

**TRANSFER OF RESOURCES AND SOCIAL SECTOR
EXPENDITURE WITH SPECIAL REFERENCE TO
HUMAN DEVELOPMENT IN INDIA:
AN EMPIRICAL ANALYSIS**

*Thesis Submitted to the
UNIVERSITY OF CALICUT
For the award of the Degree of*

DOCTOR OF PHILOSOPHY IN ECONOMICS

By

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2025

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I, **IRFANA. P.P**, hereby declare that the work presented in the thesis entitled **“TRANSFER OF RESOURCES AND SOCIAL SECTOR EXPENDITURE WITH SPECIAL REFERENCE TO HUMAN DEVELOPMENT IN INDIA: AN EMPIRICAL ANALYSIS”** is based on the original work done by me under the guidance of **Dr. Shiby M Thomas, Associate Professor, PG and Research Department of Economics, St. Joseph’s College (Autonomous) Devagiri, Calicut**. It has not been included in any other thesis submitted previously for the award of any degree. The contents of the thesis have undergone a plagiarism check using iThenticate software at C.H. M.K Library, University of Calicut and the similarity index is within the permissible limit. I also declare that the thesis is free from AI-generated content.

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ABSTRACT

TRANSFER OF RESOURCES AND SOCIAL SECTOR EXPENDITURE WITH SPECIAL REFERENCE TO HUMAN DEVELOPMENT IN INDIA: AN EMPIRICAL ANALYSIS

This study analyses the interrelationships between Fiscal Federalism, Intergovernmental Transfers, Social Sector Expenditure (SSE), Social Sector Development (SSD), and Human Development across Indian states. Using a multidimensional framework that combines theoretical, descriptive, and empirical analyses, it examines how fiscal structures and public spending shape state-level development. India's vertical fiscal imbalance, where states bear primary responsibility for social sectors while revenue powers remain concentrated at the Union level, makes intergovernmental transfers central to sustaining social investment. The study finds a sustained rise in SSE during 2004–2021, alongside persistent inter-state disparities. Southern and western states consistently allocate higher resources to social sectors, while several central and eastern states exhibit lower and more volatile spending. Education and health dominate SSE, though expenditure on social security, housing, nutrition, and livelihoods has expanded.

SSD, assessed using the Social Progress Index (SPI) for 2015–16, 2017, and 2022, reveals strong regional patterns, with southern and some north-eastern states performing better than central and eastern regions. Human development, as measured by the Human Development Index from 2004 to 2021, improved across all states but remains uneven. Panel analysis shows that SSE, Capital Formation (CF), Corruption Perceptions Index (CPI), Pension Expenditure (PE), and State-Wise Power Availability (SWPA) positively influence human development. In contrast, Gross Fiscal Deficit (GFD) negatively affect it. Interpreted through the Capability Approach, the findings underscore the central role of effective fiscal transfers and social sector investment in expanding human capabilities and reducing regional disparities in India.

Key Words: Social Sector Expenditure, Social Sector Development, Human Development, Fiscal Federalism, Public Expenditure.

സാരാംശം

ഇന്ത്യയിലെ മനുഷ്യ വികസനവുമായി ബന്ധപ്പെട്ട വിഭവ കൈമാറ്റവും സാമൂഹിക മേഖല ചെലവും: ഒരു അനുഭവാധിഷ്ഠിത വിശകലനം

ഈ പഠനം ഇന്ത്യയിലെ സംസ്ഥാനങ്ങളിലുടനീളം ധനകാര്യ ഫെഡറലിസം, അന്തർസർക്കാർ ധനമാറ്റങ്ങൾ, സാമൂഹിക മേഖല ചെലവ്, സാമൂഹിക മേഖല വികസനം, കൂടാതെ മാനവ വികസനം എന്നിവ തമ്മിലുള്ള പരസ്പരബന്ധങ്ങളെ വിശകലനം ചെയ്യുന്നു. സിദ്ധാന്തപരവും വിവരണാത്മകവും അനുഭവപരിശോധനാത്മകവുമായ വിശകലനങ്ങൾ സംയോജിപ്പിക്കുന്ന ബഹുമുഖ ഘടന ഉപയോഗിച്ച്, ധനകാര്യ ഘടനകളും പൊതുചെലവും സംസ്ഥാനതല വികസനത്തെ എങ്ങനെ രൂപപ്പെടുത്തുന്നു എന്ന് പഠനം പരിശോധിക്കുന്നു. സാമൂഹിക മേഖലകളിലെ പ്രധാന ഉത്തരവാദിത്വം സംസ്ഥാനങ്ങൾക്ക് ഉള്ളപ്പോഴും വരുമാന അധികാരം കേന്ദ്രസർക്കാരിൽ കേന്ദ്രീകരിച്ചിരിക്കുന്ന ഇന്ത്യയിലെ ലംബ ധനകാര്യ അസന്തുലിതാവസ്ഥ, സാമൂഹിക നിക്ഷേപം നിലനിർത്തുന്നതിൽ അന്തർസർക്കാർ ധനമാറ്റങ്ങളെ നിർണ്ണായകമാക്കുന്നു. 2004 മുതൽ 2021 വരെ സാമൂഹിക മേഖല ചെലവിൽ സ്ഥിരമായ വർധനവ് ഉണ്ടായതായി പഠനം കണ്ടെത്തുന്നു, എന്നാൽ സംസ്ഥാനങ്ങൾക്കിടയിലെ അസമത്വം തുടരുന്നു. തെക്കൻ സംസ്ഥാനങ്ങളും പാശ്ചാത്യ സംസ്ഥാനങ്ങളും സാമൂഹിക മേഖലകളിലേക്ക് കൂടുതൽ വിഭവങ്ങൾ വിനിയോഗിക്കുമ്പോൾ, ചില മധ്യവും കിഴക്കൻ സംസ്ഥാനങ്ങളും കുറഞ്ഞതും അനിശ്ചിതവുമായ ചെലവാണ് കാണിക്കുന്നത്. വിദ്യാഭ്യാസവും ആരോഗ്യവും സാമൂഹിക മേഖല ചെലവിൽ പ്രധാന പങ്കുവഹിക്കുന്നതോടൊപ്പം, സാമൂഹ്യ സുരക്ഷ, വാസസ്ഥലം, പോഷണം, ഉപജീവനം എന്നിവയിലുള്ള ചെലവും വർദ്ധിച്ചിട്ടുണ്ട്.

2015-16, 2017, 2022 വർഷങ്ങളിലെ സാമൂഹിക പുരോഗതി സൂചിക ഉപയോഗിച്ച് വിലയിരുത്തിയ സാമൂഹിക മേഖല വികസനം ശക്തമായ പ്രാദേശിക മാതൃകകൾ വെളിപ്പെടുത്തുന്നു; തെക്കൻ സംസ്ഥാനങ്ങളും ചില വടക്കുകിഴക്കൻ സംസ്ഥാനങ്ങളും മധ്യവും കിഴക്കൻ സംസ്ഥാനങ്ങളെയും അപേക്ഷിച്ച് മെച്ചപ്പെട്ട പ്രകടനം കാഴ്ചവെക്കുന്നു. 2004 മുതൽ 2021 വരെ മാനവ വികസന സൂചിക ഉപയോഗിച്ച് അളന്ന മാനവ വികസനം എല്ലാ സംസ്ഥാനങ്ങളിലും മെച്ചപ്പെട്ടെങ്കിലും, അത് ഏകീകൃതമല്ല. പഠനം വിശകലനം പ്രകാരം

സാമൂഹിക മേഖല ചെലവ്, മൂലധന രൂപീകരണം, അഴിമതി ധാരണ സൂചിക, പെൻഷൻ ചെലവ്, കൂടാതെ സംസ്ഥാനതല വൈദ്യുതി ലഭ്യത എന്നിവ മാനവ വികസനത്തെ അനുകൂലമായി സ്വാധീനിക്കുന്നു. ഇതിന് വിപരീതമായി, മൊത്ത ധനകാര്യ കുറവ് മാനവ വികസനത്തെ പ്രതികൂലമായി ബാധിക്കുന്നു. ശേഷി സമീപന സിദ്ധാന്തത്തിന്റെ വെളിച്ചത്തിൽ വ്യാഖ്യാനിക്കുമ്പോൾ, ഫലപ്രദമായ ധനമാറ്റങ്ങളും സാമൂഹിക മേഖല നിക്ഷേപങ്ങളും മനുഷ്യ ശേഷികളെ വികസിപ്പിക്കുകയും ഇന്ത്യയിലെ പ്രാദേശിക അസമത്വങ്ങൾ കുറയ്ക്കുകയും ചെയ്യുന്നതിൽ മുഖ്യ പങ്ക് വഹിക്കുന്നതായി കണ്ടെത്തലുകൾ വ്യക്തമാക്കുന്നു.

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LIST OF ABBREVIATIONS

AAY	– Antyodaya Anna Yojana
AC	– Arithmetic Coefficient
ADB	– Asian Development Bank
ADF	– Augmented Dickey–Fuller Test
AHS	– Annual Health Survey
AIC	– Akaike Information Criterion
AIH	– Average Institutional Health
ARDL	– Autoregressive Distributed Lag Model
ASER	– Annual Status of Education Report
BE	– Budget Estimates
BIC	– Bayesian Information Criterion
BPL	– Below Poverty Line
CAG	– Comptroller and Auditor General of India
CAGR	– Compound Annual Growth Rate
CBHI	– Community-Based Health Insurance
CE	– Capital Expenditure
CFC	– Central Finance Commission
CF	– Capital Formation
CIPS	– Cross-Sectionally Augmented IPS Test
CGI	– Composite Governance Index
CPI	– Corruption Perceptions Index
CSO	– Central Statistical Office
CSS	– Centrally Sponsored Schemes
DBT	– Direct Benefit Transfer
DDMA	– District Disaster Management Authority
DDP	– District Domestic Product
DHS	– District Health Survey
DPC	– District Planning Committee

