



EXTENT OF AGRICULTURAL MODERNIZATION AMONG THE TRIBAL AND NON-TRIBAL FARMERS OF SABARKANTHA DISTRICT OF GUJARAT STATE

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Abstract- Agricultural modernization means improvement in farming system, infrastructure facilities, promotion of cultivation practices, crop diversification and value addition process. Agricultural modernization is not purely technological or economic problem. It is frequently dependent on an understanding of the society in which it is to take place, a knowledge of the social and cultural factors that condition farmers responsiveness to technological change is essential. To measure the agricultural modernization of the farmers a teacher made test was developed. The teacher made test of agricultural modernization of the farmers was consisted of major thirteen criteria and each criteria was given score by conference method of the teachers. Then, total 200 score of agricultural modernization test was determined. The majority of the tribal (84.55%) and non-tribal (85.46%) of the respondents having low to medium extent of AMI. The tribal farmers differ significantly from non-tribal farmers with respect to their extent of AMI. The independent variables viz., age, size of family, land holding, livestock possession and cosmopolitaness were found significantly related with AMI of tribal respondents, In case of non-tribal respondents all 10 selected independent variables were found to be significantly associated with AMI.

Keywords- Tribal, Non-tribal, Agricultural Modernization

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Introduction

It is now realized the world over that in order to meet food requirement of the growing population and rapid industrialization, modernization of agriculture is inescapable.

Agriculture is one of the crucial and mega sector in the Indian economy which contributes about 27% to the GDP. Agricultural scenario in our country is undergoing a rapid change. In this context food and nutritional security, poverty alleviation, diversifying market demands, export opportunities and environment concerns are the new challenges to technology dissemination system. To respond to these challenges, appropriate agricultural technologies and agromanagement practices are to be developed and disseminated among the users. Modernization of agriculture through improvement in infrastructure facilities and at sub sector specific strategies include promotion of various package of practices were also emphasized during Tenth Five year plan. These features of Indian agriculture widened the gap between commodity based demands and supply, hence could not helped the farmers in terms of economic benefits. Among them crop diversification is vital to ensure food security and to provide balanced diet through nutritive products to poor people [1]. Therefore, the only alternate left for marching with the time is to go with the diversification as well as modernizations of

agriculture and animal husbandry production both in terms of time and space as per need and requirement of the ever-growing population to ensure their food security. The phenomenon of demand driven agriculture is still far behind with the farmers of backward regions and tribal areas.

India has the social largest tribal population in the world next to Africa. According to Census, 1991 there are 67.76 million tribals constituting (8%) of the country total population. The tribals in Gujarat from about 15% of total population. The Gujarat state is the fourth among states with sizeable tribal population, is concentrated in the North Districts to the Dangs district. Sabarkantha ranks first among the districts of the North-Gujarat with respect to tribal concentration and 15% tribal population to state total population [2]. Looking to these facts, the present investigation was planned with following objectives.

Objectives of the Study

1. To study the agricultural modernization among the tribal and non tribal farmers.
2. To ascertain the association between the personal, social, economical, situational, communicational attributes of the tribal and non tribal farmers and their agricultural modernization.

Methodology

The present study was conducted in Sabarkantha district of North Gujarat region of Gujarat state as the economy of the district is basically dependent on agriculture as 62.8% workers are engaged in primary sector. The farmers of Sabarkantha district are innovative as well as enthusiastic in modern agriculture. Based on the backwardness index the planning commission has identified six tribal districts of Gujarat as disadvantaged [3]. Out of these six districts two districts namely, Banaskantha and Sabarkantha are in North Gujarat. Considering the highest tribal population, Sabarkantha district was selected purposively. According to the Anonymous-2001, proportion of scheduled tribes population to total population in villages are categorized in 9 different percentage ranges at district level, i.e. Zero percentage range of scheduled tribes population to 76 and above percentage range. It is seen that only 14 villages out of 1,372 were having percentage range of scheduled tribes population of 41-50; covered in Khedbrahma, Vijaynagar, Bhiloda, and Meghraj talukas of the district. These 14 villages, one village was in Khedbrahma taluka, two villages in Vijaynagar taluka, four villages in Meghraj taluka and seven villages in Bhiloda taluka. Among these four talukas considering the numbers of villages Meghraj and Bhiloda talukas were selected purposively. Looking to the common situation of the inhabited villages for the tribal and non-tribal farmers, all 11 villages of Bhiloda and Meghraj talukas, having scheduled tribes population of 41-50 range of percentage were selected purposively. Ten tribal farmers and ten non-tribal farmers from each village were selected randomly. Thus, total 220 farmers were selected.

