



Impact of Sugar Factories on Socio-Economic Development in Karad Tahsil

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Abstract:

Development is a term that is both region and time-specific. It implies that the definition of development can differ from one area to the next, as well as from one time to the next within the same area. Given that different social sciences have their viewpoints on development due to differences in theory, geographers' new view provides the most comprehensive conceptualization of the development process.

The two most significant parameters for measuring social development include quality of life and social justice. It is the goal of social development to improve the well-being of each person in society so they can achieve their full potential. The well-being of every individual is connected to the progress of society.

Economic development means the enhancement in the standard of living of the people in general or enhancement in the standard of living, per capita income, worker efficiency, and overall improvement in quality of life.

Keywords: *Sugar Factories, Socio-Economic Development, Karad and Satara.*

Introduction:

The agricultural development of the study region with reference to the contribution of the sugar Factory and related aspects like cropping pattern, decadal change, types of agriculture, use of modern equipment's, changes in sources of irrigation, fertilizers, and jaggery production in Karad Tahsil.

The present research is exclusively devoted to conceptualizing the development process, development in geography, and economic, social, and political development. The following are

the socio-economic, political, and demographic developments.

Concept of Development in Geography:

Development is a term that is both region and time-specific. It implies that the definition of development can differ from one area to the next, as well as from one time to the next within the same area. Given that different social sciences have their viewpoints on development due to differences in theory, geographers' new view provides the most comprehensive

conceptualization of the development process.

Various disciplines, such as economics, sociology, politics, research, history, and geography, often deal with the growth process from their perspective. They have their understanding of the creation process, which is in line with the thrust and theory of their respective disciplines. However, among the different social sciences, economics surpasses the contributions of other social scientists. Economists have expressed their views on development in terms of economic growth when it comes to conceptualizing development and formulating development models and theories.

Concept of Economic Development:

Economic development means the enhancement in the standard of living of the people in general or enhancement in the standard of living, per capita income, worker efficiency, and overall improvement in quality of life.

Increased jobs, income, and, in certain cases, industrial growth are all part of economic development. Better living standards, access to education, health, clean water, housing, and leisure are examples of social growth.

Concept of Social Development:

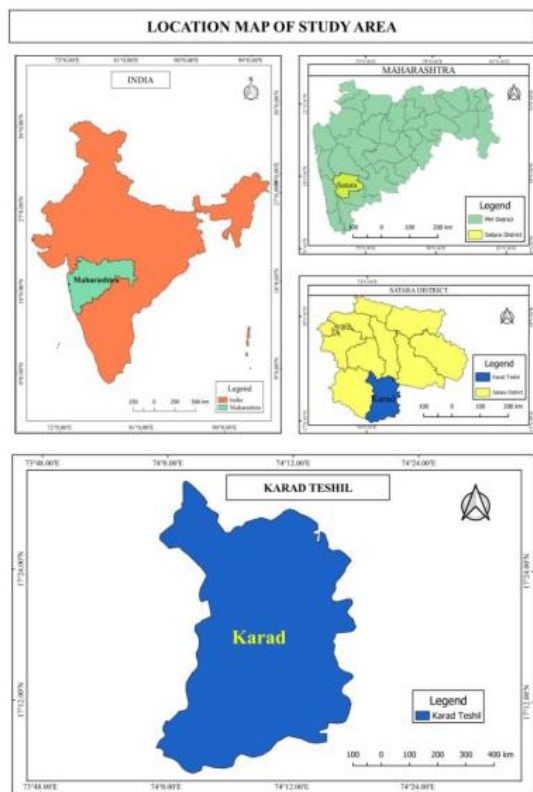
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Study Region:

Karad tahsil lies in the Satara district of Maharashtra, India, consisting of 216 villages. Geographically Karad tahsil is located between 1706't 74032' North Latitude and 730 58' to 740 16' East Longitude. It has an average elevation of 566 meters. It lies at the confluence of the Krishna and Koyana Rivers, called 'Preeti Sangam,' meaning the confluence of love. It has a maximum temperature of 410 oC and a minimum of 150 oC. The average annual rainfall in Karad is 700 mm and has a total area of 566 m2. It is located in a hilly region. The Krishna, Koyana, Uttar mand, Tarali, and their tributaries have well-developed drainage patterns in the study area.