DPGP	– Decentralised Planning and Governance Programme
DF (ADF)	– Dickey–Fuller Test
EFC	– Eleventh Finance Commission
EYS	– Expected Years of Schooling
FC	– Finance Commission
FDI	– Foreign Direct Investment
FE/FEM	– Fixed Effects/ Fixed Effects Model
FF	– Fiscal Federalism
FRBM	– Fiscal Responsibility and Budget Management Act
FY	– Financial Year
GCS	– General Category States
GDI	– Gender Development Index
GDL	– Global Data Lab
GDP	– Gross Domestic Product
GFD	– Gross Fiscal Deficit
GFR	– Gross Fertility Rate
GMM	– Generalised Method of Moments
GSDP	– Gross State Domestic Product
GST	– Goods and Service Tax
H0	– Null Hypothesis
H1	– Alternative Hypothesis
HDI	– Human Development Index
HDR / HDRs	– Human Development Report / Reports
HE	– Health Expenditure
I(0)	– Level Stationary Variable
ICDS	– Integrated Child Development Services
IGST	– Integrated Goods and Service Tax
IMF	– International Monetary Fund
IMR	– Infant Mortality Rate
IPS	– Im–Pesaran–Shin Test

LFPR	– Labour Force Participation Rate
LI	– Low Income States
LLC	– Levin–Lin–Chu Unit Root Test
LPG	– Liberalisation, Privatisation and Globalisation
MDG / MDGs	– Millennium Development Goal(s)
MHRD	– Ministry of Human Resource Development
MI	– Middle Income States
MGNREGS	– Mahatma Gandhi National Rural Employment Guarantee Scheme
ML	– Maximum Likelihood
MPLADS	– Members of Parliament Local Area Development Scheme
MR	– Mortality Rate
MSE	– Mean Squared Error
MSP	– Minimum Support Price
MTFRP	– Medium-Term Fiscal Restructuring Programme
MYS	– Mean Years of Schooling
NABARD	– National Bank for Agriculture and Rural Development
NDDP	– Net District Domestic Product
NDP	– Net Domestic Product
NDC	– National Development Council
NEC	– North Eastern Council
NFHS	– National Family Health Survey
NHB	– National Health Bill
NFSA	– National Food Security Act
NFG	– New Framework for Grants
NIPFP	– National Institute of Public Finance and Policy
NITI Aayog	– National Institution for Transforming India
NLCPR	– Non-Lapsable Central Pool of Resources
NPE	– National Policy on Education
NPS	– National Pension Scheme

NRHM	– National Rural Health Mission
NSDP	– Net State Domestic Product
NSSO	– National Sample Survey Office
ODF	– Open Defecation Free
PE	– Pension Expenditure
PED	– Public Expenditure on Development
PDS	– Public Distribution System
PETS	– Public Expenditure Tracking Surveys
PFC	– Power Finance Corporation
PP	– Phillips–Perron Test
PPP	– Purchasing Power Parity / Public–Private Partnership
R&D	– Research and Development
RBI	– Reserve Bank of India
RE	– Revenue Expenditure
REM / RE	– Random Effects Model
REC	– Rural Electrification Corporation
RGI	– Registrar General of India
RKVV	– Rashtriya Krishi Vikas Yojana
RMSA	– Rashtriya Madhyamik Shiksha Abhiyan
RTE	– Right to Education Act
SAM	– Severe Acute Malnutrition
SAS	– Social Accounting System
SC/ST	– Scheduled Castes / Scheduled Tribes
SCS	– Special Category States
SDE	– Social Development Expenditure
SDG / SDGs	– Sustainable Development Goal(s)
SE	– Social Expenditure
SFC	– State Finance Commission
SGDP	– State Gross Domestic Product
SPI	– Social Progress Index

SRS	– Sample Registration System
SSE	– Social Sector Expenditure
SSR	– Social Sector Reforms
SWPA	– State-Wise Power Availability
TFR	– Total Fertility Rate
UHC	– Universal Health Coverage
ULB	– Urban Local Body
UNDP	– United Nations Development Programme
UPA	– United Progressive Alliance
VFI	– Vertical Fiscal Imbalance

CHAPTER I

DESIGN OF THE STUDY

1.1 Introduction

1.2 Research Gap

1.3 Significance of the Study

1.4 Scope of the Study

1.5 Framing the Inquiry: Understanding and Stating the Research Problem

1.6 Research Questions

1.7 Objectives of the Study

1.8 Hypotheses

1.9 Methodology and Data Source

1.10 Chapter Scheme

1.1 INTRODUCTION

India is a quasi-federal country. It's a union of states with a central authority that governs the states. The intergovernmental transfer system plays a crucial role in realising various objectives of fiscal and political federalism. Some goals contain an equitable transfer mechanism, a formula-based, non-discretionary system, and a good blend of general-purpose and specific-purpose transfers, etc. Intergovernmental fiscal transfers have come to be recognised as a well-established and time-honoured practice across all economic systems. Its importance in bringing about fiscal adjustments and fiscal equity, and in achieving other macroeconomic aims such as allocative efficiency, economic growth, and stabilisation, is well known now and, more importantly, in the development of the states. The development of states is a significant part when considering the overall development of the country like India. The states exhibit different characteristics and developmental needs. The development is mainly focused on the social sector development, human development and economic development. Economic development is achieved only through the economic growth and the structural changes in the economy. The social sector development can be achieved through focusing on the improvement and special investments, or project implementation in the social sectors in the country. The social sector development ensures the expenditure on social sectors, which is needed to exhibit the social enhancement in the developmental framework. Human development is actually the outcome of the social and economic development of the economy. So, the term human development is attached to both the social development and the economic development. In this developmental context, the transfers are the reasons for social sector development of the states in usual cases. Hence, the transfers have a major role in the social sector development and the human development of the states.

Here, the study focused on the intergovernmental fiscal transfers to the states as the social sector expenditure to the states, which acts as a major determinant of development, especially from the human development perspective. The matter is that many of the developing states have limited resources to enhance their social

sectors to achieve a better position in the development standings. In this regard, the role of intergovernmental transfers through various channels under different sub-sectors is playing a significant role in establishing a proper base to move ahead in achieving the goal of the state economies. The outcome rests in the country's basket, as the overall development of the country is measured by human development. The social sector expenditure is the base variable to represent the impact of these intergovernmental transfers on the social sector development of the economy, and thereby human development. In this case, the social sector expenditure is the leading economic factor that contributes to the development outcome in the form of human development of the country. So the variables associated with human development basically depend on the financial flow, as the transfer of resources from the centre to the states and state governments is distributed to the various social sectors. This divides the concentration of the conceptual framework into two, one dealing with the fiscal aspects and the other dealing with the developmental aspects. The first segment deals with the federal transfers to the states, and the second focuses on the human development of the states and social sector expenditure is used as a mechanism to ensure the development of the states. This segmentation ensures the conceptual clarity in maintaining the balance in the input side of the economy, that is, resource sharing and fiscal capability of the states, and the outcome side is the impact on development, especially in the human development of the country. Combining these two areas shows the input side and its output effects on the economy. It also deals precisely with the present scenario in the field of expenditure to the social sectors and its development among the states in India, that is, the human development of the economy.

In India, a large number of factors, including historical, political, and regional factors, influence the adoption of a Federal Constitution. During the periods of British rule, administrative as well as fiscal centralisation of powers and resources were necessarily under the colonial rule. At the same time, the difficulty of administering a large country with numerous principalities, different languages, cultures, and traditions forced the Central government to devolve some powers to regional units. Indeed, for about two decades in British India before the enactment

of the Government of India Act 1935, the system required the provinces to contribute to the Union (Rao, 2000). The Federal form of government provides the division of powers and responsibilities among different layers of government as per the constitutional provisions. The concept of federalism is a mixed mode of government with one central government followed by state governments and local governments, which is the existence of multiple layers of the government. While we are discussing the federal form of government's operations, it ensures the operation of at least two levels of government working simultaneously and exercising autonomous powers. The central body in its set-up is called the federal government, and the next level may be a state, province or union territory. There can be a third layer of government, consisting of the local governments. Centre–state financial relations discuss the interrelationships between the centre and the states, as well as between the states themselves. The centre-state financial relations are showing differences in their nature of allocation, distribution and other functions in different countries. So, it works differently in nations, regions and so on. Total devolution of resources is carried out by the Finance Commission, the Planning Commission (NITI AAYOG) and Centrally Sponsored Schemes. Transfers aim at the development of the states and reducing the inequalities. Development can be expressed in terms of Human Development or Social Development. In this sense, the concept of the social sector is essential. Social Sector Development in the states can be measured by its components; among these, Infrastructure, Health, and Education play a prominent role. The states are raising funds for their development, and at the same time, the Centre is ensuring its share to each state. Transfers and Development are closely related in the allocation and utilisation of resources across various sectors.

The transfer of funds from the Centre to the state is the means by which differences between them are addressed. Fiscal federalism aims to reduce disparities between the Centre and the states. Disparities are exposed in the socio-economic development of the states. Socio-economic and regional disparities among states constitute a significant challenge for the central government. Varieties of projects have been implemented to reduce regional disparities. Bringing this equality by

devolution of resources from the central government to the state governments. The main aim of the intergovernmental transfers is to reduce the imbalances and provide better social services to the people. The intergovernmental transfers always try to meet the expenditure needs of different levels of government. While considering the lower-level governments, the transfer of funds from the higher levels of the significant source of revenue is required to meet the expenditure needs. The study incorporates the different dimensions of state development through the transfer of resources from the centre to other states. All the expenditures for the development of the states are provided through the budgetary transfers of the central government. These transfers explicitly offer the provision for diverse transfer mechanisms and the various heads of transfers for the overall upliftment of the society, as the social sector expenditure to the states.

Transfer of resources to the social sector development and thereby human development are closely related concepts because the developmental projects of the central governments are aiming to develop the society through the spending on social sectors in the country. Spending on social sectors is the direct way to improve the lives of the masses, with the progress of a large section of people living in the society. Thus, the expenditure on social sectors is much more important to advance the culture beyond the current living standards. When we consider the social sector development along with human development of the states, we need to scrutinise the devolving mechanism in the name of social sector expenditure of the states. Finally, it is reflected in the human development of the society in many ways. The social sector expenditure plays a vital role in reducing the disparities in social development among different states. This can be understood by analysing the human development in these states with the social sector expenditures. The social sector development and the human development are two angles of this social sector expenditure because the first reflection is shown in the social sector development of the states. It leads to the base for human development. So, we can say that the social sector development provides a connection path from the social sector expenditure to the human development. Human development is the outcome of the spending on the various sectors of the economy. Finally, it shows a connection to the social sector

expenditure of the states in the economy. In this study, we are trying to incorporate the concept of fiscal federalism into the social sector expenditure and human development of the states in India. The study attempted to analyse the role of transfers in the human development and used the social sector development as the instrument to attain human development across states.