To measure the agricultural modernization of the farmers a teacher made was developed [4]. The teacher made test of agricultural modernization of the farmers was consisted of major thirteen criteria viz., Farming pattern, Seed selection, Use of Irrigation system, Use of Underground pipe line for Irrigation, Use of Transportation facility for marketing of agricultural production, Available modern machinery and implements, Available Modern Sources of Energy Equipments, Extent of use of chemical fertilizers, Extent of use of organic fertilizers, Extent of use of Storage facility, Use of Plant Protection Measures, Extent of use of Harvesting Structures and Extent of use of Improved Dairy Practices [Fig-1]. Such criteria were discussed with the experts of Extension Education, Agricultural Economics and Agronomy, then finally were included in the test. All possible factors were framed / included in order to have precise response and each criteria was given score by conference method of the teachers. Then, total 200 score of agricultural modernization test was determined.

The score obtained by an individual respondent for each of these criteria was summed up for his total agricultural modernization score. The index of agricultural modernization was calculated for each individual respondent with the help of the following formula [5].

$$\text{Agricultural Modernization Index (AMI)} = \frac{\text{Sum of scores of all criteria rated by Individual}}{\text{Maximum score attributes to the all criteria rated.}} \times 100$$

Result and Discussion

Extent of Agricultural Modernization among the Tribal and Non-tribal Respondents

The only alternate left for marching with the time is to go with the diversification as well as modernizations of agriculture and animal husbandry production both in terms of time and space as per need and requirement of the ever-growing population to ensure their food

security. The extent of agricultural modernization was studied. The respondents according to their extent of agricultural modernization index in [Table-1].

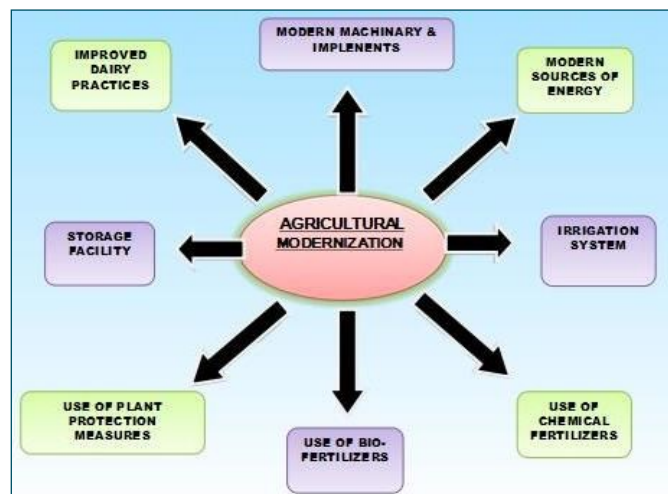


Fig. 1- Components of agricultural modernization

The data presented in [Table-1] reveal that in tribal farmers nearly two-thirds of the respondents (64.55 per cent) were having medium extent of agricultural modernization index, followed by 20.00 per cent of them had low extent of agricultural modernization, whereas only 15.45 per cent of them had high extent of agricultural modernization index.

As well as data presented in [Table-1] for non-tribal respondents two-thirds (66.36 per cent) were having medium extent of agricultural modernization index, while 19.10 per cent of them had low extent of agricultural modernization index, whereas only 14.54 per cent of them had high extent of agricultural modernization index. It can be concluded that majority of the tribal & non-tribal farmers were having low to medium extent of agricultural modernization index.

The 'Z' value was found highly significant (3.6728**) which implies that tribal farmers differ significantly from non-tribal farmers with respect to their extent of agricultural modernization index.

It was also observed that the low category of AMI among the tribal farmers was started from 17 score upto 28.78 score index while in the case of non-tribal farmers it was recorded from 21.5 upto 47.23 score index (i.e. 64.11% higher) while in the high category of AMI among tribal and non-tribal respondent was recorded, above 62.20 score index and above 83.75 score index (i.e. 34.65% higher), respectively, which clearly indicated that there was great differentiation among the tribal and non-tribal respondents with respect to their AMI.

These findings are similar to findings Dattatraya [4] and Solanki [5].

Association between the Personal, Social, Economical, Situational, Communicational attributes of the Tribal and Non-tribal Farmers and their Agricultural Modernization

To ascertain the relationship between independent variables and Agricultural modernization, zero order correlation was applied and the values of correlation coefficient (r) were calculated. These values have been given in [Table-2].