Karad tahsil has a population of 1630272 people, according to the 2011 census. The sex ratio in Karad tahsil is 972 females per 1000 males, with a literacy rate of 75.54 percent. Basalt is the main stone in this region, with distinctive black soil occupying the river valley. The Deccan trap is the only geological formation in this area. In this region, agriculture is the major occupation.



Objectives of the Study:

1. To study the variable for the economic development in Karad Tahsil.
2. To study the Socio-Economic Development.
3. To study the Composite Z-Score and Rank with sample villages of the variables for the Economic Development in karad Tahsil. .

Research Methodology:

To calculate overall levels of Socio-economic development and it's even, the data of all variables indicators have been transformed into Z-score techniques. The formula is:

$$Z - Score (Z_i) = \frac{x_i - \bar{x}}{S.D}$$

Where Z_i -Z-Score For i th observation X_i -Original Value of i th observation \bar{X} -Mean value of X' variables

S.D.-Standard Deviation of X' variable. In order to classify blocks according to their levels of development, the composite Z-score have been grouped into high, medium, and low.

Using a quartile-based method, the standard score resulted in a number that was ranked least to largest and divided into three equal parts.

$$\text{Quartile (Q1)} = ((n+1)/4)\text{th}$$

$$\text{Quartile (Q2)} = ((n+1)/2)\text{th}$$

$$\text{Quartile (Q3)} = (3(n+1)/4)\text{th}$$

Levels of Socio-Economic Development in Karad Tahsil:

Using an appropriate statistical method, the researcher has attempted to ascertain the changes that have occurred in this section. When the data were analyzed statistically, it became clear that the Karad Tahsil had undergone considerable transformations. This study will analyze spatial variances in several variables and economic development in the study area's sample villages. In order to have a better understanding of the differences in the studied area, a detailed economic development analysis is carried out. Applied economic development is used to identify differences across villages. Measurement of economic development levels refers to the information gathered under several criteria. Information gathered is tallied and properly formatted, and statistical procedures are used to arrive at conclusions. In order to better comprehend the current state of economic growth, a comparison analysis was conducted across 30 communities with 30 farmers in each village.

To determine the level of Socio-Economic development, various indicators variable have been used, such as: -

Availability of Gobar gas plant
Availability of Drip irrigation
Per family-annual income above 1 lakh

Per family savings above Rs. 20,000 (Annual)

