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Factors Affecting Quality of Life in India: An Inter-State Analysis

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ABSTRACT

This study attempts to examine the growth process of India from sustainability point of view as measured in terms of improvement of quality of life while analyzing the effects of social, economic and environmental development on the quality of life. A cross sectional analysis of various indicators among different states of India is used to test the sustainability of development process by integrating the index of quality of life, quality of environment and Index of social and economic development. It is found that the growth process so far has ignored the sustainable development in India. There is thus a need to make development compatible with environment.

Introduction:

Growth process generally creates more pressure on environmental resources. On one hand, it uses more natural resources as inputs in the production of commodities while dumping more production waste and consumption into the environment. In an attempt to improve quality of life through more baskets of goods and services, it damages quality of environment through immersion of polluted gases, soil erosion, water pollution, global warming and industrial wastes. There is thus a conflict between the goals of growth and environment in the economy. Both the higher level of growth and a good quality environment are needed for the betterment of our life. There is thus a need to integrate development efforts and improvement in the quality of environment. The process of integrating economy, development and environment is known as sustainable development. It recognizes that all the development decisions must simultaneously consider the aspects of economy, equity and environment, if both future and present generations are to enjoy high quality of life. But the growth process in developing countries suffer from abnormal uses of natural resources brought about by the demand of a rapidly growing population caught in a vicious circle of poverty for their economic development.

Growing population has placed great strain on environment. The growing population, along with rapid urbanization and industrialization, has placed significant pressure on basic infrastructure and natural resources in the poorer countries. Thus the process of economic development has led to over exploitation of natural resources, thus causing ecological imbalance in the environment.In a developing country like India where the problem of unemployment and poverty are more severe, one cannot ignore the optimization of growth. Any act, policy or program, which cannot take care of poverty, unemployment, environment and ecology, cannot be included in the process of sustainable development. It is now widely recognized that development without considering environmental consequences cannot sustain. Moreover, the impacts of environmental degradation have not been uniform, as the weaker sections of our society are most affected. This is because the poor depend more on nature for their livelihood in our agricultural based economy. Degrading environment will not only hurt their livelihood but make their survival difficult. Thus the environmental concerns in our country must be linked with people's sustainable lives and well-being. This is

because environmentally destructive economic development will impoverish the poor even further and destroy their base for livelihood. Thus in many developing countries, the prospects of long term development requires careful management of natural resources. Every economic action will have some effect on environment and similarly, maintaining environment occurs some costs.

The real problem is at firstto understand physical linkages within environmental system and secondly to transform the direction of economic policy, which makes economy environmental friendly. It is therefore important to examine the growth process of India from sustainability point of view as measured in terms of improvement of quality of life while analyzing the effects of social, economic and environmental development on the quality of life.

Review of Literature:

According to the report of World Commission on Environment and Development, famously known as the Brundtland Report (David Pearce: 1998), "sustainable development is the development that meets the need of the present without compromising the ability of future generation to meet their own needs." Adleman,Fetino and Golan (1997) has revealed that the major economic source of damage of environment in developing countries lie in the energy consumption and agriculture system. Ketkal (1998) has explored the linkages between economic, human and environmental aspects in ten developing countries to test whether economic growth has accompanied by improvement in quality of human life and environment. It is concluded that the increase in per capita is accompanied by reduction in the incidences of poverty, infant mortality and increase in life expectancy, literacy, caloric food intake, access to health services, safe drinking water and sanitation services. Further, Greenway(2004) explains that currently over 80 countries, representing 40 percent of the world's population are subject to serious water shortages, which would lead to global warming. Global warming not only disturbs rainfall patterns, suppresses the human immune system but also induces natural disasters.

Apart from these, there are many more important issues, to name a few culture of consumerism, social and economic disparity, and health and education standards. Availability and uses of infrastructural amenities, etc., which directly or indirectly affect the quality of environment and as well as quality of life.The study of quality of life is an analysis of influences upon people's happiness and well-being. The ultimate goal of quality of life study and its subsequent applications is to enable people to live quality lives- lies that are both meaningful and enjoyed. Max-Neef (1995) suggests that economic growth tends to bring an improvement in the quality of life, but only to a certain limit, after which, the quality of life actually starts degrading.

