

**Working Paper | CSD 1/2017**

# **Impact of Economic Growth on Social Development**

**Dimensions in India: A State-Level Analysis**

**Surajit Deb**



**Council for Social Development**

[www.csdindia.org](http://www.csdindia.org)

## **ABOUT CSD**

For over five decades, the Council for Social Development (CSD) has functioned as a non-profit, non-partisan, vibrant research and advocacy institution engaged in issues of social development, especially the welfare of the marginalised. CSD began its journey as an informal study group at India International Centre in 1962 by a few prominent social workers and social scientists, under the leadership of the legendary freedom fighter and social worker Durgabai Deshmukh. It was registered as a society in 1970 with C.D. Deshmukh as President and Durgabai Deshmukh as Executive Chairperson and Honorary Director. A Southern Regional Centre (SRC) of CSD was set up in Hyderabad in 1967 by Durgabai Deshmukh which is currently funded by the Indian Council of Social Science Research (ICSSR) and the government of Telangana. Eminent educationists and representatives of public institutions constitute the CSD society which guides its programmes.

# Impact of Economic Growth on Social Development Dimensions in India: A State-Level Analysis

Surajit Deb

## Abstract

*India's performance on various social development indicators remains poor due to prevalence of extreme poverty that has often caused deprivations in the form of hunger, malnutrition, illiteracy, poor basic amenities and social exclusion. This study provides consistent measures of social development across 29 state economies of the country during two trienniums ending in 2002-03 and 2012-13. The aggregate index covering 21 indicators within six dimensions of social development namely, demographic, health, education, basic amenities, social and economic, as well as the dimensional indices, allows us to rank the states according to social progress in each triennium. We subsequently explore whether economic growth had an equal impact on different dimensions of social development in the country. The relationship between economic growth and statistical scores of social development dimensions has been examined at the level of individual states through elasticity analysis and also in terms of an aggregative analysis involving the 29 states in a cross-sectional regression framework. Our findings signify that while per capita Net State Domestic Product (NSDP) improved universally for the 29 states in the interim period of the two trienniums, the performance relating to various dimensions of social development was at variance. The cross-sectional results involving the 29 states indicate that there is a strong positive, though non-linear, relation between per capita real NSDP and the various dimensional scores of social development. Thus, while small increases in per capita real NSDP are associated with large progress in social developments in states with low per capita incomes, the gains in social development emerging from economic growth diminishes as states reach high levels of income. Our results also imply that every single dimension of social development bears a distinct relationship with economic growth. Finally, analyses of the growth (income) elasticity of social development in each dimension reveal that the achievements of translation from economic growth to social development have been mixed across states and dimensions. Our results suggest that while economic growth expanded the choices in the dimension of basic amenities, the achievements in educational dimension remained inadequate in India.*

*Acknowledgement: the author would like to thank the seminar participants at the CSD and also an anonymous referee of the working paper series for comments.*

---

# Impact of Economic Growth on Social Development Dimensions in India: A State-Level Analysis

---

## 1. INTRODUCTION

India has often been singled out for its poor record in various social development parameters, including literacy, nutrition, infant mortality, gender disparity and social discrimination. The manifestations of poverty remain wide-ranging and comprise deprivations in the form of hunger, malnutrition, illiteracy, homelessness and inadequate basic amenities of life, social discrimination and exclusion. India's performance also continues to be below global average in most of the Human Development Index (HDI) indicators such as life expectancy at birth, mean years of schooling, expected years of schooling, and even per capita income, with the country placed at 130th position amongst 186 countries in the overall HDI rankings in 2015 (United Nations Development Programme Report 2015a). Thus, social policies in the Indian context may bear several objectives that include equity, social inclusion, improvements in human capital and social transformations. The two government departments in India, viz., the Department of Social Justice and Empowerment and the Department of Empowerment of Persons with Disabilities (Divyangjan), under the Ministry of Social Justice and Empowerment (GOI) that are working towards educational development, economic and social empowerment, do underscore the need for development of specific sections of the society, viz., the Backward Class, Disabled and Elderly Population, Children, Minorities and Women. The 12th Five-Year Plan document of the erstwhile Planning Commission (re-named Niti Ayog) has further pointed out that in addition to the special status provided to disadvantaged groups like the Scheduled Castes, the Scheduled Tribes and Other Backward Classes, other vulnerable groups including the Minorities, Persons with Disabilities, senior citizens, street children, beggars and victims of substance abuse also require social support (GOI 2013 a).

A *Social Progress Index* provided by a United States-based organization called the "Social Progress Imperative", ranks India at 102nd position amongst 132 countries. This status is lowest amongst fellow BRICS (Brazil, Russia, India, China and South Africa) nations (Stern et al 2014). Brazil is ranked at 46th position, South Africa is 69th, Russia stands at number 80 and China is at number 90 in this ranking. It is noteworthy that the equivalence between the performances in economic growth and social progress remains disparate even in emerging BRICS region, which is generally credited with potential for high economic growth. Only Brazil (ranked 46th) is shown to have performed better in social progress indicators, even while it is ranked 57th on per capita GDP front. The rest of the BRIC economies are ranked lower in social progress indicators in respect of the corresponding per capita GDP growth. It, therefore, appears that the priority for social outlook is relevant even in emerging economies due to



the elements of income inequalities, disabled and aged population, unplanned urbanization, violence and conflicts, climate change and environmental pressures such as pollution and water scarcity.

India has remained in the group of emerging economies by way of registering high economic growth in the previous decade, although it must be said that at the same time it has not undergone the corresponding improvements in human or social development indicators. The state-level performances in the aggregate, as well as in individual dimensions of social development, however, remained diverse due to the existing differences among states in levels of poverty incidence, income distribution, gender disparity, education and job creation. It is normally argued that the government's endeavor towards social policies is generally measured by the share of its budgetary expenditures in GDP on health, education, social welfare and other social services. According to the Indian Government's Economic Survey for 2013-14, the total expenditure on social services as a percentage of GDP remained at 7.2 per cent (Budget Estimates) in 2013-14, with the expenditure on education and health at 3.3 per cent and 1.4 per cent, respectively in the same year (GOI 2014 a). These facts, observed from the disaggregated state level data, raise a crucial issue on whether economic and social development indicators are inter-dependent and mutually reinforcing components for the achievement of higher quality of life for all people. Specifically, the issue is whether economic prosperity due to rising per capita income alone can ensure social progress, or is there a need for specific policy framework along with increased social sector spending.

Against this background, the main objective of this paper is to explore the impact of economic growth on social development and examine whether the impacts are similar across critical dimensions of development including health, education, basic amenities, et al. Our analysis is performed in two steps; first we examine the social development levels for individual states across particular dimensions in order to identify the major distinctions and divergences. Secondly, we examine as to which dimensions of social development gained most from rapid growth episodes in these Indian states. The relationship between economic growth and social development in the context of the Indian economy can be analyzed in terms of experiences at the level of individual states or in terms of cross-sectional analysis involving all the states. We first perform correlation and regression analysis on the linkages between economic growth and social development across the 29 states and union territories. These are: Andhra Pradesh (undivided), Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Delhi, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Odisha, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttar Pradesh, Uttarakhand and West Bengal. Subsequently, we analyze the growth elasticity of social development in specific dimensions for individual state to determine the responsiveness of individual state to economic growth in each of the specific development dimension.

The next segment of the paper is in ensuing sequence: In **Section 1**, we provide a description of various notions of social development and the constituent dimensions. **Section 2**, gives an account of our research on how the economic growth process impacts poverty, human and social development indicators. **Section 3** presents the evidences on economic growth and development indicators at the disaggregated level for the 29 states. In **Section 4** we develop the multi-dimensional *social development indices* individually for six different dimensions as well as an aggregated one for different states. We use the *principal component method* to determine the set of weights for deriving the composite index in order to avoid any methodological problems associated with using equal weights among variables. We employ the *method of normal or single stage principal component* to work out the dimensional capability indices from the relevant variables for six individual dimensions. Subsequently, the aggregate social development index is constructed by applying the *second stage principal component method*

over the six dimensional indices. These results help us analyze the comparative progress of different states in each individual dimensions of social development, as well as on the comparative assessment of progress by individual states across different dimensions of social development. In **Section 5** we explore whether the per capita income growth in different states has led to an impact on the aggregate as well as on individual dimensions of social development. We use *cross-sectional regression analysis* involving all the states as well as *individual elasticity analysis* for each state to discern the growth and social development relationships in specific dimensions. Finally, **Section 6** summarizes the findings and provides the resulting policy implications.

## 2. Social Development and its Dimensions

Social progress entails priorities towards well-being of all citizens and is directly linked to economic stability, political freedom, internal security and peace in a country. On the other hand, economic growth without social progress results in exclusion, discontent, and social unrest. In the global context, the significance of social development was first highlighted at the World Summit for Social Development held in Copenhagen in March 1995, where countries recognized the need to address social problems especially poverty, unemployment and social exclusion that affect nations. The Declaration on Social Development adopted at this Summit stated that the ultimate goal of social development should be to enhance the quality of life of all people. It would, therefore, require democratic institutions, respect for human rights and freedoms, equal economic opportunities, rule of law, respect for cultural diversity, rights to minorities and an active involvement of civil society (United Nations, 1995). In the Programme of Action that emerged, a special emphasis was laid on the empowerment and participation of women in all economic, social and political activity. It was further emphasized that social development and social justice cannot be attained in the absence of equality among different social classes. In a broader sense, the goals of social development were based on the principles of *equality and inclusion*. The significance of democratic and accountable government administration was subsequently highlighted through the declaration that social policy frameworks were ineffective without the components of civil society organization, advocacy groups and institutions.

In present times, social development strategy is frequently observed in welfare-state objectives of a government's policy programmes. The mandate of democratic governments often includes policies and pro-programmes concerned with the social aspect of development, such as reducing poverty, increasing literacy, combating malnutrition and improving the access to health and education. Social development also finds mention in the developmental charter of international development agencies concerned with meeting basic needs and poverty alleviation. For instance, the United Nations Research Institute on Social Development (UNRISD) approaches social development with processes of change that lead to improvements in human well-being, social relations and social institutions, and that are equitable, sustainable, and compatible with principles of democratic governance and social justice. The United Nations Economic and Social Commission for the Asia and Pacific (UNESCAP), with its regional focus on building a socially inclusive society, has identified emerging challenges of socio-economic disparities to ageing population, youth unemployment, increasing migration and the impact of climate change. The World Bank's Social Policy Programme defines a series of public policies comprising equity and social justice, with the additional objective of social inclusion, sustainable livelihoods, gender equity and participation.

Attempts have also been made globally to encapsulate various social indicators by constructing the composite index of social development and progress. For instance, the International Institute of Social Studies (ISS, Hague, Netherlands) is known to be working on a global "*Index of Social Development*" by synthesizing nearly 200 indicators spread over six dimensions, viz., civic activism, clubs and associations,

inter-group cohesion, inter-personal safety, trust, gender equality and inclusion of minorities (ISS 2014). Likewise, US-based non-profit organization-Social Progress Imperative- provides the Social Progress Index to focus on national, social and environmental performances by looking at three components, viz., basic human needs (including nutrition and basic medical care, water and sanitation, shelter, personal safety), foundations of well-being (including access to basic knowledge, access to information and communications, health and wellness, ecosystem sustainability) and opportunity (including personal rights, personal freedom and choice, tolerance and inclusion, access to advance education). This index covers 54 indicators of social and environmental outcomes (Stern et al 2014).

### 3. Impact of Economic Growth on Development Indicators

Economic growth has often been recognized as the most crucial pre-requisite for reducing poverty in poor countries. Contemporary research, based on cross-country analysis and country case studies, have provided evidence that growth in per capita GDP is the most powerful, if not the only, force for reduction of poverty (Fields (1989, Deininger and Squire 1997, Ravallion and Chen 1997, Dollar and Kraay 2002, Ravallion 2005, Rodrick 2007, Dollar et al 2013). However, a number of studies have also argued that income inequality may play a crucial role in the positive relationship between growth and poverty reduction (Ravallion, 1997, Easterly 1999, Bourguignon, 2003, Fosu, 2009). The features of higher economic growth is also widely found to be linked with performance in overall or individual human and social development indicators, like health, education and social inclusion. According to Amartya Sen [1999], economic growth holds a central reference for the human capability expansion, since improvements in per capita income provides greater opportunities for creating an environment for people to enjoy long, healthy and creative lives, and also to enhance people's choices.

Building on the initial work by Ranis, Stewart, and Ramirez [2000], a series of papers by Booser et al [2003], Ranis [2004], Ranis and Stewart [2004], Ranis and Stewart [2006], Ranis, Stewart and Samman [2007] explored the two-way relationship between economic growth and human development, and argued that human development is not only an end product of the development process but also a means to generate future economic growth. It is argued that strong economic growth advances human development through the increased household consumption expenditure as well as public expenditures, which directly benefit the poor. Thus, while economic growth increases a country's tax base, it becomes possible for the government to spend more on key public services of health, education and other spheres that contribute to the capabilities of people and raises their standard of living. On the other hand, employment opportunities created by strong growth levels can also generate incentives for families to spend on education and health. Finally, the impacts from human development to economic growth works as people become healthier, better nourished, educated and to be able to contribute more to economic growth.

Although, per capita GDP growth remains an important instrument for achieving higher standard of life, the impact of economic growth on a nation's social development also depends on other crucial aspects such as, income distribution. Thus, the same level of GDP can deliver different performance on social development in accordance with the distribution of income among different income classes. In fact, a key message contained in various human development reports is that economic growth alone does not automatically translate into human development progress. High economic growth rates may not transform into social development unless accompanied by appropriate distributional policies and well-designed delivery mechanism which will transfer the benefits of growth to the under-privileged. A government's disposition towards social policies is generally measured by the share of its budgetary expenditures on health, education and skill development, job creation and social welfare. There is a particular need for social spending to reduce the income inequality between rich and poor states and

also between the socially advantaged and disadvantaged sections. However, the success of social-sector programmes also depends on the manner in which countries spend their development expenditure on social services. It has been pointed out on many occasions that the nature of governance, transparency and institutional arrangements can significantly modify the translation of benefits from economic growth to social development. Thus, the formulation of specific policies and effective delivery become important to achieve equitable progress and serve the interests of the most vulnerable sections of society.

#### 4. Economic Growth and Development Outcomes

Economic performance of states, particularly post-reforms in 2000, has been the subject of considerable research in India (Rodrik and Subramanian 2005, Kochhar et al 2006, Aghion et al 2008, Amin and Mattoo 2008, Panagariya 2008, Kumar and Subramanian 2012), with the observation that the growth rate of per capita income in most states was substantially high after 2000, as compared to the levels in 1990s. Although the recent economic growth rates in India have been noteworthy, the country's low ranking (130 amongst 186 nations) in the HDI report of the United Nations and the quality of life of the poor and weaker sections stood out in contrast. This obviously raises the question about whether the fruits of economic growth have helped in reducing India's poverty, malnutrition, literacy and lack of sanitation. In the same way, the impressive economic achievements of a few states remain in contrast with the rising inequality in incomes and wide-spread social exclusion within those states. The examination of state-level data points to the remarkable success achieved by smaller states such as Kerala, Goa or Himachal Pradesh in various scales of human development indicators, whereas bigger states like Uttar Pradesh, Bihar, Madhya Pradesh, Jharkhand, Chhattisgarh, West Bengal and Maharashtra remained stumbling blocks in pro-poor growth (GOI 2011).

Although there have been numerous studies in India on pro-poor growth, most have been conducted by examining the growth impact on *income poverty* rather than on the *poverty in capability*. The studies have generally found that while the overall poverty ratio may have declined along with higher growth rates, there has been a *rise in income inequality* in India. The Gini Coefficient—the statistical measure of analyzing income inequality—worsened between 1993-94 to 2009-10, in comparison to its level during the pre-reform years when the poverty ratio was higher but the gap between rich and poor was smaller. Further, only a handful of the studies addressed the question of how the economic growth process interacted with the development of human capabilities. Bhide and Shand [2000], Ahluwalia [2000], Amin and Mattoo [2008] included the role of human capital – skill element in the workforce - in analyzing the recorded growth performances across the states of India, where the skill-intensity is captured through literacy rate or institutional enrollment rate or the per capita number of institutions. Dholakia [2003] also found evidence of a two-way causality between human development and economic growth from the state-level data in India. Ghosh [2006] evaluated the human development performance of 15 major Indian states during 1981-2001, and found evidence of regional convergence in human well-being by estimating the cross-sectional growth regressions. This study therefore concluded that the poorer states that failed to catch up with the rich ones in terms of per capita incomes have managed to catch up in terms of the indicators of human development. It, therefore, appears that if the poorest of the poor population in backward states of India are to benefit from the economic growth, then there should be *investments in the human capital* to raise their capabilities as productive workers in the economy.