1.2 RESEARCH GAP

Despite many studies in the field of intergovernmental transfers and the human development in the states, there is the general focus on the transfer of resources to foster economic development. Many are concentrating either on fiscal federalism, social sector development or human development. Only a few studies connect these three vast areas under a single umbrella of research. The broad area of public finance and development economics delivers only a few readings in the domain of intergovernmental transfers as social sector expenditure for a better stand in the human development. From this, the blend of social sector development to human development in India is minimal. So, in this regard, the present study is concentrating on the social sector expenditure on human development in selected states in India.

There are several studies on fiscal federalism that have examined different aspects of it in India and other countries. Like that, many researchers have worked and published on the field of social sector expenditures and social sector development, but only a few studies consider both at the same time. Based on the existing literature, the simultaneous analysis of fiscal federalism and social sector development is essential; in this context, it is more relevant to discuss the devolution of resources and the social sector development of the states in India.

Many studies have been done in both the areas separately, and they have done a deep root analysis in the field. It is noted that the empirical studies are very few to exhibit the reality in the devolving mechanism with the light of human development in India. There are several working papers available to understand the fiscal federalism in India and what happens in the foreign countries that follow the exact mechanism of federalism. The other point is that there are very few recent studies in

this field; many studies focus on the FRBM Act, Fiscal Deficit, the Finance Commission and its disbursements, and NITI Aayog. The IMF (International Monetary Fund) and the NIPFP (National Institute of Public Finance and Policy) have done some work in this area. Still, it is not purely based on the transfer of resources with a view to human development in India. In this respect, it is relevant to note and prioritise the scope of discussing the transfer of resources to the social sectors of the states. The study attempts to capture insights into the social sector development of states in India. In addition, the development outcome is evident in the country's human development, so it is relevant to incorporate human development as the outcome of the country's social sector expenditure. The existing studies use different dimensions to examine aggregate social sector spending, creating a gap in this field of study, especially in India. Addressing the gap in this field requires a comprehensive understanding and analysis of social-sector spending and human development in India. The study incorporates longitudinal panel data to explore the perspectives on social sector spending to capture the human development of the states in India. The study uses the data on central transfers to different states, indicators of human development, social capital formation and many other variables reflecting the presence of welfare programmes to strengthen the human capital. In this respect, it is essential to conduct a study like this to bridge the gap and to provide an empirical understanding in this field.

1.3 SIGNIFICANCE OF THE STUDY

The primary driver of research on social sector development for human development is the policy implications for the developmental perspective of the economy. Any other factors that contribute to the relevance of learning and raise significant concerns to frame a proper developmental structure, or highlight the areas that must be concentrated on under the concept of human development, suited to the developmental path of the economy. Here, the most important channels of social sector expenditure are education, health and infrastructure, which primarily focus on the broader developmental vision along with the economic growth. The government spending under the social sector expenditure concentrates not only on the social

sectors of the economy but also on the entire economic development via human development. The social sectors reinforce the developmental process of the economy through their mechanisms to connect the process to human development and ensure targeted developmental outcomes of the economy. Focusing on the academic importance of social sector expenditure to human development shows empirical evidence of meeting the economy's human development priorities.

The developmental concerns under social sector expenditure for human development are the proper evaluation of the country's developmental indicators. The improvement of human well-being is the ultimate impact of the appropriate implementation of public spending policies on the economy. The most important one is the shift from prioritising a growth-oriented policy structure to a development-oriented policy framework for efficient utilisation of public spending. The central interesting fact is that a larger population in our country, India, is depending on the provisioning of public utilities, which means the most of the developing economies are the prime supporters of its population for meeting their educational, health care and welfare needs. The bonus point is that the human development outcomes indirectly try to reduce the regional disparities in the economy.

Here, the focus is on establishing the significance of understanding and examining the relevance of working in the area of social sector development to human development. The social sector expenditure determines the social sector development, and further, it connects to the human development of the economy. The ultimate aim of the economic activities and public spending is nothing other than the human development. This concern is evident from the human development index of the country. When we notice the policy importance of social sector expenditure to social development and human development, it is the platform to run the efficiency parameters of public expenditure from the development perspective. It means that the policy makers are working on the allocation efficiency check from the social sector expenditure to the social welfare via human development of the economy. So, it is evident that this is the platform for an efficiency check of public

spending on the country's welfare programmes in the context of its development. It also explains the spending translation to the outcome generation in human development priorities.

From the above discussions, it is obvious that the study on social sector expenditure for human development is important to unveil the developmental concerns of the economy to prioritise public spending for the development of the country. Ultimately, we can say that the significance of studying the role of social sector expenditure in the human development is much needed, especially for policy suggestions to the country. This study deepens the ways to explore the relationship among them and the inner connections between the developmental priorities. A proper analysis provides the usefulness of the concentration to the social sector spending for the human development of the country. Here, the study focused on the evaluation of the monetary impact on the welfare perspective, that is, people-centric development. That means it is important to study the effectiveness of government spending on the population because the study is concentrated on the social sector expenditure on human development in India. India is a developing economy and the most populous country, so the importance of studying it is significant. In short, the study is relevant because it questions the importance and effectiveness of social sector expenditure in actually improving the lives of people or in other words, public spending through social sectors translates the expenditure to the betterment of people's lives in the society. The study concentrates on the societal perspective of development, that is, the development beyond the growth of the economy, rather than the traditional perspective of progress of the country. Finally, it is crucial to analyse the effectiveness of public spending on the welfare of the economy for a sustained and equitable development strategy. The significant point is that the common or popular variables of tracing the human development of states are now outdated, so we need to suggest and practice some new variables to connect the social sector development of the states to human development. The main highlight of conducting research in this area is determining the influence of new variables and identifying the major determinants of human development. In this respect, the study tries to capture such a picture of human development, so it is significant to express

such a model as a pathway to materialise the social sector development to human development in the states.

1.4 SCOPE OF THE STUDY

The study aims to analyse the interconnection between social sector expenditure and the economy's human development. While we are entering into the inner paths of social sector spending in the country like India, the majority of the expenditure heads are focusing on the welfare of the people in the country. The expenditure under social sectors like education, health and infrastructure represents many sub-sectors under the social sectors, and all of them are focusing on targeting the welfare of the economy. In such a situation, it is relevant to exhibit the reflections of a study that considers both the social sector expenditure and the human development in a single frame. There is a wide range of opportunities to consider the study for policy formulation and to examine the current state of social sector spending for social development in the states. It is evident that, in such a situation, the scope of the study is relevant to capturing the various aspects of social development as well.

The research in this area usually covers a macro-level analysis rather than the micro-level analysis. So the present study provides a purview of its extent and coverage of developmental views of a developing economy. It intensively explores the in-depth analysis of the relationship between social sector expenditure and human development. It explains how fiscal transfers reflect in the human development of the states. It considers major social sectors and their improvement through public spending. Ensures a comprehensive quantitative analysis of 28 states in the period 2004 to 2021 by employing different econometric tools to capture the macro-level outcome from this study. It is evident that the study provides a comprehensive understanding of the existing literature.

Geographical Coverage: the geographical scope of the study extends to 28 states, considering interstate comparison of 28 Indian states, enabling a comprehensive interstate comparison rather than a broader national-level assessment. By focusing on the state level, the analysis captures regional disparities, structural differences, variations in governance patterns, and heterogeneity in social sector spending. This

state-wise approach provides deeper insights into how development outcomes differ across geographical units and how policy effectiveness varies within the federal structure of India.

Temporal Coverage: The study covers the period from 2004 to 2021, a timeframe marked by significant policy reforms and institutional changes in India's social sector and fiscal architecture. This period includes major initiatives such as the implementation of the National Rural Health Mission (NRHM), the Right to Education (RTE), the National Food Security Act (NFSA), the restructuring of centrally sponsored schemes, and the transition to the 14th Finance Commission. The extended time horizon allows the analysis to capture both short-term fluctuations and long-term trends, providing a more robust understanding of developmental dynamics.

Determinants of Human Development: The study incorporates a multidimensional set of determinants that influence human development. These include:

- Governance Indicators (effectiveness of administration, institutional quality).
- Fiscal Indicators (public expenditure patterns, fiscal transfers, social sector expenditure and fiscal prudence).
- Infrastructure Indicators (health, education, basic services and infrastructure facilities).
- Institutional Indicators (policy orientation, decentralisation, state capacity).

By integrating these diverse dimensions, the study provides a holistic framework for analysing the drivers of human development beyond mere income-based measures.

Extent of the Analysis: The empirical scope of the study is extensive, employing a range of econometric methods suitable for panel data analysis. Techniques such as descriptive statistics, correlation analysis, unit root tests, pooled OLS, fixed-effects models, random-effects models, the Hausman test, and the redundant fixed-effects test are utilised. This broad methodological framework strengthens the validity and

reliability of the results by ensuring rigorous examination of relationships, causality, and state-specific heterogeneity.

Conceptual Range: The conceptual scope of the study links quantitative inputs—specifically fiscal transfers and social sector expenditure to qualitative outcomes measured through human development indicators. It integrates economic, social, and institutional dimensions to understand how financial allocations translate into improvements in education, health, and overall well-being. This conceptual connection enables the study to move beyond numerical expenditure data and examine its real developmental impact.

1.5 FRAMING THE INQUIRY: UNDERSTANDING AND STATING THE RESEARCH PROBLEM

Fiscal federalism has always placed its destination at the top of discussions from its emergence, because the federal system for the fund transfer ensures the existence of different layers of government, which explains that the needs of different levels of government are always different. It explains that the actions of one level of government are not sufficient to support the proper functioning of other levels. In this sense, there is always some dissonance with them, which makes sense of the discussion on fiscal federalism. At the same time, we enter into the social sector development of the states and human development, which also creates a platform for discussion by the variances in the developmental perspectives and the allocation of resources, responsibilities and functions among them, along with the concentration of development to various social sectors. In India, the transfer of resources always raises various discussion points, such as the criteria for devolution, changes in the criteria, channelising fiscal transfers, etc. So, it opens the door to discussion. The fiscal deficit of the states is another area that falls under this head and also covers the main topic of discussion in this field. The human development of the states is a separate area, but we can incorporate it with the instrumental mechanism of social sector expenditure. Connect it with the transfer of resources because the social sector expenditures are mainly from the central government's contribution to the states through their budgetary transfers. It is evident that the importance of

discussing the transfer of resources in the light of human development. In general, it can be discussed with a general outline, but in India, it can be more specific, while we consider the state's social sector development and thereby human development, with its contributions from the central government, as the fund transfers through different channels.