There are many approaches to measure quality of life, subjective well-being (SWB)beinga new scientific approach.Slottje (1991), Becker, Philipson and Soares (2003), Roback (1982) and Liu (1975) have worked in this direction.Diener and Suh(1997) have discussed the "good life" and the desirable society for millennia. It is argued that social indicators and subjective well-being measures necessary to evaluate a society and add substantially to the vagrant economic indicators that are favored by policy makers. Theyfurther present the relation between the composite advanced QOL index and the per capita purchasing power of nations. The QOL index is made up of variables such as number of physicians per capita, savings rate income quality and environmental treaties signed. The study demonstrates, however, that there is more to quality of life than simply living in a well the nation. According to Dienerand Suh(1997) social indicators, subjective well-being measures and economics indices are needed in unison to understand human quality of life and to make inform policy decisions.

Although the various measures each have a number of quantity of environment and weakness, they are methodologically and conceptually complementary.The basic objective of India's planning process has always been to improve in people'swell-being and standard of living. The desire of people to improve the quality of life remains ever persisting. Mere per capita income or per capita consumption cannot capture the welfare aspect in a country like India having inherent heterogeneity of people land and culture. Other works using indicators in measuring quality of life include Knopman et.al. (2015), Kayıkç (2015), Veca (2015), and Fassio et.al. (2013). There are many indicators which influence the quality of life in our society. These measures neglect many social indicators, relevant to individual social welfare. There istherefore a need to construct appropriate indexesto measure the benefits of sustainable development.

This study is cross sectional analysis of various indicators among different states of India to test the sustainability of development process by integrating the index of quality of life, quality of environment and Index of social and economic development. This will help us to understand how various social, economic and environmental factors affect quality of lifethe States This study may prove to be an important contribution for evaluation of development policy in terms of its sustainability perspective at State level in the country.

Objectives:

1. To study the indicators of quality of life, social, economic and environment development among different states in India
2. To analyze inter-State disparities in quality of life, social, economic and environmental development at State level.
3. To study the sustainability of development process by inter relating index of quality of life quality of environment and Social and Economic development index.

Methodology:

This study is an attempt to establish a link between index of Quality of life and Quantity of environment and index of social and economic infrastructure among all 29 major States in the country. The study is based on secondary data which are collected from various sources. The major sources of data are: RBI's Handbook of Statistics on Indian States; “Agricultural Statistics at a Glance 2015” by Ministry of Agriculture & Farmers Welfare, Government of India; Ministry of Statistics and Programme Implementation, Government of India's Statistical Handbook.

Indicators of Quality of Life:

Quality of life is a function of economy well-being as well as access to basic amenities.It is now well recognizedthat GNP has a limited capacity to capture various human dimensions of development and equity aspect. In the light of this consideration, following indicators are selected to develop index of quality of life for the cross- sectional analysis among 29 States. Barring Gini Coefficient and Literacy Gap, all other variables show positive contribution to the improvement in quality of life.

1. Gini Coefficient,
2. Monthly Per Capita Consumption Expenditure (Rural and Urban),
3. Literacy Gap,
4. Households with Safe Drinking Water,

5. Life Expectancy at Birth,
6. Sex ratio.

Indicators of Quality of Environment:

There are many indicators which reflect the Quality of Environment following variables are included to access the level of quality of environment among the States. Barring the percentageof households with no latrine and area under food grain all other variables show negative contribution to the improvement in quality of environment.

1. Percentage of Households with no Latrine,
2. Cropping Intensity,
3. Urbanization,
4. Land Degradation,
5. Percentage area under food grains,
6. Number of vehicles per lakh population.

Indicators of Social Development:

There are many indicators which reflects the social development. Following variables are included to access the level of social development among the States.Allof the variables show positive contribution to the improvement in quality of environment.

