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A Study on Adoption Level of Farm Mechanization on Paddy Grower in Uttarkannada, Karnataka

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ABSTRACT

Farm mechanization implies the use of various power sources, improved farm tools and equipment, with a view to reduce the drudgery of the human beings and draught animals, which increasing the crop production and productivity. About 65 per cent of the Indian population depends on agriculture for their livelihood. In recent years, non availability of farm laboures and fragmentation of land holdings (smaller land holdings) are forcing many farmers to mechanize their farms and over the last few years, there has been considerable progress in agriculture mechanization. Mechanization in agriculture is predominantly taking place mainly for operations where traditional practices have failed to achieve the precision in operations. Keeping this in view a study was conducted to know the adoption of farm mechanization on paddy grower in Uttarkannada, Karnataka A survey was conducted by interview method from paddy growers to elicit information regarding adoption level of farm mechanization. It was revealed that majority of the respondents (80.00%) were fully aware about the farm implements and machinery accept transplanter, drum seeder, line marker. majority (60.00%) of the respondents using hire (40.00%) of the respondents using own machineries.

Key words: *Adoption, Paddy Implements, and Profile.*

INTRODUCTION

Agricultural machines have now been recognized as one of the major inputs in agriculture due to the advantages such as reduction in operational costs, minimizing human drudgery in addition to increasing farm production. Farm machines also confer definite benefits to the farmers in terms of greater efficiency, economy and higher productivity. In recent years, non availability of farm laboures and fragmentation of land holdings (smaller land holdings) are forcing many farmers to mechanize their farms. Mechanization in agriculture is predominantly taking place mainly for operations where traditional practices have failed to achieve the precision in operations.

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This is mainly due to the fact that agricultural labour available in Indian farms is becoming scarce day by day due to rapid industrialization, urbanization, migration and employment guarantee programmes[5]. Agricultural machines have now been recognized as one of the major inputs in agriculture due to the advantages such as reduction in operational costs, minimizing human drudgery in addition to increasing farm production. Farm machines also confer definite benefits to the farmers in terms of greater efficiency, economy and higher productivity particularly by speeding up agricultural operations during crucial periods. Studies have revealed that farm mechanization has led to an increase in the productivity of land by as much as 30.00 per cent. Rijk[6], reported that majority 60.00 per cent respondents had adopted the production technology at higher level followed by 21.25 per cent and 18.75 per cent at medium and low level **)** Kumbhare and Singh the availability of HYV seed at sowing time, high cost of improved seeds, unawareness about recommended seed rate, method and time of seed sowing etc. High price of fertilizer, strong need of capital, unawareness and non availability of fertilizers at sowing time in selected crops were pointed out as the other reasons of non adoption of recommended technology followed by lack of mulching technique, crop rotation technique and lack of alternative risk bearing capacity, irrigation and drainage system etc. as major constraints. Mayank Singh[4], Thiyagarajan[8] revealed that majority of the respondents (78.30%) had medium level of knowledge followed by 19.20 per cent of the respondents with low level and 2.50 per cent with high level of knowledge in SRI cultivation and nearly half of the respondents had high level (48.40%) of adoption in the cultivation of paddy under SRI method followed by medium (25.80%) and low (25.80%) levels of adoption.

MATERIALS AND METHODS

Selection of district

There are 30 district in Karnataka state out of these Uttarakannada district of Karnataka was selected purposively for the present study, as based on highest area and production of paddy

Selection of blocks

There are 12 blocks in Uttarakannada district out of these Haliyal block was selected purposively on the basis of highest area and production of paddy.

Selection of village

There are 154 villages in Haliyal Taluka .out of these, 12 villages were selected randomly for the present study

Selection of Respondents

From each selected village, a list of farmers cultivating paddy was prepared with the help of Agricultural Assistant and Private Extension Officer. Ten respondents from each village were randomly selected to constitute the total sample size of 120 respondents.

Tools used for data collection

Survey is one of the tools used for collecting the relevant information from paddy growers. Interview schedule were structured which consisting of Part A which included set of questions to gather general information and Part B which consisted questions to gather specific information. The interview schedule was administered on the paddy growers to elicit information regarding profile characteristics of paddy growers, awareness level of paddy growers in improved farm equipments in paddy cultivations.