RCC house

TV Set per family

Four-Wheeler per family

Annual expenditure per family above Rs. 80000/-

Acquired higher education

Table No. 1: Variables for the Economic Development in Study Area

Sr. No.	Villages	Availability of Gobar Gas Plant (1)	Availability of Drip Irrigation (2)	Per Family Annual Income above 1 Lakh (3)	Per family Saving Above Rs. 20,000 (Annual) (4)	RCC. House (5)	TV Set per family (6)	Four Wheeler per family (7)	Annual expenditure per family Above Rs. 80,000/- (8)	Acquired Higher Education (9)
1	Saidapur	15	31	28	12	27	30	19	25	18
2	Masur	31	34	22	09	23	30	12	21	13
3	Kalgaon	05	09	19	04	16	28	06	16	08
4	Chikhali	06	18	17	03	17	29	05	15	07
5	Surali	08	29	21	02	17	27	08	14	06
6	Shamgoan	08	22	21	03	15	26	04	13	08
7	Khodshi	19	29	29	06	25	30	11	22	10
8	Vadgaw Haveli	24	25	27	11	26	30	17	24	12
9	Vadoli Nileshewar	09	17	29	07	21	28	12	19	09
10	Sajur	04	02	22	05	23	29	15	21	10
11	Khalkarwadi	05	05	18	02	19	27	07	19	06
12	Chore	09	29	27	03	26	30	13	24	09
13	Pal	16	28	28	09	28	30	13	24	08
14	Yerwale	05	16	21	03	21	28	09	19	06
15	Kale	11	35	29	11	28	28	12	26	11
16	Dhushre	08	29	28	06	27	30	13	24	10
17	Shenoli	12	19	19	04	26	28	10	26	09
18	Khubi	16	26	18	08	27	30	11	24	09
19	Rethare Br.	27	36	29	09	28	30	15	23	12
20	Gholeswar	09	15	19	04	26	30	10	24	06
21	Aane	12	28	22	02	23	30	05	22	05
22	Kusur	06	08	24	03	27	25	06	24	08
23	Salshir Be	12	26	20	04	22	26	08	20	06
24	Jinti	03	08	19	03	15	26	09	13	04
25	Ghogaon	09	32	20	02	18	26	11	15	05
26	Shewalwadi	06	08	19	02	14	28	04	13	06
27	Manav	05	14	24	08	21	28	08	18	05
28	Ond	24	27	24	07	16	29	08	15	08
29	Korti	15	29	28	08	25	30	13	22	09
30	Konegaon	09	14	22	05	18	30	09	18	11
Total		350	648	693	165	665	856	303	603	254
Mean		11.67	21.6	23.1	5.5	22.2	28.53	10.1	20.1	8.47

Table No. 2: Composite Z-Score and Rank with sample villages of the variables for the Economic Development in Karad Tahsil

Sr. No.	Villages	Zi(1)	Rank	Zi (2)	Rank	Zi(3)	Rank	(Zi)4	Rank
1	Rethare Br.	2.13	2	1.47	1	1.45	2	1.14	4
2	Pal	0.6	6	0.65	11	1.21	5	1.14	5
3	Saidapur	0.46	8	0.96	5	1.21	8	2.12	1
4	Kale	-0.09	13	1.37	2	1.45	1	1.8	2
5	Dhushre	-0.51	20	0.76	9	1.21	6	0.16	13
6	Khubi	0.6	7	0.45	14	-1.26	29	0.82	9
7	Korti	0.46	9	0.76	10	1.21	7	0.82	7
8	Chore	-0.37	15	0.76	8	0.96	10	-0.82	20
9	Vadgaw Haveli	1.71	4	0.35	16	0.96	9	1.8	3
10	Khodshi	1.02	5	0.76	7	1.45	3	0.16	12
11	Masur	2.69	1	1.27	3	-0.27	17	1.14	6
12	Aane	0.05	10	0.65	12	-0.27	15	-1.14	26
13	Manav	-0.93	26	-0.78	23	0.22	12	0.82	8
14	Konegaon	-0.37	18	-0.78	24	-0.27	16	-0.16	15
15	Shenoli	0.05	12	-0.27	18	-1.01	27	-0.49	19
16	Salshir Be	0.05	11	0.45	15	0.76	22	-0.49	16
17	Gholeswar	-0.37	17	-0.67	22	-1.01	24	-0.49	17
18	Ond	1.71	3	0.55	13	0.22	13	0.49	11
19	Ghogaon	-0.37	14	1.06	4	-0.76	21	-1.14	28
20	Chikhali	-0.79	22	-0.37	19	-1.5	30	-0.82	25
21	VadoliNileshewar	-0.37	16	-0.47	20	1.45	4	0.49	10
22	Khalkarwadi	-0.93	28	-1.7	29	-1.26	28	-1.14	30
23	Yerwale	-0.93	25	-0.57	21	-0.52	18	-0.82	22
24	Shamgoan	-0.51	21	0.04	17	-0.52	20	-0.82	23
25	Sajur	-1.06	29	-2	30	-0.27	14	-0.16	14
26	Surali	-0.51	19	0.76	6	-0.52	19	-1.14	27
27	Shewalwadi	-0.79	24	-1.39	28	-1.01	25	-1.14	29
28	Kusur	-0.79	23	-1.39	26	0.22	11	-0.82	21
29	Kalgaon	-0.93	27	-1.29	25	-1.01	26	-0.49	18
30	Jinti	-1.2	30	-1.39	27	-1.01	23	-0.82	24