The United Nations' Millennium Development Goals (MDGs) established concrete targets for improving quality of life of people on the principle of equality-equity-dignity and freeing the world from extreme poverty. There are experts who believe that the relevance of MDGs remains central to the Indian development agenda. An assessment of India's achievements in MDGs shows that the

country attained targets like halving the percentage of population below the poverty line, achieving the net enrolment ratio in primary education and providing access to improved water sources (GOI 2014 b). It states that progress is slow in respect of women's share in non-agricultural employment or representation in Parliament and in attaining universal sanitation targets. It, therefore, appears that in the coming years besides coping with the significant unfinished development agenda, India would also deal with emerging challenges of rising income inequalities alongside social discrimination

## 5. Index of Social Development

The major tasks involved in developing the social development index (SDI) as a multi-dimensional index, is to decide on the choice of dimensions and associated indicators as well as the method of aggregating the dimensions into a single aggregate indicator. The Human Development Index (HDI) - which is the most acknowledged well-being index - measures a country's average achievements in three capability dimensions, i.e. long and healthy life of individuals, knowledge, and decent standard of living. In its present form, HDI is a weighted average of indicators such as life expectancy, adult literacy, school enrollment, and per-capita income. While the HDI measure covers only those dimensions that are essential for the quality of human life, the idea of social development remains much broader and requires considerations that include basic living conditions, social exclusion due to caste discrimination, developmental needs of women, children, religious minorities and old-age population. Therefore, the measure of societal progress should include dimensions concerned with social deprivation and working of social institutions, since the socio-economic marginalization of certain groups may act as a major barrier to social cohesion in the country. The range of dimensions surrounding social development is actually infinite and the selection of relevant dimensions remains fundamental for constructing the SDI measure in a meaningful manner. In the Indian context, the measure may include people's well-being in health, education, basic amenities of life, employment or livelihood and freedom from social discrimination. We have used **21 indicators** to build the SDI as a multi-dimensional index within the ensuing six **dimensions**: 1) demographic 2) health 3) education 4) basic amenities 5) economic and 6) social

### 5.1. Methodology

We have employed Principal Component Analysis (PCA) to aggregate individual dimensions of social development and estimate the composite indices of SDI for the 29 Indian states. The principle of PCA lies in finding weights to be given to each of the concerned dimensions, wherein weights maximize the sum of the squares of correlation of the dimension with the composite index. Suppose  $y_1$  is a principal component of  $x_1, x_2, x_3, \dots, x_p$ , such that:  $y_1 = a_{11}x_1 + a_{12}x_2 + \dots + a_{1p}x_p$ . Then the variance of  $y_1$  is maximized given the constraint that the sum of the squared weights of  $x_1, x_2, x_3, \dots, x_p$  is equal to one. The PCA determines the weight vector  $(a_{11}, a_{12}, \dots, a_{1p})$  by selecting higher weights for those series that vary a lot so that they influence the composite index relatively more. Once the weights are chosen, the first principal component would indicate the dominant pattern of variance in the indicators. The second principal component ( $y_2$ ) similarly finds out a second weight vector  $(a_{21}, a_{22}, \dots, a_{2p})$  such that the variance is maximized subject to the constraints that it is uncorrelated with the first principal component. This signifies that  $y_2$  has the next largest sum of squared correlations with the original variables, and the variances of the subsequent principal components would be smaller. The analysis also produces an estimate of how much variance in the  $x$ 's is explained by each principal component.

However, one problem of using PCA in indexing is to decide how many components to retain. It can be noticed in the applied literature that using the first principal component has remained the standard practice. To capture the total system variability of the original variables, we could use all the components, but if the first component accounts for a large proportion of the variability (around 70-80

per cent), it implies that there is one dominant component in the underlying variables. In the present analysis we use the first principal component since it explains about 81 per cent of the variance in the data in most cases. In PCA, each of the principal components are described by the pair of *eigen-value* and *eigen-vector*, where each *eigen-value* describes the amount of variance explained by each principal component and the factor-loadings are the coordinates of the *eigen-vector*. The factor-loadings measure the importance of each dimension in accounting for the variability in the particular principal component. The *eigen-vectors* provide the weights to compute the uncorrelated principal components, and the principal component scores are then worked out as linear combinations of normalized original variables with the factor-loadings as weights.

The construction of the multi-dimensional social development index by using the PCA determined weights requires the application of a series of sequential steps. As the first step, we convert some of the negative indicators into positive ones. Since the SDI is linked to development, the negative indicators such as total fertility rate, infant mortality rate, percentage of under-nourished children, pupil-teacher ratio, school drop-out rate, percentage of population below poverty line, unemployment rate and ratio of female to total unemployment rates are made positive by taking the inverse of the respective values. Secondly, it is important that before the PCA is performed, each of the individual indicators have been normalized and made scale-free. The normalization of data is important given that the indicators are measured in different units and also display widely different means as well as relatively large standard deviations. It is therefore necessary to convert them in some standard comparable units such that the initial scale chosen for measuring them so as to not bias the results. Thus, each of the raw indicator is mapped onto a unit-free scale by subtracting the lowest value of the particular indicator among states from each of the state's value under that indicator, and then dividing by the indicator-range among states, viz.,  $(x_{np} - x_{npmin}) \div (x_{npmax} - x_{npmin})$ . Finally, we work out the dimension specific index from the relevant variables for each of the six individual dimensions of social development by employing the method of normal or single stage principal component analysis. The aggregate multi-dimensional social development index is similarly derived by subsequently applying the second stage principal component method on the six social development dimensions. The above method of using the principal component appears to be a better than the method of using simple average of original variables that may have high-degrees of correlation present.

## 5.2. Indicators and Data Base

As mentioned, the Social Development Index (SDI) has been developed in the methodology discussed above for the 29 states as well as at all-India level. We have attempted to construct two sets of SDIs referring to the triennium ending in 2002-03 and 2012-13. The details on various indicators employed under each dimension that are finally used in the construction of respective SDIs along with the account of their data base, are discussed below.

We have used *three indicators* under the *demographic dimension* including a) contraceptive prevalence rate, b) total fertility rate and c) infant mortality rate. The *contraceptive prevalence rate* represents the proportion of currently married women using any form of contraceptive for family planning purposes. The data has been collected from the state-wise fact sheets of the National Family Health Survey (NFHS-3), International Institute of Population Science and Ministry of Health and Family Welfare (IIPS 2007). The *total fertility rate* is defined as the number of children that would be born to each woman if she were to live to the end of her childbearing years (15-49 years) and if the likelihood of her giving birth to children at each age was the currently prevailing age-specific fertility rates. This data is compiled from the Sample Registration System (SRS), Registrar General of India (RGI). The *infant mortality rate* corresponds to the number of infants below one year of age dying per 1000 live births in



the same year. This data is made available from the SRS (RGI).

Under the *health dimension* we have included *two indicators* namely a) percentage of institutional deliveries and b) percentage of undernourished children. Indicators of institutional deliveries include the percentage of deliveries in both, public and private sector institutions, within the state. The data has been compiled from the state-wise fact sheet of the NFHS-3 provided by IIPS. The percentage of undernourished children captures the nutritional status of children according to the anthropometric measure (weight-for-age) provided by IIPS in the NFHS-3 survey.

We considered *three indicators* within the *educational dimension*, which are: a) literacy rate, b) pupil-teacher ratio and c) school attendance rate. The data on literacy rate has been compiled from the Census information provided by the Registrar General and Census Commissioner RGCC). The indicator of pupil-teacher ratio corresponds to the ratio of number of students to a teacher in primary schools in different states of India. The data has been compiled from the “All India School Education Surveys”. The data on school attendance rate evaluating the percentage of population currently attending schools has been gathered from the National Sample Survey (NSS), which measure the current attendance rate in educational institutions per 1,000 persons for 5-14 years age group of population.

We have employed *four variables* to measure *access to basic amenities*, viz., a) percentage of households which live in concrete house (with roof), b) percentage of households which have access to safe drinking water; c) percentage of households which have access to toilet facility and d) percentage of households which have electricity connection. The Registrar General and Census Commissioner’s Housing Tables data have been used as the source.

In the *economic dimension* we have used *three indicators*, viz., a) head-count ratio of poverty, b) unemployment rate (according to current daily status) and c) monthly per capita expenditure (rural plus urban) for different states. The data on percentage of population living below poverty line (Tendulkar methodology) has been used in our analysis. The unemployment rate as defined by the number of person (aged 15-59) unemployed according to current daily status per thousand persons in the labour force, which has been compiled from the Key Indicators of NSS Surveys. The data on monthly per capita expenditure (according to modified mixed reference period) are gathered from the NSS Survey (Key Indicators).

Finally, we have used *six indicators* in the *social dimension*, which include: a) disparity ratio in literacy rates between the Scheduled Castes (SCs) and the general population b) disparity ratio in literacy between the Scheduled Tribes (STs) and the general population, c) disparity ratio in literacy rates between females and males, d) ratio between female unemployment rate to total unemployment rate, e) disparity ratio in work participation between Muslims and total population, and f) child (0-6 years) sex ratio.

While the first five indicators are intended to represent the educational and employment deprivation of SCs, STs, Muslims and Women, the last one is meant to capture the survival ratio of the girl-child. The data on SC, ST and general literacy rates are taken from the NSS Surveys and the female and male literacy data have been compiled from the Census information. The information on female and male unemployment rates are also gathered from the NSS Survey (Key Indicators). The data on work participation ratio, defined as number of persons employed per thousand persons, according to the usual status (principal plus subsidiary status)) are taken from NSS Surveys for the Muslims and the total population. Finally, the child-sex ratio referring between 0-6 years has been taken from the recent Census 2011 data.

The 29 states and union territories covered for this part of our analysis are: Andhra Pradesh (undivided), Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Delhi, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Odisha, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttar Pradesh, Uttarakhand and West Bengal. The SDIs for two different time periods referring to the triennium ending in 2002-03 and 2012-13 are constructed for each state by using the most appropriate information on each indicator. It may be mentioned that the reference point of certain data series did not exactly match with the demarcation of years that we have used in this study. For instance, we had to use the data that was available only decennially and merge it with other data that was available only at five-year intervals. Since the main data source in our analysis, viz., Census, NSS, NFHS and SRS do not always have a common reference point, we have taken recourse to meaningfully picking up data for the most adjoining years. Table 1 provides a listing of all the 21 indicators under six dimensions along with their reference years for the SDI series of the two periods mentioned above.

### 5.3. Decadal Variations in Aggregate Social Development across States

Figure 1 summarizes the results of the SDI ranks for individual states during the trienniums ending in 2002-03 and 2012-13 on the basis of their aggregate scores developed over six dimensions covering 21 indicators. In order to provide a clear focus on the variations in a state's ranking between the two time periods, we have positioned the states according to their ranks achieved in the first triennium ending in 2002-03. Thus, Kerala was the top-ranking state during the triennium ending in 2002-03, but Goa secured the first position during the triennium ending in 2012-13 in the SDI ranking. Our results suggest that while states like Kerala, Goa, Delhi, Mizoram, Punjab, Nagaland, Sikkim, Manipur and Tamil Nadu remained at the top order of the SDI ranking in both the decades, states like Bihar, Jharkhand, Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Odisha and Rajasthan could not move on from their low SDI ranks between the trienniums ending in 2002-03 and 2012-13. It is also observed that the SDI Index improved for 22 states as well as pan India but deteriorated for seven states in between the two trienniums. The states for which the SDI index deteriorated are Arunachal Pradesh, Assam, Delhi, Gujarat, Meghalaya, Mizoram and Nagaland. While the extent of the decline in SDI ranks has remained 'insignificant to small' in most cases, one can distinguish some substantial differences in the magnitude of variations for the states that experienced improvements in SDI. Thus, some noteworthy improvements in social development indices are observed for Andhra Pradesh, Goa, Himachal Pradesh, Karnataka, Maharashtra, Odisha, Punjab, Sikkim, Tamil Nadu, Uttarakhand and Uttar Pradesh.

### 5.4. Dimensional Ranking of States

We have noticed that the aggregate social development performance of states did not remain similar in between the two trienniums ending in 2002-03 and 2012-13. This fact has essentially provided the motivation for examining in detail the performances of states in individual dimensions of social development during each triennium. We, therefore, provide results on the states' ranking in each of the six dimensions of social development during each period of time. Figure 2 and 3 provides the ranking of all the 29 states along with all-India for the *demographic dimension* of social development. It is observed from the results of dimensional ranking that Kerala, Goa, Manipur, Mizoram and Nagaland were the five top-ranking states during the triennium ending in 2002-03, while Goa, Manipur, Kerala, Tamil Nadu, and Maharashtra improved into the first five states in the ranking of triennium ending in 2012-13. While Mizoram and Nagaland slipped from the top-five ranks in the second triennium, Tamil Nadu and Maharashtra climbed up to enter the list during the same triennium. On the other hand, Uttar Pradesh, Bihar, Meghalaya, Jharkhand and Rajasthan remained at the bottom of the states' ranking in the demographic dimension during both the trienniums.



As regards the *health dimension*, Kerala, Goa, Sikkim, Mizoram and Tamil Nadu remained at the top of the ranking, while Chhattisgarh, Jharkhand, Bihar and Uttar Pradesh were placed at the bottom, during both the trienniums (Figure 4 and 5).

The results of ranking for *educational dimension* in Figure 6 and 7 portray that Mizoram, Kerala, Sikkim, Goa and Nagaland were among the first five states, whereas Bihar, Jharkhand, Arunachal Pradesh and Rajasthan were positioned at the bottom of the ranking in both the trienniums.

The results of dimensional ranking for *basic amenities* indicate that Punjab, Delhi, Kerala and Goa were at the top and Odisha and Jharkhand remained at the bottom of the ladder during both the trienniums. (Figure 8 and 9). It can be seen that while Meghalaya, Chhattisgarh and Manipur improved on their individual ranking, Uttar Pradesh, Assam and Bihar deteriorated on their state specific ranks in the second triennium.

Figure 10 and 11 provides the ranking of states for the *economic dimension* of social development, and it is in this dimension that we observe some major changes in the top five and bottom five ranks during the years between 2002-03 and 2012-13. Thus, while Nagaland, Delhi, Mizoram, Meghalaya and Jammu and Kashmir occupied the top five ranks during 2002-03, the states of Goa, Kerala, Delhi, Punjab and Haryana secured the highest ranks during 2012-13. It can be noted that Goa, Kerala, Punjab and Haryana replaced the smaller states of Nagaland, Mizoram, Meghalaya and Jammu and Kashmir to achieve top ranks in 2012-13. On the other hand, it is the same states of Odisha, Bihar, Chhattisgarh and Jharkhand that remained at the bottom of the ranking in the economic dimension during each triennium.

Finally, the results of state's ranking in *social dimension* during the triennium ending in 2002-03 and 2012-13 are presented in Figure 12 and 13, respectively. It is apparent that Mizoram, Punjab, Delhi, Tripura and Meghalaya were among the first five ranks during the triennium ending in 2002-03, while Meghalaya, Kerala, Nagaland, Mizoram and Sikkim attained the top-five ranks in the triennium ending in 2012-13. While Punjab and Delhi marked their descent in the ranking of social dimension in the second triennium, the two relatively smaller states from the north-eastern region, viz., Nagaland and Sikkim along with Kerala, catapulted among the first five ranks ahead of Delhi and Punjab.

It is interesting to note that the all-India ranking remained diverse across the individual dimensions of social development. The rank for all-India in the demographic dimension remained at 20th during both the trienniums ending in 2002-03 and 2012-13. The rank of all-India deteriorated from 19th to 21st in the health dimension and from 22nd to 24th in the educational dimension in the between years of the two triennium. In the basic amenities dimension also there was an all-India decline from 10th to 15th rank during the same reference periods. However, there was some progress in the all-India rank in the economic dimension 22nd during 2002-03 to 20th position in 2012-13. In the same way, it is observed that the social dimension rank for all-India improved marginally from 21st to 20th place during the two trienniums.

It can thus be inferred that except for the dimension of basic amenities, the ranking of all-India remained way below the majority of states in all the five dimensions of social development. The all-India ranking registered a decline during the two trienniums in all the dimensions of social development except for the economic and social dimensions, where it registered marginal progress. The fact that a majority of states have done better than the all-India ranking in nearly all the dimensions of social development suggests that a larger section of the Indian population that remained concentrated in poor and large states remained deprived of the social development.

## 6. Impact of Economic Growth on Social Development Dimensions

In the literature of development economics, the role of human and social capital accumulation has occupied a prominent place in accounting for the differences in growth rates across countries. Specifically, the roles of investments in health and education have been emphasized in the growth literature for its positive contribution. On the other hand, it is held that social progress generates from the effects of economic growth process. It is argued that the rise in per capita income can contribute to human and social capital through both, the household and government activity. Thus, if the economic growth process improves the level and distribution of income in favor of poor households, then their propensity to spend on food items, basic education including school enrolment, and healthcare increases. At the same time, the proportion of government's development expenditure in social sectors also improves with economic growth. It may be mentioned that this paper mainly focuses on the impact of economic growth on social development and does not consider how social development complements economic policies. The relationship between economic growth and social development in the context of the Indian economy has been analyzed both in terms of experiences at the level of individual states as well as in terms of cross-sectional analysis involving all the states.

### 6.1. Decadal Change in Per Capita Income of States

Figure 14 plots the variations in per capita real (at 2004-05 prices) Net State Domestic Product (NSDP) during the similar triennium ending in 2002-03 and 2012-13. The feature of regional disparity in the per capita real NSDP across states is very much apparent in the figure, so that the high-income states are found to register real incomes in the recent triennium which are three to four times of the real income levels in low-income states. The economically well-off states in terms of the highest per capita real NSDP during the triennium ending in 2012-13 are Goa, Delhi, Sikkim, Maharashtra, Haryana and Gujarat, whereas Bihar, Uttar Pradesh, Assam, Manipur, Madhya Pradesh, Odisha, Jharkhand, Chhattisgarh, Rajasthan remained with the lowest per capita real NSDP. It can also be observed that while Delhi remained as the top ranking state in per capita income during the first triennium, Goa claimed the position during the second triennium. It is interesting to note that per capita income progressed for all the states and all-India between the two decades, with the extent of improvement being quite impressive in Goa, Delhi, Sikkim, Uttarakhand, Gujarat, Tamil Nadu, Maharashtra and Haryana.

