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**Growth** and  
**Human Development** in  
**North-East India**

edited by **P. NAYAK**



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**P. NAYAK**

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## Preface

It took centuries to realize that people are the real wealth of a nation. They produce goods and services for their own welfare. The development and growth of a nation depends upon the proper utilization of natural and cultural endowments available to it. To utilize these endowments, human participation is required. Human participation, on a sustained and autonomous basis, cannot be expected without enhancement in the capability of the population. Thus, self-sustained growth cannot be ensured without human development. Further, since the basic objective of development of a nation is to improve the well-being of the people, every nation strives hard, not only to increase her wealth and productive resources, but also to ensure a better standard of living for its citizens by providing them with adequate food, clothing, housing, medical facilities, education, etc. In fact, governments of various nations, at different levels, take the initiative to create an enabling environment for their people to enjoy healthy, long, and creative lives. However, technical considerations of the means to achieve human development and the use of statistical aggregates to measure national income and its growth have, at times, obscured the fact that the primary objective of development is to benefit the people. Of course, people want higher incomes as one of their options, but income is not the aggregate of human life and, hence, not an end in itself.

The human development approach of looking at development differs from conventional approaches to economic growth, human capital formation, human resource development, human welfare, and basic human needs. Gross National Product (GNP) growth is treated as being necessary but not sufficient for human development. Human

progress may be lacking in some societies despite rapid GNP growth unless some additional steps are undertaken to improve the same. Human welfare approaches look at human beings more as beneficiaries of development processes than as participants in it. They emphasize only the distributive policies rather than production structures. Recent development experience has once again underlined the need for paying close attention to the link between economic growth and human development for a variety of reasons. Many fast-growing developing countries are discovering that their high GNP growth rates have failed to reduce the socio-economic deprivation of substantial sections of their population. Even industrial nations are realizing that high income is no protection against the rapid spread of such problems as drugs, alcoholism, AIDS, homelessness, violence, and the breakdown of family relations. At the same time, some low-income countries have demonstrated that it is possible to achieve high levels of human development if they skillfully use available means to expand basic human capabilities.

Human development also encompasses elements that constitute the critical issues of gender and development. There are four major elements in the concept of human development—productivity, equity, sustainability, and empowerment. People must be enabled to increase their productivity and to participate fully in the process of income generation and remunerative employment to achieve higher economic growth, which is a subset of human development models. Productivity is not the only means to achieve welfare in a society. People must have access to equal opportunities. All barriers to economic and political opportunities must be eliminated so that people can participate in and benefit from these opportunities. These benefits also need to be distributed over generations. Access to opportunities must be ensured, not only for the present generation but for future generations as well. All forms of capital such as physical, human, and environmental should be replenished. Besides, empowerment is a necessity. People must participate fully in the decision-making process that can shape their lives. Human development is impossible without gender equality. As long as women are excluded from the development process, development will remain weak and lopsided (UNDP 1995).

Development should increase peoples' choices. While enhancing the choices of one individual or a section of a society, it should not restrict the choices of another. It calls for equity in human relationships. It should not mortgage the choices of future generations while

improving the lives of the present generation (UNDP 1991). In other words, the development process must be sustainable.

Literature in this regard is vast and varied. It reveals that a large number of studies have been undertaken in India and abroad on various aspects of human development. While some literature dealt with concepts of human development, some have dealt with methods of measurement, construction of Human Development Index (HDI) for various states and sub-states, and for different sections of society. There have been numerous efforts over time to remedy the defects of traditional measures of development, and to create composite indicators that could serve either as complements or alternatives to this. There are studies relating to debates on the selection of variables to be included in HDI and weights to be assigned to different variables under consideration. While some studies dealt with disparities in human development between rural and urban areas and between males and females, some others concentrated on trends of human development. There are some studies that concentrated on finding the two-way relation between human development and economic growth of nations. Available evidence reveals interesting insights relating to the impact of economic growth on human development, and vice versa, with different time lags. Some scholars have also tried to examine the link between poverty and human development. The factors responsible for low levels of human development are also identified in some studies. While some authors prescribed increased allocation of resources on social sectors for improving human development, some others put emphasis on the aspects of implementation of programmes relating to social sector development. There are some authors who believe that high growth could lead to high human development, while some others opine for achieving high growth through the achievement of high human development. There are also some studies that argue in favour of a balanced path of development that combines the strategies of growth and human development with appropriate weights.

Since 1990, United Nations Development Programme (UNDP) has been publishing *Human Development Reports (HDRs)* at the global level for various nations and every year a report is published to this effect with emphasis on a different theme. The Planning Commission of India has also undertaken a similar exercise and has published the *National Human Development Report (NHDR)* for the years 1981, 1991, and 2001. The reports for the years 1981 and 1991 include data on HDI for all the states and union territories of India. But in the 2001

report, the index has been constructed only for fifteen major states due to non-availability of required data for smaller states, including the states in the North-East.

If we take a look at the *NHDR 2002*, we get some idea on the status of human development in the North-East, though data is somewhat dated. The report reveals that the region comprising the eight states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim (the last to be included in the region), and Tripura constitutes a land surface of 262,230 square kilometers with a population of 38.9 million belonging to different ethnic and cultural groups. Topographically, the region is a mixture of hills and plains. While Arunachal Pradesh, Meghalaya, Mizoram, Nagaland, and Sikkim are almost entirely hilly, about four-fifths of Assam is plains. Manipur and Tripura have both plains and hilly tracts. The hills account for about 70 per cent of the area and accommodate about 30 per cent of the population of the region while the plains, constituting the remaining 30 per cent area, hold about 70 per cent of its population. A wide variation in altitude coupled with abundance of rainfall has given rise to a wide variation in climatic conditions within the region, which in turn has endowed the region with rich biodiversity. The richness of biodiversity of the region is almost matched by its ethnic diversity. The region is a meeting place of large number of races, creeds, cultures, and languages. The impingement of the diversity of physical and cultural environment is naturally found in the organization of economic life of the people of the region.

Keeping all this in view, it was thought to bring out a volume on growth and human development for the region by inviting papers from academicians from within and outside the region. The present book is an outcome towards achieving that end. While every effort has been made to bring analysis and discussion on the issues of human development, touching upon various states in the region, the study is constrained due to non-inclusion of the newly included state, Sikkim. It must be borne in mind that although Sikkim has been included in the north-eastern region for administrative and developmental considerations, it is geographically non-contiguous to the rest of the states in the region. Its cultural background is much different from the other states. This sociological, cultural, and geographical difference gives a different character to Sikkim.

The book has been broadly divided into three sections on three different themes:

1. Concept and measurement issues;
2. The national scenario; and
3. The issues at the level of the north-eastern region.

The first section deals with the concept and measurement, and has three chapters. The first chapter titled 'Human Development: Concept and Measurement' contributed by the editor discusses in detail not only the evolution of the concept of human development but also its measurement. The author provides an account of change in the methods of measurement of human development proposed by UNDP, the Government of India, and individual academics.