Table No. 3: Composite Z-Score and Rank with sample villages of the variables for the Economic Development in Karad Tahsil

Sr. No.	Villages	Zi (5)	Rank	Zi (6)	Rank	(Zi)7	Rank	(Zi)8	Rank	(Zi)9	Rank	Summation of Rank	
1	Rethare Br.	1.37	2	0.92	1	-0.0265	15	1.39777	2	0.18266	10	39	Very High
2	Pal	1.37	3	0.92	2	0.76882	5	0.92395	5	0.52092	7	49	Very High
3	Saidapur	1.15	4	0.92	3	-0.5567	20	-1.2082	25	-0.1556	18	92	Very High
4	Kale	1.37	1	-0.33	17	-1.087	26	0.9713	23	-0.1556	17	102	Very High
5	Dhushre	1.15	6	0.92	5	-0.0265	16	0.92395	9	-0.8321	21	105	Very High
6	Khubi	1.15	5	0.92	4	0.2386	12	0.92395	8	-0.18266	12	100	Very High
7	Korti	0.72	12	0.92	9	-1.087	25	0.92395	10	-0.1556	16	105	Very High
8	Chore	0.94	11	0.92	8	0.76882	6	0.45013	12	0.18266	13	103	Very High
9	Vadgaw Haveli	0.94	8	0.92	6	-1.3521	27	-0.45.13	14	-1.1704	27	114	High
10	Khodshi	0.72	13	0.92	10	0.2386	13	-1.2082	24	-1.1704	29	116	High
11	Masur	0.29	14	0.92	11	-0.2916	17	-1.6821	28	-1.5086	30	127	High
12	Aane	0.29	16	0.92	12	0.2386	14	0.45013	13	0.52092	8	126	High
13	Manav	-0.14	18	-0.33	19	0.50371	10	1.39777	1	0.85918	5	122	High
14	Konegaon	-0.79	22	0.92	13	1.29905	3	0.68704	11	1.19744	4	126	High
15	Shenoli	0.94	10	-0.33	18	0.76882	8	0.92395	7	0.18266	11	130	Medium
16	Indoli	0.07	17	-1.59	26	1.82927	2	0.92395	4	1.19744	3	116	High
17	Ghoshwar	0.94	9	0.92	7	0.50371	9	-0.2606	18	0.18266	14	137	Medium
18	Ond	-1.22	26	0.3	16	-0.5567	22	-0.4975	22	-1.1704	28	154	Medium
19	Ghogaon	-0.79	23	-1.59	27	0.50371	11	0.21322	16	1.5357	2	146	Medium
20	Chikhali	-1.01	24	0.3	15	0.76882	7	0.92395	6	-0.1556	15	163	Medium
21	VadoliNileshew ar	-0.14	19	-0.33	20	-1.6172	29	-1.6821	29	-0.8321	26	173	Medium
22	Khalkarwadi	-0.58	21	-0.96	24	2.35949	1	1.16086	3	3.22701	1	165	Medium
23	Yerwale	-0.14	20	-0.33	21	-0.2916	18	-0.2606	19	-0.8321	23	187	Low
24	Shamgoan	-1.44	28	-1.59	28	-0.2916	19	-0.4975	21	0.85918	6	183	Low
25	Sajur	0.29	15	0.3	14	-0.5567	21	-1.4452	27	-0.8321	25	189	Low
26	Surali	-1.01	25	-0.96	25	-0.5567	23	-0.0237	17	-0.8321	22	183	Low
27	Shewalwadi	-1.66	30	-0.33	23	1.29905	4	0.21322	15	0.52092	9	187	Low
28	Kusur	1.15	7	-2.22	30	-1.3521	28	-1.2082	26	-0.4939	20	192	Low
29	Kalgaon	-1.22	27	-0.33	22	-0.8218	24	-0.2606	20	-0.8321	24	213	Low
30	Jinti	-1.44	29	-1.59	29	-1.6172	30	-1.6821	30	-0.1556	19	241	Low