It is clear from [Table-2] that out of 10 independent variables, the correlation of 4 variables viz., size of family (0.2088), land holding (0.1880), livestock possession (0.1894) and cosmopolitaness

(0.1982) were statistically found to be positively and significantly related with agricultural modernization index of tribal farmers at 0.05 level of significance.

As far as the variables "Age" was concerned, the computed correlation coefficient was found to be negative but significantly related with AMI of tribal farmers at 0.05 level of significance.

Table 1- Distribution of the respondents according to their extent of agricultural modernization index (n = 220).

Sr. No.	Agricultural Modernization index	Tribal farmers		Sr. No.	Agricultural Modernization index	Non tribal farmers		'Z' value
		Number	Percent			Number	Percent	
1	Low (Below 28.78)	22	20	1	Low (Below 47.23)	21	19.1	3.6728**
2	Medium (28.78 to 62.20)	71	64.55	2	Medium (47.23 to 83.75)	73	66.36	
3	High (Above 62.20)	17	15.45	3	High (Above 83.75)	16	14.54	
Total		110	100			110	100	

** Significant at 0.01 level of significance

Table 2- Correlation coefficient of selected independent variables with Agricultural modernization (n = 220)

Sr. No.	Variables	'r' value		
		Tribal farmers	Non-tribal farmers	
Personal variables				
[I]	i	Age	-0.3289**	-0.2848**
	ii	Education	0.1089 ^{NS}	0.2966**
Social variables				
[II]	i	Size of family	0.2088*	0.2848**
	ii	Social participation	0.0683 ^{NS}	0.2175*
Economic variables				
[III]	i	Land holding	0.1880*	0.2410*
	ii	Annual income	0.1405 ^{NS}	0.3662**
Situational variables				
[IV]	i	Source of irrigation	0.1249 ^{NS}	0.2356*
	ii	Livestock possession	0.1894*	0.2835**
Communication variables				
	i	Sources of information	0.0971 ^{NS}	0.2368*
	ii	Cosmopolitaness	0.1982*	0.2286*

*significant at 0.05 level; **significant at 0.01 level; NS = Non significant

While the independent variables viz., education, social participation, annual income, source of irrigation and sources of information were concerned, the computed correlation coefficient were found to be non significant, this indicated that they did not establish any relationship with AMI of tribal farmers.

It can be concluded that age, size of family, land holding, livestock possession and cosmopolitaness were the important variables affecting the agricultural modernization index among the tribal farmers.

The probable reason might be that age, size of family, land holding and livestock possession are mostly the components of personal, social and economic growth, respectively, which may have influenced the AMI of tribal farmers.

In the case of non-tribal respondents, out of 10 selected independent variables, the correlation of 4 variables viz., education (0.2966), size of family (0.2848), annual income (0.3662) and livestock possession (0.2835) were statistically found to be positively and significantly associated with AMI at 0.01 level of significance.

Among personal variables "Age" was found to be negative but significantly associated with AMI of non-tribal farmers at 0.01 level of significance.

While the independent variables viz., social participation (0.2175), land holding (0.2410), source of irrigation (0.2356), sources of information (0.2368) and cosmopolitaness (0.2286) were statistically found to be positively and significantly associated with AMI at 0.05 level of significance.

From the above discussion, it can be concluded that all the selected variables were very important variables affecting the AMI among the non-tribal respondents.

The probable reason might be that the non-tribal farmers (general farmers) have an enviable position in the Gujarat state among the all farming community with the rapid development of agriculture, discernible to the tribal farmers and the real benefits of modernization did not trickle down to the backward castes level.

Conclusion

From the research, It can be concluded that majority of the tribal and non-tribal farmers having low to medium extent of AMI. Out of selected ten independent variables age, size of family, land holding, livestock possession and cosmopolitaness were found significantly related with AMI of tribal farmers, In case of non-tribal respondents all ten selected independent variables were found to be significantly associated with AMI. It is indicated that all the selected variables were very important variables affecting the AMI among the non-tribal respondents. The non-tribal farmers have an enviable position in the Gujarat state among the all farming community with the rapid development of agriculture, discernible to the tribal farmers and the real benefits of modernization did not trickle down to the backward castes level. Further it can be reported that the new modern farm technologies required in tribal area for development whole as community.

Conflicts of Interest: None declared.

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