Table 1: according to profile characteristics

Variables	Category	Frequency	Percentage
Age	Young age(<30years)	26	21.67
	Middle age(31-50 years)	81	67.50
	Old age (>50 years)	13	10.83
Education	Illiterate	14	11.67
	Primary school (1st to 4th)	24	20.00
	Middle (5th-7th)	32	26.67
	High school (8th-10th)	40	33.33
	PUC	6	5.00
Innovativeness	Low(<10)	30	25.00
	Medium (10-11)	81	67.50
	High (>11)	9	7.50
Risk Orientation	Low (<14)	22	18.33
	Medium (14-16)	69	57.50
	High (>16)	29	24.17
Economic Motivations	Low (<15)	26	21.67
	Medium (15-16)	82	68.33
	High (>16)	12	10.00
Land Holding	Marginal farmers (<2.5 acre)	16	13.33
	Small farmers (2.51 to 5.00 acre)	37	30.83
	Semi medium (5.01 to 10.00 acre)	54	45.00
	Medium farmers (10.01 to 25.00 acre)	11	9.16
	Big farmers (>25.00 acre)	2	1.66

Figures in parenthesis indicate percentages

Table 2: Adoption levels of the respondents about farm mechanization implements by paddy growers (n= 120)

Sl. No	Field operations	Farm implements and machinery	Adoption Level						Adoption Type			
			Fully adopted		Partially adopted		Never adopted		Own		Hire	
			F	%	F	%	F	%	F	%	F	%
1	Field Operation	Tractor	90	75.00	30	25.00	0	0	60	50.00	60	50.00
		Power tiller	60	50.00	20	16.67	40	33.33	50	41.67	30	25.00
		Cage wheel	55	45.83	35	29.17	30	25.00	46	38.33	44	36.67
		Peg puddler	60	50.00	33	27.50	27	22.50	43	35.83	50	41.67
		M B plough	66	55.00	25	20.83	29	24.17	17	14.17	74	61.67
		Disc plough	75	62.50	25	20.83	20	16.67	31	25.83	69	57.50
		Cultivator	89	74.17	22	18.33	9	7.50	68	56.67	43	35.83
		Leveller	85	70.83	10	8.33	25	20.83	69	57.50	26	21.67
		Harrow	100	83.33	12	10.00	8	6.67	72	60.00	40	33.33
		Spade	120	100.00	0	0.00	0	0.00	110	91.67	10	08.33
2	Trans0 planting	Transplanter	0	0.00	0	0.00	120	0	0	0	0	0
		Drum seeder	0	0.00	0	0.00	120	0	0	0	0	0
		Line marker	20	10.00	20	10.00	80	80.00	5	4.16	15	12.5
3	Fertilizer application	Broadcaster	100	83.33	0	0.00	20	16.67	90	75.00	10	08.33
4	Irrigation	Pump set	98	81.67	12	10.00	10	8.33	80	66.67	30	25.00
5	Weeding	Sickles	120	100.00	20	16.67	0	0	120	100.00	0	0
		Rotary weeder	5	4.17	5	4.17	110	91.67	5	4.17	5	04.17
6	Plant protection	Knapsack sprayer	15	12.50	5	4.17	100	83.33	12	10.00	08	06.67
		Charger sprayer	75	62.50	10	8.33	35	29.17	60	50.00	25	20.83
		Power sprayer	48	40.00	12	10.00	60	50.00	55	45.83	05	04.17
7	Harvesting	Sickle	100	83.33	20	16.67	0	0	120	100.00	0	0
		Paddy reaper	10	8.33	10	8.33	100	83.33	5	4.17	15	12.50
		Paddy thresher	15	12.50	5	4.17	100	83.33	4	3.33	16	13.33
		Tractor mounted harvester	10	8.33	10	8.33	100	83.33	5	4.17	15	12.50
		Combine harvester	15	12.50	15	12.50	90	75.00	13	10.83	17	14.17