### 6.2. Decadal Change in Social Development Dimensions

It is useful to explore as to why the overall ranking of states in the aggregate social development index diverge from each other. To discern this aspect it becomes pertinent to focus on the performances of each state in all the constituent dimensions. This section therefore examines the progresses made from the perspective of a specific state in different dimensions of social development during the decade. Accordingly, we begin by providing variations in the demographic dimension for all the 29 states along with all-India in Figure 15. We notice that the dimensional index incorporating *demographic indicators* has improved for 22 states as well as for all-India but deteriorated for 7 states during the trienniums ending in 2002-03 and 2012-13. The states for which the demographic index deteriorated in the interim period are Arunachal Pradesh, Kerala, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. It can further be observed that among the states that experienced advancement in the demographic scores, some significant improvements were attained in Himachal Pradesh, West Bengal, Jammu and Kashmir, Maharashtra, Punjab, Tamil Nadu, Karnataka, Goa and Andhra Pradesh. On the contrary, the extent of decline in the dimensional score consisting demographic indicators remained considerable in Meghalaya, Nagaland, Kerala and Arunachal Pradesh.

The variation in the state's score for *health dimension* in between the two trienniums is presented

in Figure 16. It can be seen that respective health scores of states registered deterioration only in four states and progress in the remaining 25 states as well as pan India. We can notice some substantial disparities in the magnitude of deviation across the states that experienced changes in the dimensional score of health indicators. Thus, while the Mizoram, Manipur, Jammu and Kashmir, Himachal Pradesh, Maharashtra, Punjab, Odisha, Uttarakhand, Andhra Pradesh, Rajasthan, Karnataka and Tamil Nadu made noteworthy improvements, a sharp decline in health scores is apparent only for Arunachal Pradesh.

Figure 17 provides the progress in different states in *education dimension* during the two trienniums, which reveals large-scale decline in the aggregate statistical score among states. Thus, as many as 23 states as well as the all-India, recorded worsening of their dimensional scores. A positive change for educational score in the second triennium is recorded only in the six states, namely Jammu and Kashmir, Karnataka, Odisha, Sikkim, Tripura and Uttarakhand. While some considerable improvements were observed in the states of Tripura, Odisha, Uttarakhand, Karnataka and Sikkim, the negative deviation in the educational dimension remained considerable in the states of Delhi, Gujarat, Assam, Uttar Pradesh, Manipur, Andhra Pradesh, Rajasthan, Arunachal Pradesh and Jharkhand.

The changes in the dimensional index containing indicators of basic amenities of *healthy life* are presented in Figure 18, and it is found that the score has improved for as many as 24 states and for all-India during the trienniums ending in 2002-03 and 2012-13. The states for which the basic amenities scores deteriorated in the in-between decade are Assam, Bihar, Gujarat, Punjab and Uttar Pradesh. One can observe some significant improvements in Himachal Pradesh, Mizoram, Manipur, Goa, Uttarakhand, Haryana, Andhra Pradesh, Tamil Nadu, Karnataka, Jammu and Kashmir, Tripura, Meghalaya, Nagaland and Chhattisgarh. On the other hand, the degrees of deterioration in the dimensional scores remained significant in Punjab, Bihar and Gujarat.

A somewhat widespread deterioration in the dimensional index can also be noticed for the statistical scores encompassing *economic indicators* during the trienniums ending in 2002-03 and 2012-13 (Figure 19). Thus, while the dimensional score registered improvements in 14 states, the same have been found to decrease in 15 states as well as all-India. It can be seen that Goa, Kerala, Andhra Pradesh, Himachal Pradesh, Haryana, Tamil Nadu, Punjab, Sikkim, Maharashtra and Tripura were leading among the states, where advancement in the economic scores prevailed. On the contrary, the magnitude of fall in the dimensional score containing economic indicators remained sizeable in the states of Nagaland, Mizoram, Meghalaya, Arunachal Pradesh, Jammu and Kashmir, Manipur, Assam, Jharkhand and Delhi.

Finally, the movement for different states in the *social variables* during the same trienniums is depicted in Figure 20. We observe that among all the six dimensions, the index for the social dimension has registered the most large-scale improvement as the statistical scores advanced for the highest number of states, viz., 25 states as well as for all-India, in our sample. The remaining four states where the dimensional score recorded deterioration in between the decade are Delhi, Haryana, Jammu and Kashmir and Punjab. It is additionally revealed that Chhattisgarh, Sikkim, Meghalaya, Kerala, Tamil Nadu, Jharkhand, Nagaland, West Bengal, Odisha, Arunachal Pradesh, Madhya Pradesh, Andhra Pradesh and Karnataka remained significant among the states that experienced progress in the social scores. On the contrary, Delhi, Jammu and Kashmir and Punjab happened to be the handful of states, where the degrees of deterioration in the dimensional index remained significant.

We have noted earlier that the aggregate SDI scores improved for 22 states as well as for all-India during the triennium ending in 2002-03 and 2012-13. But the performances of states in the individual

dimensions of social development convey that the aggregative picture can be very deceptive. The statistical scores for the several dimensions reveal that the indices certainly improved in the health and social dimension (25 states in each), followed by basic amenities dimension (24 states) and demographic dimension (22 states). But, the statistical scores as a matter of fact, registered decline in other dimensions for a majority of states. The deterioration in dimensional score during the triennium ending in 2002-03 and 2012-13 was mainly prevalent in the educational front, which was endured by 23 of a sample of 29 states. The economic aspects also experienced widespread deterioration in the dimensional score that took place in 15 states in between the same trienniums.

### 6.3. Relationship between Growth and Development Dimensions

Our analysis on the linkages between economic growth and social development begins with examining the relationship between SDI scores and per capita real (at 2004-05 prices) NSDP (as a proxy of economic growth). The examination of this relationship utilizes cross-sectional data on states and is performed separately for the two trienniums ending in 2002-03 and 2012-13, so as to focus on whether the relationship had undergone any change during the decade. The relationships for the two trienniums are graphically represented through a scatter-plot of the aggregate-SDI and per capita NSDP at constant (=2004-05) prices for all the 29 states plus for all-India, along with the information on correlation coefficient and the regression line fitted around the observations. The regression model specifies social development scores as a function of per capita real NSDP and the estimation of the regressions are performed by employing 29 cross-sectional observations on Indian states plus all-India for the aggregate and six specific dimensions of social development in each decade. We have depicted two regression lines between the two variables that are based on the linear model as well as the quadratic model to discern any non-linearity in the variable relationships.

The relationship between per capita real NSDP and aggregate indices of social development during the trienniums ending in 2002-03 and 2012-13 are represented in Figure 21 and Figure 22, respectively. We observe a high positive correlation between the two, indicating social development progressing along with rising per capita income, so that the two fitted regressions also yielded a reasonably positive sloped line. Hence, the existence of a positive relationship between economic growth and aggregate social development is supported by a fairly high correlation coefficient of +0.72, which is observed during both the triennium of years. However, the quadratic model that captures the presence of non-linearity in the economic growth and social development linkage provides a better overall fit to the data set, as evident from the R<sup>2</sup> values. The non-linear regression line depicted a parabola that is opening downwards from a maximum point with a negative quadratic term in the regression equation during both the triennium of years. It is therefore suggested that the increase in aggregate social development with respect to changes in economic growth could turn out to be less than linear because the quadratic term would exert a downward force on the equation.

While the occurrence of a positive relationship between economic growth and aggregate social development is academically interesting, an inquiry on the strength of the relationship between per capita real NSDP and individual dimensions of social development could be more pertinent for policy formulations in the Indian context. That is because not only does the wide regional divergences that existed in education, demographic and health dimensions of social development across Indian states remain a cause for concern, but also little is known about the factors behind such a different development performances across the country. We therefore examine the nature of the growth impacts on individual dimensions of social development during the two trienniums ending in 2002-03 and 2012-13. This is to discern whether the linkages have improved over time.

The relationship between per capita real NSDP and demographic dimension during the trienniums ending in 2002-03 and 2012-13 are given in Figure 23 and Figure 24. Notethat the positive association with per capita real NSDP is much less in the demographic dimension as compared to the association with aggregate social development scores. The correlation coefficient indicates a marginal improvement during the decade from +0.56 to +0.58. The two fitted regression lines also indicate a positive relationship in both the linear and quadratic model, but the regression performance in terms of R<sup>2</sup> turns out to be better under the quadratic model for both the periods. Since the quadratic term in the non-linear model turns out to be negative, it would appear that the linear and quadratic terms would compete with one another and eventually the impact of economic growth on the health dimension would level-off and head downward. The similar scatter plots of health dimensional scores against per capita real NSDP across the 29 Indian states for the two trienniums are given in Figure 25 and Figure 26, respectively. Although a positive relationship between the two is detected during each triennium of years, the correlation coefficient in actual fact registered a decline from +0.60 to +0.55 in between the two trienniums. The figures also reveal that the quadratic model presents a better fit of the relationship underlying economic growth and health dimensional scores along with a significant negative quadratic term in the regression equations for both the trienniums. This also signifies that rising per capita income level among Indian states would be connected with lesser achievements in the health dimension of social development.

Figure 27 and Figure 28 depicts the link between per capita real NSDP and education dimension during the trienniums ending in 2002-03 and 2012-13, respectively. It may be noted that although the coefficient of correlations bear positive values during both the trienniums, the direct relationship is less strong as compared to the same in other dimensions of social development. In addition, the coefficient of correlation can also be found to have diminished from +0.54 to +0.49 during the decades. While both the linear and quadratic regression models indicate a positive relationship between the educational scores and per capita real NSDP of various states, the presence of a negative quadratic term would imply that rising per capita income level may be associated with smaller gains in the educational dimension of social development. The corresponding relationship between per capita real NSDP and basic amenities dimension during the two trienniums are provided in Figure 29 and Figure 30, respectively. It can be seen that the coefficient correlation between development scores on basic dimension and per capita real NSDP remained one of the highest, and furthermore, the positive correlation went through impressive rise from +0.69 to +0.89 during the two trienniums. The plot of regression lines also point out that the quadratic model provides a better fit of the relationship underlying economic growth and dimensional scores of basic amenities, along with a negative quadratic term that remains significant in the first triennium but insignificant in the second triennium.

The regression of development scores in the economic dimension on per capita real NSDP for the cross-section of states provides a unique result that is distinctively special among results derived from other dimensions (Figure 31 and Figure 32). The plot of regression lines from alternative models clearly indicates that the quadratic model provides a better overall fit to the data as seen from the R<sup>2</sup> values. The quadratic regression line, however, represents a parabola that is opening upwards from a minimum point with a positive quadratic term in the regression equation during the second triennium. It is therefore suggested that increases in the economic scores with respect to changes in economic growth could turn out to be greater than linear because the quadratic term would exert an upward impact on the equation. Although, the positive correlation between per capita real NSDP and economic dimensional scores, observed during the trienniums ending in 2002-03 and 2012-13, would appear somewhat reiterative, it is important to note the significant improvements in the coefficient of correlation from +0.58 to +0.81 in between the two triennium of years.

Finally, Figure 33 and Figure 34 have been provided to represent the relationship between per capita real NSDP and social dimensional scores during the same triennium of years. It is pertinent to note that the observed positive correlation has remained one of the lowest in comparison to correlation involving statistical scores of other individual dimensions or the aggregate social development scores. Another specific concern that is evident in these figures is the drastic decline of the coefficient of correlation from +0.52 during the triennium ending in 2002-03 to +0.18 in the triennium ending in 2012-13. The two fitted regression lines indicate a positive relationship in both the models, but the downward opening parabola in the quadratic form would suggest that rising per capita real NSDP would be connected with lesser achievements in the social dimensional scores.

To summarize, these results indicate that while the correlation of per capita real NSDP with aggregate SDI remained intact between the decades, the correlation of the same with individual dimensions of social development indicated disparate patterns. The correlation coefficient declined moderately for the health and education dimensions but registered a sharp decline in the social dimension. On the contrary, the correlation with per capita real NSDP recorded moderate improvements in the demographic dimension but climbed sharply for the basic amenities and economic dimensions. Our regression results imply an impact of the per capita NSDP that reduces in size on all the non-economic dimensional scores, viz., demographic, health, education, basic amenities, social and the aggregate social development scores. This basically implies that while small increases in per capita real NSDP are associated with large progress in social developments in states with low levels of per capita real NSDP, the gains in social development occurring from economic growth diminishes as states reach high levels of income.

#### 6.4. Growth Elasticity of Social Development: Dimensional Effects

Following the analytical tool of growth elasticity of poverty in the examination of the pro-pooriness of growth hypotheses (for instance, Ravallion and Dutt 2002, Bourguignon 2002) we develop the measure of total growth (income) elasticity of social development ( $\epsilon$ ) by evaluating the degrees of improvement in social development due to increases in per capita incomes. Formally, the measure can be described as:

$$\epsilon = (\partial SDI / \partial SDP) \times (SDP / SDI)$$

*where, SDI represents the statistical score of respective developmental dimension and SDP is the per capita real state domestic product (at 2004-05 prices) used as an indicator of income or economic growth.*

The growth elasticity of social development measure is formulated to assess the effectiveness of economic growth to generate social development in dissimilar dimensions across major states of India. It may, however, be kept in mind that the elasticity estimates often face criticism due to the limitations in the measure. It can be deduced in our case that if the initial level of social development in a particular state had remained low, then even an insignificant absolute improvement in social development can generate results suggesting high elasticity of social development. Furthermore, the estimates of elasticity should be interpreted with caution because the calculations based on observations at points of time are capable of generating irregular values. Similarly, in no way the negative or low elasticity values should be interpreted to say that economic growth have not benefited social development. Despite all this, we presume that the elasticity results can be meaningfully used to ascertain the strength of the growth-to-social development linkage across different states.

The elasticity in the demographic dimension of social development is provided in Figure 35 and the estimates remain positive in 22 states and all-India, but negative in seven states, viz., Arunachal



Pradesh, Kerala, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. It may be noted that the negative growth elasticity in all these 7 states are associated with fall in the demographic dimensional score between trienniums ending in 2002/03 and 2012/13. The states for which the growth elasticity remained in the negative zone in the demographic dimension, some significantly low elasticity was observed in the north-eastern states of Meghalaya, Mizoram, Arunachal Pradesh and Nagaland. On the contrary, Uttar Pradesh, Assam, Jammu and Kashmir, Punjab, Tamil Nadu, Karnataka, Goa and Andhra Pradesh are the states where the growth elasticity remained highest.

Similarly, the elasticity of health dimensional scores with respect to economic growth is provided in Figure 36. A negative value for the health dimensional intensity to growth can be observed only for four states, viz., Arunachal Pradesh, Assam, Goa and Kerala, whereas positive elasticity values were recorded in the rest of the 25 states and in all-India. The positive elasticity values remained significant in Chhattisgarh, Uttar Pradesh, Odisha, Rajasthan, Himachal Pradesh, Manipur, Jharkhand, Punjab, Bihar, Uttarakhand and Mizoram.

Figure 37 provides the estimates of growth elasticity in the educational dimension of social development between trienniums ending in 2002-03 and 2012-13. It is found that negative elasticity values prevailed in almost every states of India. To be specific, negative elasticity values were observed for 23 states as well as in all-India and only six states recorded positive values. These are Jammu and Kashmir, Karnataka, Odisha, Sikkim, Tripura and Uttarakhand. While the positive elasticity values remained significant in the states of Odisha, Tripura, Karnataka and Uttarakhand, the negative elasticity values were high in West Bengal, Assam, Bihar, Arunachal Pradesh, Jharkhand Rajasthan, Manipur, Madhya Pradesh, Delhi, Punjab, Andhra Pradesh, and Gujarat.

On the contrary, similar estimates of elasticity in the basic amenities dimension reveal that a large number of Indian states have experienced positive elasticity values in between the two trienniums of years (Figure 38). The only five states where negative elasticity values were registered are Assam, Bihar, Gujarat, Punjab and Uttar Pradesh. It is interesting to note that although positive elasticity values prevailed in as many as 24 states and also in all-India, it is only in Manipur, followed by Himachal Pradesh that the positive elasticity values were found to be somewhat substantial.

The elasticity values for the economic dimension of social development point out large variations across different states (Figure 39). While 14 states indicated positive elasticity values in this dimension, negative values were noticed in 15 states as well as pan India. The states in which the economic dimensional scores responded negatively to changes in economic growth are those of Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Delhi, Gujarat, Jammu and Kashmir, Jharkhand, Madhya Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Uttarakhand and West Bengal. Further, the negative elasticity values were found to be significant in the states of Assam, Manipur, Chhattisgarh, Jharkhand, Mizoram, Bihar, Arunachal Pradesh, Meghalaya, Nagaland, Madhya Pradesh and Jammu and Kashmir. On the other hand, the positive elasticity estimates were high among the states of Tripura, Andhra Pradesh, Himachal Pradesh, Kerala, Punjab, Goa, Haryana, Maharashtra, Tamil Nadu and Uttar Pradesh.