Now the study incorporates the concept of human development into the above discussions to explore the impact of these transfers on development, especially on the human development. Here, it is important that the public spending to achieve its developmental goals and the different layers of government play a crucial role in achieving its target. Every economy is dreaming of its overall development. So, first shape its base to ensure proper spending on its social sectors, then it will be in a better place in human development. In this regard, it is important to study the spending pattern of the government to materialise its development dream and check its reflections on human development of its states and the country as a whole. In this respect, this study is significant to catch the blueprint of such a development path. As we know the human development comprises the development of various social sectors like education, health, infrastructure and other basic sectors, so it reflects the development of various sub-sectors of the overall development of the economy. The available studies in this area show a wide range of analytical perspectives of social sector development, fiscal transfers and human development, but there are only a few that comprise all the three areas in a single frame. And the studies incorporating the major determinants of human development are not providing a broader understanding of the concept, so it is relevant to incorporate such elements in the study. In this regard, it is pertinent to picturise all the concerns in a single window and make the study an important one to deliver them. There is a deficiency of empirical studies in this field, making this study significant and a focus that is in need of such a study to capture how the social sector expenditure reflects on the human development of the states and the country.

1.6 RESEARCH QUESTIONS

The leading research questions to guide the study are

1. What is the role of transfers in contributing to human development in the states?
2. Which are the factors influencing the social sector expenditure of the states?
3. How to determine human development of the states from the idea of Fiscal Federalism?
4. What is the role of social sector expenditure in achieving Human development in the states?

1.7 OBJECTIVES OF THE STUDY

The objectives set for the study provide a clear framework for the entire work on it. They point out the specific areas and concentration of conducting this research and aim to gain a thorough understanding of the process of research. In the context of analysing human development and its determinants across states, it provides a framework to realise and strengthen the investigation. The following are the objectives set for the study of “Transfer of resources and social sector expenditure with special reference to human development: an empirical analysis”.

1. To study the evolution and composition of fiscal transfers across states in India.
2. To examine intergovernmental fiscal transfers and their implications on social sector expenditure.
3. To measure human development and its determinants (socio-economic and fiscal determinants) across states in India.
4. To analyse the output indicators of social sector development and human development, such as the Human Development Index (HDI) and the Social Progress Index (SPI).

1.8 HYPOTHESES

Based on the objectives listed in the study, the proposed hypotheses are given below.

Hypothesis 1

H0: There is no significant relationship between Social Sector Expenditure (SSE) and Human Development Index (HDI) across states during 2004-2021.

Hypothesis 2

H0: There is no significant combined effect of determinants of Human Development on Human Development Index (HDI) across states during 2004-2021.

1.9 METHODOLOGY AND DATA SOURCE

The methodology of a research study provides the structural and analytical framework through which the research objectives are addressed. Given the multidimensional nature of human development and the diverse patterns of SSE across Indian states, a rigorous, systematic methodological design is essential to ensure empirical reliability. This section outlines the research design, data sources and types, geographical and temporal coverage, selection of variables, analytical tools, panel data techniques, and model selection procedures employed in the study. By adopting a panel data approach and integrating advanced econometric methods, the study seeks to capture inter-state differences over the period 2004–2021. The methodological choices are therefore aligned to derive meaningful insights into the determinants of human development in the context of India’s evolving social sector landscape.

The study considers the areas of fiscal federalism, social sector expenditure, and human development in the states of India. Fiscal federalism provides a conceptual understanding of the structure of resource transfer, and social sector expenditure provides the mechanism to achieve human development. So, the study considers both the conceptual and analytical methodology to express ideology in it. Fiscal federalism provides all the conceptual background to analyse social sector

expenditure and human development of the states, and the rest provides an analytical explanation. The research is purely based on secondary sources of data. So, the study uses a pure quantitative method for analysing the data related to social sector expenditure and human development. The theoretical aspects are discussed in the area of fiscal federalism and the foundations of social sector spending. The concept of social sector development can be measured by analysing the social sector spending/expenditure on it, which is closely associated with human development in the states. While looking into the social sectors, the study considers all the social sectors incorporated in the expenditure side of the economy. The study uses a blend of both the explanatory and empirical ways of presentation of the ideology incorporated in the research, which explores the conceptual understanding along with quantitative validation of the analysis part. The study considers only secondary data sources, and panel data is used to supplement the analytical framework presented here. The current research aims to examine the relationship between social sector expenditure and human development across Indian states. It directly goes to the deep search of how the fiscal transfers reflect in the human development of the states in India. It searches the link between human development and social sector development via social sector expenditure to the states. The core of the study considers the social sector expenditure, determinants of human development and the human development index across states in India.

The study covers an 18-year research period, from 2004 to 2021. It uses different variables, which are not common to the studies in this field, to explore the relation between social sector expenditure and human development of the states. A quantitative approach is used to examine the relation, and suitable analytical explanations are provided to support the data used here. An econometric model is constructed to analyse the data by using the fixed effect model and the random effect model with some descriptive analysis. The panel data design in this model reflects the use of time-series and cross-sectional data for the interstate analysis of Indian states' human development outcomes. It also provides an overview of the trends and patterns of social sector spending across different Indian states during the prescribed time period. It provides an insight into the long-term effect or the long-term trend in

the expenditure pattern on human development. The study considers 28 Indian states with the major components of human development in the states. The study analyses the impact of transfers on human development by using the various indicators of development considered here as the determinant of human development. The study incorporates the Human Development Index and Social Progress Index to add some impact on development. The regression model is used to examine the relation between human development and its determinants in India, along with the trend analysis.

The present study adopts a structured methodological framework; however, the detailed methodology is intentionally placed in Chapter 3 to maintain clarity and coherence in the organisation of the thesis. Chapter 1 provides only an overview of the research background, objectives and scope. In contrast, Chapter 3 furnishes a comprehensive explanation of the research design, data sources, analytical tools, statistical techniques, variables, model specifications and procedures adopted for the study. All methodological details, including data collection strategies, econometric methods, analytical frameworks, and the tools used to examine social sector expenditure and human development, are systematically presented in Chapter 3 to enable a clear understanding of the study's empirical foundation.

1.10 CHAPTER SCHEME

The present study is organised into eight chapters, each addressing a distinct conceptual, analytical, or empirical component of the research. The structure is designed to move systematically from theoretical foundations to empirical validation and policy-oriented conclusions.

Chapter I: Design of the Study: This chapter outlines the overall framework of the research. It provides the background, statement of the problem, objectives, hypotheses, scope, and significance of the study. The chapter also explains the rationale behind selecting fiscal federalism, social sector expenditure, and human development as key focus areas. It sets the stage for the analytical trajectory of the thesis by defining the research questions and operationalising major concepts.

Chapter II: Theoretical Underpinnings and Empirical Evidence: This chapter provides the conceptual foundation for the study by reviewing key theories on fiscal federalism, social sector expenditure, and human development. It synthesises major theoretical perspectives and reviews relevant empirical studies to identify key findings and research gaps, thereby justifying the scope and relevance of the present analysis.

Chapter III: Materials and Methodological Procedures: This chapter presents the research design, data sources, variables, and empirical strategy adopted in the study. It includes the rationale for selecting panel data, details of econometric tools, model specifications, and diagnostic tests such as unit root tests, correlation analysis, fixed- and random-effects estimation, and the Hausman test. The chapter ensures methodological transparency and scientific rigour.

Chapter IV: Overview of Fiscal Federalism and Social Sector Expenditure in India: This chapter outlines India's fiscal federal framework and its implications for social sector expenditure. It examines the evolution from centralised to decentralised and cooperative–competitive federalism, analyses vertical and horizontal fiscal imbalances, and highlights the role of intergovernmental transfers. The chapter reviews budgetary and non-budgetary transfers and assesses trends in resource flows and their allocation to social sector expenditure during 2004–2021.

Chapter V: Social Sector Expenditure (SSE) and Social Sector Development (SSD) in India: This chapter examines the concepts, patterns, and linkages between social sector expenditure and social sector development. It analyses trends and state-wise variations in SSE, highlights regional disparities, and situates social spending within the MDG and SDG frameworks. The chapter also discusses the multidimensional nature of SSD, its relevance to inclusive growth, and its measurement using indicators such as the Social Progress Index.

Chapter VI: Empirical Analysis of Socio-Economic and Fiscal Determinants of Human Development: This chapter empirically examines the relationships among social sector expenditure, fiscal factors, and human development across Indian

states. Using panel data from 2004–2021, it examines trends in HDI, conducts descriptive and econometric analyses, and identifies key determinants of human development. The findings reveal significant inter-state disparities and emphasise the role of fiscal and institutional factors, interpreted through the capability approach.

Chapter VII: Summary, Findings and Conclusion: This chapter consolidates the key findings of the study and synthesises insights from the conceptual and empirical analyses. It highlights the significant contributions of the research in understanding the linkages between fiscal federalism, social sector expenditure, and human development, and reflects on their implications for reducing regional disparities.

Chapter VIII: Recommendations, Policy Prospects and Future Research: This chapter presents policy recommendations based on the study's findings to enhance the effectiveness and equity of social sector expenditure. It outlines future research directions and discusses the implications and limitations of the study, offering a forward-looking perspective for policy and academic discourse on social sector expenditure and human development.

THEORETICAL UNDERPINNINGS AND EMPIRICAL EVIDENCE

2.1 Introduction

2.2 Theoretical Underpinnings of the Study

2.2.1 Overview of the Theoretical Upholdings

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2.3.1 Background

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2.1 INTRODUCTION

Understanding the complex relationship between fiscal federalism, social sector expenditure, and human development requires a coherent integration of theoretical insights and empirical evidence. This chapter brings together the theoretical foundations that guide the study and the existing body of literature that has examined similar themes across different contexts. By combining these two dimensions, the chapter provides a comprehensive understanding of how fiscal arrangements, intergovernmental transfers, and public spending patterns shape social outcomes at the state level. The theoretical overview outlines the key concepts, principles, and frameworks that underpin the functioning of federal fiscal systems and their implications for social sector development. These perspectives help clarify the channels through which resource allocation, expenditure responsibilities, and institutional structures influence developmental processes. Complementing this, the literature review synthesises major empirical studies that have analysed social sector expenditure, fiscal decentralisation, and human development across countries and Indian states. The review identifies the gaps, trends, and methodological approaches that inform the analytical direction of the present study.

