



CHANGING CAPITAL COMPOSITION AT THE FARM HOUSEHOLDS AND ITS IMPACT ON THE TIMELINESS OF AGRONOMIC PRACTICES IN MAIZE PRODUCTION: AN EMPIRICAL STUDY IN DAVANGERE DISTRICT, KARNATAKA

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ABSTRACT Trends in the composition of capital assets at the farm households and impact of ownership of capital assets on the timely performance of sowing and inter-cultivation has been assessed by using the primary data collected from the 144 randomly selected farmers. The study has observed considerable decline in the percentage of farmers owning the bullock pairs, harvesting yard, livestock and the implements. There is increasing trend in the ownership of tractors and bore-wells but still percentage of farmers owning these assets is very low. The percentage of farmers performed the sowing and inter-cultivation at the right time was significantly more among the farmers who have the bullock pairs, tractors, implements compared to the farmers who have not owned these assets. Farmers who have tube-wells could create their own right time for performing sowing and inter-cultivation by providing protective irrigation.

KEYWORDS : Capital Assets at the Farm Households, Timeliness of agronomic practices

1. Introduction

Capital assets are the most important factors of production and they are accumulated at the farm households with the intension of improving the agriculture productivity. Possession of such capital assets enables the farmers to perform the agronomic practices at the right time which results in higher crop yield. The importance of capital in economic progress has been recognized long back. The first leading study in the area of capital formation in agriculture in India has been done by Tara Shukla (Shukla, 1960). It has generated interest among the researchers about the agricultural investments in India.

There is an intense debate in the country that capital formation in Indian agriculture has been either stagnating or falling since the beginning of 1980s (Dhawan, 1998). Serious concern has been expressed by various scholars over the declining trend in public investment (Shetty, 1990). It has been asserted that decline in public investment is bad not only in itself but also because it would lead to decline in private investment due to complementarity between public and private investment. Some empirical studies have observed the high complementarity between the two types of investment (Krishnamurty, 1985).

Over the decades the composition of capital assets owned by the farm households has been changing. It has greater implications on the timely operation of agronomic practices in the crop production. In this backdrop this study has undertaken to analyse the changing composition of capital assets at the farm households and its impact on the timely performance of agronomic practices in maize.

2. Methodology

This study is based on the primary data collected from sample farmers of Davangere district. Primary data were collected from the sample farmers of Davangere district by using well-structured pre-tested schedule for the crop season 2016-17. Maize is one of the major crops of this district by occupying about 40 percent of the gross sown area of the district. Three taluks in which maize is a major crop were selected. Three villages were randomly selected from each taluks by using the lottery method. From each village 16 farmers were randomly selected. Thus, totally 144 farmers were randomly selected for the study.

3. Results and Discussion

Information about the size of the land holding of the family as well as possession of selected capital assets was collected for two point of time; that is present information (as on the year 2016-17) and status before 25 years (as on the year 1991-92) and results are given in table-1. Respondents have given information about the size of the holding and possession of capital assets of their family based on memory recall. About 70 percent of the respondents were in the age group of 40 plus at the time of interview and such respondents were able to give information based on the memory recall and remaining farmers given information which was passed on by their parents. Out of 144 households, marginal farmers constituted 12.5 percent, small farmers were 37.5 percent, medium farmers were 31.3 percent and large

farmers were 18.8 percent of the total respondents as on 1991-92 and the corresponding figures for the present status were 43.8, 25.0, 18.8 and 12.5 percent respectively. The size of the holding declined over the 25 years due separation of the families with few cases of selling of part of their land. Declining size of holding and changing technology has brought significant change in the capital assets composition at the farm household level.

Out of 144 respondents surveyed, eight respondents reported that they had open wells during 1991-12 and they have witnessed the drying up of these wells due to depletion of the ground water within 10 years (during 1990s). At present no farmers are having the open wells. One of the senior citizen of the sample household who had about 45 years of experience in farming opined that almost all the farming household used to own bullock pairs during 1970s but now many of the farmers don't want to take the risk of owning the bullock pairs and many farmers are not in need of possessing bullock pairs due to uneconomical size of holding. The percentage of farmers possessing the bullock labour has declined from 75 percent in the year 1991-92 to 49.3 percent by the year 2016-17. The possession of bullock carts and farm implements like wooden or iron ploughs, harrows, seed drills etc. is closely associated with possession of bullock pairs. Farmers who don't have bullock pairs will not have such farm implements.

Table-1: Changes in Capital Composition in Sample Households

Sl No	Capital Assets	Percentage of Households owning	
		During 1991-92	At present
1	Open Well	5.6	0.0
2	Harvesting Yard	37.5	6.5
3	Bullock Pair	75.0	49.3
4	Bullock cart	43.8	25.0
5	Implements	75.0	50.0
6	Buffalos / Cows	62.5	41.7
7	Sheep / Goat	29.9	24.3
8	Tube well	9.0	23.1
9	Tractor	6.3	18.8
10	Sprayer	18.8	37.5
11	Thresher	0.0	3.5
12	Farm Buildings	18.8	25.0

The percentage of farmers owning bullock carts and farm implements as well as animals like cows/ buffalo's sheep and goats has also decreased considerably. Increasing land value has made it very difficult to own the harvesting yard. Though, there is considerable increase in the percentage of farmers possessing tube-wells and tractors only about 1/5th of the respondents had owned these assets. Many of the farmers who didn't have the capital assets were reported to be not able to perform certain agronomic practices at the right time. Therefore, information about the timely performance of sowing and inter-cultivation operation was collected from the respondents. The two way classification of the respondents based on the timely

performance of agronomic practices and ownership of selected capital assets was made and the results are given in the table-2. Two agronomic practices and six capital assets were selected for this purpose and the details are self-explanatory.