Figure 40 contains information on the elasticity estimates for the social dimensional scores, which reflect high responsiveness due to changes in economic growth across different states. Thus, as many as 25 states revealed positive elasticity values in this dimension, whereas negative values of elasticity were observed only for four states namely Delhi, Haryana, Jammu and Kashmir and Punjab. It is also noted that high positive elasticity values were recorded in the states of Jharkhand, Madhya Pradesh, Chhattisgarh, Bihar, Uttar Pradesh, Odisha, West Bengal, Andhra Pradesh, Rajasthan, Tamil

Nadu, Karnataka, Meghalaya, Kerala, and Arunachal Pradesh. On the contrary, Jammu and Kashmir and Punjab happened to be the only states, where the negative elasticity values in this dimension remained significant.

Finally, the growth elasticity results have been provided for aggregate social development, to find out as to what extent these are different from the individual dimension specific results. These results given in Figure 41 suggest that elasticity values in the positive range can be confirmed for 22 states and also for all-India. The remaining seven states that revealed elasticity values in the negative range were Arunachal Pradesh, Assam, Delhi, Gujarat, Meghalaya, Mizoram and Nagaland. The elasticity estimates for the states of Himachal Pradesh, Odisha, Chhattisgarh, Andhra Pradesh, Karnataka, Rajasthan, Jharkhand, Bihar, West Bengal, Tamil Nadu, Madhya Pradesh, Haryana, Uttarakhand, Maharashtra, Manipur and Jammu & Kashmir remained significant among the states that registered positive responsiveness of aggregate social development due to changes in economic growth. The states for which growth elasticity of aggregate social development remained highly negative in between the decade are Assam, Arunachal Pradesh and Nagaland.

On the whole, it can be interpreted that the frequency of negative elasticity values has remained at the maximum in the educational dimension (as experienced by 23 states plus all-India), which is followed by the economic dimension (as experienced by 15 states plus all-India). On the other hand, the consequence of positive elasticity values has been the highest in both the health and social dimensions that is experienced by 25 states plus all-India in each dimension. It is crucial to note that the occurrence of positive elasticity values is narrowly followed by the basic amenities dimension (as experienced by 24 states plus all-India) and then the demographic dimension (as experienced by 23 states plus all-India). Thus, the elasticity results, which are drawn from the perspective of individual states in India, would imply the visible impacts of economic growth upon the demographic, health, basic amenities and social dimensions. Conversely, the impacts of economic growth on the dimensions of education and economic remained undistinguishable.

It may be noted that the distinct achievement (failure) of individual states in specific dimensions of social development cannot simply be attributed to differences in economic growth rates across states economies in India. That is because each state has its own basic social structure that may respond differently to periods of rapid economic growth. Since our framework considers only economic growth as the main explanatory variable, it is obvious that we cannot capture the role of other important aspects that may explain the fluctuations in social development levels across different states of India. Our results evaluate the crucial policy-making issue, viz., the effectiveness to which a particular state's economic success is converted into social progress.

## 7. Conclusion:

The significance of social policies on India's development strategies has been a much debated issue in academic and policy-making circles. While some hold an opinion that the government should prune social sector schemes to contain budgetary expenditures, others argue that the making of social policy and social development should remain at the centre of public policy making for poverty alleviation and income-equality. Normally social sector programmes in India are woven around inclusive development strategy that incorporates social and financial inclusion of marginalized sections including landless agricultural labour, marginal farmers, Scheduled Castes, Scheduled Tribes, and Other Backward Classes, (GOI 2014 a). Towards this end, the Government of India devised several social-sector schemes for poverty alleviation and employment generation, social protection, rural infrastructure and development, urban infrastructure, education and skill development, health, women and child development, and



welfare and development of weaker sections. In this backdrop, the motivation of this paper is to focus on the appropriate role of social policies by examining whether successful growth performances across state economies have led to enhanced social development levels in India.

The level of social development has been measured by an aggregated index covering 21 indicators within six dimensions of social development, viz., demographic, health, education, basic amenities, social and economic during the two triennium of years ending in 2002-03 and 2012-13. We provide consistent estimates of social development levels across 29 states in India through composite indices that allow us to rank them according to aggregate as well as individual dimensions of social progress in each triennium of years. While, states like Kerala, Goa, Delhi, Mizoram, Punjab, Nagaland, Sikkim, Manipur and Tamil Nadu remained at the top order of the SDI ranking in both the trienniums, states like Bihar, Jharkhand, Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Odisha and Rajasthan could not move on from their low SDI ranking between the two trienniums. It is our finding that the aggregate SDI Index improved for 22 states and at an all-India level, but deteriorated for seven states between the two trienniums. It is interesting to note that while the per capita NSDP improved consistently, although unequally, across the 29 states between the two trienniums, the performances in individual dimensions of social development remained incompatible during the same time span.

Since it is apparent that each dimension of social development bears a distinct relationship with economic growth, we subsequently examined the responsiveness of social developmental scores in each dimension due to changes in per capita income caused by economic growth across states. The results indicate that the co-relation with per capita real NSDP dropped moderately for the health and education dimension but registered a sharp decline in the social dimension. On the contrary, the co-relation with per capita real NSDP recorded moderate improvements in the demographic dimension but climbed sharply for the basic amenities and economic dimensions. The regression results imply that while small increases in per capita real NSDP are associated with large progress in social developments in states with low levels of per capita real NSDP, the gains in social development occurring from economic growth, diminishes as states reach high levels of income. Finally, we calculate the growth (income) elasticity of social development to provide an indication of how social development scores have responded to changes in per capita real NSDP in individual states for each dimension. The education and economic dimensions have revealed low or negative elasticity values in response to changes in the per capita real NSDP-- a trend that is evident in a majority of states in India during the interim period of the two trienniums ending in 2002-03 and 2012-13. On the contrary, the results reveal positive elasticity values in the demographic, health, basic amenities and social dimensions during the two trienniums.

India today has several development goals and agendas but the need to incorporate social development policy cannot be over-emphasized. While most of the states have done well, and some of them exceptionally well, in terms of economic growth indicators, only a few of them show good performances in terms of improved social development indicators. Further, there exists not only wide divergence across states in aggregate as well as in individual dimensions of social development but also within a state. The comparison of the per capita incomes of states in India shows wide regional disparities, suggesting that the present growth process is exclusive rather than inclusive. It may be mentioned that the inter-state differences in the pace of economic growth witnessed since the 1990s and growing regional disparities have remained a cause for concern. (Cashin and Sahay 1996, Ahluwalia 2001, Bandyopadhyay 2012). The gap in income shared between the top 10 per cent and bottom 40 per cent of the population has been on the rise since 1995, indicating that the benefits of growth have increasingly accrued to the richest population. A study by McKinsey & Company [2014] maintains that the eight high-performing states will account for 52 per cent of India's incremental GDP growth from

2012 to 2025, and along with four very high-performing states, would come to account for 57 per cent of India's consuming-class households by 2025.<sup>1</sup> This sort of imbalance in per capita incomes across states may become a real challenge to the social development goals in the country, unless an egalitarian growth strategy is followed to bring about a balance in the economic growth of all states. Thus, a set of targeted regional policies to reduce income inequalities between the rich and the poor states and also between the socially upper class and the disadvantaged sections is absolutely essential in this context.

United Nations [2015b] suggested that India must make use of its achievements in Millennium Development Goals (MDG) and incorporate the lessons learnt in designing Sustainable Development Goals (SDG) to build upon the unfinished MDG agenda. It may be noted that the SDGs propose to end poverty and deprivation in all forms while making development economically, socially and environmentally sustainable. It is often pointed out that social sector spending in India has not been enough in comparison to the levels in developing Asia, resulting in low achievements in the areas of nutrition, health, education and skill development. Another noteworthy factor is that most of the social-sector subjects fall within the purview of the states in India, while the central government's support for social programmes in the recent past has continued to fluctuate due to adverse fiscal circumstances. Apart from the insufficient overall social spending, there remains a wide ranging variation amongst states in their budgetary allocations towards social development. Many states have much lower per capita spending on social sector than the high income states, owing to poor revenue collection and inadequate devolutions from the central government. If the poorest of the poor population in backward states of India are to benefit from the economic growth, then there should be increased social spending to improve health and education status - both of which are the basic requirements to raise the ability of the poor and marginalized sections as workers in the economy. The government has recently declared specific policies for improved sanitation, health, education, financial inclusion, security and dignity of women. One expects that some rationalization of the shares of centre and respective states in the social sector budget is done for better implementation of these welfare schemes.

Economic progress remains as the essential foundation for social progress, since growth oriented strategies add to the per capita income of a nation. It is known that social development cannot originate from the interaction of market forces and, therefore, public policies often become necessary to correct various forms of market failures, provide the merit goods and achieve social stability. In fact, our elasticity results reflecting poor responsiveness of the educational attainment to economic growth provide a good example of where specific policy supports are essential. The policy implication that arises from this paper is that the process of economic growth that is inclusive and ensures equal access to economic opportunities can play a crucial role in generating social development. Since, the context of social deprivation remains different across states, the nature of social policies may vary depending upon the priorities of the region. The dimensional indices constructed in this paper can serve as helpful tools that can be used to determine the deprivation of individual states in the direction of inclusive growth. The indices can also be effective in formulating the social-sector programmes and arriving at the criteria for devolution of state's developmental funds. In the same way, the growth (income) elasticity can be used to determine the potential of economic growth to generate progress in specific dimensions of social development in each state.

---

<sup>1</sup> In an attempt to understand as to which states would contribute most to India's future growth prospects and market opportunities, the referred study has classified 29 states and union territories of India into four broad groups based on their relative 2012 per capita GDP, viz., very high performing (Chandigarh, Delhi, Goa and Puducherry), high performing (Gujarat, Haryana, Himachal Pradesh, Kerala, Maharashtra, Punjab, Tamil Nadu and Uttarakhand), performing (Karnataka, Andhra Pradesh, West Bengal, Chhattisgarh, Rajasthan, Odisha and Jammu & Kashmir), and low performing (Bihar, Uttar Pradesh, Jharkhand, Madhya Pradesh and North-Eastern states).

## Bibliography

**Aghion, P., R. Burgess, S. Redding and F. Zilibotti [2008]:** The Unequal Effects of Liberalization: Evidence from Dismantling the License Raj in India, *American Economic Review*, 98(4), pp. 1397-1412.

**Ahluwalia, M. S. [2000]:** State Level Performance under Economic Reforms in India, Working Paper No. 96, Center for Research on Economic Development and Policy Reform, Stanford University.

**Amin, M. and A. Mattoo [2008]:** Human Capital and the Changing Structure of the Indian Economy, Policy Research Working Paper No. 4576, World Bank: Washington DC.

**Bandyopadhyay, S. [(2012):** Convergence Club Empirics: Evidence from Indian States, *Research on Economic Inequality*, 20, 175-203.

**Bhide, S. and R. Shand [2000]:** Inequalities in Income Growth in India before and after Reforms, *South Asian Economic Journal*, 1(1).

**Boozer, M., G. Ranis, F. Stewart and T. Suri [2003]:** *Paths to Success: the Relationship between Human Development and Economic Growth*, Discussion Paper No. 874, Economic Growth, Yale University: New Haven, Available in <http://ssrn.com/abstract=487469>.

**Bourguignon, F. [2003]:** The Growth Elasticity of Poverty Reduction: Explaining Heterogeneity across Countries and Time Periods, in T. Eicher and S. Turnovsky [Edt.]: *Inequality and Growth. Theory and Policy Implications*, MIT Press: Cambridge, 2003.

**Cashin, Paul, and RatnaSahay [1996]:** Internal Migration, Center-State Grants, and Economic Growth in the States of India, *International Monetary Fund Staff Papers*, pp. 123–171.

**Deininger, K. and L. Squire [1997]:** Economic Growth and income Inequality: Re-examining the Links, Finance and Development, pp. 38-41, March, 1997.

**Dholakia, R [2003]:** Regional Disparity in Economic and Human Development in India, *Economic and Political Weekly*, 38 (39), 27 September.

**Dollar, D. and AartKraay [2002]:** Growth is good for the Poor, *Journal of Economic Growth*, Vol. 7, pp. 195-225.

**Dollar, D., T. Kleinberg and AartKraay [2013]:** Growth Still is good for the Poor, Policy Research Working Paper No. 6568, World Bank: Washington D.C.

**Easterly, W. [1999]:** Life during Growth: International Evidence on Quality of Life and Per Capita Income, Policy Research Working Paper No. 2110, World Bank: Washington D.C.

**Fields, Gary [1989]:** Changes in Poverty and Inequality in Developing Countries, The World Bank Research Observer, 4(2), pp. 167-182.

**Fosu, A. K. [2009]:** Growth, Inequality and Poverty Reduction in Developing Countries, Recent Global Evidence, Background Paper for the Global Development Outlook 2010, Shifting Wealth: Implications for Development, OECD: Paris.

**Ghosh [2006]:** Economic Growth and Human Development in Indian States, *Economic and Political Weekly*, 41 (30), 29 July.

**Government of India [2011]:** *India, Human Development Report, 2011*, Institute of Applied Manpower Research, Planning Commission, Oxford University Press: Delhi.

**Government of India [2012 a]:** *Employment and Unemployment Situations Among Social Groups in India, NSS 66th Round, 2009-10*, Report No. 543, Ministry of Statistics and Program Implementation, GOI.

**Government of India [2012b]:** *Census of India, 2011, Tables on Houses, Household Amenities and Assets, Series 1*, Registrar General of India and Census Commissioner, GOI.

**Government of India [2013 a]:** *Twelfth Five Year Plan, 2012-17, Social Sectors*, Sage Publications: New Delhi for Planning Commission, GOI.

**Government of India [2013 b]:** *Poverty Estimates for 2011-12*, Planning Commission, GOI, New Delhi.

**Government of India [2013 c]:** *Key Indicators of Employment and Unemployment in India, NSS 68th Round, 2011-12*, Ministry of Statistics and Program Implementation, GOI.

**Government of India [2013 d]:** *Key Indicators of Household Consumer Expenditure in India, NSS 68th Round, 2011-12*, Ministry of Statistics and Program Implementation, GOI.

**Government of India [2013 e]:** *Employment and Unemployment Situations Among Major Religious Groups in India, NSS 66th Round, 2009-10*, Report No. 552, Ministry of Statistics and Program Implementation, GOI.

**Government of India [2014 a]:** *Economic Survey, 2013-14*, Ministry of Finance, GOI, New Delhi.

**Government of India [2014 b]:** *Millennium Development Goals, India Country Report, 2014*, Social Statistics Division, Ministry of Statistics and Programme Implementation, GOI. Available at: [www.mospi.nic.in](http://www.mospi.nic.in) (Accessed 10th February 2015).

**Government of India [2014 c]:** *Eighth All India School Education Survey, 2009*, Ministry of Human Resource and Development, GOI, New Delhi.

**International Institute of Social Studies (ISS) [2014]:** *Annual Report Indices of Social Development 2013*, ISS, Hague, Netherlands, Available at: <http://www.IndSocDev.org/> (Accessed 10th February, 2015).

**Kochhar, K., U. Kumar, R. Rajan, A. Subramanian and I. Tokatlidis [2006]:** India's Pattern of Development: What Happened, What Follows, *Journal of Monetary Economics*, Vol. 53, pp. 981-1019.

**Kumar, U. and A. Subramanian [2012]:** Growth in India's States in the First Decade of the Twenty First Century: Four Facts., *Economic and Political Weekly*, 47 (3), 21 January.

**McKinsey & Company [2014]:** *India's Economic Geography in 2025: States, Clusters and Cities*, Delhi, October 2014, Available in <http://mckinseyinsightsindia.com>. (Accessed 10th February 2015).

**Panagariya, A. [2008]:** *India: The Emerging Giant*, Oxford University Press: New York.

**Ravallion, M. [1997]:** Good and Bad Growth: The Human Development Reports, *World Development*, 25 (5), pp 631 -638.

**Ravallion, M. [2005]:** Inequality is Bad for the Poor, Policy Research Working Paper No. 6568, World Bank: Washington D.C.

**Ravallion, M. and S. Chen [1997]:** What Can New Survey Data Tell Us about Recent Changes in Distribution and Poverty? *World Bank Economic Review*, 11(2), pp. 357-82.

**Ranis, G. [2004]:** *Human Development and Economic Growth*, Discussion Paper No. 887, Economic Growth Center, Yale University: New Haven, Available in: <http://ssrn.com/abstract=551662>

**Ranis, G. and F. Stewart [2004]:** *Dynamic links between the Economy and Human Development*, United Nations Department of Economic and Social Affairs (UN-DESA) Working Paper No. 8, UN: New York, Available in <http://www.un.org/esa/desa/papers>.

**Ranis, G. and F. Stewart [2006]:** *Successful Transition towards a Virtuous Cycle of Human Development and Economic Growth: Country Studies*, Discussion Paper No. 943, Economic Growth Center, Yale University: New Haven, Available in: <http://ssrn.com/abstract=920603>.

**Ranis, G., F. Stewart and A. Ramirez [2000]:** Economic Growth and Human Development, *World Development*, 28(2), pp. 197-219.

**Ranis, G., F. Stewart and E. Samman [2007]:** Country Patterns of Behavior on Broader Dimensions of Human Development, Discussion Paper No. 958, Economic Growth Center, Yale University: New Haven, Available in: <http://ssrn.com/abstract=1030028>.