The second chapter 'Concept of Human Development: A Critique' contributed by P.K. Chaubey, critically examines the literature on the concept of human development and its measurement. He points out that the motivation for UNDP, under the advice of Mahbub-ul-Haq, to bring out a report on human outcomes of economic, social, development, and welfare activities in the public, private, and other spheres in different countries emanated from the fact that wide failures were noticed in terms of reduction in poverty and infant mortality, enhancement in longevity, education, improvement in health, and the like. Contributions from economists like Amartya Sen, on capability approach as against the commodity approach, provided the right kind of theoretical support to define 'human development' in terms of enlarging people's choice through enhancement of capabilities. However, everything is not hunky dory with the idea of human development as it is too individualistic in approach, and shorn of communitarian ethos. Again, when it comes to measuring human development, it is not in terms of capabilities but in terms of attainment and performance, which is possible only when capability space interacts with commodity space. The author, in this connection, tries to delineate the history of evolution of the idea of human development and its contribution in shifting the focus of the development debate, and the weakness it inheres.

The third chapter 'Construction of an Index: A New Method' has been contributed by Sudhanshu K. Mishra. In this paper the author argues that composite indices are often constructed by a linear combination or weighted sum of indicator variables. While constructing indices, weights are either subjectively determined on the basis of expert opinion, or mathematically determined by the Principal

Components Analysis (PCA). By its very logic, such composite indices are elitist—assigning large weights to highly correlated variables and negligible weights to poorly correlated variables. The author proposes to construct a composite index by maximizing the sum of absolute correlation between the composite index and the indicator variables. In the first part of this chapter, the author shows that such a composite index is inclusive—duly weighting the poorly correlated variables. Thus, composite index does not undermine the importance of an indicator variable merely because it is not well correlated with others. In the later part of the paper, the author, by adopting the proposed method, has constructed HDI with equality in income distribution for 125 countries. The study reveals that while the traditional PCA assigns poor weight to the measure of income inequality, the proposed method ameliorates its position by assigning reasonable weight to it.

The second section of the book which deals with growth, human development, and other related issues at the all India level, has seven chapters. In this section, Saundarjya Borbora in the chapter titled 'Economic Growth and Human Development: Chain Relationship' discusses the relationship between economic growth and human development, and opines that they reinforce each other. He argues that development of social sectors, such as education, health, and good governance, is a major precondition for achieving economic growth with the help of effective government policy and appropriate public expenditure. This in turn would help the states to move above the threshold level in human development. He also admits that it is necessary to identify the weak links between growth and human development, and that appropriate policies are required to be formulated and implemented to strengthen the links; and that such policies must be dynamic in nature with changes in the development process. He suggests that in the early stages, priorities might be given to education and health, and at a later stage higher education, technology, and better health facilities might assume a greater role. He concludes by reiterating that the view of *grow first and worry about human development later* is not supported by evidence and, hence, focus on human development must be targeted at the beginning of the growth process.

Santanu Ray, in his chapter 'Transformation of Economic Growth to Human Development: A Long-Run Study of Indian States' states that the role of income growth in determining the level of human

well-being has become a topical issue in recent literature. Indian performance in this regard has been far from satisfactory. Using disaggregated data for the country over a long period of time, Ray examines the relationship between growth and human development. He also addresses the question whether the economic growth achieved by Indian states in the last three decades has any significant influence in determining the level of human development. Using the latest formulation of UNDP, he not only computes HDI for each of the major states of India, but also makes an analysis of HDI over time and across states. His study reveals that per capita income levels of Indian states play a positive role in determining the non-income component of human development in the long-run. He expresses his concern over huge regional variation in income levels and disparity in human development indicators across states.

The chapter titled 'Effect of Structural and Conditional Rigidities: A Case Study of a Poverty Reduction Programme' has been contributed jointly by Arindam Banik and Pradip K. Bhaumik. In their paper, the authors are very critical about the previous studies conducted on poverty reduction programmes, most of which concentrated on evaluation of the effectiveness of government interventions in meeting the stated programme objectives and targets, gaps between desired and actual targeting of beneficiaries, and adherence to programme guidelines. In their paper the authors have made an attempt to analyse the effect of structural and conditional rigidities, on moving a beneficiary of poverty reduction programme from passive to active state, with the help of micro-level field data comprising a fairly large sample of poor beneficiary artisans collected under SITRA programme. Using ordered logistic analysis, they have provided an analytical characterization of the beneficiaries in a situation of structural and conditional rigidity, where all beneficiaries do not move from a passive state to an active state and are able to take advantage of the government intervention despite their having access to the benefit. The authors view that identification of ageing artisans as beneficiaries of the programme might not bear much fruit as they are unlikely to become economically active due to their conditional rigidities. Therefore, they opine that a thorough understanding of the conditional and structural rigidities and their impact on economic behaviour of beneficiary artisans is required, which perhaps would go a long way in helping to design and implement poverty reduction programmes.

The chapter titled 'Public Distribution System: An Instrument for Improving Human Development' has been contributed by R. Gopinath. The author states that the PDS is a major component of public delivery system in India that started functioning during the 1930s and, subsequently, was replaced by the Targeted Public Distribution System (TPDS) in the 1990s. The programmes were mainly designed to play an important role in improving human development, particularly among the rural masses and the poor people. The paper revolves around the discussion on the loopholes in operational mechanism of both PDS and TPDS, and strongly argues for addressing the problems associated with their implementation.

Taking a careful look at the HDI estimates for the various districts in Orissa, P.K. Tripathy and Bhabagrahi Mishra, in the chapter 'Status of Human Development in Orissa', make a few intriguing observations. They point out that the districts of Kalahandi and Deogarh, two of the least developed districts by conventional yardsticks, turn out to be ranked as high HDI districts in the *HDR* of Orissa. Keeping this paradoxical result in mind, they raise some important questions on the suitability of the concept of HDI while assessing the economic status of a region. They observe that the implication of high literacy in developed economies is not the same as that in backward economies. In backward economies, mere literacy without employment opportunities neither turns out meaningful educational attainment nor estimated higher life expectancy, and that lower infant mortality reflects sound health conditions of the majority of the population in general, and agricultural labourers, marginal and small farmers, and poor artisans, in particular. In the light of the above observations, they argue that there is a need for inclusion of alternative variables for health, education, and standard of living in the index that can lead to a more realistic ranking of a region based on such indices. For example, a composite index of property ownership (land and other resources), per capita income obtained on the basis of income accrual method, and the average man days employed for the working population shall capture the standard of living index more accurately than mere per capita income. Similarly, education index could be a composite index of literacy as well as its linkage with employment opportunities and the health index as a composite index of anthropometric measurements and pattern of mortality.

The chapter 'Good Governance: The Force behind Human Development', contributed jointly by Ashutosh Dash and Paohulen

Kipgen, reveals that human development cannot just automatically happen without economic development. The authors argue that growth oriented economic progress alone cannot bring progressive human development without good governance which demands greater transparency. That is why social activists are increasingly paying attention to governance, both at the macro and micro level. The authors conclude by laying stress on the importance of governance in the process of human development.

The last chapter in the section, titled 'Politics of Human Development', has been contributed by Apurba K. Baruah. The author brings out the politics involved in the issues concerning human development. Citing the example of poverty, he explains that in Contemporary Development Theory, poverty has been basically reduced to an issue of measurement, and the important issue of the mechanism of its generation is often overlooked. He also pleads that the economic efficiency is in its top gear only when the state takes control. Whether the state controls or leaves the market in private hands is a matter of politics to which the nature of human development is inalienably connected.