1. Literacy Rate,
2. Infant Mortality Rate,
3. Density of Schools,
4. Number of Teachers per thousand population,
5. Primary Health Centers,
6. Sub Health Centers,
7. Households with Septic Tank/Flush.

Indicators of Economic Development:

There are many indicators which reflects the economic development in a region.Following variables are included to access the level of economic development among the States.All of the variables show positive contribution to the improvement in quality of environment.

1. Factories per thousand square kilometer,
2. Credit-Deposit Ratio,
3. Per Capita Electricity Consumption (KwH),
4. Per Capita Income.

We have collected secondary information related to above mentioned indicators to construct a composite index of quality of life, environment, and social and economic development indices by following ranking and indexing method. To make these indicators additive, we have converted them into standardized format using a distant function. The indicator value is thus normalized as,

$$X_i = \frac{X_i - MinX_i}{MaxX_i - MinX_i}$$

Where, X_i is the variables X for i^{th} district; $MinX_i$ is the minimum value of variable and $MaxX_i$ is its maximum value in the State.

After normalizing the variables, the composite Indexes were calculated by averaging all the indicators for each category. Thus, these indexes bring out a composite comparative profile of quality of life, environment and economic and social development in the states.

Status of Quality of Life at State Level:

To examine the performance of States on the basis of these dimensions, we have used cross-tabulations as a graphical tool and regression as a statistical of analysis. This enabled us to compare variability of districts based on the level of development.

Table 1: Indexes and Ranks of States

States	LIFE	Rank	SOCI	Rank	ECOI	Rank	ENVI	Rank
Andhra Pradesh	0.5089	12	0.3343	18	0.4913	8	0.6158	13
Arunachal Pradesh	0.5338	10	0.2288	29	0.1339	23	0.7439	4
Assam	0.3502	25	0.3475	17	0.1095	26	0.6954	10
Bihar	0.3246	28	0.2619	25	0.0508	29	0.5948	16
Chhattisgarh	0.3433	27	0.2415	28	0.3711	11	0.5221	26
Goa	0.7417	1	0.5121	2	0.6104	4	0.5551	23
Gujarat	0.4901	14	0.4069	10	0.6055	5	0.7010	9
Haryana	0.5419	8	0.3942	14	0.6830	2	0.5620	22
Himachal Pradesh	0.5916	5	0.4068	11	0.3271	14	0.6305	11
Jammu & Kashmir	0.4781	16	0.2552	27	0.2090	18	0.6251	12
Jharkhand	0.2901	29	0.2608	26	0.1510	21	0.5838	18
Karnataka	0.4595	19	0.4339	8	0.4334	10	0.5424	25
Kerala	0.6172	3	0.4474	6	0.4564	9	0.7593	3
Madhya Pradesh	0.4221	23	0.2662	24	0.2041	19	0.4847	28
Maharashtra	0.4354	20	0.5282	1	0.4924	7	0.5716	21
Manipur	0.4777	17	0.3252	20	0.0622	28	0.7068	8
Meghalaya	0.6088	4	0.2769	23	0.1117	25	0.8591	1
Mizoram	0.6186	2	0.3730	15	0.1357	22	0.7648	2
Nagaland	0.5366	9	0.4395	7	0.0981	27	0.7416	5
Odisha	0.3573	24	0.2873	22	0.2599	17	0.5802	19
Punjab	0.4958	13	0.4589	5	0.6649	3	0.4922	27
Rajasthan	0.4223	22	0.3483	16	0.3698	12	0.5964	15
Sikkim	0.5530	7	0.3958	12	0.3091	15	0.7073	7
Tamil Nadu	0.5576	6	0.4805	4	0.8026	1	0.5431	24
Telangana	0.4842	15	0.3274	19	0.5959	6	0.5756	20
Tripura	0.5185	11	0.3232	21	0.1236	24	0.7113	6
Uttar Pradesh	0.3464	26	0.5027	3	0.1656	20	0.4784	29
Uttaranchal	0.4346	21	0.3944	13	0.3433	13	0.6034	14
West Bengal	0.4630	18	0.4212	9	0.2936	16	0.5916	17