**Rodrik, D [2007]:** *One Economics, Many Recipes*, Princeton University Press: New Jersey.

**Rodrik, D. and A. Subramanian [2005]:** From Hindu Growth to Productivity Surge: The Mystery of the Indian Growth Transition, *IMF Staff Papers*, 52(2), pp. 193-228.

**Sen, Amartya [1999]:** *Development as Freedom*, Anchor Books: New York.

**Stern, Scott, et al [2014]:** Social Progress Index 2014: Methodological Report, Social Progress Imperative, 2014, Available in [www.socialprogressimperative.org/socialprogress](http://www.socialprogressimperative.org/socialprogress). (Accessed 10th February 2015).

**United Nations [1995]:** Report of the World Summit for Social Development, Copenhagen, 6-12 March, 1995, Available at: <http://www.un.org/documents/ga/conf166/aconf166-9.htm>, (Accessed 10th February, 2015).

**United Nations [2014]:** The Millennium Development Goals Report, 2014, UN: New York.

**United Nations Development Programme (UNDP) [2015 a]:** *Human Development Report, 2015, Work for Human Development*, UNDP: New York.

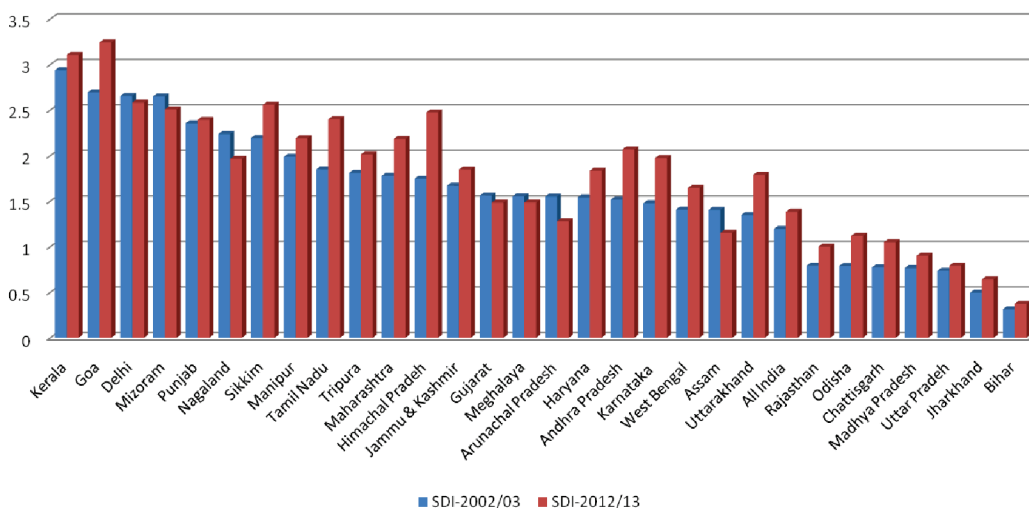
**United Nations [2015 b]:** India and the MDGS: Towards a Sustainable Future for All, Available at: [www.in.one.un.org](http://www.in.one.un.org) and [www.unescap.org](http://www.unescap.org) (Accessed 1st September 2016)

**United Nations [2015b]:** India and the MDGS: Towards a Sustainable Future for All, Available at: [www.in.one.un.org](http://www.in.one.un.org) and [www.unescap.org](http://www.unescap.org) (Accessed 10th February 2015).

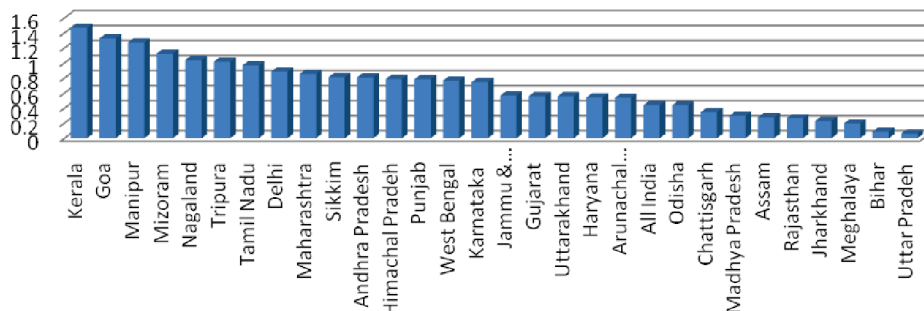
**Table 1: Data Base for SDIs during Trienniums ending in 2002/03 and 2012/13.**

Dimension/Indicator	Data Base
<b>Dimension 1: Demographic</b>	
1.1 Contraceptive Prevalence Rate	National Family Health Survey (NFHS-3, 2005-06) & (NFHS-2, 1998-99), International Institute of Population Science (IIPS 2007)
1.2 Total Fertility Rate	Sample Registration System (SRS) 2011 & 2005, Registrar General of India (RGI) 2012
1.3 Infant Mortality Rate	SRS, 2012 & SRS 2005. RGI [2013]
<b>Dimension 2: Health</b>	
2.1 % of Institutional Delivery	(NFHS-3, 2005-06) & (NFHS-2, 1998-99), IIPS [2007]
2.2 % of Undernourished Children	(NFHS-3, 2005-06) & (NFHS-2, 1998-99), IIPS [2007]
<b>Dimension 3: Education</b>	
3.1 Literacy Rate	Census 2011 & Census 2001. Registrar General & Census Commissioner (RG&CS)
3.2 Pupil-Teacher ratio	All India School Education Survey, 8th Survey 2009 & 7th Survey 2002) GOI [2014 c]
3.3 School Attendance Rate (Age 5-14)	NSS, 66th Round (2009-10) & 61st Round (2004-05), GOI [2012 a]
<b>Dimension 4: Basic Amenities</b>	
4.1 % of households. Living in Concrete House	Census Housing Tables, Census 2011 and 2001, GOI [2012 b]
4.2 % of households having access to Drinking Water	Census Housing Tables, Census 2011 and 2001GOI [2012 b]
4.3 % of households having access to Toilet Facility	Census Housing Tables, Census 2011 and 2001GOI [2012 b]
4.4 % of households having Electricity Connection	Census Housing Tables, Census 2011 and 2001GOI [2012 b]
<b>Dimension 5: Economic</b>	
5.1 Percentage of Pop. living below Poverty Line	Press Note on Poverty Estimates, 2011-12 & 2004-05, GOI [2013 b]
5.2 Unemployment Rate (Current Daily Status, Age 15-59)	NSS, 68th Round (2011-12) & 61st Round (2004-05), GOI [2013 c]
5.3 Monthly Per Capita Expenditure	NSS, 68th Round (2011-12) & 61st Round (2004-05), GOI [2013 d]
<b>Dimension 6: Social</b>	
6.1 Disparity between SC & General Population in Literacy	NSS, 66th Round (2009-10) & 61st Round (2004-05), GOI [2012 a]
6.2 Disparity between ST & General Population in Literacy	NSS, 66th Round (2009-10) & 61st Round (2004-05), GOI [2012 a]
6.3 Disparity between Female & Male Population in Literacy	Census 2011 & Census 2001, RG&CS
6.4 Disparity between Female to Total Unemployment Rate	NSS, 68th Round (2011-12) & 61st Round (2004-05), GOI [2013 d]
6.5 Disparity between Muslim & Total Population in Worker Population Ratio (usual status)	NSS, 66th Round (2009-10) & 61st Round (2004-05), GOI [2013 e]
6.6 Child Sex Ratio	Census 2011 & Census 2001, RG&CS.

**Figure 1: Variations in Social Development Index**

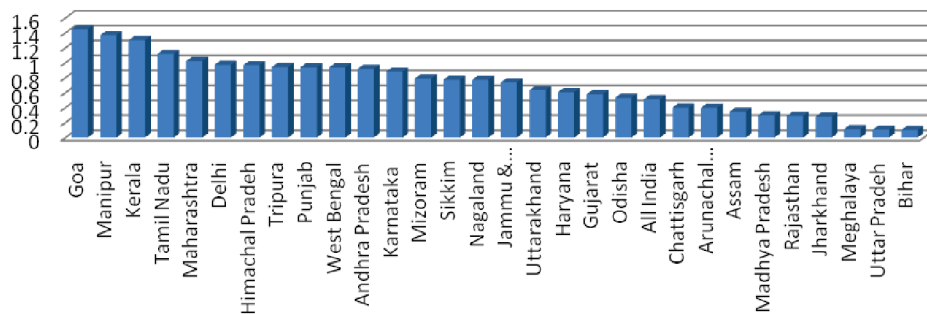


**Figure 2: Ranking of States in Demographic Dimension, 2000/01-2002/03**

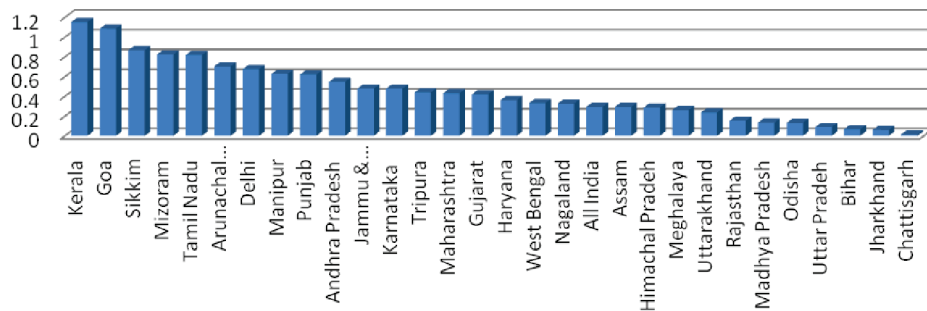




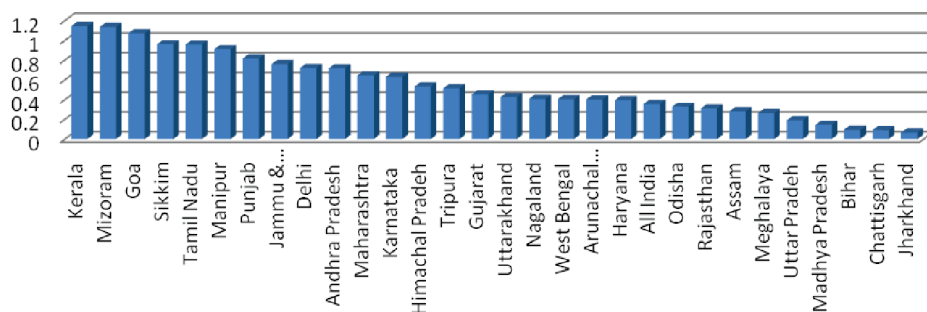
**Figure 3: Ranking of States in Demographic Dimension, 2010/11-2012/13**



**Figure 4: Ranking of States in Health Dimension, 2000/01-2002/03**

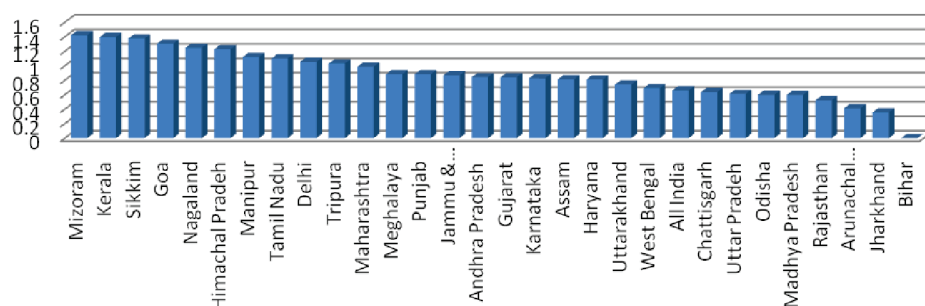


**Figure 5: Ranking of States in Health Dimension 2010/11-2012/13**

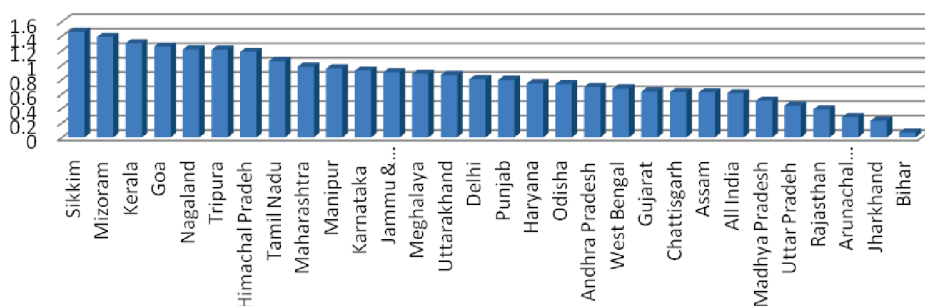




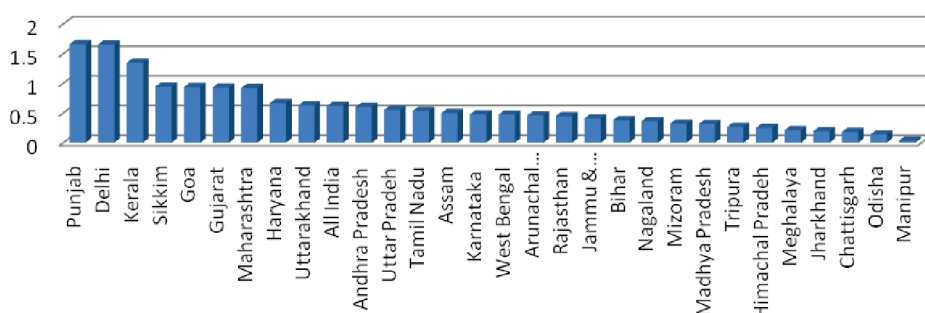
**Figure 6: Ranking of States in Educational Dimension, 2000/01-2002/03**



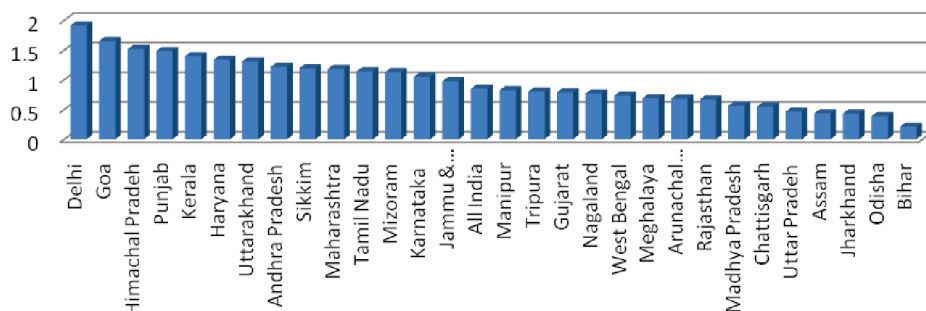
**Figure 7: Ranking of States in Educational Dimension, 2010/11-2012/13**



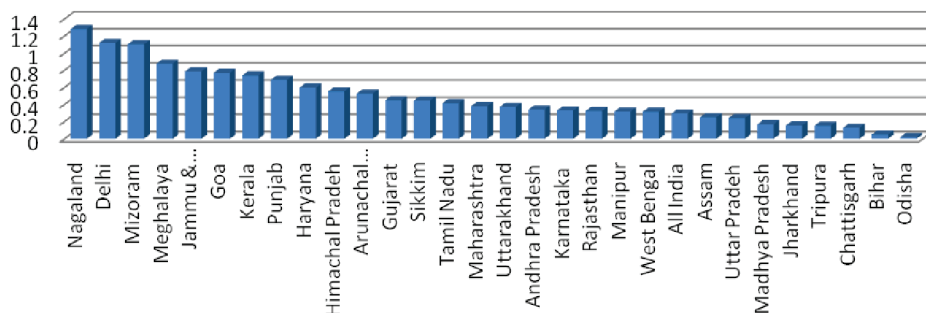
**Figure 8: Ranking of States in Basic Amenities Dimension, 2000/01-2002/03**



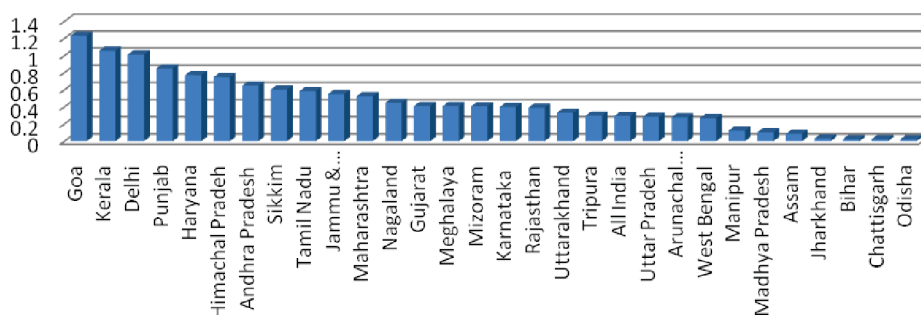
**Figure 9: Ranking of States in Basic Amenities  
Dimension, 2010/11-2012/13**