The third section deals with the issues of human development in the context of North-East India and has fifteen chapters. M.P. Bezbaruah, in his chapter 'Socio-political Transition, Growth Trends, and Development Attainment in the North-East in the Post-Independence Period', reviews the development experience of the region in the context of its political-administrative transformation in the post-Independence period. He points out that development experience in the region has been mixed and uneven. While there are periods of high growth for individual states, the region as a whole has been increasingly lagging behind the country in terms of per capita income. He believes that the rapid post-liberalization growth of the country is a far cry for the region. While the recent service sector led growth of the country is propelled by expansion of frontier areas like information technology, public administration and other services are the faster growing services in the region. He argues for enhancement of the rate of economic growth in the region based on its inherent strength and endowed resource base. Though funds required for building up the necessary infrastructure to activate the inherent growth potential of the region are no longer a constraint, disruptions caused by insurgency and the *bundh* culture make deployment of such investments difficult and add to the cost of any business venture, reducing the competi-

tiveness and economic viability. However, he is optimistic about the future of the region in the globalized era.

The editor of the book, in the chapter titled 'Human Development in North-East India' highlights that India, in spite of pursuing the policy of liberalization and globalization since the early eighties and witnessing higher growth rates, has not been able to achieve much on account of human development and welfare in comparison to many countries at the global level. Human Development Index in the country was as low as 0.56 in 2001. While some states in the region have performed better than the national level, some others have lagged behind. Rural-urban disparity, gender disparity, and uneven human development across the states in the region are quite significant. The disturbing trend of increasing gender disparity in Nagaland and the escalating rural-urban gap, particularly in the states of Assam and Meghalaya, is a matter of concern. The author, while highlighting some of these issues, stresses on the urgent need for taking appropriate action in this regard.

Nirankar Srivastav analyses the poverty status in the region using three conventional measures of poverty in the chapter titled 'Severity of Poverty and Status of Public Services in North-Eastern States'. His study reveals that poverty, in most of the states in the region, has declined. It has declined more in the hill states and in urban areas. The access to public services is observed to be very poor in the poverty-stricken states. The author states that there is a positive and strong relationship between poverty levels and access to public services in the region and recommends a target-oriented and region-specific poverty reduction programme.

Bhagirathi Panda, in the chapter 'Economic Growth, Exclusion, and Human Development', studies the mismatch between economic growth and human development in the region using empirical data. He observes and apprehends that the region, which is witnessing continuous low economic growth accompanied by relatively high human development, is susceptible to social tension. This has to be overcome by promoting a policy of high economic growth by taking some concrete measures. He prescribes accelerating industrialization and putting emphasis on greater value addition. The author also identifies some of the obstacles to industrialization, such as poor physical infrastructure, lack of culture of genuine entrepreneurship, security deficit, and poor governance. He suggests that in order to overcome these hurdles the governments in the region should play a proactive

role along with developmental Non-Governmental Organizations (NGOs) and promote Self Help Groups (SHGs), their movement, and effective participation in development programmes. He also emphasizes the role of civil society, academia, and peer groups towards reorientation in the value-systems for inculcating a culture of entrepreneurship.

Biswambara Panda, in the chapter 'Non-Governmental Organizations and Participatory Development' analyses the approaches of the grassroot NGOs and their role in contributing towards participatory development in addressing issues relating to human development, with special reference to the North-East. The author argues that participatory development can ensure integrated development, where all sections of society would be involved and benefited. This would not only bring about economic growth but would also dissipate social inequality. The micro approaches along with people-centred development objectives can bring considerable dividend by resolving conflicts, avoiding programme uncertainties, and evolving synergy among the key actors of society. He further argues that though participatory development may not ensure development for all the people but it certainly creates confidence among them, and most importantly provides them opportunities to share their ideas and knowledge. He believes that a development plan, armed with indigenous practices and native wisdom, can accelerate the developmental process at the grassroots level. Though NGOs are not the only force within the civil society to work towards inclusive growth, they are certainly a force to reckon with in the development domain. They can inch towards this objective through (various) people-centred approaches and strategies despite so much of apprehensions on their accountability and sustainability.

The chapter 'Inter-District Disparities in Meghalaya: A Human Development Approach' contributed jointly by Purusottam Nayak and Santanu Ray highlights widespread variations in the magnitude of human development across all the seven districts and three hills regions representing three different ethnic tribal groups in the state, between rural and urban areas, and between male and female groups of population. The authors also show that there exists a significant level of disparity, both in income consumption and in non-income attainments, among these districts. The inequality in economic attainment (income, as well as consumption expenditure) happens to be very high. However, both measures of variation and inequality indices suggest that few non-

income indicators, namely intensity of formal education and infant mortality rates, have disparities over economic indicators, which, according to the authors, are indeed a cause of considerable concern. In addition, they observe that economic inequality is much higher than inequality in overall HDI. Keeping in view a huge shortfall in HDI, accompanied by the existing level of variation and disabilities, the authors feel the need for a redesign of public policies that directly affect the welfare of the people. The study also reveals that the improvement of human development in Meghalaya, on account of better performance in respect of some socio-economic indicators, has been neutralized because of its laggardness in respect of some other indicators over time.

The next chapter titled 'Does Micro Finance Bring Human Development?' contributed by A.P. Pati, explains the success stories of micro-finance through SHGs in different parts of the country and abroad. The author suggests ways for economic empowerment of women through micro finance in the region. However, he concludes by stating that micro finance endeavour in Meghalaya is still at the nascent stage to make any visible impact at the macro level, so as to measure its contribution in attaining higher human development.

P.S. Suresh and Biswambhara Mishra, in their chapter 'Public Expenditure and Human Development in North-East India: A Case Study of Meghalaya', point out that Meghalaya, in the last few decades, has been witnessing a paradoxical and explosive economic growth because of the mismatch between growth rates of state domestic product and public expenditure. Disproportionate growth of the social sector over the years has not only eaten up most of the public investment in the state, but also given rise to a weaker linkage among different sectors. The study explores the nature, extent, and the degree of interdependence between the level of public expenditure and human development with the aim of understanding the cause and effect relationship and the extent to which the public expenditure on social services gets transformed to the end result of a better level of human development. The study reveals that at the regional level there is a positive functional relationship between public expenditure on social sectors and human development. The authors conclude that per capita spending on education and health has a relatively stronger impact on human development than per capita income growth.

Kishor Singh Rajput in the chapter 'Antenatal Care, Institutional Delivery, and Human Development in Meghalaya' highlights some

of the facts and figures on mothers' health with special reference to institutional deliveries of the child. Further, using logistic regression, he examines the role of certain background variables of women like her education and the spouse, work status, place of residence, etc., along with the role of antenatal care on institutional delivery.

E. Bijoykumar Singh in 'Human Development in Manipur' states that in spite of having a low per capita income, the HDI of Manipur for 1981 and 1991 has been higher than most of the major Indian states. In his chapter, he makes an attempt to examine the change in HDI for the state in the post (economic) reform period with available indicators of development like Infant Mortality Rate (IMR), sex ratio, life expectancy at birth, and literacy rate. He also examines the quality of development through an analysis of data on structural change, occupational distribution of work force, employment, and productivity of workers. He argues that though performance of Manipur in terms of IMR, sex ratio, literacy rate, and life expectancy at birth has been positive, low per capita income and continued dominance of low productivity activities in the occupational structure has weakened the link between employment creation and poverty reduction.

