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Research Article

An impact analysis of peasantry's socio - techno - economic change under Integrated Tribal Development Project

MUKESH R. PATEL, J.K. PATEL AND S.A. SIPAI

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SUMMARY : Integrated Tribal Development Project had great influenced on the upliftment of tribal farmers in terms of socio-techno-economic change. The results revealed that great majority of the peasantry had medium to high level of socio-techno-economic change due to implementation of Integrated Tribal Development Project. The independent variables *viz.*, education, occupation, annul income, mass media exposure, change agency contact, level of educational aspiration of their son, economic motivation, cosmopoliteness, risk orientation, scientific orientation and attitude of tribal peasant towards Integrated Tribal Development Project were found to be positively and significantly co-related with the socio-techno-economic change of the tribal peasants. The independent variables such as cosmopoliteness, risk orientation, educational aspiration of son and attitude towards Integrated Tribal Development Programme contributed 48.20 per cent variation in predicting extent of socio-techno economic change. Cosmopoliteness and annual income were the key variables in exerting considerable direct and substantial effect whereas risk orientation and attitude towards Integrated Tribal Development Project had exerted maximum total indirect and negative effect on socio-techno-economic change.

KEY WORDS:
Socio-techno-economic change, Integrated Tribal Development Project, Tribal farmer

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Author for correspondence :
S. A. SIPAI
Department of Extension Education, B.A.College of Agriculture, Anand Agricultural University, ANAND (GUJARAT) INDIA
Email: pathansalman29@yahoo.com

See end of the article for authors' affiliations

BACKGROUND AND OBJECTIVES

The Indian peasants in recent years have shown encouraging sign of changing from traditional to modern one. During the last 65 years, a number of changes have taken place in Gujarat and India through implementation of various development programmes. In Gujarat, there are certain districts, where progress in peasantry socio-techno-economic change is very low in general and tribal districts in particular. Integrated Tribal Development Project (ITDP) was implemented in 1976 throughout the state in tribal pockets for welfare of the tribal peasants even though majority of the peasants in this area not yet able to reach expected level of socio-techno-economic change. To assess this situation present study on an impact analysis of peasantry in socio-techno-economic change under Integrated Tribal Development Project was undertaken with following specific objectives:

- To measure the level of socio-techno-economic change of the tribal farmers.
- To find out the relationship between the selected independent variables and socio-economic change of the tribal farmers.
- To study the relative importance of independent variables in predicting socio-techno-economic change.
- To study the direct and indirect effect between antecedents attribute of tribal peasant on socio-techno-economic change.

RESOURCES AND METHODS

The present study was undertaken in

Integrated Tribal Development Project area of Vadodara district of Gujarat State. Out of five tribal talukas of Vadodara district, two talukas having highest tribal population were selected purposively. Finally, sample of 200 tribal peasants from total 20 villages of two talukas were selected for the study. An interview schedule was developed in accordance with the objectives of the study. The data of this study were collected through personal interview. The statistical measures such as percentage, mean, standard deviation, and coefficient of correlation, stepwise multiple regressions, standard partial regression co-efficient and path analysis were used (Panse and Sukhatme, 1967).

OBSERVATIONS AND ANALYSIS

The experimental findings obtained from the present study have been discussed in following heads:

Overall socio-techno-economic change:

It is the assessment of changes in terms of socio-techno-economic aspect. For the present study the resultant change in terms of impact occurred due to implementation of Integrated Tribal Development Project in terms of socio-techno-economic changes in last ten years have been taken into account as impact. The information in this regard was collected and respondents were classified into three groups as shown in Table 1.

Table 1: Distribution of respondents according to their socio-techno-economic change under ITDP (n=200)

Sr. No.	Level of socio-techno-economic change	Number	Per cent
1.	Low (< 39.96 score)	16	8.00
2.	Medium(between 39.97 to 65.96 score)	128	64.00
3.	High (> 65.96 score)	56	28.00
	Total	200	100.00
Mean ($\bar{x}$) = 52.96		S.D. = 13.00	

The data in Table 1 indicate that majority (64.00%) of the respondents had medium level of socio-techno-economic change followed by 28.00 per cent with high level of socio-techno-economic change, whereas, 8.00 per cent of the respondents were found to have low level of socio-techno-economic change.

Thus, it can be concluded that great majority (92.00%) of the respondents had medium to high level of socio-techno-economic change due to implementation of Integrated Tribal Development Project. This might be attributed to benefit availed by tribal farmers in terms of technical guidance and other development activities carried out by Integrated Tribal Development Project.