Levels of Socio-Economic Development in Selected Villages:

All ten variables have been aggregated to assess the level of economic development in the study area. The Z-score value of ten variables was transformed and combined with the help of the Z-score and prepared a composite score. On the basis of the summation of ranks and quartiles, the selected villages have been categorized into four classes, viz., very high, high, medium, and low, which clearly shows the spatial variation in the level of agricultural development in the study area.

Very High Levels of Economic Development:

As a result, the villages, including Rethare br., Pal, Kale, Khubi, Saidapur, Chore, Dhushere, Korti, and their summation rank of less than 107.25; these are extremely well-developed villages. It has been found that the majority of villages with a high annual income are economically developed. Villages surrounding the sugar factory have also been noticed. The sugar factory provided all economic and social schemes.

Table No.4: The spatial pattern of the level of agricultural development in Selected Villages Z-score value Level of agricultural Development

Z-score value	Level of agricultural Development	No. of Villages	Name of the Villages
Less than 107.25	Very High	8	Rethare br., Pal, Kale, Khubi, Saidapur,Chore, Dhushere, Korti,
107.25-128.5	High	7	Aane, Vadgawhaveli,Manav, Khodshi, Konegaow, Indoli, Masur
128.5-180.5	Medium	7	Shenoli, Goleshwar, Khalkarwadi, Chikhali, Ond, Sajur, Ghogaon
Abov 180	Low	8	Kusur,Shevalwadi, Vadolinileshwar, Yerwale, Surali, Shamgaon, Kalgaon, Jinti

High Levels of Economic Development:

Chore, Aane, Vadgaw haveli, Manav, Khodshi, Masur, Indoli and Konegaow have developed, with their rank summation ranging from 107.25 to 128.5. They are well-developed villages.

Medium Levels of Economic Development:

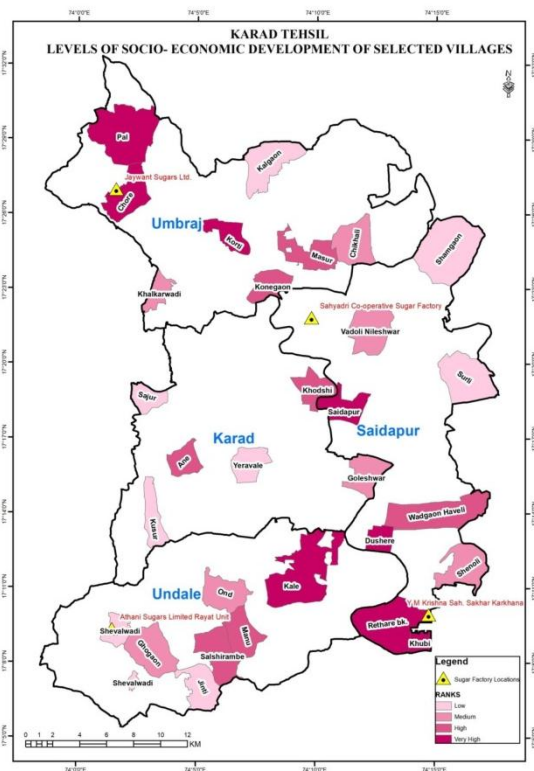
The villages fell into the medium group, with a rank summation ranging from 128.5 to 180.5 Goleshwar, Shenoli, Khalkarwadi, Chikhali, Ond, Sajur, and Ghogaon are included in this group.