A.K. Agarwal in the chapter 'Human Development in Mizoram: An Overview' not only analyses the status of human development in Mizoram, its strengths and weaknesses, but also suggests a strategy for improvement. Through empirical analysis he claims that Mizoram has shown excellent performance not only in the field of education and health but also on Gross State Domestic Product (GSDP) in which the tertiary sector has been playing a dominant role. He also states that one might not notice the relative inadequacy of the state in terms of HDI, Human Poverty Index (HPI), and gender disparity as compared to other states in the region and the country as a whole, but in-depth analysis points towards the need for better services and for evolving an appropriate delivery mechanism with close interaction of various components of human development in the state.

The chapter 'Facets and Factors of Human Development in Tripura', contributed jointly by Sudhanshu K. Mishra and Purusottam Nayak, synoptically presents an account of different facets and factors relating to human development in Tripura which suffered a brutal blow during partition of the country in the form of maimed infrastructure, severed connectivity, and a debilitating burden of immigrants, with all the needs and no resources. They have also systematically presented the geographical and historical forces that have shaped the resource

base, infrastructure, connectivity, socio-economic milieu, and, consequently, the economy of the state, determining the level of human development. Their study reveals that in spite of a great population burden on her fragile economy, the state has secured an appreciable score in matters of education and health. The authors opine that human development of the state needs to be harnessed to promote economic growth in terms of increased productivity and higher per capita income.

The next chapter, 'Human Development in Assam: An Analysis', is jointly contributed by Hiranmoy Roy and Kingshuk Adhikari. The authors report that the state is lagging far behind other major Indian states in terms of various socio-economic indicators, including the measures of HDI, HPI, and poverty. Their findings also reveal an inverse relationship between human development and poverty on the one hand, and widespread variation of human development across districts, on the other.

Debasis Neogi, in 'Development and Deprivations in Arunachal Pradesh', highlights the extent of development and deprivations in the state of Arunachal Pradesh. While presenting his findings, he states that while some parts of the state are well ahead in terms of socio-economic development, the other parts are lagging behind. He opines that uneven development, across districts and among tribal groups, has given rise to inter-tribe disputes. The large chunk of Net State Domestic Product (NSDP) in the state is observed to be contributed by the tertiary sector, of which public administration constitutes the major component. This type of development trend, as observed by the author, seems to be untenable in the long run. The author also analyses the role of basic education in bringing empowerment to the society and explains how such capacity building can lead to redressal of deprivation of human beings. Besides, he investigates the aspect of gender discrimination and prescribes mass education in order to remove such discrimination from the society.

The last chapter of the book, 'Human Development and its Correlates in Nagaland', has been contributed by Sudhanshu K. Mishra and Purusottam Nayak. The authors have presented a large amount of data relating to human development in Nagaland, and made an attempt to observe regularities in the same that may be meaningful for devising development policies. Their findings indicate that PCI, HDI, and gender-related development index are poorly correlated with health indicators, but appreciably correlate with educational

attainment. The authors conclude that the reliability of data reported by a socio-economic system is dependent on the level of development of the system. Underdeveloped socio-economic systems report highly unreliable data. This is not only regarding the figures of income but also the measures of attainment in matters of health and education. Official data on these variables is thrown up by a system that is administratively motivated and unsupervised with regard to their economic and developmental meaning. Use of such data, whether it pertains to income or any other measure of development, is not dependable for policy decisions meaningful to fostering development.

An overall analysis of various issues discussed in the present volume reveal the following:

1. There is a need to rethink, not only the choice of variables but also the method of construction of HDI. The proposed alternative method, by maximizing the sum of absolute correlation between the composite index and the indicator variables, might be of some use while overcoming the problems associated with construction of composite indices by PCA.
2. In the recent past, the entire region has been experiencing good human development but poor economic growth. There exist widespread variations in the levels of human development across states, regions (rural-urban), among ethnic and other social groups, and between genders. This mismatch probably has given rise to increased disputes among various social groups and tribal populations leading to social tensions reflected in the form of extortions and other secessionist activities. To overcome this, a determined effort is required to harness human development towards achievement of higher economic growth through increased productivity. There is also a need for specific intervention strategies on the basis of sector/group/class/gender/region/state.
3. Human development is positively associated with the quality of governance. Governance, from the human development perspective, demands greater transparency, accountability, participation, and stringent rules and laws. Judged on these parameters, the quality of governance in the region is not satisfactory and, hence, requires improvement. Besides, local democratic institutions like Autonomous District Councils need to be strengthened and their functioning be made more effective.

4. Revolution of SHGs has not made much headway in the region. SHG as a movement and institution ensures, at the micro level, both economic growth and human development. Further, both these objectives are realized through the method of participation, especially of the poor and the marginalized. There is a need to make this movement more widespread in the region.
5. Besides increased inequality, the quality of public services on the basis of access, use, reliability, and satisfaction are worst in the poverty stricken states in the region. To overcome this, the extremely poor households need up-front intervention through measures such as TPDS.
6. Reproductive health care happens to be an important component of human development. The goal to attain satisfactory human development will remain unfulfilled if the reproductive health needs of married women and children are not properly attended. The situation of reproductive health care in some states of the region is worse than many other in the country. Therefore, immediate efforts are to be made to improve this situation.
7. Higher level of human development is a product of the accumulated benefits that accrue to the society from public investments on social service. Per capita spending on education and health has a relatively stronger impact on human development than growth in per capita income. Hence, public expenditure on social services needs to be continued till the time economic growth itself takes care of it substantially.
8. The country, in general, and the north-eastern region in particular, suffer from the politics of human development. The approach of development theory and practice to poverty has been mechanical. It never goes into the question of the mechanism of generation of poverty. Hence, it is suggested that institutions engaged in development practice should analyse the mechanism of generation of poverty, and based on such analysis should come up with programmes to overcome it.

PURUSOTTAM NAYAK

# I

## Concept and Measurement Issues

## 5

## Transformation of Economic Growth to Human Development

### A Long-Run Study of Indian States

SANTANU RAY

#### INTRODUCTION

Economists in the war-stricken world of the 1940s emphasized on economic growth with the belief that expansion of income/output is an end in itself, and that growth does trickle down. Economic Growth (EG) improves the quality of life of the people, at least in the long run. However, the global experience suggests that the transformation of economic prosperity to the well-being of the people is not automatic. Growth, in the new development paradigm of the 1990s, has been identified as a necessary but not sufficient condition for achieving Human Development (HD). Moreover, the economic growth that fails to enhance human development is unlikely to sustain. A virtuous cycle requires that growth must be accompanied or preceded by parallel improvements in human development. An economy may be on a mutually reinforcing upward spiral with high levels of human development leading to high income growth, and growth in turn promoting human development. Conversely, weak HD may result in low growth and consequently poor progress towards HD. Hence, human development is not just an end product of the development process but an important input as well, and also a key ingredient in the process of economic prosperity. Because of the strong two-way relationship, it is extremely important for any economy to promote both growth and human development to sustain progress in either.