Source: Authors' Calculations

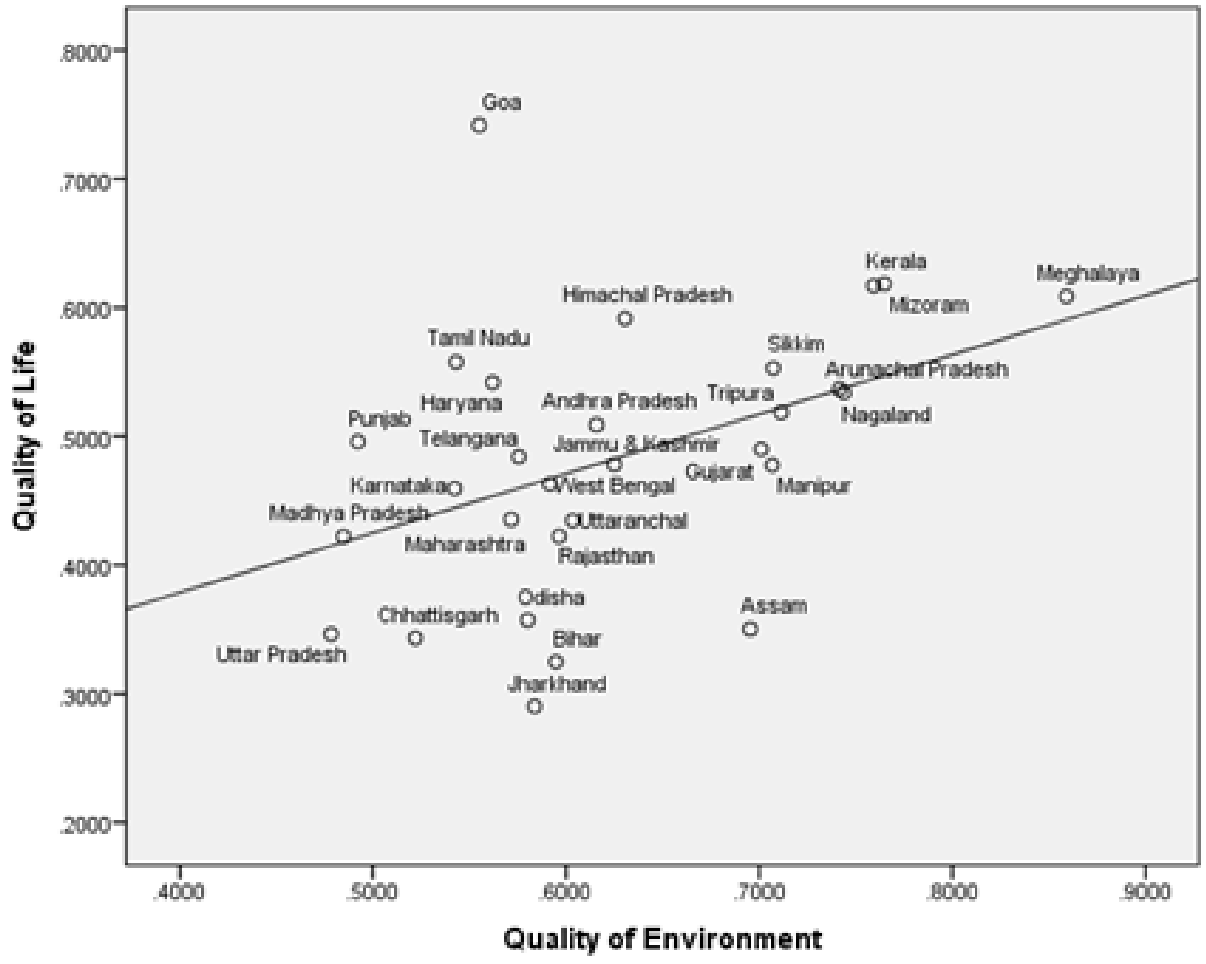
Table 1 provides ranks of States based on quality of life (LIFE), quality of environment (ENVI), social development (SOCI) and economic development (ECOI), sorted on the basis of their respective ranks in alphabetical order.