Figures in parenthesis indicate percentages

From Table 1 revealed that Majority (67.50%) of the respondents belonged to the middle aged, followed by young age (21.67%) and old age group (10.83%).where as the (79.00%) respondents are literates, Whereas, 67.50 per cent of the paddy growers belonged to 'medium innovative proneness' category followed by 25.00 per cent and 7.50 per cent belonged to 'low' and 'high innovative proneness' categories, respectively, Further, 57.50 per cent of the paddy growers belonged to 'medium risk orientation' category, followed by 24.17 per cent and 18.33 per cent belonged to 'high' and 'low risk orientation' categories, respectively. Majority (68.33%) of the paddy growers belonged to 'medium economic motivation' category, followed by 21.67 and 10.00 per cent belonged to 'low' and 'high economic motivation' categories, respectively. 45.00 per cent of the respondents belonged to semi medium land holding category followed by 30.83 per cent belonged to small land holding category, 13.33 per cent belonged to marginal land holding category, 9.16 per cent belonged to medium land holding category and only 1.66 per cent of them were big farmers, respectively. This could be attributed to inheritance of land from their ancestors who might have transferred from generation to generation. This result is in agreement with Sajith Kumar and Man and Sadiya.

The result presented in Table 2 regarding adoption levels of the respondents about farm implements. More than 50.00 per cent of the paddy growers were fully adopted implements were tractor, power tiller, peg puddler, M B plough, disc plough, cultivator, leveler, harrow, spade, broadcaster, pump set and sickles. However, 10.00 to 20.00 per cent

of them were partially adopted the implements. Cent percent of the respondents were never adopted Transplanter and drum seeder. Whereas, 80.00 to 90.00 per cent of the paddy growers were never adopted the implements such as line marker, rotary weeder, knapsack sprayer, paddy reaper, paddy thresher and tractor mounted harvester. represents the data regarding on type of adoption level and revealed that cen per cent of the respondents were own adopted the implements *viz.*, sickle weeder and sickle harvester followed by spade (91.67%), harrow (60.00%), leveler (57.50%), cultivator (56.50%) and tractor. (50.00%) on the other hand more than 50.00 per cent of the respondents were hired tractor, M B plough and disc plough implements when they required. The 50.00 to 60.00 per cent of farmers adopted hire accept sickle spade broadcaster.

The possible reasons for this trend could be medium educational level of the respondents (about 60.00 per cent of the respondents educated up to high school to graduation level) and medium extension contact (70.83%). Another reason may be due to medium mass media exposure (59.17%) particularly high majority (98.33%) possessed television and were regular viewer of agriculture programmes. Nearly half of the respondents (48.40%) were subscribers of news paper, of which 33.33 per cent of the respondents were regular reader of agriculture news. nearly half of the farmers having Semi medium (5.01 to 10.00 acre), Majority of the respondents (67.50%) and (68.33%) belonged to 'medium innovative proneness' and 'economic motivation' respectively resulted in gaining adoption about farm machinery and implements. It is clear from the findings that the positive and significant relationship of the personal characteristics like education, land holding, innovative proneness and economic motivation might have influenced the adoption level of the farmers.