India's growth performance over the last two decades became a topical issue. After a sluggish growth rate in the first three decades

of independence, India's turnaround in the 1980s attracted attention all over the world. The acceleration, on the other hand, raised several questions. It is often said that the recent growth trend in India is not an inclusive one, and failed miserably to expand the well-being of the people in the human development sense. This chapter seeks to answer the question whether the state-level growth achievements in India are transformed into human development. Using Indian disaggregated data for a period of three decades (1970–71 to 2000–01), a growth-human development relationship is scrutinized. Thus, the present chapter examines whether the economic growth achieved by Indian states in the last three decades has any statistically significant influence in determining the present level of human development.

#### THEORETICAL FRAMEWORK

*Human Development Report 1996* provides a standard framework for discussing the relationship between economic growth and human development, and emphasizes on the quality of growth, that matters, to achieve progress in human development. The framework was further advanced and updated in a series of articles by Ramirez *et al.* (1998), Ranis *et al.* (2000), Ranis and Stewart (2000), Boozer *et al.* (2003), and Ranis and Stewart (2005). They argue that there exists a strong relationship between economic growth and human development. In Chain-A, growth provides resources to permit sustained improvements in human development, while in Chain-B, improvements in the level of education and health, key ingredients of human development, contribute to future growth. They hypothesize that transformation of growth into human development would be stronger when there is a higher income equality, greater allocation of resources toward human development, larger share of government allocation to human development related social expenditure, greater contribution of social capital, and a more effective human development improvement function. The empirical analysis suggests that in most cases, EG and HD run parallel. Most of the developing economies are within the vicious cycle mode—with below average HD and EG, and few economies are facing lopsided realities where HD and EG are not coherent.

#### LITERATURE SURVEY

India's position in the above framework is far away from satisfactory. *Human Development Report 1996*: 81 notes: '...India—remains in the weak

links quadrant with low human development and low growth during the 1960s and 1970s. It moves to lopsided development in 1980–92 as growth accelerates while progress in human development remains slow...'. Ramirez *et al.* (1998) examine the significance of the relationship, for the chains as a whole and for particular links in them, with the help of cross-country statistics. They find Indian performance in the 1960s and 1970s, in a vicious cycle category. However, in the 1990s India moved to the *EG*-lopsided group. Almost the same views have been expressed about India by Ranis and Stewart (2000) and Boozer *et al.* (2003). Using data from 69 developing countries, Ranis and Stewart (2005) extend the analysis for the period 1960–2001. They point out categorically that India remained in a vicious cycle for first two decades; however, her movement toward *EG*-lopsided quadrant during the 1980s received a reversal in the 1990s.

In parallel efforts, Mazumder (1995 and 2000) scrutinized the causal relationship between human well-being and economic prosperity. Human well-being in this framework is captured by the core indicators such as life expectancy at birth, adult literacy rate, and infant mortality rate, while economic achievements by per capita real gross product. Key findings in Mazumder (2000) reveal that the relation varies significantly with different income groups.

At the national level, empirical studies on the causality between economic growth and human development have been attempted in both ways. Few scholars find that economic growth determines the level of human development, however, others argue for reverse causality. Dholakia (1985: 112–18) tested both the hypotheses of neoclassical school. A higher human capital formation would lead to higher growth of the TFP in a region and of human capital approach where human capital base of a region plays an important role in determining the growth of output and TFP, using data from 15 major states for the period 1961–71. However, Indian data could not support any of these hypotheses even at 10 per cent level of significance. Geeta Rani (1995) finds that economic progress in India is one of the important factors that determine the level of human development. Dholakia (2003) finds that human development indicators positively influence income with a lag of about eight years, whereas income per capita affects the other within two years. Using Indian mortality statistics, World Bank (2004) documents that both household living standards and national income levels have a positive effect on the reduction of infant mortality (under age one). This result is for Indian infant mortality in

five years preceding 1998–99. Foster and Rosenzweig (1996) focus attention on the relation between education levels and economic growth in rural India during the Green Revolution. They concentrate mainly on the agricultural transformation in that period, and show how initial education levels translated into subsequent economic growth through new opportunities, created by technical change. Gupta and Mitra (2004) investigate the possible links between economic growth, poverty, and health, using panel data for 15 major states covering a period from the early 1970s to late 1990s. Their results indicate that though growth tends to reduce poverty, significant improvements in health status are also necessary for poverty to decrease. The study explores a two-way relationship between growth and health status: better health condition of the people enhances economic growth by improving productivity and higher growth allows better human capital formation.

In another attempt, Duraisamy and Mahal (2005) examine the same relationship between the rate of economic growth, health indicators, and poverty levels of 14 major Indian states for the period 1970–71 to 2000–01. They document a strong association between income growth and health indicators: with the increase in income life expectancy increases significantly and infant mortality falls sharply. However, poverty level and income growth on an average are inversely related. Bhalotra (2006) arrives at the result that unconditional growth elasticity of under-five mortality in India is about  $-0.7$ , which means that a 10 per cent increase in per capita income is associated with a 7 per cent reduction in mortality. This result corresponds to the under-five mortality statistics of 14 major Indian states for the period 1970 to 1994. Trivedi (2006) studies the relation between income levels and levels of educational capital in Indian states. The key findings are that the stock of educational capital, proxied by the secondary school enrolment rate, has a significant positive impact on steady-state level of per capita income and also on attendant growth rates. Other interesting set of findings is that both male and female educational capitals are positively related to the steady-state incomes, or that gender-gaps in education reduce long-run incomes. Drawing data mainly from the Planning Commission (2002) for 15 major states of India and covering a period from 1980–81 to 2000–01, Ghosh (2006) found strong evidence of regional convergence in human development despite significant divergence in real per capita income.

## PRESENT STUDY

It is evident from the previous section that several attempts have been made to correlate economic progress with human well-being in the Indian sub-national context. However, there is a dearth of empirical studies aimed to find out the cause-and-effect relationship between the two. The present study intends to seek the role of economic growth in determining the level of human development using a limited version of Granger-Causality Test.

We narrow our focus to the 16 most populous states for which consistent time series data are available. The older boundaries of the states of Bihar (including Jharkhand), Madhya Pradesh (including Chhattisgarh), and Uttar Pradesh (including Uttaranchal) are considered for the entire period of three decades. The focused states in this study include Punjab (PJ), Haryana (HR), Himachal Pradesh (HP), Uttar Pradesh (UP), Madhya Pradesh (MP), Maharashtra (MH), Gujarat (GJ), Rajasthan (RJ), Bihar (BH), Orissa (OR), West Bengal (WB), Assam (AS), Andhra Pradesh (AP), Karnataka (KK), Kerala (KR), and Tamil Nadu (TN). These included states have a combined population of 987.92 million, accounting for over 96 per cent of India's total population (Census 2001); and 2.87 million square kilometers, accounting for 87 per cent of India's total geographical area. The variation in economic performances and disparity in level of living within the focused area are large.

First, we computed the growth rates of each of the included states for the last three consecutive decades and then construct a HDI for the states, following the United Nations Development Programme (UNDP) formulated *HDR 1999* methodology, so that the position of the Indian states could be viewed in a global perspective. The states are classified on the basis of their achievements in per capita income and HDI. And finally, using a limited version of Granger-Causality Test we examine the significance of the transformation of economic prosperity into human development.