By blending theory and literature, this chapter establishes a strong conceptual and empirical base, enabling a deeper understanding of the patterns observed in subsequent analyses. It positions the study within the broader academic discourse and provides the rationale for the variables, hypotheses, and methodological choices that follow. In this respect, the chapter is divided into two sections, one dealing with the theoretical underpinnings of the study, and the second one dealing with the available related literature in the fields of fiscal federalism, social sector expenditure, social sector development and the human development.

2.2 THEORETICAL UNDERPINNINGS OF THE STUDY

This part focuses on the theoretical aspects in the areas prescribed in the fields of this study. It considers the concepts like transfer of resources from centre to the states as the centre-state financial relations in public finance, public expenditure on

social sectors contributes to the theory of public goods as well as merit goods, the social sectors provides the theory of externality to the economy, the devolution as well as the social sector development constitutes the theories incorporated to the inclusive growth strategies, the public spending on social sectors look into the theories associated with human capital of the economy, the social returns from the merit goods, the Addis Ababa Action Agenda (AAAA) of 2015 provides the priority to sustainable development along with social and infrastructure development with a view of the sustainable development goals must be economically, socially and environmentally sustainable, convergence across states with respect to social sector expenditure and Sustainable Development Goals (SDG) outcomes. The concepts include sociological interactions in the social development of the economy, sectoral contributions to budgetary provisions, human development aspects in developmental concerns, and the significant contribution of the public sector. The research also connects all these areas to the head of social sector expenditure and the human development. It covers all the implicit ideas behind the conceptual framework of the study.

2.2.1 OVERVIEW OF THE THEORETICAL UPHOLDINGS

The theoretical foundation in this chapter integrates multiple economic theories to establish the conceptual connections among the concepts incorporated in the study. The theories provide the foundations for the theoretical linkages among fiscal federalism, social sector expenditure, and human development across the states. The central analytical chain of the theories underlying the study is that fiscal arrangements shape social sector expenditure, which, in turn, affects human development in the country.

The theoretical foundations of this study are grounded in a comprehensive set of economic and developmental theories that collectively explain why governments invest in social sectors, how these investments are structured through fiscal systems, and how they ultimately influence human development outcomes. At the broadest

level, the study is anchored in several theories, including developmental, social, and welfare theories. These theories establish that markets alone cannot ensure the optimal provision of essential services such as education and health, as well as other social sectors, thereby necessitating state intervention to correct market failures, address positive externalities, and enhance overall social welfare. Thus, all theories collectively shape the framework which shows the resource allocation and its outcomes in human development.

2.2.2 THEMATIC CLASSIFICATION OF UNDERLYING THEORETICAL APPROACHES

Under this thematic classification, the major theories incorporated in the study are organised into coherent conceptual groups to reflect their distinct roles in shaping the analytical framework. Each classification represents a broader theoretical tradition that contributes uniquely to understanding the relationship between fiscal structure, social sector expenditure, and human development. Together, these thematic classifications create a structured and interconnected theoretical base for the present study. The study draws upon the following theories under different heads, each contributing to the conceptual and analytical developments.

- **DEVELOPMENTAL THEORIES**

The classification of developmental theories represents the developmental theories that encompass human development perspectives, along with endogenous growth theories, social capital theories, social development theories and social sector development theories in this framework. This describes how investments in people drive long-term socio-economic progress. It highlights the role of trust, networks, community participation, and collective action in improving social outcomes and enhancing the effectiveness of public spending. Social development theories emphasise the broader transformation of social structures, equity, and inclusion, demonstrating how improvements in social services contribute to long-term societal well-being. Together, these theories explain how investments in social sectors create human capabilities and support the development process.

- **HUMAN DEVELOPMENT THEORIES**

The Human Development theories are popular only after the works of Amartya Kumar Sen and the reports of the United Nations Development Programme (UNDP). The human development theories focus on the human development in the development of the economy or the country. The endogenous growth theories actually consider the concept of human development in its intense form. The theories in it concentrate on the various aspects of human development in the process of development of the economy, and it incorporates the improvement in people's health, educational attainments and the improvements in the standard of living through investing in the development programmes in the economy. The human development theories are pointing to the improvement of the well-being of the human beings in the society. It is actually the human-centred theories of the overall economic development of the country. The social sectoral development aspects, as well as the economic development aspects of the country, are mainstreaming the act of human development in the developmental activities in the country. Some of the major human development theories are given below.

Foundational theories of human development

The theory by Paul M Romer in 1990 explains the connection between the growth prospects of the country and the concept of human capital. It explains the theoretical as well as the empirical understanding of the conceptual framework. It considers the level of human capital variables to explore the output growth rather than measuring the input growth to the output growth. The endogenous growth model used knowledge as the input in the model. The study probes into the role of physical investment in the variables surrounding the human capital. The exploratory data analysis provides some insights into Literacy-Investment - Life expectancy, which are the various dimensions connecting the human capital. Literacy as human capital explains the change in the level of literacy in terms of the growth of human capital in the economy. The initial level of literacy provides the perception for the supportive growth conceptualisation to the final part, that is, income generation. The study connects the literacy to the growth rate through the human capital and its

reflections in the welfare aspects of the economy. The stock of knowledge and the stock of human capital are the basic components in the model, and they connect the economy by investing in human capital in knowledge through literacy, resulting in economic growth by income generation and finally in the human capital expansion.

The works of Robert Summers and Alan Heston (1988) express their view on human capital in terms of literacy in the United States. It points out interestingly the human capital theory to its measurement in such a way that the obvious measure of human capital considers the literacy, and the less obvious measure considers the consumption of newsprint per capita and the consumption of radio per capita. The theory provides a major role for the well-being of individuals in explaining the human capital. The well-being of an individual depends on many factors contributing to the social sectors. The material well-being and non-material well-being are united in various dimensions for the upliftment of the life of humans in terms of human capital of the economy. The availability of goods and services ensures the materialistic part of well-being, and the factors like longevity and literacy constitute the non-materialistic part of the well-being of people. Finally, the overall well-being constitutes prior importance to the non-material well-being from the perspective of the welfare of the people in the economy.

The Robert Barro model of endogenous growth (1990) provides the ideas on the human capital model in the application of knowledge capital to human capital in the economy. The model explains that the more investments in human capital, in the form of education and skill development, the greater the diversification of economic growth. The human capital is actually a proxy for the economic development in the model. The Barro model emphasises the government spending in the economic growth process. The generation of human capital through the government spending creates some implications in the growth process of the economy. The public spending on social sectors like education, infrastructure, public health and research and development has some effective implications in the growth path by putting more public investments in these fields. This model is giving much more importance to the public investments in the social sectors and explains that the real propellers of

economic growth are the social sectors in the economy. The model highlights the substance of public spending and its well-planned execution in stimulating the economic progress.

Arrow's model of endogenous growth explains the improvement in production by placing importance on the concept of knowledge to empower the human capital in the production process. Arrow is giving greater priority to the concept of knowledge by generalising the idea of "learning by doing" in the model. The significance of the notion of Research and Development (R&D) lies in this endogenous variable, given the development in the production-enhancing capacity of the economy. This model gives an insight into the crucial inclusion of the learning by doing to knowledge, and then to the R&D, and finally, the improvement in the productivity. All these connections focus on the inclusion of the education sector in the model. The final views are that the production enhancement is directly evident from investment in research and development, and hence the improvement in human capital. Ultimately, the concept of learning by doing is actually the binary meaning of knowledge in the model, which pertains to the importance of social sectors in the economic development.

The Levhari-Sheshinski model is an extension of the Arrow's model of learning by doing. The model offers the dominance of investment in knowledge, which generates a spill-over effect in the economy. The priority is given to the increase in investment as a source of knowledge, and this knowledge contributes to the human capital, and finally, this leads to the economic growth. The model assumes that the investment in knowledge is a public good, so the spill-over effect ensures consumption of this public good at zero cost. The model describes the imparting of knowledge and thereby the generation of human capital, and ultimately economic growth. It signifies the significance of education in terms of knowledge in the theory, and thereby the education as a social sector.

The Uzawa model explains that economic growth results from the accumulation of human capital in the economy. The model precisely describes the importance of internal factors in the process of economic development. The model provides the

theoretical implications of the prime concern proposed to the concept of human capital in the economic growth. The model is inclined to apply the model in the long run. Thus, the conclusion makes a prior response of the education sector as the social sector in the growth process of the economy.

The Lucas Model is primarily based on the Uzawa model of endogenous growth. As discussed earlier, the model emphasises the concept of human capital. The Lucas model also gives gravity to the educational investment in the human capital generation in the form of training. The model renders the investment in human capital in the long run. The internal and external effects of human capital strongly support investments in human capital rather than physical capital in this field of economic growth. The noticeable weights in the education sector as a social sector through the training of the workers contribute to the human capital by a spill-over effect in the economy. In this regard, the Lucas model provides a solid foundation for the social sectors in the process of economic development.

The Acemoglu Model of endogenous growth (2009) explains the interactions of the internal factors of economic growth. As explained in the previous endogenous growth models the Acemoglu's model is noticing the importance of human capital in the economic growth process. The highlight of the model is the significance of the education, skill development and training. Here again, the weight is given to the social sector development for the economic growth in the endogenous model. The model prescribes the significance of the internal factors in the model, which drives the economy with the motive of long-term economic growth.

Haveman and Wolfe's (1994) model assigns the weight to the educational investment in the endogenous growth model. The majority of the previous theories emphasise the growth path through the social sectors in the economy. All these models are pointing to the idea that human capital is linked to the factors of social development, especially the education and health of the present and future generations. The accumulation of human capital is positively connected to the social factors of development. The importance of social programs is explicitly described in the model, and the deeper analysis in it goes to the remarkable

investments in the education sector in the economy. The core content behind the theory has some policy implications in the field of productivity and innovations through the investments in the education and the social programs.

1960- Walt Rostow- Modernisation theory- the social and economic modernisation is a way to refine the economy from the traditional concept of development, and it uses investment in education as a major mechanism to strengthen the social infrastructure for ensuring social as well as the economic development of the country. Investment in social sectors like education, health and infrastructure provides the modernisation in the development of the country.

1980- Amartya Kumar Sen: capability approach: the theory explains that the development of the economy is the elaboration of capabilities. This expansion of capabilities ensures the economic development beyond the mere economic growth. It explains the people's freedom and opportunities to expand their lives that they value. The theory intensely focuses on the social sector expenditure on education and health to acquire a better life and thereby economic development via fostering the capabilities. These capabilities are linked the human development and public expenditure rather than the country's economic growth perspective.