The result depicted in Table 2 revealed that out of eighteen independent variables, 11 variables namely, education, occupation, annul income, mass media exposure, change agency contact, level of educational aspiration of their son, economic motivation, cosmopoliteness, risk orientation, scientific orientation and attitude of tribal peasant towards Integrated Tribal Development Project were found to be positively and significantly co-related with the socio-techno-economic change of the tribal peasants whereas age, social participation and organizational participation were found to be negatively and significantly co-related with socio-techno economic change.

Table 2: Relationship between independent variables and socio-techno-economic change (n=200)

Sr. No.	Independent variables	Correlation co-efficient (r value)
	Personal	
1.	Age	-0.236*
2.	Education	0.176*
	Socio-economic	
3.	Occupation	0.175*
4.	Size of land holding	-0.125 NS
5.	Farm power	0.072 NS
6.	Migration habit	0.135 NS
7.	Organizational participation	-0.174*
8.	Social participation	-0.226*
9.	Annual income	0.267*
	Communication	
10.	Mass media exposure	0.249*
11.	Change agency contact	0.202*
	Psychological	
12.	Level of aspiration	0.077 NS
13.	Level of aspiration of son	0.494**
14.	Economic motivation	0.198*
15.	Cosmopoliteness	0.401**
16.	Risk orientation	0.298*
17.	Scientific orientation	0.148*
18.	Attitude towards Integrated Tribal Development Project (ITDP)	0.334**

* and ** indicate significance of values at P=0.05 and 0.01, respectively
NS=Non-significant

Relative importance of independent variables in predicting socio-techno-economic change:

In order to assess the contribution of each independent variable to the dependent variable, the stepwise regression was carried out and results are presented in Table 3.

From the Table 3, it can be observed that The R^2 values at each stage of step up regression were found to be significant at 0.01 level of probability. Contribution of all the variables included in the study was found to be 53.00 per cent as overall R^2 was 0.530.

It can be inferred that 34.80 per cent variation in socio-techno economic change was contributed by cosmopoliteness

of the tribal farmers. However, cosmopoliteness + scientific orientation accounted for 41.40 per cent, cosmopoliteness + scientific orientation + economic motivation accounted for 45.70 per cent, cosmopoliteness + scientific orientation + economic motivation + occupation accounted 46.80 per cent and cosmopoliteness + scientific orientation + economic motivation + occupation + attitude towards Integrated Tribal Development Programme accounted 48.20 per cent change in dependent variable.

The partial 'b' values of these four variables were converted into standard partial 'b' values which were 0.832 for cosmopoliteness, -0.427 for risk orientation, 0.276 for educational aspiration of son, -0.127 for occupation and -0.172 for attitude towards Integrated Tribal Development Programme. The 't' values for partial 'b' were significant at 0.01 level in case of all the four independent variables.

According to the values of standard partial 'b' from the highest to lowest, the rank order were given first to cosmopoliteness, second to risk orientation, third to educational aspiration of son, fourth to attitude and fifth to occupation towards Integrated Tribal Development Programme. Similarly Hanumanaikar *et al*. (2011) worked on the socio-economic profile and adoption of paddy cultivation practices by Siddhi tribal community farmers of North Karnataka and Patel *et al.* (2012) worked on the Socio-economic status of tribal farm women as influenced by milk co operatives.

Direct and indirect effect between antecedents attribute of tribal peasant on socio-techno-economic change under integrated tribal development project:

To study the influence of one variable on other variable both directly as well as through other variables presented in the situation. Hence, the significant variables were subjected to path analysis. The result of path analysis is presented in Table 4.

Direct effect:

The data in Table 4 reveal that the variables, cosmopoliteness, annual income, level of aspiration and mass media exposure exhibited positive direct effect whereas risk orientation, attitudes towards Integrated Tribal Development Project, age, occupation, organizational participation,

Table 3: Step-wise multiple regression analysis of socio-techno-economic change

Sr. No.	Independent variable	Multiple co-relation co-efficient (R)	Co-efficient of determination (R^2)	'F' values	Partial regression co-efficient (b)	't' value	Standard partial regression co-efficient (SPRC)	Rank
1.	X_{15}	0.590	0.348	103.61	2.393	8.157	0.832	I
2.	$X_{15}+X_{17}$	0.643	0.414	68.14	-1.166	-5.111	-0.427	II
3.	$X_{15}+X_{17}+ X_{14}$	0.676	0.457	53.82	0.714	3.495	0.276	III
4.	$X_{15}+X_{17}+ X_{14}+X_3$	0.684	0.468	42.01	-3.281	-2.335	-0.127	IV
5.	$X_{15}+X_{17}+X_{14}+X_3+ X_{18}$	0.695	0.482	35.41	0.220	-2.292	-0.172	V