## INDICATORS AND DATA SOURCES

The period chosen for this study covers three decades: 1970–71 to 2000–01. A brief discussion is presented here on the data sources of different variables/indicators that are involved in this study.

### Estimates of Economic Growth

Per Capita Net State Domestic Products (PCNSDPs) are taken as an indicator of measuring economic performances of the states. First, we

obtain the data directly from EPWRF (2003: Annexure 1 and Appendix 11.6) for the period 1980–81 to 2000–01 at constant 1993–94 prices. For the states of Bihar, Madhya Pradesh, and Uttar Pradesh, we merged the data of Jharkhand, Chhattisgarh, and Uttaranchal, respectively, in case they were provided separately. Now a deflator is constructed for each of the included states, using the price index of the respective state to convert the figures of 1970–71 prices into 1993–94 prices.

### *Human Development Index*

United Nations Development Programme (1999) methodology involves a number of indicators. We present the sources of the dataset of the indicators that are directly involved in the computation of HDI.

### *Life Expectancy at Birth*

The Registrar General of India estimates life-tables for major Indian states on the basis of 6 or 5-year averages of age-specific death rates. Using these values of state-specific life expectancy at birth, regression lines for each of the major states of the country are fitted applying Ordinary Least Square method. From the regression line, the estimate of life expectancy at birth, for a particular state in a particular year, is commonly obtained by the researchers for different purposes. These estimates are widely referred and used in socio-economic researches. We obtained the same from Planning Commission (2002) and MSPI (2006).

### *Adult Literacy Rate*

Planning Commission (2002) provides data on adult literacy rate for the years of 1981 and 1991, while from the Census of India (1971) and (2007), we collected the adult literacy rates for the years 1971 and 2001, respectively. Srivastava (2002) also provides useful feedback on adult literacy rates of Indian states for different census years.

### *Combined Enrolment Ratio*

This is comparatively a complicated indicator. Indrayan *et al.* (1999) had computed Combined Enrolment Ratio (CER) for major Indian states using official information from different sources. We adopt their figures for the years of 1971, 1981, and 1991. Using information from Geeta Rani (2007) and applying the same formulation of Indrayan *et al.* (1999), we have estimated the CER for the states of India of the year 2001.

### GSDP Per Capita in PPP US \$

The income component of HDI is captured by the indicator of real per capita GDP in Purchasing Power Parity (PPP) term. For Indian states the corresponding indicator is Gross State Domestic Product (GSDP) at factor cost. These are estimated for all included states since 1980–81 by the Central Statistical Organisation (CSO). Prior to 1980–81, Net State Domestic Product (NSDP) used to be estimated. To overcome this problem, the NSDP per capita figures of 1970–71 are multiplied by the state-specific ratio of gross to net in the year 1980–81 to obtain GSDP per capita for 1970–71. Throughout this study we use the conversion factor (from official exchange rate to PPP exchange rate) of UNDP (2003), which corresponds to the data for the year 2001. World Development Indicator (2003) notes that these calculations were made on the basis of data on GDP at market prices (at constant 1995 US \$) and GDP per capita at PPP US \$.

### TRENDS OF GROWTH AND HUMAN DEVELOPMENT (1970–71 to 2000–01)

#### Trend of Income and Growth

For the analysis of inter-state income differentials over the study period, real PCNSDP at constant 1993–94 prices of each state, for every fiscal year, are plotted in Figure 5.1 in logarithmic scale.

Figure 5.1 shows clearly that the top four positions, in terms of per capita income, are uninterruptedly occupied by the states of Punjab, Haryana, Gujarat, and Maharashtra, although there had been some minor changes of positions among themselves. On the other end, in early 1970s, four poorest states, namely Bihar, Orissa, Uttar Pradesh, and Andhra Pradesh, continued to maintain their positions till the end of 1990s, except Andhra Pradesh. In the mid-1980s, Assam entered in the group of four poorest states. Apparently, there is a trend of divergence in inter-state income disparity as the gap between two bold lines has widened over time. This trend is not only true for Punjab and Bihar. The income divergence is obvious for all the 16 major states of India, on which we avoid discussion in the present chapter.

From our dataset we now review the growth performances across the states in three successive decades. The annualized growth rate of an individual state is obtained by fitting log-linear growth curves. The state-wise annual rate of growth of per capita state income for three successive decades are shown in Figure 5.2.

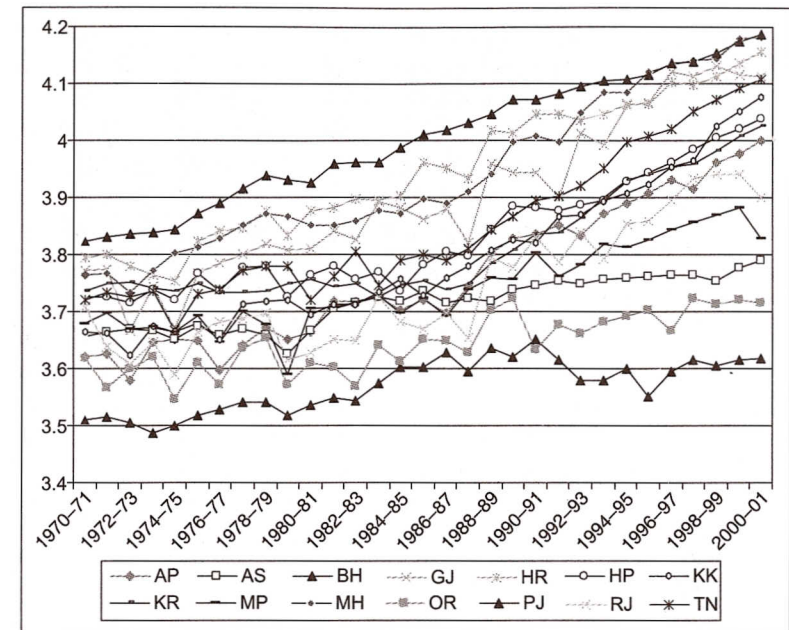


Figure 5.1: Real Per Capita Net State Domestic Product (in Log Scale)

Source: Author's calculation, based on EPWRF (2003).

During the 1970s the growth performance of the country was recorded as low as 0.89 per cent per annum. Maharashtra and Punjab are the only two states which could achieve growth rates over 3 per cent. The coefficient of variation of growth rates across the included states was about 76 per cent indicating that decadal growth performance was quite uneven. During the 1980s, the national growth rate accelerated steeply to 3.43 per cent. All states recorded positive growth with a minimum at 1.14 per cent for Assam. Impressive performances were shown by Haryana (4 per cent), Rajasthan (3.89 per cent), Maharashtra (3.6 per cent), and Punjab (3.4 per cent). The coefficient of variation was much less (about 30 per cent) compared to the previous decade. During the 1990s, when national income growth accelerated further to 3.97 per cent the inter-state variation of growth rates (50 per cent) had considerably widened. The traditionally poorer states such as Bihar, Orissa, and Uttar Pradesh along with Assam and Rajasthan, showed poor performance.