Low Levels of Economic Development:

Kusur, Shevalwadi, Vadoli Nileshwar, Yerwale, Surali, Shamgaon, Kalgaon, and Jinti are the eight villages with sums of rank greater than or equal to 180 that fall into this category of low economic development. According to the data, Jintivillage has the lowest level of

economic development out of all the villages in the area under consideration.

As a result, sugarcane production near the sugar factory has been shown to be high development. The annual income and living standards in these villages are both high. The standard of living in these villages is rather high, especially when it comes to the quality of the household amenities. As can be seen from the preceding discussion and table, villages that provide sugar factory facilities are automatically well-developed in terms of all other characteristics.



Conclusions:

It has been discovered that the study area's specific distribution variables and economic development are not uniform. The study emphasizes that numerous indicators variables were utilized to determine the level of economic development in thirty villages. For example, the availability of a gober gas plant and drip irrigation, above-poverty-line families' annual income, savings, RCC house, TV set per family, four-wheeler per family, annual expenditure per family, and higher education obtained are used to calculate overall levels of economic progress and its evenness. Z-score approaches were used to change the data distribution for all variable indicators. The study shows that the Rethare br., Pal, Kale, Khubi, Saidapur, Salshirbe, Dhushere, and Korti villages are well developed, as are Chore, Aane, Vadgaw Haveli, Manav,

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Khodshi, Shenoli, and Konegaon villages. Goleshwar, Masur, Khalkarwadi, Chikali, Ond, and Sajur are medium-developed villages, while Ksur, Shewalwadi, Vadoli Nileshtar, Yerwale, Suruli, Shangaon, and Kalegaon are low-developed villages.

Satara district is a significant district in Maharashtra. Sugar industry development began after independence with the first sugar factory in Phaltan taluka in 1951 and the second in Karad in 1960-61. There are now 25 sugar factories in various talukas in the Satara district. In Satara district, Karad is a large and economically significant taluka. The sugar industry's growth has had certain agricultural, economic, and social consequences in rural areas.

Economic development has resulted in various benefits, including a rise in income, the creation of jobs, the increase in the value of the agricultural property, the increase in purchasing HYV, the development of irrigation facilities, and an increase in the amount of money spent on functions. On the other side, societal impacts such as education, medical care, drinking water, sports events, and road and transit infrastructure are growing.

References:

1. Andreae, B (1975): The Types of irrigation farming; Applied science and developed Vol.6, PP.77-93.
2. Bhanje, B.M. (1993): Sugar Co-operatives and rural transformation- A geographical Perspective of the command area

- of Warna Sugar factory, unpublished thesis, Shivaji University, Kolhapur.
3. Desai D.K.(1966): Technological changes and its diffusions in Agriculture, Indian Journal of Agriculture, Economic Vol. XXI No.1.
 4. Jadhav, MG (1986): Sugarcane cultivation: A Regional Survey, Himalaya Publishing House, Mumbai.
 5. Jadhav VB (1987): Socio economic and Technological impact of co-operative credit on agriculture, Unpublished Ph.D. Thesis, submitted to the Shivaji University, Kolhapur 2-479.
 6. Majid Husain (2020): Agricultural geography, Inter-India publications, New Delhi.
 7. Nikam BT: (2012): Role of Sugar Factory in Rural Development (A case study of vitthal Sahakari Sakhar Karkhana, Venunagar – Pandharpur) Young Researcher Journal Vol.1 No.4 PP 9-17.
 8. Pawar, CT (1989): Impact of Irrigation: A Regional Perspective, Himalaya Publishing House, Bombay.
 9. Phule, BR (2013): Impact of sugar Factory on the socio-economic life of sugarcane Growers- Young Researcher Journal Vol.II No.2, June- 2013.