more about agriculture machinery subsidies and loans, while 16.66 per cent are undecided and about 3.34 per cent disagree on it. About 88.34 per cent of the respondents agree on wanting to know more about trainings and demonstrations regarding the use of agriculture machinery, while 10.83 per cent are undecided and less than 1 per cent (i.e. 0.83%) disagree on it. About 55 per cent of the respondents agree on being ready to adopt agriculture machineries in their farm, while 44.17 per cent are undecided and only 0.83 per cent disagree on it. About 78.34 per cent of the respondents are undecided when asked whether man power is sufficient, while 15 per cent of the respondents disagree on it and 6.66 per cent of them agree on it. Similar findings were reported by Patil, V. G. [7]

Table 2 and Figure 1 reveal that the attitude level of the respondents towards agriculture machinery and its usage is medium at 61.66 per cent followed by low at 29.17 per cent and high at 9.17 per cent. Similar findings were reported by Bite *et, al.* [4]

From Table 3, it is found that the independent variables such as Yearly income (0.241), Social contact (0.359), Extension contact (0.550) and Mass media exposure (0.238) had positive and significant correlation at 5% probability towards attitude of the respondents.

Furthermore, it was seen that other variables such as Age (0.146), Education (0.364), Type of house (-0.025), Family type (0.141), Family size (-0.150), Occupation (0.314) and Land holding (0.433) had non – significant correlation towards the attitude of the respondents.

Table 1. Distribution of the attitude of respondents towards the use of agriculture machineries.

S. No.	Question	Agree		Undecided		Disagree	
		f	%	*f*	%	*f*	%
1	Whenever I get information about new technologies, I adopt it.	21	17.50	94	78.33	5	41.67
2	Whenever I get information about new technologies, I apply it in small area.	57	47.50	59	49.16	4	3.34
3	Whenever I get information about new technologies, I adopt it when others adopt it.	21	17.50	55	45.83	44	36.67
4	Whenever I get information about new technologies, I rarely adopt it.	4	3.34	27	22.50	89	74.16
5	I am eager to know more about agriculture machinery subsidies and loans.	96	80	20	16.66	4	3.34
6	I want to know more about trainings and demonstrations regarding the use of agriculture machineries.	106	88.34	13	10.83	1	0.83
7	I am ready to adopt agriculture machineries in my farm.	66	55	53	44.17	1	0.83
8	I am not ready to adopt agriculture machineries in my farm.	3	2.50	26	21.67	91	75.83
9	Use of agriculture machineries is a complex process.	40	33.33	76	63.33	4	3.34
10	Use of agriculture machineries is not profitable.	9	7.50	92	76.66	19	15.84

11	Manpower is sufficient.	8	6.66	94	78.34	18	15
12	Manpower is insufficient.	19	15.84	94	78.33	7	5.83

f – Frequency; **%** - Percentage

Table 2. Distribution of the respondents based on attitude level towards agricultural machineries.

S. No.	Category	Frequency (*f*)	Percentage (%)
1	Low (22 – 24)	35	29.17
2	Medium (25 – 27)	74	61.66
3	High (28 – 30)	11	9.17
	Total	120	100

Figure 1. Graphical distribution of the respondents based on attitude level towards agricultural machineries.

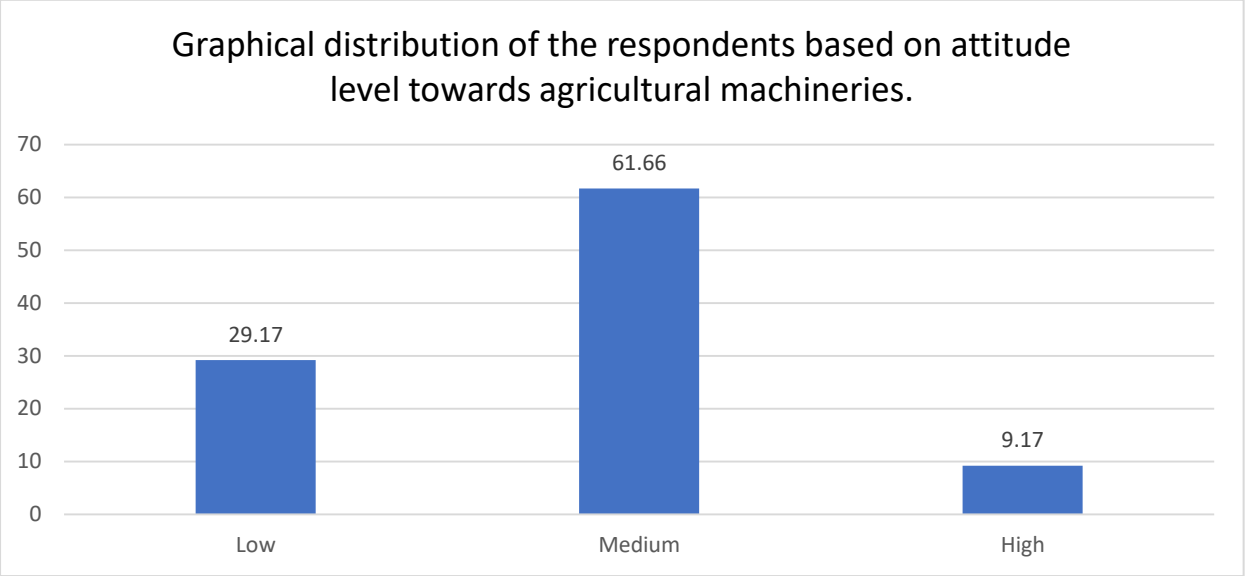

Table 3. Association between independent variables and Attitude level of the respondents.

S. No.	Variables	Correlation Coefficient (r)
1	Age	0.146 ^{NS}
2	Education	0.364*
3	Yearly income	0.241*
4	Type of house	-0.025 ^{NS}
5	Family type	0.141 ^{NS}
6	Family size	-0.150 ^{NS}
7	Occupation	0.314 ^{NS}
8	Land holding	0.433 ^{NS}
9	Social contact	0.359*
10	Extension contact	0.550*
11	Mass media exposure	0.238*

* = Significant at 5% level of significance; ** = Significant at 1% level of significance;

^{NS} = Non – Significant

CONCLUSION

It is found that majority of the attitude level of the respondents towards agriculture machinery and its usage is medium at 61.66 per cent. This is followed by low at 29.17 per cent and high at 9.17 per cent.

It is also found that independent variables like yearly income, social contact, extension contact and mass media exposure had positive and significant correlation towards attitude of the respondents. Furthermore, it was seen that other variables such as age, education, type of house, family type, family size, occupation and land holding had non – significant correlation towards the attitude of the respondents.

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