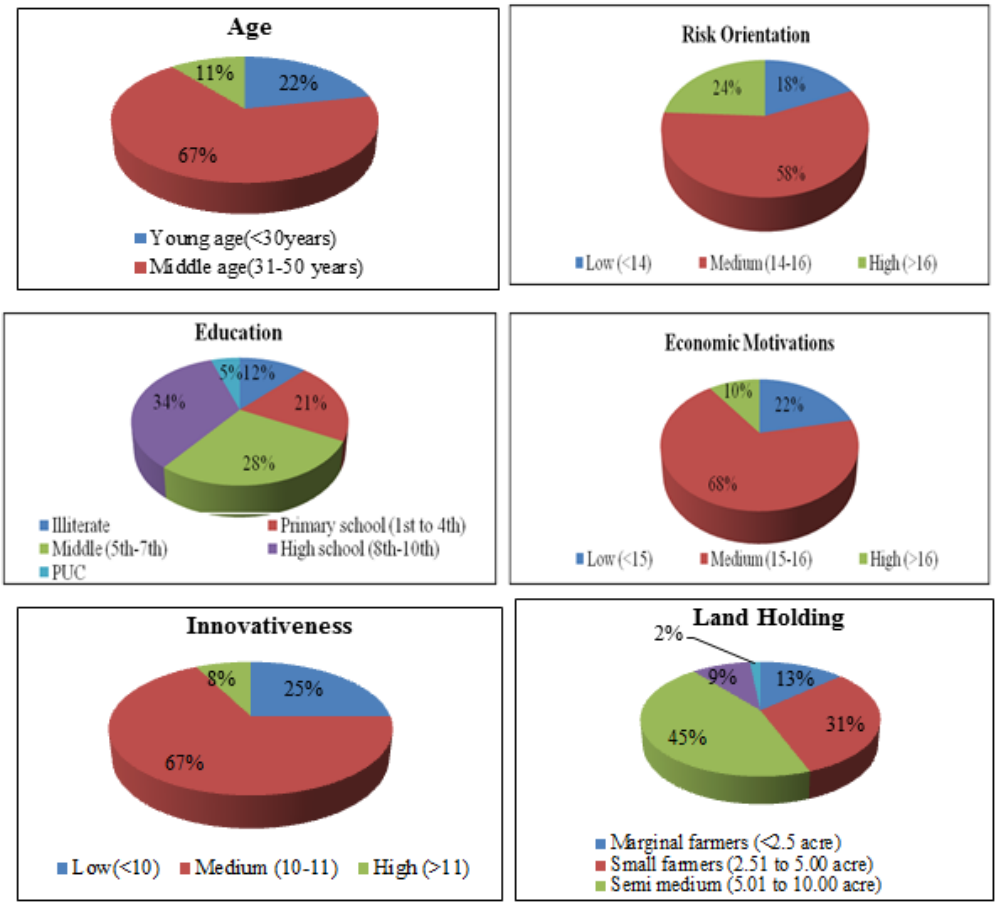

Fig. 1: Distribution of the respondents according to profile characteristics

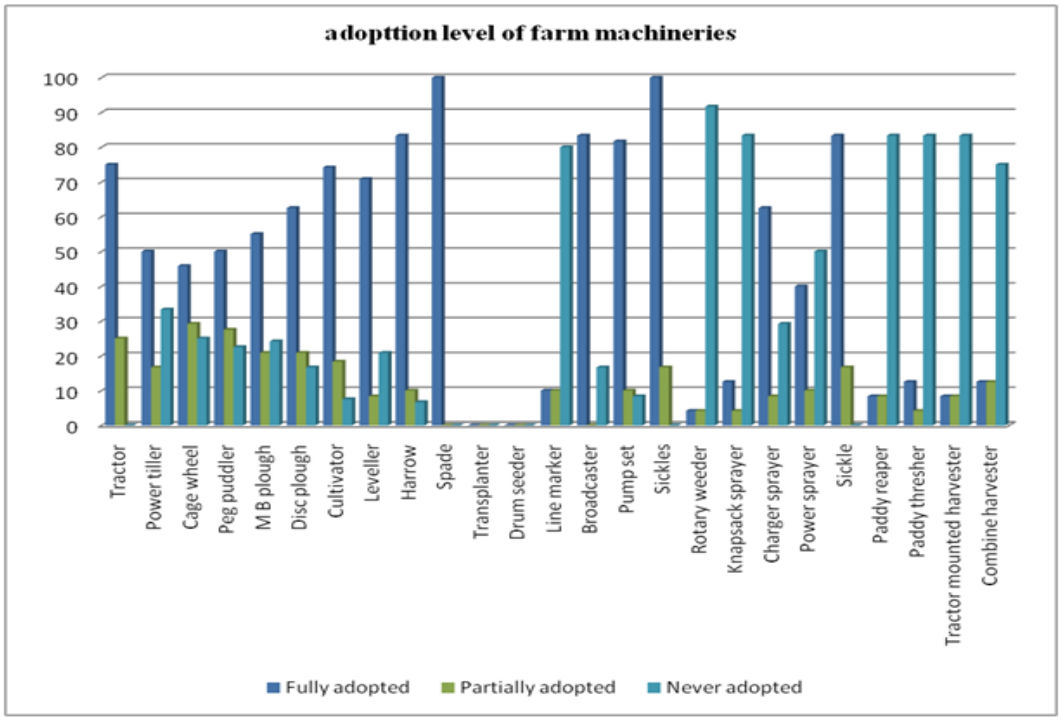

Fig.2: Adoption levels about farm mechanization implements

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