1988- Robert Lucas: Endogenous growth theory: the investments in human capital, which are investments in education and health, work as a booster of sustained economic growth. The theory clearly underscores the importance of social sector investment to ensure long-term developmental impact on the economy.

1990- Paul Romer: Endogenous growth theory: stresses the role of endogenous factors in fostering economic growth and thereby economic development. Provide more importance to investment in education, that is, knowledge accumulation, which presses the economy to develop faster. Highlight the social sector spending in education and health to reach the development path quickly.

Kanbur, Amartya Sen, Joseph Stiglitz: Equity/ Inclusive development theory: the inclusive development provides the pathway to reduce inequalities and ensure more access to get more and more opportunities to improve life. The social sector

expenditure is used as a tool to get the desired result in the form of education on inequalities. Development is considered under a broader concept to reduce inequalities through an inclusive growth strategy.

2000- Martha Nussbaum: Capability Approach - Normative: the theory holds that the central human capabilities are those that improve human development in the economy. It discusses that the social sector expenditure works as an operator to get the capabilities to substantiate the economic development via human development.

2000- Sustainable Development Framework: Sustainable Development theory: the concept of sustainable development is incorporated to achieve the development goals of the country. The theory discusses the social sector expenditure for sustained economic development for the present generation without compromising the needs of the future generation. That is the theory that explains the wise usage of the resources, especially focusing on the social sector expenditure.

Operational theories of human development

Human development theory by Amartya Sen (Amartya Sen's Capability Approach): The human development theory of Amartya Sen concentrates on the capabilities of human beings to contribute to the development of the economy. The capability approach stresses the concept of people's ability to lead a life in the country. The capability of an individual can be measured by considering three components of capability determination, which are the capabilities of individuals, the functioning or the realised achievements of individuals and freedom. The capability approach connects many of the variables in the economy in the process of economic development. By incorporating the social sector development of the economy, the health and education are the two major components that determine the capabilities of people. The process of development, in the capability approach, discusses the role of human well-being in the development. The capability theory is entirely different in discussing the development, and it ignores the traditional way of representing the development of the economy. The theory incorporates the capabilities of human beings to generate development, along with the individual's freedom to achieve the development. The theory considers a multi-dimensional approach to the

development process. The theory focuses on the development of marginalised people through the incorporation of its development dimensions. The theory uses its own terminology to materialise the concepts of development in the economy. The developmental concerns are the major steps forward in the development process in the capability approach.

Sustainable human development theory: The theory of sustainable human development constitutes the aspects of sustainability in the human development in the economy. The theory uses the capability approach of Amartya Sen to the sustainable factors of development in the economy. The idea of sustainability is incorporated into the developmental process to ensure the satisfaction of development with sustainable goals. The human-centric approach provides the way of development by improving the well-being of the society. The protection of natural resources in the process of development provides the theoretical understanding of the sustainable human development theories in the country. The goals of development consider both the economic development and the sustainable development goals. The inclusiveness of economic growth, along with the prioritisation of natural resources, simultaneously provides the human concentrated sustainable development in this theory. The theory considers sustainability aspects in many things, such as economic sustainability, environmental sustainability and the social sustainability. The theory connects the human aspects of development to the environmental aspects. It tries to bridge the gap between the environmental preservation and human well-being in the society.

Basic Needs Approach: The Basic Needs Approach theory of development was introduced by the International Labour Organisation (ILO). The theory advocates the human development in the economy is possible through satisfying people's fundamental needs. The theory considers people's basic needs as the priority of the development of the economy. The basic needs constitute the provision for the needs such as food, water, education and health facilities. The basic needs of an individual depend on the economic growth of the country. The theory noted that the economic growth aspects are the leading components of determining whether to satisfy the

individuals' basic needs to maintain life in the country. The theory focuses on the role of social sectors in contributing to the concept of development by ensuring the sectoral facilities for individuals in the economy. The basic needs approach gives enough priority to concentrate on the various social protection schemes for ensuring the basic facilities to the people in the society.

- **SOCIAL DEVELOPMENT THEORIES**

The social development theories actually explain the background of the social development of an economy. It discusses all the factors, incorporating the evolution of social development into the process of social development in a society. The social development theories are actually exploring the progress of society along with the progress of human beings in the society. The societal progress of people living in the society explains the factors contributing to the driving mechanism of social development of such societies. The major theories explain the various aspects of the interconnections among the variables that connect people, communities, and the institutions within them. All the societal developments are finally contributing to the growth performance of that society by undertaking various stages of societal development. The developmental theories of the society address the theoretical movement of factors of development and the problems and challenges of that society itself. Ultimately, all the social development theories are trying to contribute to the equitable growth of the society. So the theories are contributing much more to the process of development of the societies. Here are some of the major social development theories given below.

Modernisation theories: The modernisation theory of development was developed by W. W. Rostow, Talcott Parsons and David Lerner in the year 1960. The modernisation theory explains the factors contributing to the social development of societies from the traditional societies to the modern societies. This transformation of social development is possible only by adopting the modern techniques to open the society into an industrialised one. The industrialisation ensures the implementation of grassroots level changes in the factors such as political, institutional, economic and social variables in the society. These factors in

developed nations play a major role in influencing the society to transform from a traditional to a modern society. The modernisation theories are contributing to the development of the economy in the sense that they can influence the socio-economic activities in a different way to transform the societies. This transformation is possible through the implementation of the use of older techniques in the modern techniques in the social progress of such societies. The modernisation concept of social development gives priority to industrialisation and urbanisation of the societies. The modern theories are following continuous changes in the progressing part of society. The modernisation theories are purely visible in the Western countries. They ensure the proper the implementation of the modernisation theories in their societies. These theories do not consider the diversities in the culture followed by the people in the society, in the transformed culture of the society. The modernised theories of social development are influenced by many of the existing theories before their introduction to the society, and they are concentrated on the faster adoption of the diverse changes in the socio-economic aspects of the newly developed economies.

Dependency theories: The Dependency theory of social development was developed by Hans Singer and Raúl Prebisch in 1949. The dependency theory of social development explains the society's development from the dependency factors of the society from its evolution. The dependency relationship in the underdeveloped economies is the platform of the dependency theories in the social development of the societies. The dependency theory concentrated on the component of exploitation of the underdeveloped economies by the developed economies. This exploitation creates a way for the dependency among them. This dependency explains the theoretical setting of the dependency of underdeveloped societies on the introduction of dependency in the social development. The dependency of underdeveloped regions paved the way for dependency in the progress of the society. The major reason for this is the economic inequality of regions, or in other words, the differences in the economic development. The global comparisons of economic development clearly focus on the inequality in the development process and the social progress of the different regions in the world. The ruling power in the world

rules the underdeveloped communities by adopting its own rules and regulations with the intensive aim of exploitation. This leads to the over-dependency of one community on another. This creates the base for the development of dependency theories in the world. The capitalist ideas in the colonial economies are the real-life reflection of the dependency theory in the world. The theory explains the ongoing exploitation in the world economy. The end of the dependency is possible only after the implementation of equal power distribution in the world. It is impossible to equalise the societies, and the theory gains its ascendance all over the world until the end of the human life in the world. The regional cooperation among the strong movements in the society leads them to break the dependency on them. But it is impossible to remove the dependency in the world economy.

- **SOCIAL CAPITAL THEORIES**

The social capital theory was advocated by Robert Putnam, Pierre Bourdieu and James Coleman. The social capital theories explain the role of social structure in forming social capital and the enhancement of the social capital in the developmental activities. The theories in it stress the points of development in the factors like social norms, social relationships, social networks and trust. The variables in the social capital theories focus on the different forms of cooperation, mutual support and the collaboration for the capital formation in the economy. The theory of social capital explains the importance of social institutions and norms in the development of the economy. The theory focuses on the collective progress of the economy in the formation of social capital. Theory advocates that a need for social capital to solve the issue. The relation of social capital to the social sector development is that it connects the individuals to perform well in the development process, and that leads the improvement in life and thereby improvement in all sectors of the society. The social capital theories help understand the socio-economic and political influences on the development process and the solutions to them through the proper application of social structure in the economy. Major theories of social capital in the development process are given below.

Pierre Bourdieu's theory of social capital: The theory considers the social capital as a factor which drives the societies on the development path by incorporating its relation to the making of social capital from the networks of relationships of people. The act of groups is more efficient for the society's development than the individual act of creating capital for the economy. The social capital forms the society's cooperation and interactions for the effectiveness of the social operations. The groups provide access to different forms of capital the such as economic capital or the cultural capital, in the society. The embodiment of social structure in the social capital is a major component in the theory of development in social capital. The theory explains the need for inclusive growth in the development process, along with the reasons for disparities in the access to networks within the society.

James Coleman's functional approach to social capital: The Coleman theory on social capital stresses the importance of social capital as a resource for the collective action in the society. So here the social capital integrates the society for a group action. This theory emphasises the role of cooperation and the coordination. Like the cooperative federalism in the public expenditure, the social capital theory also advocates the unity of all the individuals for the development of the society, making the social capital a tool to tackle all the problems in the society. The theory emphasises the role of trust, norms and the network relationships in the social capital for the development of the society. The social capital advocates the coordination of activities that leads to the reduction in transaction costs in economic activities through people's connections in the society. The individuals work as a community in the formation of social capital in the society, and thereby in the development of the society. The shared goals and actions are the output of the cooperation and coordination of people in the society in capital formation.

Robert Putnam's view on social capital: The theory advocated by Robert Putnam focuses on the civic engagement and democracy in the process of enhancing the concept of development through the social capital. The Putnam's theory clearly differentiates the working of social capital within the groups and across the groups. The theory analysed the reasons for the reduction in social capital. It concluded that

the reasons within the social groups, trust issues and the civic participation are the causes for a reduction in the social capital in the economy. The social capital among the groups is a major determinant of the development of the society. This theory also concluded that the role of inclusive development is essential for the final social capital formation in the society. The theory advocates the role of civic participation and the participatory governance for the development of social capital in the economy. The theory gives more emphasis on the development perspectives of social capital through the focus on effective governance and the civic components in the society.