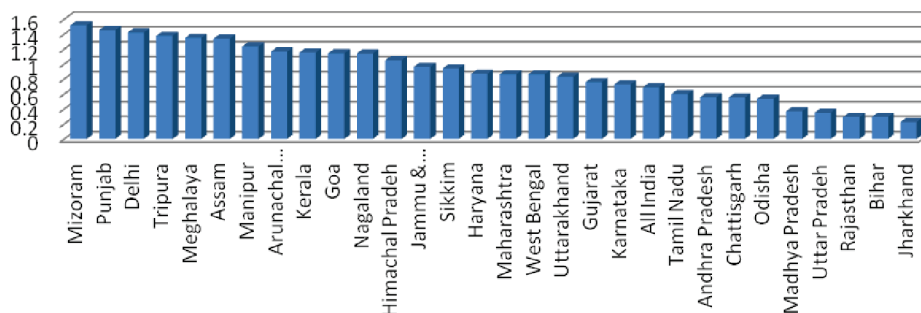
**Figure 10: Ranking of States in Economic  
Dimension, 2000/01-2002/03**



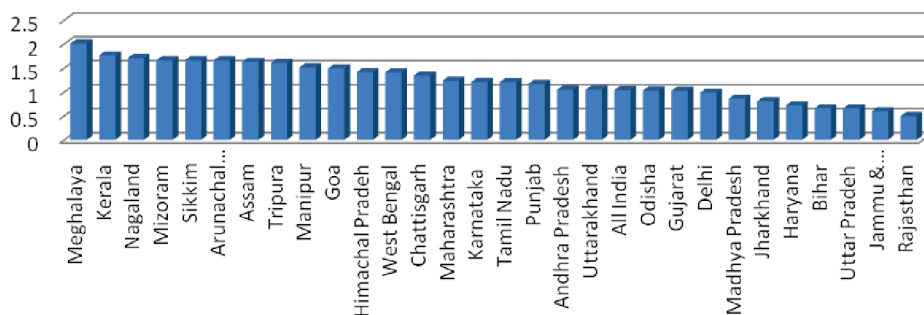
**Figure 11: Ranking of States in Economic Dimension, 2010/11-2012/13**



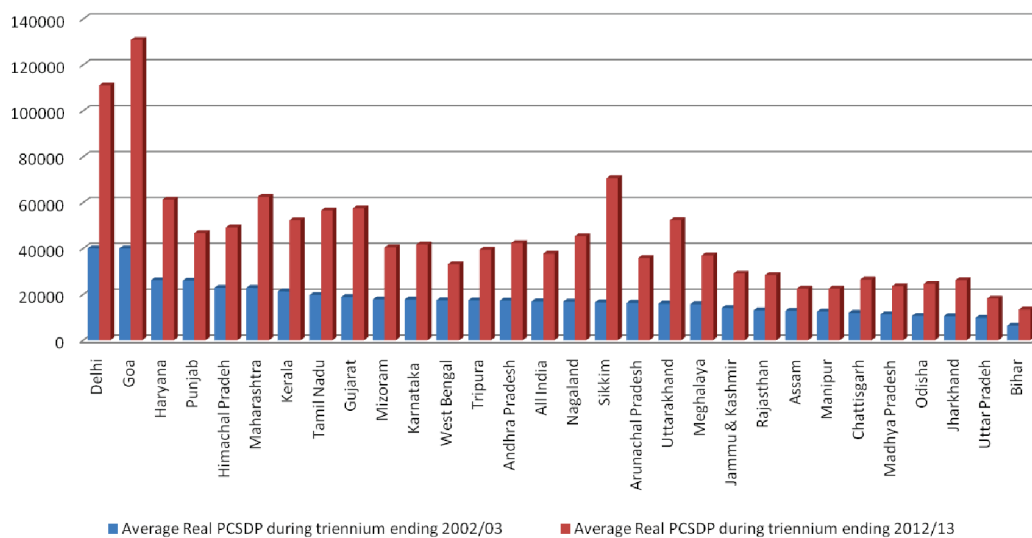
**Figure 12: Ranking of States in Social Dimension, 2000/01-2002/03**



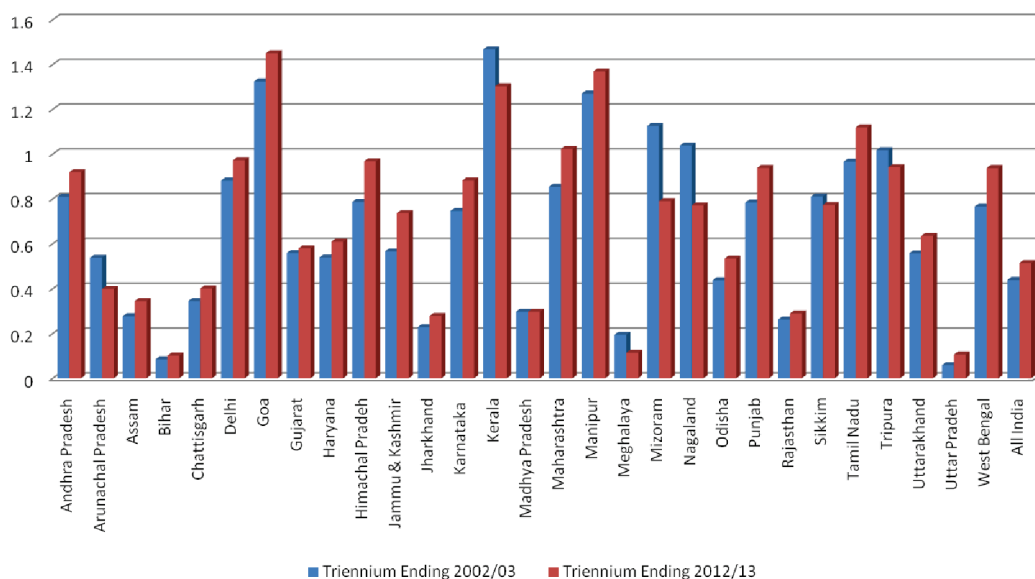
**Figure 13: Ranking of States in Social Dimension, 2010/11-2012/13**



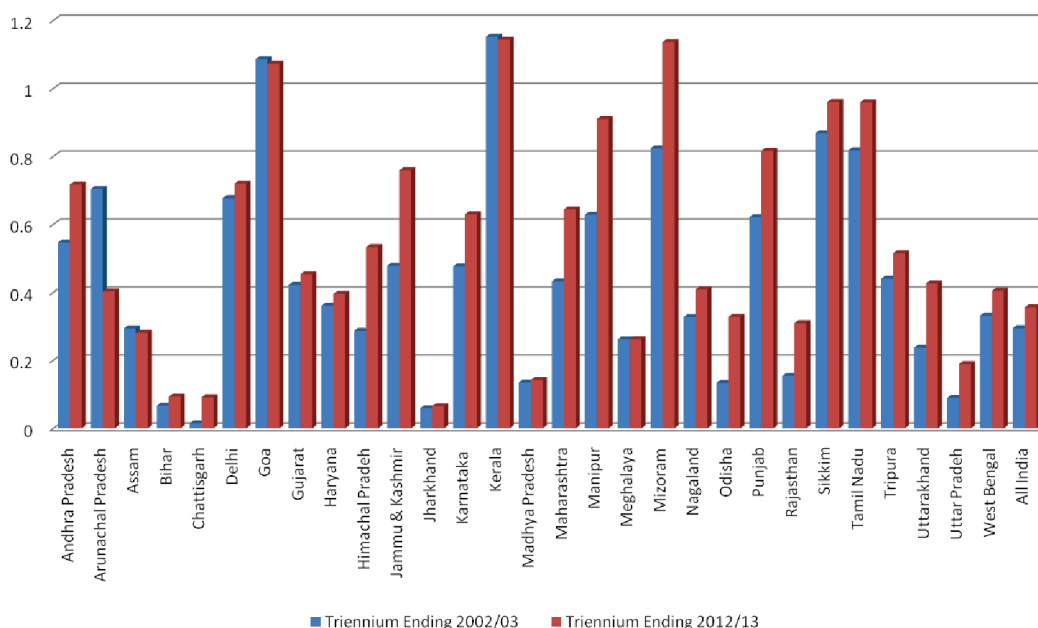
**Figure 14: Variations in Average Real Per Capita SDP.**



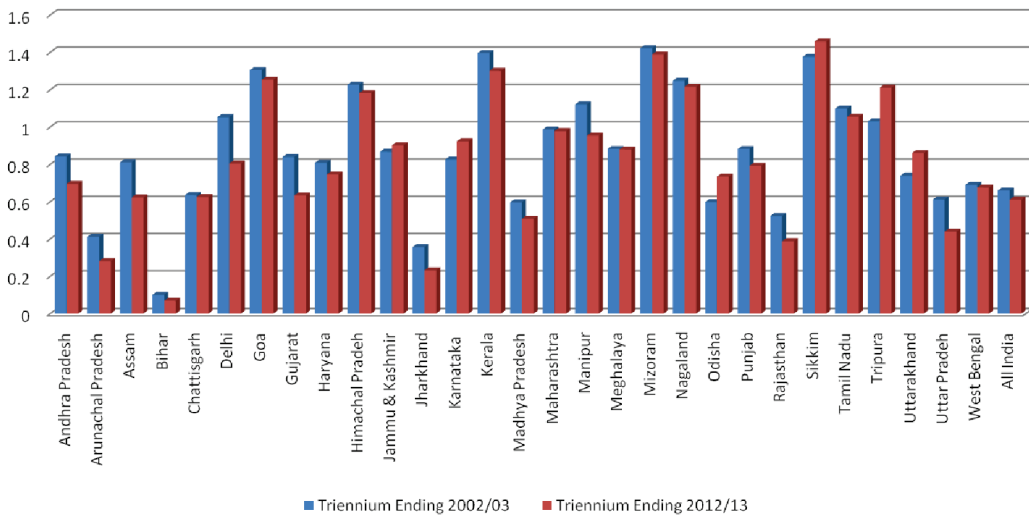
**Figure 15: Variations in Demographic Dimension.**



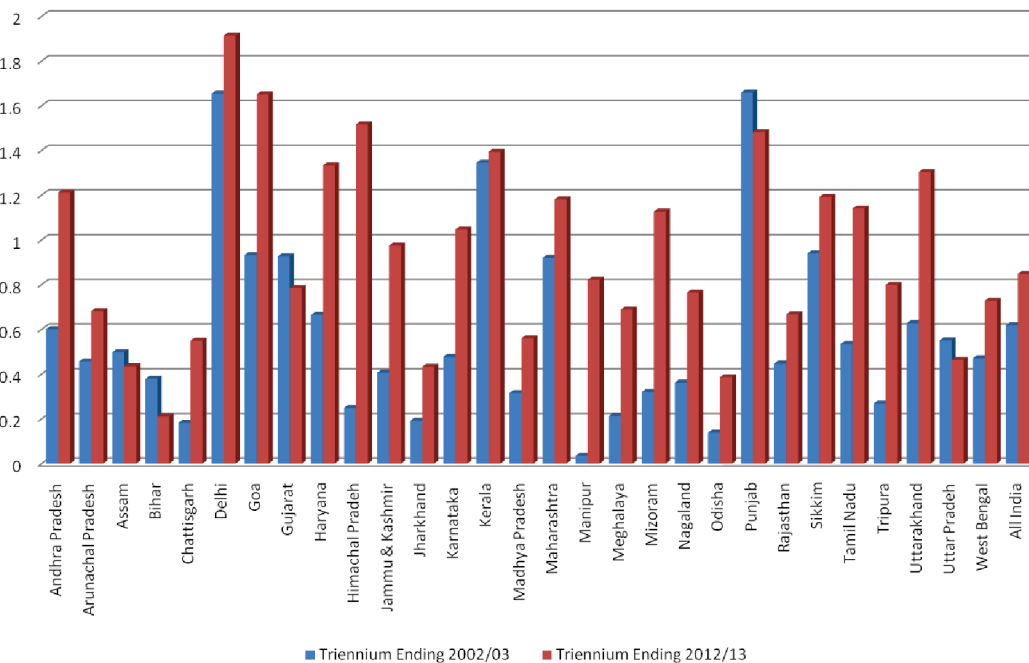
**Figure 16: Variations in Health Dimension.**



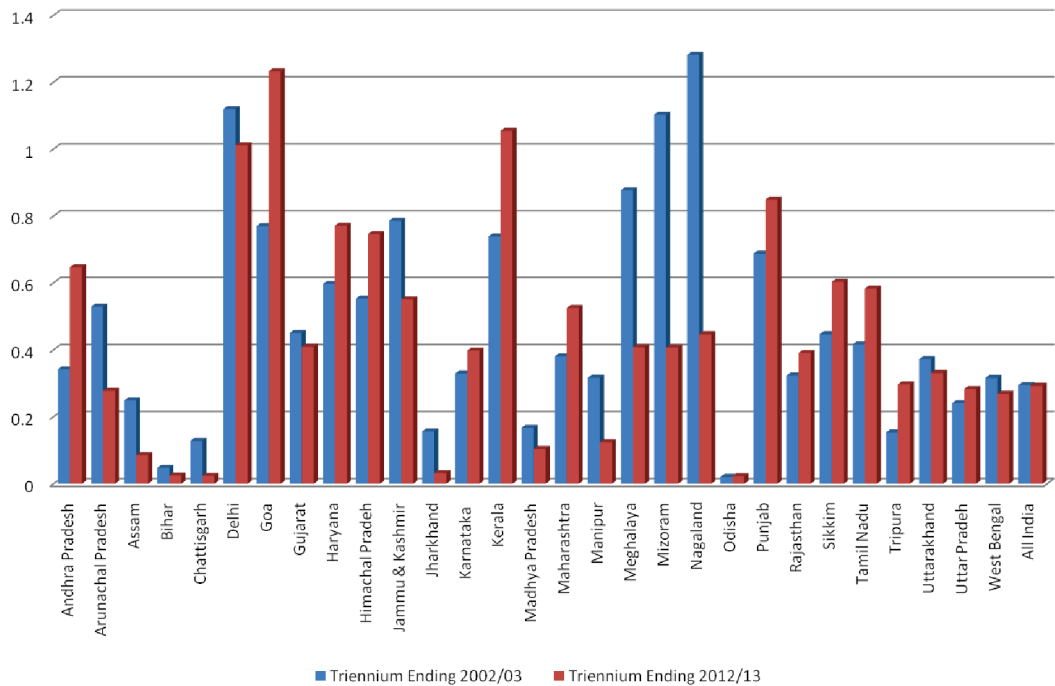
**Figure 17: Variations in Education Dimension.**



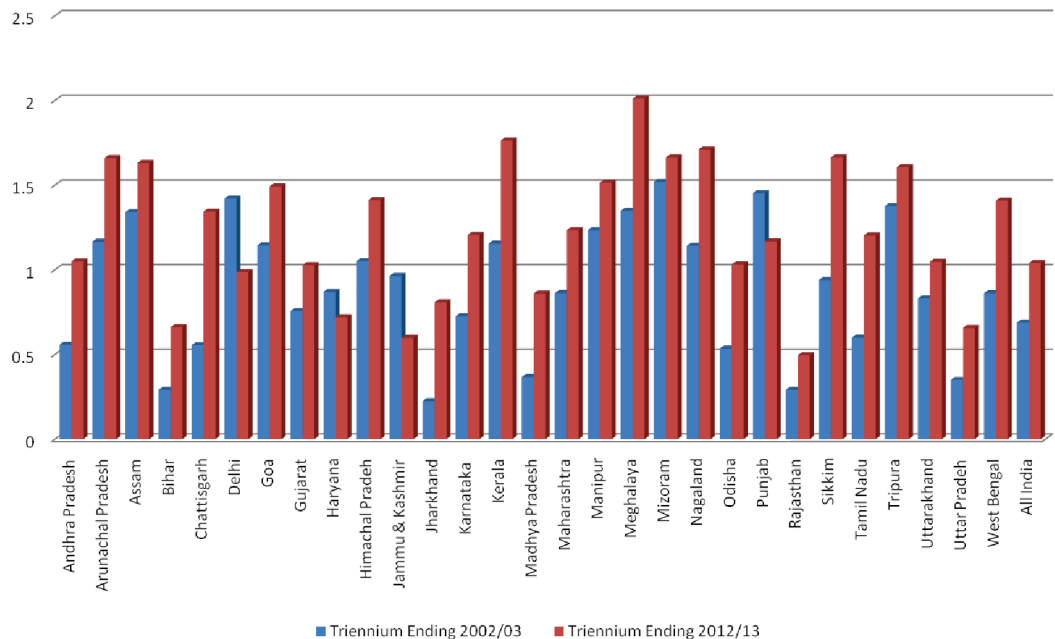
**Figure 18: Variations in Basic Amenities Dimension.**



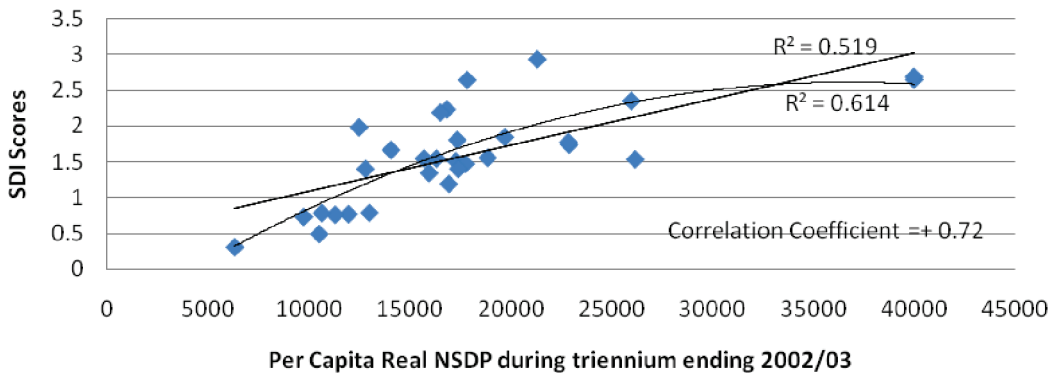
**Figure 19: Variations in Economic Dimension.**