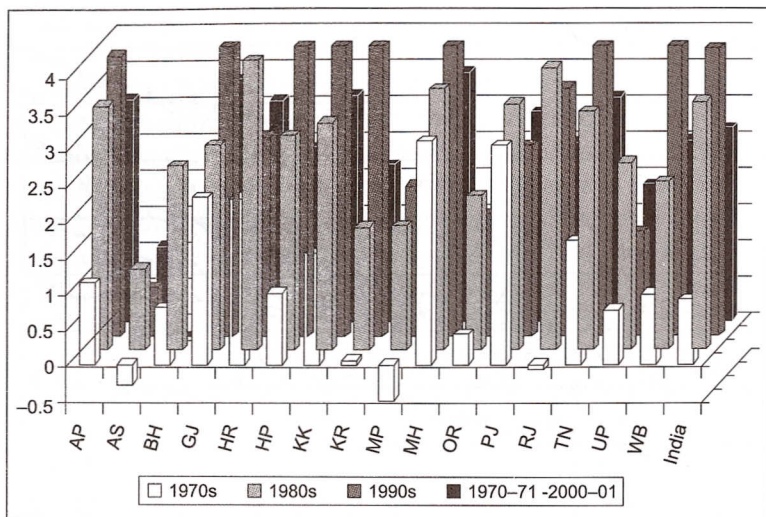


Figure 5.2: Widely Varying Growth Performances

Source: Author's Calculations, Based on EPWRF (2003).

### Trend of Human Development

Following the UNDP (1999) methodology, we computed HDIs for India and included states in the UNDP format. Additional information, we have computed is Non-income Human Development Index (NIHDI), which is simply obtained as the mean of health as well as educational indices of the concerned region. Hence, for the  $j^{\text{th}}$  state

$$NIHDI_j = \frac{1}{2}[(\text{Life Expectancy Index})_j + (\text{Educational Index})_j] \quad (5.1)$$

Figures 5.3 and 5.4 depict, respectively, the levels of HDI and Non-Income Human Index scored by India and Indian states in four years: 1971, 1981, 1991, and 2001. The values are in ascending order in respect of the initial year of the study. In 1971 and 1981, India scored the values of HDI which are classified in UNDP literature as low human development (that is, below 0.500). Kerala was the only state in 1971 and Kerala, Maharashtra, and Punjab were the three states in 1981 that could cross the boundary of low human development. In 1991 India emerged as a member of a medium human development nation taking ten states in the list. In 2001 all included states excepting Bihar entered into the group of medium human development.

The construction of HDI of Indian states for 2001 is comparable to the values obtained by 175 nations in (UNDP 2003: Table-1; 237-40). Interestingly, Kerala, the best performer among Indian states scores a value in HDI equivalent to China which ranks 104 in the list of 175 countries. At the other end, Bihar, the poorest performer scores

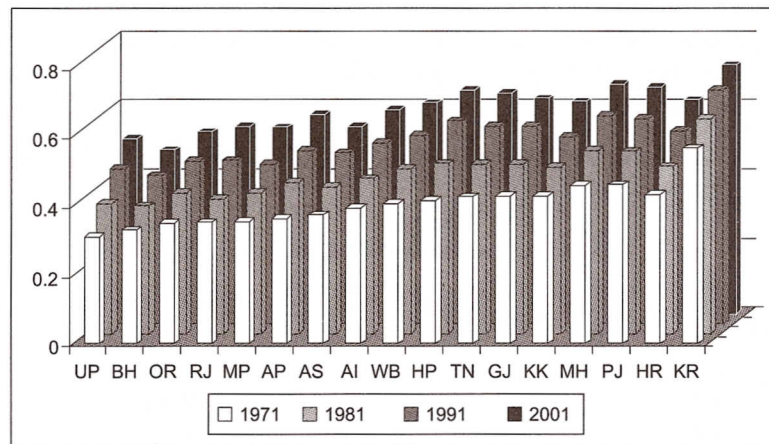


Figure 5.3: Four-Decade Trend in Human Development Index

Source: Author's Elaboration from Secondary Sources.

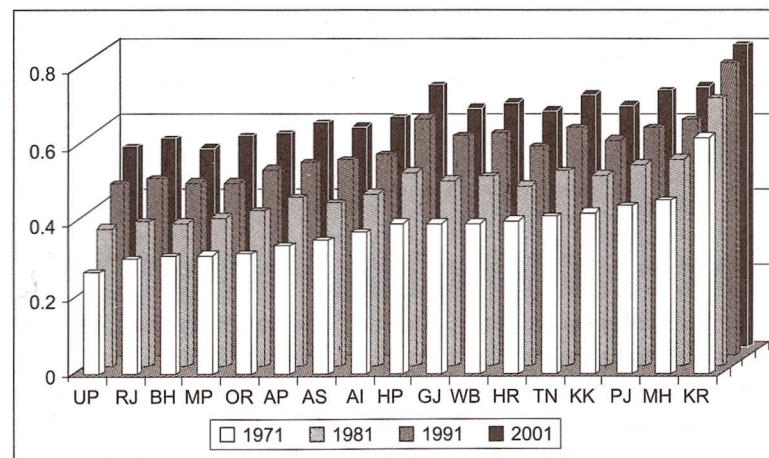


Figure 5.4: Four-Decade Trend in Non-Income Human Development Index

Source: Author's Elaboration from Secondary Sources.

equivalent to Yemen with a rank of 148. Hence, it follows that when India as a nation is placed at a rank of 127, the cross-state variation is marked over a range of 45 nations of the world.

### Classification of Indian States

The states are plotted in the scatter diagram (as shown in Figure 5.5) according to their achievements in per capita GSDP, in PPP terms (horizontal axis) and HDI scores (vertical axis) for the year 2001. In Table 5.1 they are classified on two scales:

1. National average; and
2. Average of 94 Developing Nations (the list is provided in UNDP 2003: 247).

Table 5.1: Classification of Indian States 2001

Sl. No.	State	State Code	Basis of Classification	
			National	Global
1	Andhra Pradesh	AP	Vicious	Vicious
2	Assam	AS	Vicious	Vicious
3	Bihar	BH	Vicious	Vicious
4	Gujarat	GJ	Virtuous	Income-Lopsided
5	Haryana	HR	Virtuous	Income-Lopsided
6	Himachal Pradesh	HP	Virtuous	Vicious
7	Karnataka	KK	Virtuous	Vicious
8	Kerala	KR	HD-Lopsided	HD-Lopsided
9	Madhya Pradesh	MP	Vicious	Vicious
10	Maharashtra	MH	Virtuous	Virtuous
11	Orissa	OR	Vicious	Vicious
12	Punjab	PJ	Virtuous	Virtuous
13	Rajasthan	RJ	Vicious	Vicious
14	Tamil Nadu	TN	Virtuous	Vicious
15	Uttar Pradesh	UP	Vicious	Vicious
16	West Bengal	WB	HD-Lopsided	Vicious

In the former scale seven states—namely Gujarat, Haryana, Himachal Pradesh, Karnataka, Maharashtra, Punjab, and Tamil Nadu—are classified in the virtuous quadrant indicating above average performances in both aspects while exactly seven states—namely Andhra Pradesh, Assam, Bihar, Madhya Pradesh, Orissa, Rajasthan, and Uttar Pradesh—are in the vicious cycle showing below average performances in both. Kerala and West Bengal are two states falling into the

quadrant described as HD-lopsided reality indicating above average performance in human development not accomplished with parallel expansion of income. However, when the average of developing nations is used as the scale of classification, only two states, Maharashtra and Punjab could maintain their positions in the virtuous cycle quadrant. Gujarat and Haryana move from virtuous to income-lopsided quadrant; Himachal Pradesh, Karnataka, and Tamil Nadu from virtuous to vicious cycle, while West Bengal from HD-lopsided to vicious cycle. Kerala still remains in the HD-lopsided quadrant. This phenomenon is depicted in Table 5.1. It is worth mentioning that India as a nation falls into the vicious cycle in the latter scale.