A careful look through the table articulates that Goa is topping the chart for LIFE but is on 23rd position in ENVI while Mizoram, the State with second position on LIFE in India is far ahead of Goa in maintaining quality of environment (2nd position in ENVI).Also, States like Haryana, Himachal Pradesh and Tamil Nadu, performing better in quality of life than environment contradictory to States like Gujrat, Tripura and Assam which are better at environmental fronts that their quality of life. Again, there are States like Gujrat and Kerala which are doing well in all of the indices opposite to State like Bihar, Jharkhand, Madhya Pradesh and Odisha which aren't able to perform well in any of the index.This depicts the level of regional disparity in development among different aspects of development in the country.

Quality of Life and Quality of Environment:

As can be seen from figure 1, Goa, Tamil Nadu, Sikkim, are the states with good quality of life but are poor in quality of environment and Manipur, Assam, Bihar, etc. are States better in ENVI rather than LIFE.

Figure 1: Cross tabulation between Quality of Life and Quality of Environment

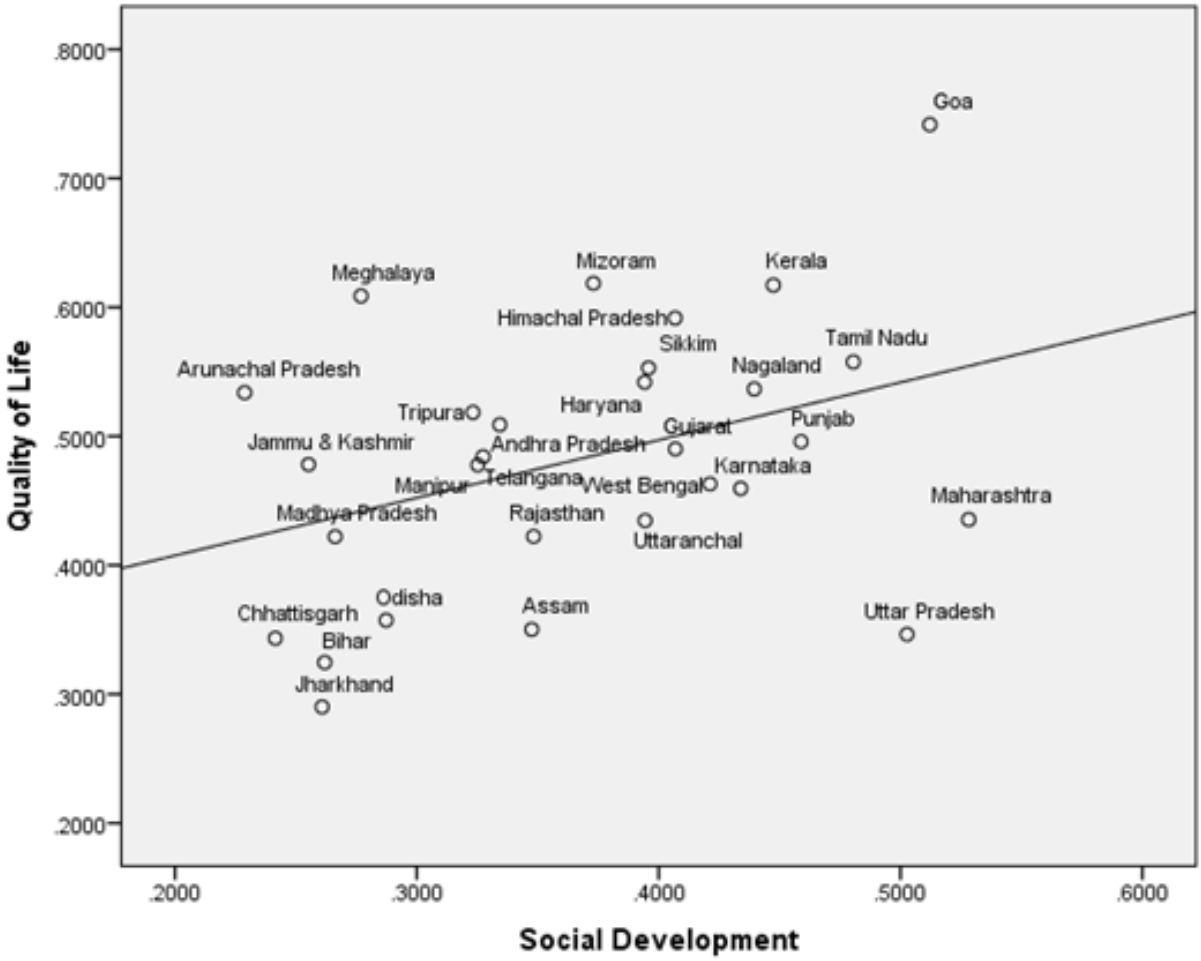


Source: Prepared by authors

Quality of Life and Social Development:

As can be seen from figure 2, Goa, Meghalaya, Mizoram, Arunachal Pradesh etc. are the states with good quality of life but aren't performing at par in social development and Maharashtra, Uttar Pradesh etc. are States better in SOCI rather than LIFE.