Most of the farmers are growing the maize crop under rain fed condition except few cases of protective irrigation by few farmers. Due to uncertain, irregular and inadequate rainfall soil moisture condition may be ideal for sowing maize crop only during few days. Sowing as well as inter-cultivation operations have to be performed only when soil moisture condition is suitable for such operations. The respondents who don't have bullock pairs, implements and tractor have to depend on hiring the services of these assets and many of them reported that they could perform the sowing and inter-cultivation during the days on which soil moisture condition is ideal but only on the day of availability of the services of these assets on hiring basis.

Timeliness of the sowing and inter-cultivation operations were observed to be significantly associated with the ownership of all the capital assets selected for the analysis except thresher. Bullock pairs, implements like wooden/iron ploughs, seed drills and tractors were the capital assets which have been utilised by almost all the respondents in maize cultivation practices. Many of the farmers who owned the tube-wells have given the protective irrigation to the maize crop. These assets were observed to be having greater influence on the timely performance of sowing and inter-cultivation as indicated by chi-square values. The percentage of farmers who have utilised the services of bullock cart in the maize cultivation is relatively low but still the ownership of bullock cart has significant association with the timely performance of sowing and inter-cultivation due to complementarity between the ownership of bullocks and bullock carts.

Table-2: Ownership of Capital Assets and Timeliness of Sowing Maize

Ownership of Capital asset	Number of respondents who performed the operation			Chi-square Value	
	Timely	Not-Timely	Total		
Sowing of Maize					
Tractor	Owned	25 (92.6)	2 (7.4)	27 (100)	8.793*
	Not-Owned	74 (63.2)	43 (36.8)	117 (100)	
	Total	99 (68.8)	45 (31.3)	144 (100)	
Thresher	Owned	4 (80.0)	1 (20.0)	5 (100)	0.305
	Not-Owned	95 (68.3)	44 (31.7)	139 (100)	
	Total	99 (68.8)	45 (31.3)	144 (100)	
Tube well	Owned	38 (92.7)	3 (7.3)	41 (100)	15.282*
	Not-Owned	61 (59.2)	42 (40.8)	103 (100)	
	Total	99 (68.8)	45 (31.3)	144 (100)	
Bullock Pare	Owned	66 (93.0)	5 (7.0)	71 (100)	38.202*
	Not-Owned	33 (45.2)	40 (54.8)	73 (100)	
	Total	99 (68.8)	45 (31.3)	144 (100)	
Bullock Cart	Owned	34 (94.4)	2 (5.6)	36 (100)	14.750*
	Not-Owned	65 (60.2)	43 (39.8)	108 (100)	
	Total	99 (68.8)	45 (31.3)	144 (100)	
Implements	Owned	67 (91.8)	6 (8.2)	73 (100)	36.553*
	Not-Owned	32 (45.1)	39 (54.9)	71 (100)	
	Total	99 (68.8)	45 (31.3)	144 (100)	
Inter-cultivation					
Tractor	Owned	27 (100)	0 (0.0)	27 (100)	8.038*
	Not-Owned	81 (69.2)	36 (30.8)	117 (100)	
	Total	108 (75.0)	36 (25.0)	144 (100)	
Thresher	Owned	5 (100)	0 (0.0)	5 (100)	1.727
	Not-Owned	103 (74.1)	36 (25.9)	139 (100)	
	Total	108 (75.0)	36 (25.0)	144 (100)	
Tube well	Owned	40 (97.6)	1 (2.4)	41 (100)	15.561*
	Not-Owned	68 (66.0)	35 (34.0)	103 (100)	
	Total	108 (75.0)	36 (25.0)	144 (100)	
Bullock Pare	Owned	71 (100)	0 (0.0)	71 (100)	46.685*
	Not-Owned	37 (50.7)	36 (49.3)	73 (100)	
	Total	108 (75.0)	36 (25.0)	144 (100)	
Bullock Cart	Owned	36 (100)	0 (0.0)	36 (100)	16.000*
	Not-Owned	72 (66.7)	36 (33.3)	108 (100)	
	Total	108 (75.0)	36 (25.0)	144 (100)	
Implements	Owned	72 (98.6)	1 (1.4)	73 (100)	44.092*
	Not-Owned	36 (50.7)	35 (49.3)	71 (100)	
	Total	108 (75.0)	36 (25.0)	144 (100)	

* indicate the significance at one percent probability level

4. Conclusion

The study has observed the declining trend in the ownership of bullock pairs, harvesting yard, livestock as well as implements like seed-drills, iron/wooden ploughs and harrow. Open well have almost disappeared in the region. Though, there is increasing trend in the ownership of possessing tube-wells and tractors only about 1/5th of the respondents have owned these assets. Timely performance of sowing and inter-cultivation observed to be significantly associated with possession of bullock pairs, implements, tractors and tube-wells.

References

1. Dhawan, B.D. (1998) 'Studies in Agricultural Investments and Rural Savings', Commonwealth Publishers, New Delhi.
2. Krishnamurty, K. (1985), 'Inflation and Growth: A Model for India', in K. Krishnamurty and V.N. Pandit eds. Macroeconomic Modelling of the Indian Economy: Studies in Inflation and Growth, Hindustan Publishing Corporation, Delhi.
3. Shetty, S.L. (1990), 'Investment in Agriculture: Brief Review of Recent Trends', Economic and Political Weekly, Feb. Pp.17-42.
4. Shukla, Tara, (1965) 'Capital Formation in Indian Agriculture', Vora & Co. Publisher, Bombay.