** indicate significance $R^2 = 0.530$

Table 4: Direct and indirect effect of independent variables on socio-techno-economic change under integrated tribal development project

Sr. No.	Variables		Direct effect	Total indirect effect	Substantial indirect effect through 1st		2nd	
1.	Age	X_1	-0.1507	-0.0853	-0.4423	X_{15}	-0.2546	X_9
2.	Education	X_2	-0.0203	0.1961	0.2271	X_9	0.2143	X_{15}
3.	Occupation	X_3	-0.1355	-0.0394	-0.0735	X_{14}	0.0454	X_9
4.	Organizational participation	X_7	-0.1248	-0.0492	0.2606	X_9	-0.1355	X_{17}
5.	Social participation	X_8	-0.1098	-0.1164	-0.2113	X_{14}	-0.1098	X_7
6.	Annual income	X_9	0.4115	-0.1445	0.3018	X_{15}	0.1665	X_{17}
7.	Mass media exposure	X_{10}	0.1010	0.1479	0.1910	X_9	-0.1866	X_{17}
8.	Change agency contact	X_{11}	-0.0597	0.2617	0.3242	X_9	-0.2463	X_{17}
9.	Level of educational aspiration of son	X_{13}	0.3886	0.1054	0.3808	X_{15}	0.2213	X_{17}
10.	Economic motivation	X_{14}	-0.1229	0.3210	0.2567	x_{15}	0.2216	X_9
11.	Cosmopoliteness	X_{15}	0.5319	0.1309	-0.2731	X_{17}	0.2338	X_9
12.	Risk orientation	X_{16}	-0.3528	0.6508	0.4116	X_{15}	0.2438	X_{14}
13.	Scientific orientation	X_{17}	-0.1238	0.2718	0.3467	X_{15}	0.3155	X_9
14.	Attitude towards ITDP	X_{18}	-0.2225	0.5561	0.3762	X_{15}	0.2145	X_{14}

scientific orientation, economic motivation, social participation and change agency contact exerted negative direct effect on socio-techno-economic change.

Cosmopoliteness had maximum positive direct effect (0.5319) on socio-techno-economic change fallowed by annual income (0.4115), level of aspiration (0.3886) and mass media exposure (0.1010), whereas risk orientation had the highest negative direct effect (-0.3528) followed by attitude towards Integrated Tribal Development Project (-0.2225).

Total indirect effect:

So far, total indirect effect is concerned 9 variables and 5 variables had positive and negative total indirect effect on socio-techno-economic-change. Further, it can be observed that risk orientation (0.6508) had maximum total indirect effect followed by attitude towards Integrated Tribal Development Project (0.5561), scientific orientation (0.2718) and change agency contact (0.2617), whereas annual income had maximum negative indirect effect (-0.1445).

Substantial indirect effect:

It was further revealed that out of 28 substantial indirect effects, nine routed through annual income, eight through cosmopoliteness, six through scientific orientation and four through economic motivation.

With regards to substantial indirect effect the first substantial positive indirect effect on socio-techno-economic change was put forth by risk orientation (0.4116) followed by attitude towards Integrated Tribal Development Project (0.3762), scientific orientation (0.3467) through cosmopoliteness. However, substantial negative indirect effect on modernization was put forth by age (-0.4423) through cosmopoliteness. Similarly Patel *et al.* (1995) studied the techno-economic change among beneficiary farmers in watershed area.

Conclusion:

To epitomize the results it can be said that great majority of the peasantry had medium to high level of socio-techno-economic change due to implementation of Integrated Tribal Development Project. The independent variables *viz.*, education, occupation, annul income, mass media exposure, change agency contact, level of educational aspiration of their son, economic motivation, cosmopoliteness, risk orientation, scientific orientation and attitude of tribal peasant towards Integrated Tribal Development Project were found to be positively and significantly co-related with the socio-techno-economic change of the tribal peasants. The independent variables such as cosmopoliteness, risk orientation, educational aspiration of son and attitude towards Integrated Tribal Development Programme contributed 48.20 per cent variation in predicting extent of socio-techno economic change. Cosmopoliteness and annual income were the key variables in exerting considerable direct and substantial effect whereas risk orientation and attitude towards Integrated Tribal Development Project had exerted maximum total indirect and negative effect on socio-techno-economic change.

Authors' affiliations :

MUKESH R. PATEL, Sardar Smruti Kendra, Anand Agricultural University, ANAND (GUJARAT) INDIA

J. K. PATEL, Dairy Vigyan Kendra, S.M.C. College of Dairy Science, Anand Agricultural University, ANAND (GUJARAT) INDIA

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