- **PUBLIC POLICY AND INTERVENTION THEORIES**

The theories under public policy and intervention theories explain the government intervention theories, including externality theory, Pigouvian theory, Coase theorem, and public goods theory, which collectively explain the rationale for state involvement in the provision of social services. The final classification consists of Institutional and Fiscal Theories, particularly institutional economics and fiscal federalism, which explain how governance structures and intergovernmental financial arrangements influence the effectiveness of social spending across states.

Pigouvian theory: The theory was developed in the year 1920 by Arthur Cecil Pigou. The Pigouvian analysis of externality explains that the externality in the economy arises from the divergence between private and social cost-benefit analysis. The theory explores the problems and the proper solution for externality in the economy. In the case of a negative externality in the economy, the economy can solve the issue by introducing a Pigouvian tax on the economic activities. It is popular in cases of negative externality in the environmental factors. If the economy has a positive externality, then Pigou advocates the provision of a subsidy. This positive externality usually happens in the social service provisions in the economy. The major criticism of this theory is that the measurement of externality is based on its cost-benefit analysis. The benefits of positive externality measurement and the costs of measuring the negative externality are complex tasks for the economy. The Pigouvian version of externality theory explains the cost-benefit analysis of positive

and negative externalities in the economy, and the solution to the problem of externalities is the use of taxes and subsidies to address the externalities created by various goods and services.

Coase theorem: The Coase theorem is an explanation of externality introduced by Ronald Coase in 1960. The Coase theorem explores the role of negotiations in the economic activity that creates the externality. The theory explains the ways and solutions for the positive and negative externality with the inclusion of the concept of negotiations by the benefited and the sacrificing groups in the economic activities. The scope of private negotiations without the government intervention is clearly identified in the theory as a way to settle the problems created by the negative externality in the economy. The conceptualisation of property rights in the case of externalities is clearly mentioned in the economy as a tool for diluting the externality effect. The bargaining power of the agent creates a negative impact on the theoretical implementation of the Coase theorem of externality.

Public goods theory: The public goods theory of externality is closely related to the concepts in the social sector developments of the economy. By concentrating on the theoretical point of view, the idea of externalities is closely connected to the public goods and their usage in the developmental process of the economy. The non-excludability and non-rivalry features of public goods are connected to the concept of externality. The externality in the economy is actually the result of market failures in the economic activities. The market failure in the public reasonable allocation to the society is analysed in this theory. The provision for public goods provides a path to the externality effects in the development of the economy. The government provision for public goods and its regulations on the externalities create the solution to the problem the market failure.

Externality Theories: Externality is a central part of every developmental aspect in the economy. The concept of externality is different from the influence of external factors on the economic activities. The influence of external factors is much greater than that of internal factors in the developmental process. In some cases, the external factors are prominent than the internal factors of development. The externality

concept explains that the unexpected policy effects of the economic activity affect the third party in the development process. It provides the actual idea of externality, that is, a third-party effect. By considering the development perspective, the externality constitutes a third-party effect on several aspects in the economic framework of the society. The third-party impact may be positive or negative. He, regarding the social sector components of development, the positive externality contributes a lion's share of the developmental outcome in the economy. The theoretical setting of the externality provides insight into the third-party impacts of the developmental variables in the social sector of the economy. The significant variables are the economy's health, education, and social welfare.

The concept of externality is the involuntary impact of an individual or a firm on another in the economy. It may be positively impacted or negatively impacted. It is actually the third-party effect of an economic activity. The concept was first used by Henry Sidgwick and later by AC Pigou in 1920. Pigou analysed the concept of externality to familiarise the concept with theories. The positive externality aspects consider addressing the public provisioning of goods and services along with the subsidy process. This leads to the interconnection of externality to the social sector development of the economy. The social sector development provides the public provisioning of services to the society through education, health, infrastructure and welfare programs, etc. The concept of externality is also connected to the environmental factors of development by considering the sustainability concept of development. In the case of environmental impact, the factors like climate change and greenhouse gas emissions create an involuntary third-party impact on the economy. In the case of social sector development, the externality in it is positive, and the sustainable development aspect generates a negative externality of global warming in the economy. The effects through the externality are actually the unpriced effects in the economy. Spill-over effect theories: The concept of the spill-over explains the influence of the outcome of one activity on another. This effect is known as the spill over effect in the economy because the result of one activity spills over into another. The outcomes of one spill over to another explore the overall impact of an activity on the economy. The effect may be accidental or without any special motive. The effects may be indirect or secondary effects rather than the primary or direct effect. The spill-over effect explains its roots in the effect on other

variables or the related areas in the economy. In the case of the development of the economy, it is essential to understand the conceptualisation of spill-over effects in the developmental activities. The theoretical understanding of the the spill-over effects explains its dimensions in the development process. The concept of spill-over effect can be categorised as the technological spill-overs, global aspects of spill-overs and negative spill-overs to the widening perspective of the theory. These categorisations materialise the meaning in economic perspectives. The first two create a positive impact on the financial activities and thereby development, but the third one generates a negative impact on the economy. The concept of spill over explores the negative as well as the positive effects of one activity impacting another as an unintended activity. The effect connects different agents of the developmental process with cumulative effects in the economy. The spill-over effect can create a simultaneous impact on the economy, as it has the negative and positive effects. The direction of the spill-over effect is determined by its impacts on the economy and the affected community. The theory of spill over in social sectors can create positive effects in the developmental programmes in the economy through the investments in the enhancement of the lives of individuals living in the economy.

1959- Richard Musgrave: Functions of the state: Musgrave classified the functions of the state under three heads: allocation function, distribution function, and stabilisation function. The social sector expenditure in the society lies under the allocation and distribution function explained in the theory. The public expenditure and its allocation to the society significantly describe the social sector expenditure under this head. The distribution function clearly states the diversification of funds allocated to various social sectors of the economy.

1962- Buchanan and Tullock: Public Choice theory: the theory considers the political influence in the disbursement of public expenditure. In other words, the theory considers the impact of the factors such as voting preferences, political incentives and other institutional constraints that affect the public spending. The influence of the above factors determines the variations in human development in different states or regions of the economy.

1972- Wallace Oates: the theory of fiscal federalism discusses the sharing of powers and responsibilities among different layers of government. It describes the vertical

imbalances in the transfer of resources from the centre to the states. Clearly specifies the channels for transferring resources from the centre to the states, along with the functions and responsibilities of the different layers of government. All the matters regarding the resource allocation from the centre to the state are described in the theory.

- **WELFARE THEORIES**

The following classification includes Welfare Economics and Public Finance, which provide the normative and operational basis for resource allocation and justify public expenditure on education, health, and welfare.

1920- Arthur Cecil Pigou: highlighting the importance of state intervention to ensure socially desirable outcomes. It considers the market failure and the necessity of state intervention to clear the market for obtaining a desirable market outcome in the sectors like education, health and for poverty reduction in the economy.

1959- Richard Musgrave: Merit Goods Theory: it considers that education and health are merit goods. Hence, the expenditure on these two sectors in the society places the importance on public spending for the social choice rather than the individual choice. It provides justification for the claim that society values public expenditure on education and health more than the personal preferences for public spending.

2025- Ponzetto and Troiano: social capital and government expenditures: the theory gives prior importance to the social capital from trust, civic engagement and from social networks. That means the investments under these increase the social capital, and work as a booster of economic growth and thereby economic development. The theory stresses the relevance of social cohesion in impacting the social spending decisions and explains that it increases the human development outcomes in the economy.

- **OTHER THEORIES**

Gender and development: The proper addressing of the gender inequalities in recent years constitutes the development of the idea of gender equality in the country. The variables gender and development are connected to many other factors. The

components in the development perspectives of the society concentrated on its roots in the gender developments in the economy. The idea of gender development materialises some theories for the development of this sector in the economic activities. The gender development perspective, focusing on the feminist perspectives, its contributions to the idea of development. The theory discusses the role of gender equality in human development and, by extension, the overall development of the economy. The theories of gender development explore women's empowerment through the process of gender equalisation in the economy. The theorists stress the components of women's education, participation, health, and entrepreneurial development. This significant role of gender equalisation provides a large number of schemes and programmes in the economy that contribute to the development process.

1976- International Labour Organisation: Basic Needs Approach: the concept explains the improvement in life on the platform of human development. The necessities of individuals to ensure a better life from the development perspective. That means development necessarily ensures the minimum standards in the social services like education, health and infrastructure facilities.

1990- United Nations Development Programme (UNDP): Human Development Paradigm: restructure the growth concept from GDP expansion to the societal expansion or improvement in the standard of living. It provides an empirical explanation of the fiscal expansion and the improvement in human development of the country. The introduction of the Human Development Index provides a drastic change in the field of development. Provides a platform to check the development in regions, states, countries and even the global growth in terms of human development.

2.3 REVIEW OF LITERATURE AS EMPIRICAL EVIDENCE

A comprehensive review of the literature provides the intellectual foundation for the present study by examining the theoretical perspectives, empirical findings, and methodological approaches that have shaped the understanding of human development and social sector expenditure. It offers a critical assessment of existing research, identifies the evolution of concepts, and highlights the primary debates and gaps in the field. Drawing on national and international studies, the review situates

the present research within the broader scholarly discourse. It clarifies how previous work informs the conceptual and analytical framework adopted in this study. By synthesising insights from diverse strands of literature ranging from fiscal federalism and public expenditure theories to human development paradigms, the review strengthens the rationale for the study. It underscores the need for a state-level panel data analysis in the Indian context. This section ultimately establishes the scholarly context from which the research objectives emerge and describes the contributions the present study seeks to make.

The review of related literature on this study provides deeper insights through the studies under the following broad heads in Figure 2.1.

Figure 2.1
Overview of the review of the literature



Data source: Curated by the researcher

2.3.1 BACKGROUND

The background studies are rooted in the different branches of economics in this field. The interaction of public finance, welfare economics and developmental

economics paves the framework for social sector expenditure to the human development of the states. The resource transfers provide the connections to the ideas associated with public finance, highlighting the significant theories of transfers in it. The expenditure side is discussed here, and all the theories which contribute to the spending side deal with the important concepts in the public finance. The welfare aspect focuses on the social sector development along with the concerns in the variables considered under the societal role in the development perspective. The social sector development the human development connect the theories of development with the components of development in the study. The background analysis indirectly links the study to the sociological aspects of the main theories. On average, the inheritance of the survey is connected to the public finance, welfare economics, and developmental economics. All are contributing to constructing a framework to analyse the role of transfers in the context of social sector expenditure for human development through social sector development of the economy.