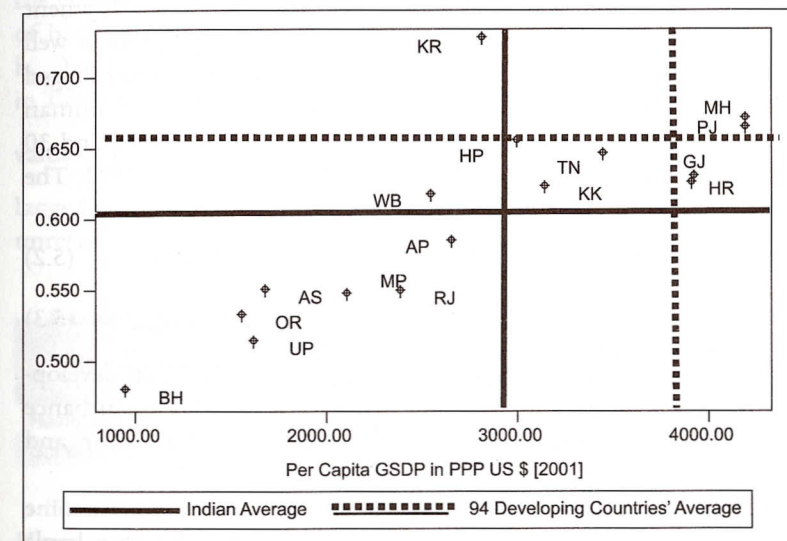


Figure 5.5: Scatter Diagram of Indian States, 2001

### EMPIRICAL ANALYSIS

In this section we apply some econometric tools to examine the role of income on non-income HDI. First in Table 5.2 Spearman's rank correlation coefficients between per capita income and non-income human development index are depicted for all four selected years of our study: 1971, 1981, 1991, and 2001. The coefficients are found to be statistically significant at 1 per cent level of confidence, which suggests that the influence of income in determining non-income component of human development cannot be ruled out.

Table 5.2: Rank Correlation Matrix

Variable	Non-Income Human Development Index				
	Year	1971	1981	1991	2001
Per Capita	1971	0.693	0.682	0.678	0.662
Net State	1981		0.753	0.739	0.750
Domestic	1991			0.639	0.641
Product	2001				0.738

Note: All coefficients are statistically significant at 1 per cent level (two-tailed)

Source: Author's calculation

To examine the relationship empirically we assume that the current (2001) level of non-income component of human development is determined by previous levels of non-income components as well as by the previous levels of incomes. This chapter introduces lagged variable model of transformation of economic growth to human development. The time lags used here are 10 years, 20 years, and 30 years and denoted by the suffixes 2001, 1991, 1981, and 1971. The specific model is given by:

$$h_t = \sum_{i=1}^n \alpha_i y_{t-i} + \sum_{j=1}^m \beta_j h_{t-j} + u_t \text{ and more specifically,} \quad (5.2)$$

$$h_{2001} = \alpha_1 y_{1991} + \alpha_2 y_{1981} + \alpha_3 y_{1971} + \beta_1 h_{1991} + \beta_2 h_{1981} + \beta_3 h_{1971} + u_t \quad (5.3)$$

where  $h$  represents the non-income component of human development and  $y$  is the per capita income in a specific year. The disturbance term  $u_t$  is assumed to be serially independent with zero mean and finite covariance.

Equation (5.3) postulates that the current level of non-income component of human development is determined by past levels of non-income components as well as by past values of per capita income. To establish the influence of per capita income on non-income human development we should get that the coefficients of income in the equation are statistically different from zero as a group, that is,  $\sum \alpha_i \neq 0$  irrespective of  $\sum \beta_j \neq 0$  or  $= 0$ . The basic hypothesis set here is,

$H_0 : \sum \alpha_i = 0$  that is, lagged terms of per capita income do not belong to the equation implying that the rate of transference from income to non-income human development in case of Indian states is insignificant.

The basic hypothesis ( $H_0$ ) can be tested against the following alternative hypothesis ( $H_1$ ):

$H_1 : \sum \alpha_i \neq 0$  that is, lagged terms of per capita income belong to the equation, implying that the rate of transference from income to non-income human development in case of Indian states is significant.

A number of steps are involved to decide about  $H_0$ . First we obtain the regression of the equation in a restricted form: the current non-income human development index ( $h_{2001}$ ) is regressed on all lagged terms of non-income human development indices ( $h_{1991}$ ,  $h_{1981}$ ,  $h_{1971}$ )—not including the lagged per capita income terms. This restricted form of equation is denoted by the suffix R. Next unrestricted regression of the equation (suffixed as UR) is obtained involving the lagged terms of both income and non-income variables, that is, ( $h_{1991}$ ,  $h_{1981}$ , and  $h_{1971}$ ) as well as ( $y_{1991}$ ,  $y_{1981}$ , and  $y_{1971}$ ). Regression results are depicted in Table 5.3. And finally, from these two regressions we compute the value of F as  $F = \frac{(R_{UR}^2 - R_R^2)/m}{(1 - R_{UR}^2)/(N - k)} = 3.2146$ ; where  $m$  is the number of lagged terms in  $y$ ,  $k$  is the number of parameters to be estimated in the unrestricted regression, and  $N$  is the total number of observations.

Table 5.3: Results of Empirical Analysis

Regression	Sum of Standardized Coefficients		Coefficient of Determination		F-value
	$\alpha$	$\beta$	R <sup>2</sup>	Adjusted R <sup>2</sup>	
Restricted (R)	-	0.72	0.983	0.979	3.2146
Unrestricted (UR)	0.08	0.94	0.993	0.988	

This has the F-distribution with  $m$  and  $(N-k)$  degrees of freedom. However, it is observed that  $F_{0.05,(4,9)} = 3.63$  and  $F_{0.10,(4,9)} = 2.69$ . Hence, if we go for 10 per cent level of confidence the computed value of F exceeds the critical value which suggests that the  $H_0$  can be rejected and  $H_1$  can be accepted. Considering the huge variability in the dependent variable the rejection of  $H_0$  at nearly 7 per cent level of confidence is not unjustified. Therefore, per capita income levels of Indian states play a positive role in determining the non-income component of human development in the long run, that is, economic growth has been crucial for the expansion of human capability.

## CONCLUSION

In this chapter we have focused attention on the role of economic variables in enhancing human development in India's sub-national

context. We examine whether economic achievements in sub-national levels influence the average of other two components of human development: health and educational attainments. Even though we take the results of our empirical analysis on a positive note the disturbing level of regional disparities in both income and non-income components of human development, is a matter of great concern. The real task for the policy makers is to bridge the gap within a reasonable time frame. An unprecedented effort will be needed to halve the regional variation in both economic prosperity and levels of human development.

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