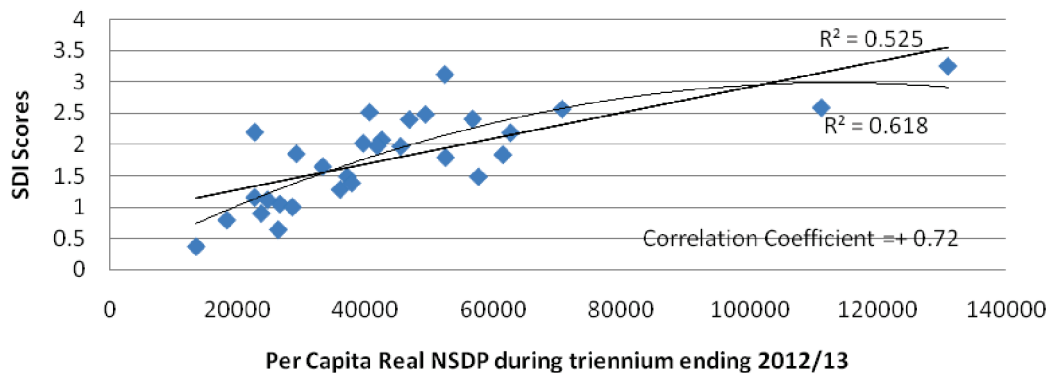
**Figure 20: Variations in Social Dimension.**



**Figure 21: Per Capita Real NSDP and SDI Scores, 2002/03.**

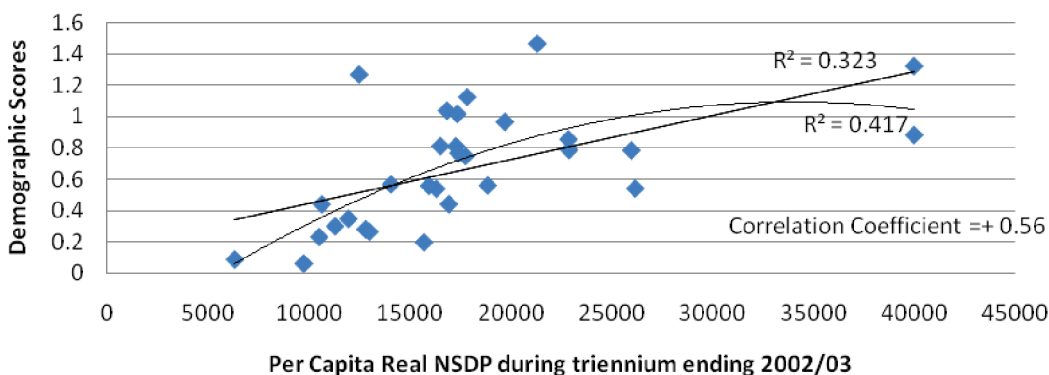


**Figure 22: Per Capita Real NSDP and SDI Scores, 2012/13.**

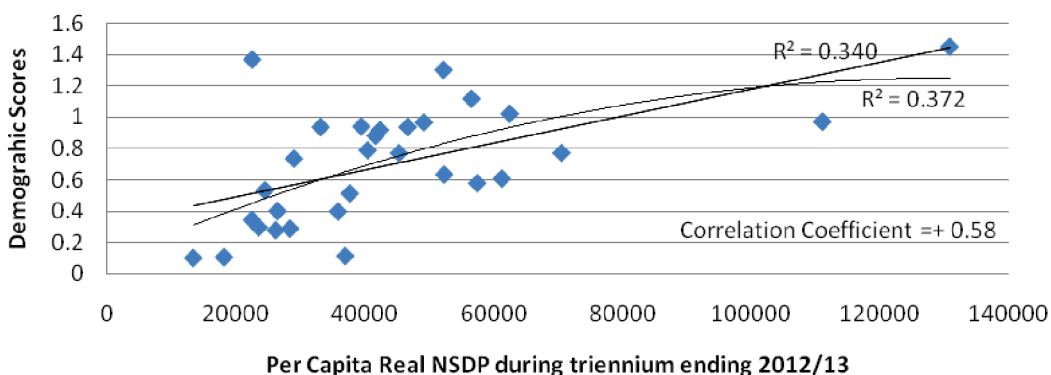




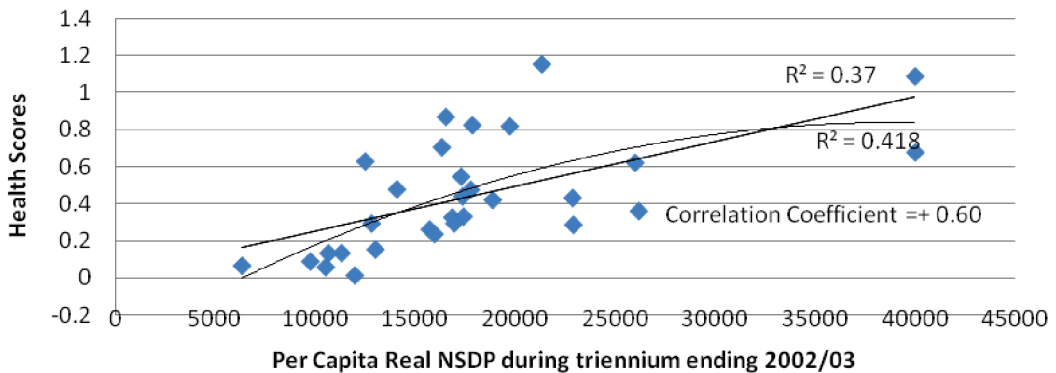
**Figure 23: Per Capita Real NSDP and Demographic Scores, 2002/03.**



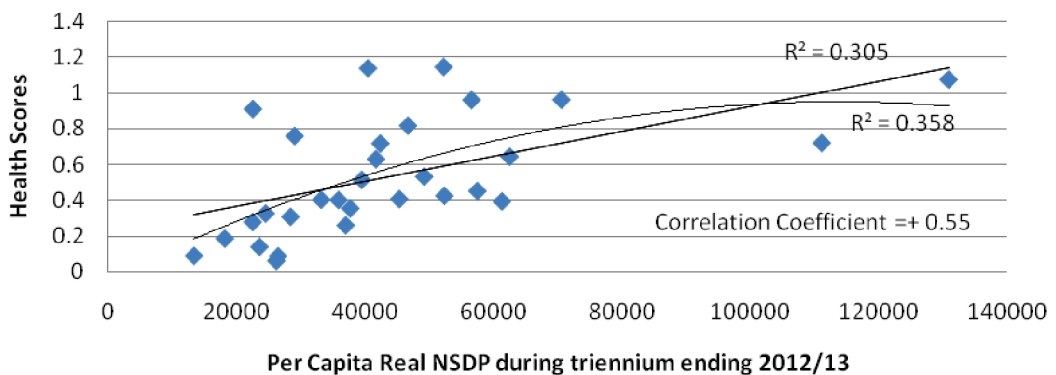
**Figure 24: Per Capita Real NSDP and Demographic Scores, 2012/13.**



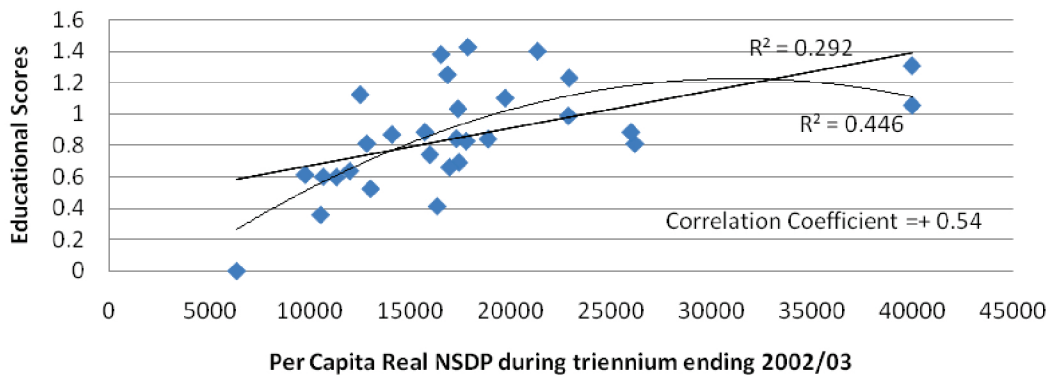
**Figure 25: Per Capita Real NSDP and Health Scores, 2002/03.**



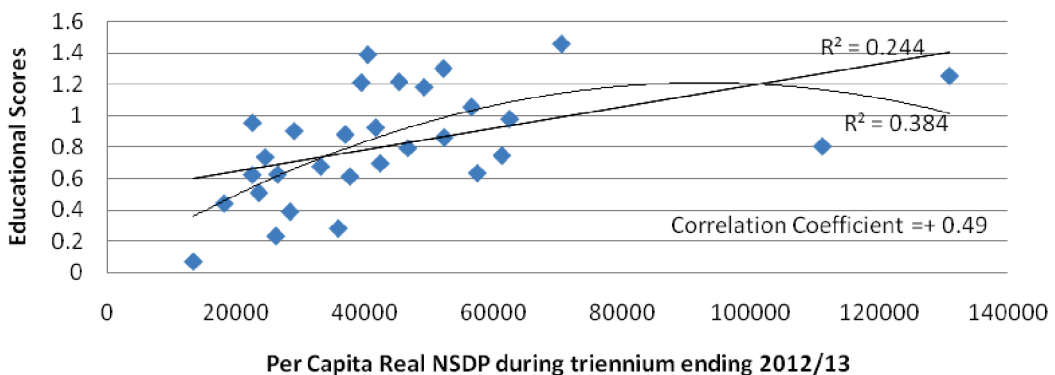
**Figure 26: Per Capita Real NSDP and Health Scores, 2012/13.**



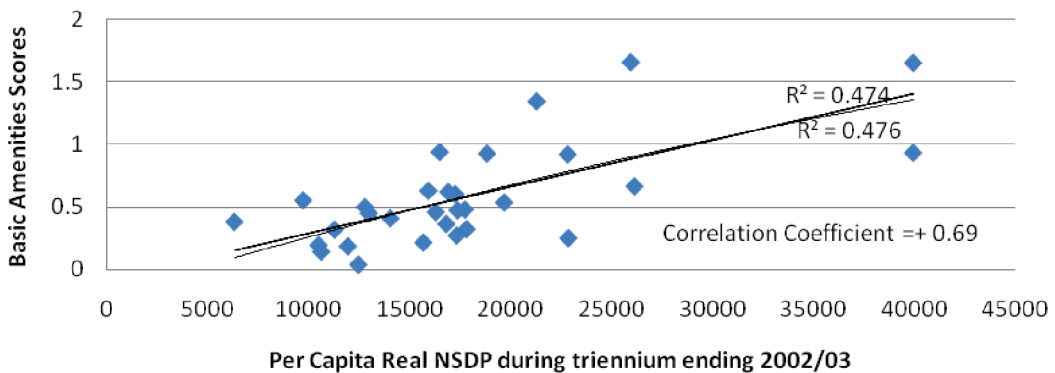
**Figure 27: Per Capita Real NSDP and Educational Scores, 2002/03.**



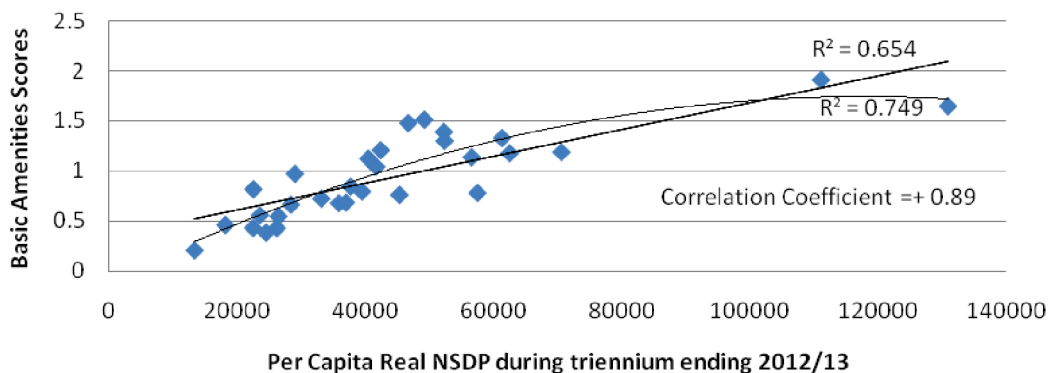
**Figure 28: Per Capita Real NSDP and Educational Scores, 2012/13.**



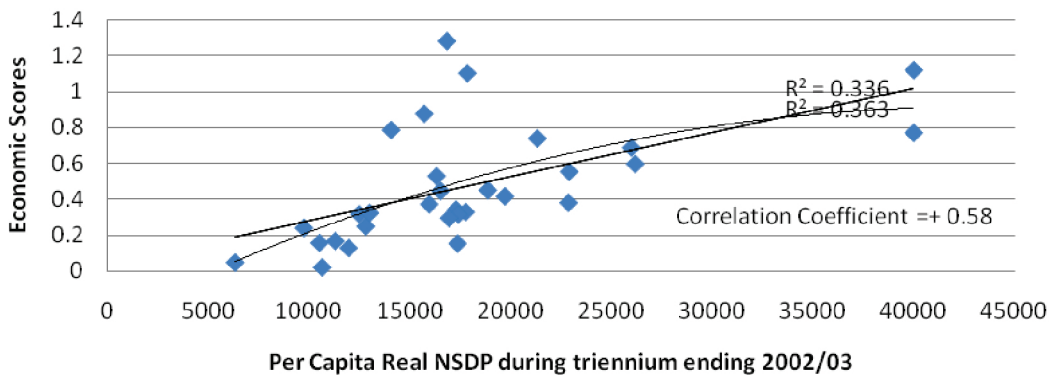
**Figure 29: Per Capita Real NSDP and Basic Amenities Scores, 2002/03.**



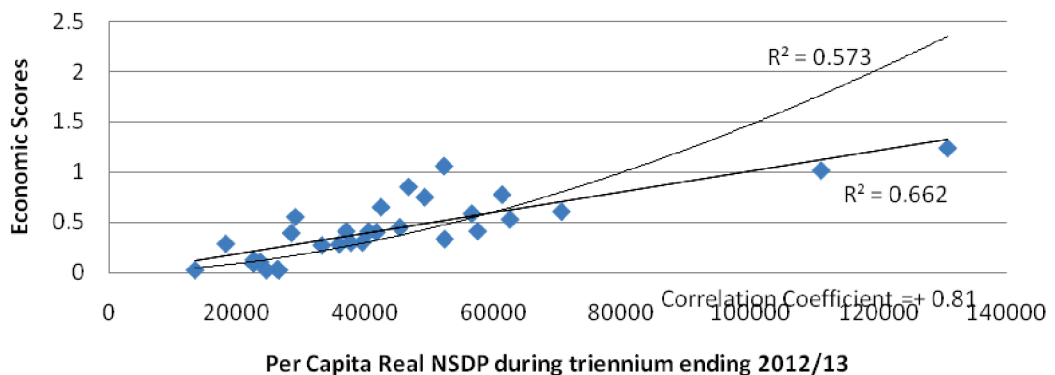
**Figure 30: Per Capita Real NSDP and Basic Amenities Scores, 2012/13.**



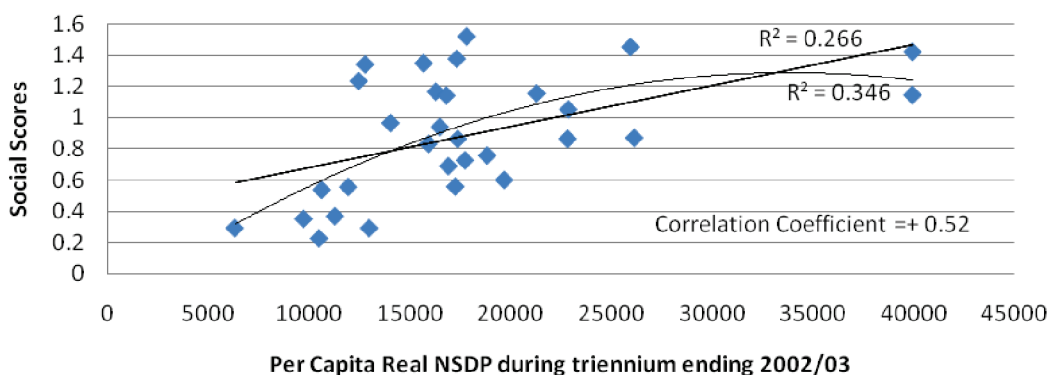
**Figure 31: Per Capita Real NSDP and Economic Scores, 2002/03.**