Figure 2: Cross tabulation between Quality of Life and Social Development



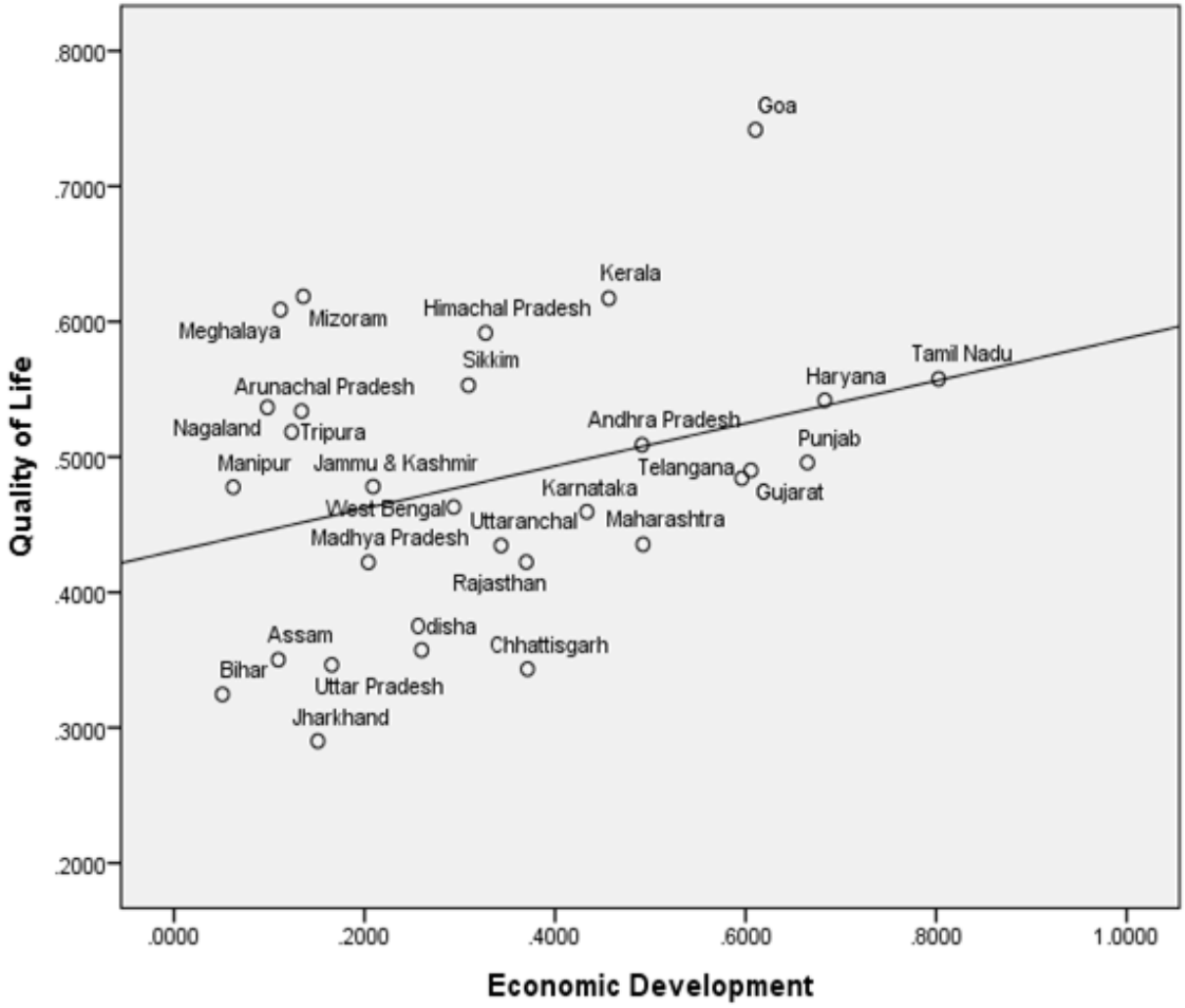
Source: Prepared by authors

Quality of Life and Social Development:

As can be seen from figure 3, Goa, Kerala, Himachal Pradesh etc. are the states with good quality of life but aren't performing at par in economic development and Punjab, Maharashtra, Gujrat, Telangana etc. are States better in ECOI rather than LIFE.

It can thus be concluded thatthe regional imbalance is not only present in the country but is much higher between the quality of life, quality of environment, social and economic development indices. This statement can be verified by taking a closer look at the graphs along with table 1. As explained, there is a high level of variability among the States.

Figure 3: Cross tabulation between Quality of Life and Economic Development



Source: Prepared by authors

Regression Analysis:

The model used for the analysis was: $LIFE=\alpha+\beta_1 SOCI+\beta_2 ECOI+\beta_3 ENVI+\mu$, while the dependent variable LIFE indicates quality of life; SOCI is index of social development; ECOI is the index of economic development; and ENVI is the index of quality of environment. α is the intercept; β's are all respective coefficients and μ is the error term.

Table 2: Regression Results

Variables	Coefficients	P-Value	R Square
Intercept	-0.18133	0.160	0.555
SOCI	0.317124	0.100	
ECOI	0.234382	0.008	
ENVI	0.75027	0.000	

The results from table 2 show that the model has ECOI and ENVI as significant variables at 1 percent significance level and SOCI at 10 percent significance level. The R-square of this model is 0.555, which is a fair value to work with.

Conclusion:

The cross sectional comparison of indexes of quality of life, quality of environment and social and economic development bring out the fact that many states with high quality of life do not ensure high quality of environment at the same time States with high status high status of social and economic development have failed to ensure high quality of environment and sometimes quality of life. In other words Kerala is the only state in the country ensuring a better quality of life, better quality of environment and as well as better social and economic development base.This clearly illustrates the fact that the growth process so far has ignored the sustainable development in India.

This outcome is a setback for our planning process simple because for a country as big as India to attain an environmentally sustainable development ensuring a better quality of life is not an option but a requirement.On one hand India has experienced growth and on the other hand the country is facing the problem of environment degradation.There is thus a need to make development compatible with environment.There lies the challenge ahead of us to restructure our economic system so that it protects the environment as our social and economic progress continuous. Therefore we should develop such kind of policies which not only protects and promote environment to safeguard our present and future generations but also to continue with the process of economics development.This can be done through a collective approach by the people and the government at regional level by conducting search programs which would throw a clear message that sustainable development is not a luxury but an absolute necessity and requires tremendous co-operation.

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