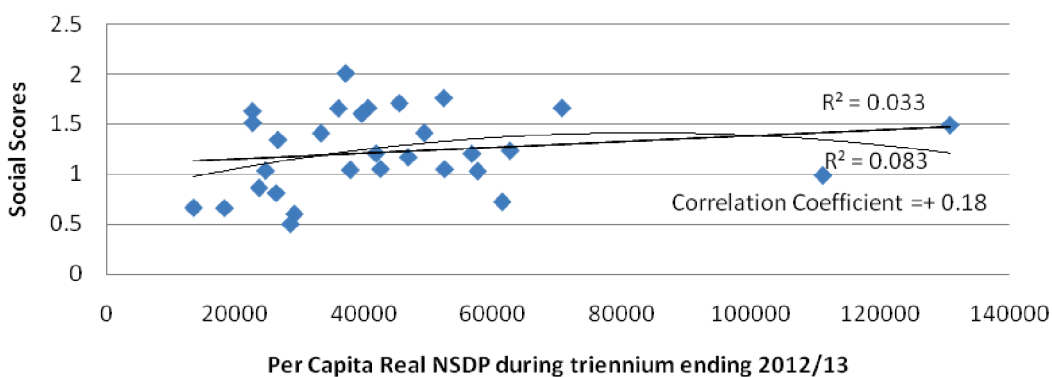
**Figure 32: Per Capita Real NSDP and Economic Scores, 2012/13.**



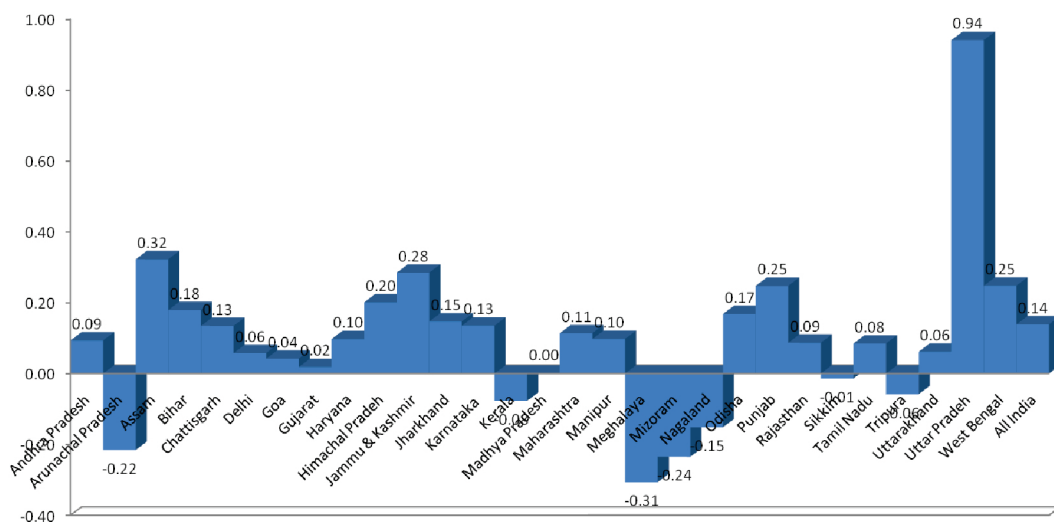
**Figure 33: Per Capita Real NSDP and Social Scores, 2002/03.**



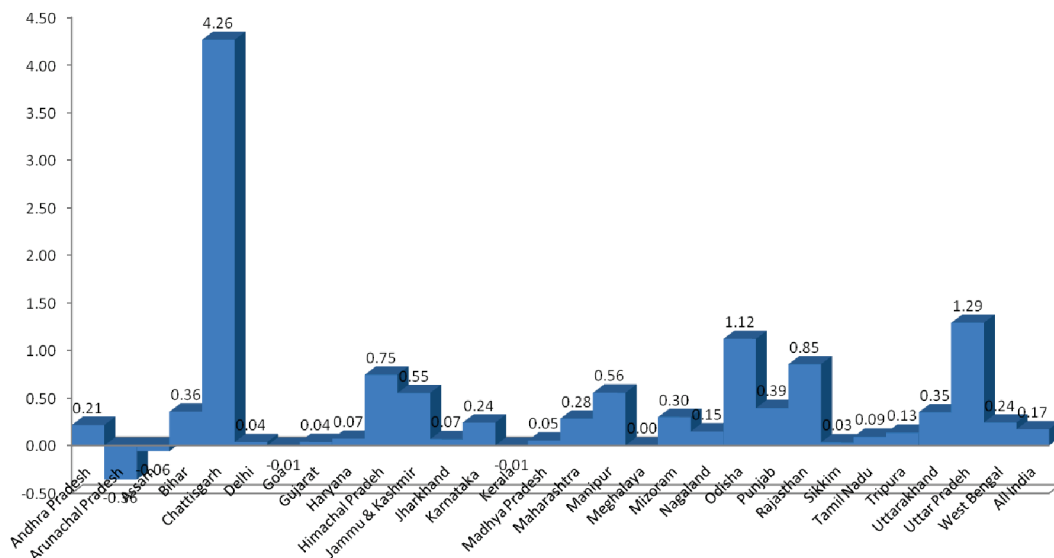
**Figure 34: Per Capita Real NSDP and Social Scores, 2012/13.**



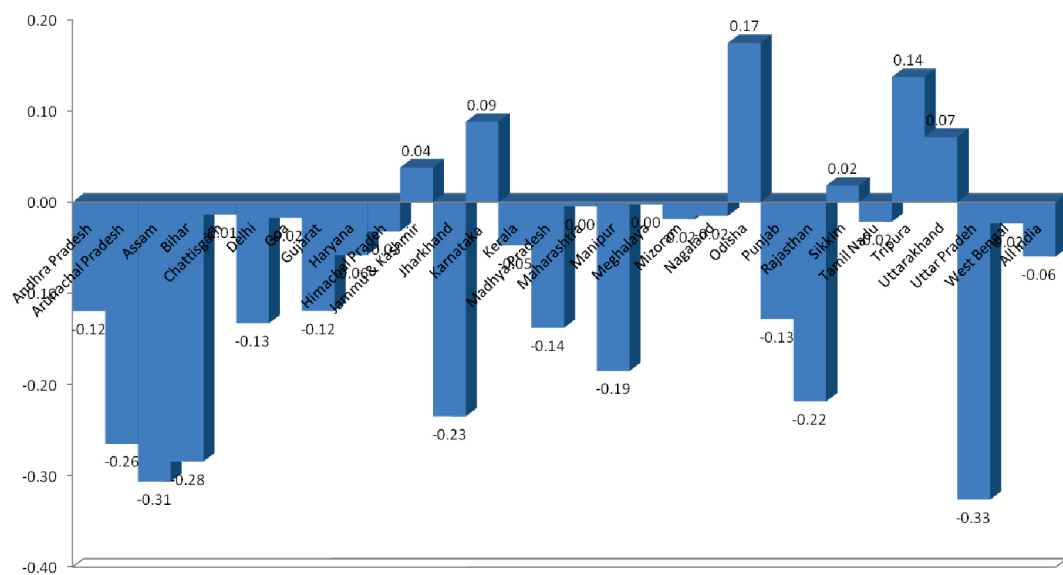
**Figure 35: Growth Elasticity in Demographic Dimension of Social Development (2003-2013)**



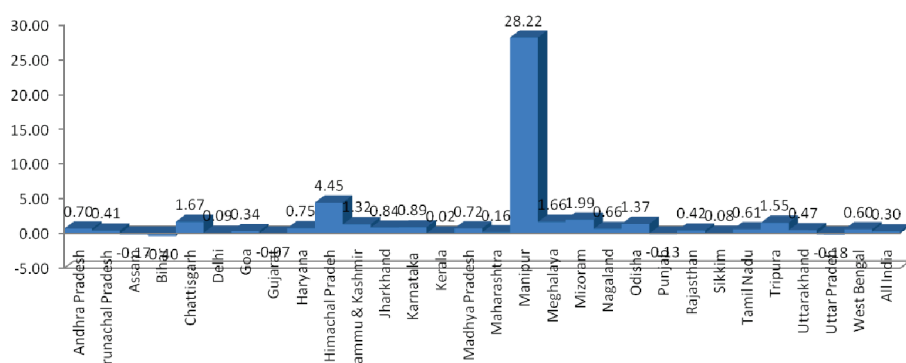
**Figure 36: Growth Elasticity in Health Dimension of Social Development (2003-2013)**



**Figure 37: Growth Elasticity in Education Dimension of Social Development (2003-2013)**

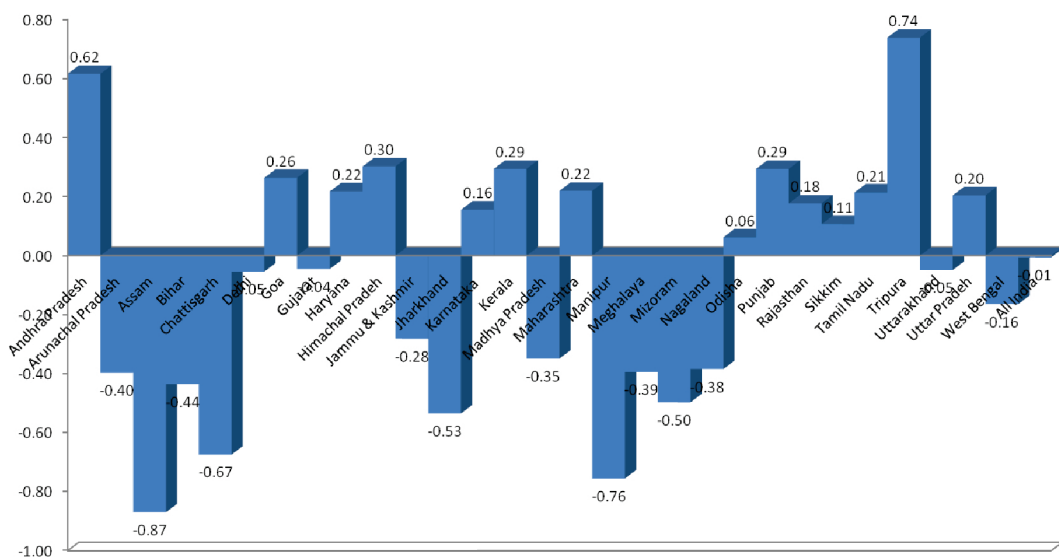


**Figure 38: Growth Elasticity in Basic Amenities Dimension of Social Development (2003-2013)**

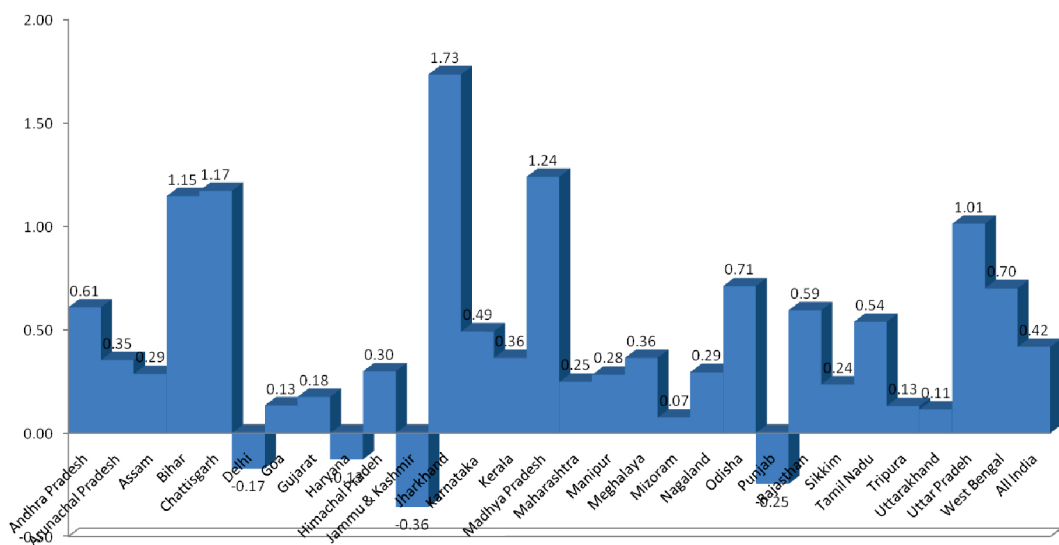




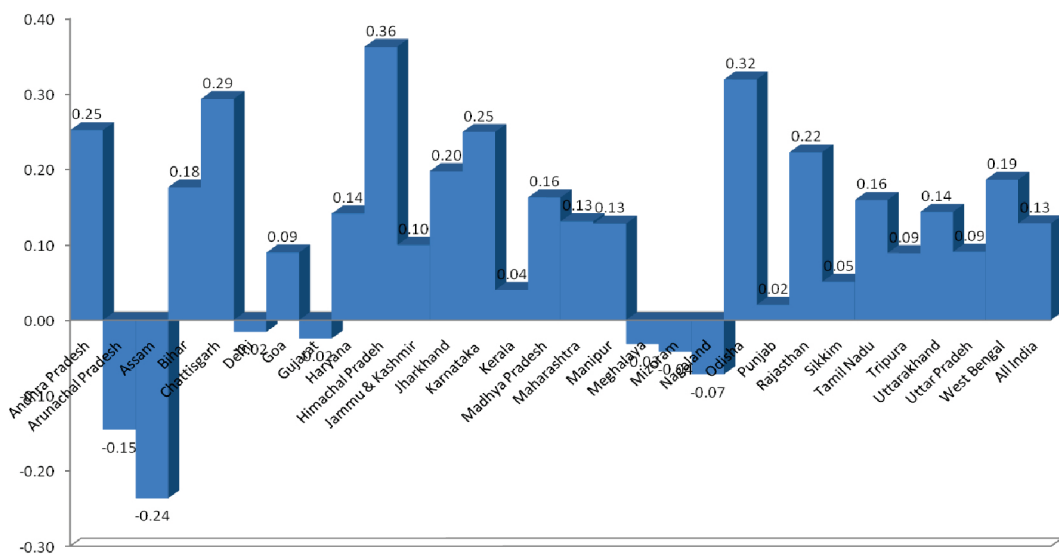
**Figure 39: Growth Elasticity in Economic Dimension of Social Development (2003-2013)**



**Figure 40: Growth Elasticity in Social Dimension of Social Development (2003-2013)**



**Figure 41: Growth Elasticity in Aggregate Social Development  
(2003-2013)**



## **List of CSD Working Papers and Monographs**

### **Working Papers:**

1. Balakrishnan, Rajiv. The social context of the family planning programme : Evidence of 1990s survey data from Uttar Pradesh.
2. Sabir Ali. Magnitude of slum problem in Delhi.
3. Balakrishnan, Rajiv. Jharkhand : Past, present & future.
4. Ghosh, Arun Kumar. The gender gap in literacy and education among the scheduled tribes in Jharkhand and West Bengal.
5. Balakrishnan, Rajiv. Caste and tribe wise female-male ratios in India, 1961-2001 : Issues emerging from a preliminary analysis of census data.
6. Ghosh, Arun Kumar. Health status of tribal women and children in Jharkhand and West Bengal.
7. Balakrishnan, Rajiv. Poverty at the turn of the century : Facets, issues and policy perspectives
8. Sabir Ali. Slums within resettlement colonies as an environmental hazard : A case study of Delhi slums.
9. Jabbi, M. K. Girl child discriminated to death.
10. Shahabuddin, Ghazala, Verma, Ashok. Effects of forest resource extraction on biodiversity conservation values : Towards a sustainable forest management strategy in Sariska Tiger Reserve, Rajasthan.

### **Monographs:**

1. Bhaswati Das and Animesh Kumar (2006). An assessment of the watershed development programme with special reference to marginal farmers and landless households.
2. Vimal Khawas (2006). Socio- economic conditions of tea garden labourers in Darjeeling hills.
3. Arun Kumar Ghosh (2006). A longitudinal study of slum dwellers in Delhi : from a squatter settlement in a resettlement colony.
4. Satyajeet Nanda (2007). Gap between maternal and child health service delivery and utilization in Orissa : a micro-level exploratory study.
5. Saxena, K B (2008). Rehabilitation and Resettlement of the Displaced Persons : A Critique of the Policy and the Bill.
6. Saxena, K B (2008). The Land Acquisition (Amendment) Bill, 2007 : A Critique.
7. Saxena, K B (2008). Development, Displacement, and Resistance: The Law and the Policy on Land Acquisition.
8. Saxena, K. B. (2009). Swelling Displacement and Elusive Rehabilitation Deficits in Policy interventions.
9. Saxena, K. B. (2011). The Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Rights) Act, 2006. Status of Implementation and Recommendations.



**Surajit Deb** did his Ph. D. in Economics in 2003 from Department of Economics, Delhi School of Economics, University of Delhi, in the area of Macroeconomic Implications of Agricultural Price Movements and Time Series Econometrics. He has published extensively in academic journals, participated in international conferences and completed commissioned research projects for international organizations. His important contributions include a chapter on Social Development Index in the Social Development Reports of 2012, 2014 and 2016. He has acted as a member of the Working Group on Terms of Trade between the Agricultural and Non-agricultural Sectors during 2012-15 for the Ministry of Agriculture, Government of India. His current research interests include multi-dimensional indices of human and social development, analysis on inclusive growth, disability prevalence and its implications, gender inequality issues, ageing impacts and India-China comparisons.



## Council for Social Development

**Sangha Rachna**

53, Lodi Estate, New Delhi – 110003.

**Phones:** 91-11-24615383, 24611700, 24616061, 24693065, 24692655

**Fax:** 91-11-24616061 • **Email:** [csdnd@del2.vsnl.net.in](mailto:csdnd@del2.vsnl.net.in), [director@csdindia.org](mailto:director@csdindia.org)