Literature can be divided into three: one is related to the devolution and transfer of resources that is under fiscal federalism, the second is on social sector spending as well as the social sector development, and the third is on social sector expenditure and human development or public spending and human development. Among these, the global, cross-country, international, national and regional comparisons are there in the study. The empirical works on devolution to social sector expenditure and the theoretical literature related to the social sector expenditure to social sector development of the states generate another way of classification in the literature. Still, here, no further subdivisions are considered. Now, the review is divided into three: the first is associated with fiscal federalism, the second is about social sector expenditure, and the third is about social sector expenditure and the economy's human development. There are only a few studies available that address both social sectors and human development, and it is rare to find such studies in a single frame. So, they deal with the social sector expenditure and human development of the states simultaneously, which are classified under the last head. In this respect, the available studies are classified under the following specific heads.

2.3.2 CLASSIFICATION OF THE REVIEW OF LITERATURE

The major classifications of the review of literature in this study are shown in the following Figure 2.2.

Figure 2.2

Classifications of the review of literature

Fiscal Federalism	Social Sector Expenditure/ Social Sector Development	Social Sector Expenditure and Human Development
• Empirical studies • Theoretical studies • International comparison • National and Regional studies	• Empirical studies • Theoretical studies • National studies • State specific studies • Sector specific studies • Regional studies • Policy oriented studies	• Empirical studies • Theoretical studies • Sector specific studies • Global studies • Cross-country comparison • National studies • State specific studies • Regional studies

Data Source: Curated by the researcher

• **Reviews on Fiscal Federalism**

Fiscal Federalism is a widely discussed topic of research. It concerns discussions of the allocation of powers and responsibilities, imbalances in the allocation process, and related issues. Here, the study is considering some reviews available in the area of Fiscal Federalism in India. The studies highlight the discussions on Fiscal Federalism in India, as seen in national and international studies. Some of the studies on Fiscal Federalism in India reviewed are given below. To trace the history of federal finance, the movement through Finance Commissions, the shift in focus from vertical to horizontal transfers and the road to competitive federalism from co-operative federalism, I have arranged the studies chronologically.

Thimmaiah (1976) studied the Finance Commission transfers and noted a gradual decline of constitutional autonomy. Empirical evidence is given to show that the statutory transfers create a budgetary income effect but fail to create favourable expenditure substitution and budgetary substitution effects on the current budgets of

the states. The study observes that Tax shares and Grants do not stimulate expenditures on essential public and social services. Even the states are not induced to tap their own resources. The effect of tax shares on the per capita income of the state is consistently inequitable, and it is aggravated compared to grants. The study establishes historical and institutional factors for analysing the policy framework. A comparative analysis of earlier finance commissions, along with the descriptive approach, to materialise the ideology. It was concluded with the observation of constitutional and institutional changes for the better outcomes.

Thimmaiah and Rao (1985) further examine the methodology and the types of statutory transfers in the background of vertical and horizontal imbalances and economic disparities. They conclude that the magnitude of vertical imbalances has been increasing, though it shows a downward trend in recent years. The Finance Commission transfers are relatively assured, but the assured component is falling in itself. However, these transfers are progressive, though the degree is relatively low. This study also makes some suggestions relating to the methodology, assistance for relief and rehabilitation, and non-plan capital gaps, etc., and does not favour advance plan assistance. Instead, it suggests transfers through grants and the formation of a National Relief Fund, with contributions from the states and the centre on a matching basis.

Chalam and Mishra (1997) examine the mechanism of Vertical and Horizontal Transfers through a complex process by the Finance Commission. The Tenth Finance Commission recommended an alternative scheme for vertical devolution in the long term. In this respect, 29 per cent of all central taxes come under the purview of the central divisible pool. It provides a simple, transparent methodology for vertical devolution. If tax accruals are sufficient to meet the needs of states, grants are reduced, and if tax accruals are insufficient, grants meet the residual needs of the states. The tax accrual to each state is not the result of a vertical formula. It only considers the horizontal distribution formula as such. The finance commission handled all revenue transfers under the revenue account. This advantage over the Gadgil-Mukherjee formula is that it provides an outline of each state's plan needs

within its purview of standard criteria. It aims more towards equity and progressiveness than directly addressing them. The study concludes that Grants usually play a key role in the vertical and horizontal balance in devolution.

Lahiri (2000) discusses fiscal deficit and budgetary constraints in federal finances. It argues that the fiscal and revenue deficits of states are smaller than the centre's. The earlier fiscal prudence is due to hard budgetary constraints. The interest, wage payment and debts create crowding out of investment and expenditure on the states. These problems generate more fiscal deficit for state governments, and there are no other proper fiscal correction measures. The Fiscal Responsibility Act safeguards the state governments' interest payments and debt limit in the medium term. The enactment of the Fiscal Responsibility Act may reduce the leading role of the centre. States can reduce their deficits through small savings, which is a move away from the 'gap-filling' approach in fiscal devolution. This act provides the chance to reduce the state's fiscal deficit. The tax reform aims to progress, but states cannot move forward properly due to the budgetary stress they face.

Rao (2000) on Fiscal decentralisation in Indian federalism gives an idea about the fiscal decentralisation in India and also discusses its evolution. It provides an overview of the transfer of funds and responsibilities among the various tiers of government in India. Critically analysed the inter-governmental transfers for bringing equity and efficiency in the system. It provides insight into the critical evaluation of the fiscal mismanagement of transfers between the centre and the states. The paper has covered the various aspects of intergovernmental transfer of resources and the inhibition of the transfers to the following levels. The constitution of India provides the provision for implicit transfers, like the explicit transfer of resources from the upper levels of government to the lower levels. This paper provides a clear picture of the deficit analysis and the liabilities in the deficit calculation. The empirical evidence on the sharing of funds rationalises the preferences of the states as per the deficit financing of each state. Macroeconomic stability is the primary focus of the states, which is why deficits have accumulated the high levels. The role of the criterion of fiscal discipline by the Finance

Commission was clearly mentioned in this study, and the justification was that this criterion removes the problem of indiscipline in the transfer mechanism. The indiscipline was due to the presence of various channels in the funding system. The process of sharing of resources from the centre to states and to the local bodies is discussed here, and some of the issues in this sharing process are inequality in the sharing of the planning commission. At the same time, this gap in the transfer mechanism was cleared by the Finance Commission as discussed earlier. In general, the central transfers are bringing an equalising impact in the society to uplift all states in the development process. The paper noticed that the decentralisation from top to bottom was not as efficient because at the local level, governments' revenue as well as the spending was minimal. They had a negligible role in raising revenue in this case. Still, their role is laid out in the implementation process of each scheme, even though the concluding remarks noted that we need more effective policies to achieve successful decentralisation in India.

Bagchi (2003) opines that the states are demanding more autonomy for themselves, so there is a need to rethink the Fiscal Federalism. The study attempts to deliver the idea of rethinking federalism due to the need for a powerful decentralised government. For the study purpose, states are classified into High Income (HI) states, Middle Income (MI) states, Low Income (LI) states, and Special Category (SC) states, and divided into the 50 years after independence into centralised and cooperative federalism. India follows both centralised and decentralised federalism, recognising the importance of competitive and cooperative federalism. Plan transfers and Centrally Sponsored Schemes (CSS) were created and used to reduce disparities among the states. Moving towards cooperative federalism brings some decisive role to state government, and a positive impact on growth and development, but the movement towards competitive federalism resulted in the widening of disparities.

Bagchi and Chakraborty (2004) observe that transfer is an essential aspect in the centre-state relations. The transfer system plays a vital role in the Federal Fiscal transfers in India. It is necessary to address the weaknesses of the transfer system the support socio-economic development. The Finance Commission plays a key role in

the centre-state transfer of funds. An incentive system is used to create efficiency and fiscal discipline, but it fails to achieve this, despite criticism. The Eleventh Finance Commission (EFC) sharply criticised the neglect of efficiency in budgetary management and the focus only on equity. The award of the Eleventh Finance Commission has a veritable revolt by the advanced states. The transfer system as a whole has an equalising impact. The most crucial criticism of the transfer system is that it is inadequate to bridge the vertical gap. In the case of horizontal and vertical imbalances, all federal systems are not able to reduce the imbalances efficiently and satisfactorily.

Rao (2004) focuses on the Eleventh Finance Commission's recommendation for the Medium-Term Fiscal Restructuring Program (MTFRP) as an incentive-based scheme for fiscal restructuring. This study aims to evaluate this scheme. The study considers 25 states, which are classified as Special Category States (SCS) and General Category States (GCS), which are classified again as High Income (HI), Middle Income (MI), Low Income (LI), Special Category States (SCS) and General Category States (GCS). The period of study is 1980-81 to 2000-01. The study addressed the problem of deterioration in state finances. The study concludes by observing that the impact of incentive-based schemes is too small to influence the fiscal performance of states and such schemes fail to address the basic reasons for the deterioration of state finances. Incentivised transfers are not as powerful in influencing the budgetary restructuring.

Rao, Choudhury and Anand (2005) analyse central transfers to the health sector, recognising health as a key component of human capital and identifying expenditure needs across areas such as nutrition, water supply, sanitation, and public health. The study also treats primary education and road construction as variables that generate positive externalities, thereby indirectly strengthening the health sector. Using data from 2005–06 to 2009–10 for 15 major states, the authors apply an aggregate regression model to assess taxable capacity through the representative tax system and employ a tax frontier approach to measure states' tax effort. The findings show that central transfers only partially meet states' social-sector expenditure

requirements, and that a substantial gap persists between required and actual health spending. The study concludes that strengthening state resource mobilisation, improving tax capacity, and reprioritising health sector expenditures are essential, as both direct and indirect spending contribute to human capital formation.

Bagchi (2006) briefly analyses the adverse effect of deficit reduction in the context of Indian fiscal federalism. The actual scenario of deficit reduction activities caused a cut short in the social sector spending, especially on health and education. It shows a direct relation between the deficit reduction of the government and the social sector spending of the government. The ultimate impact of the deficit reduction was laid out in the social sector development of the states. The problem is the government's inappropriate identification of the exact ways to reduce deficits. That identification problem leads to the unexpected reduction in the social sector spending. This unanticipated reduction of funding to the pathways of social sector development hardly reduces the social sector enhancement of the states. The policymakers used the stabilisation measures to reduce the deficit. Still, the measures were helpful in a short period, and after that, the fiscal deficit shot up to a high level. The government had done a proper follow-up to reduce it by understanding the exact cause. The final analysis was that the significant part of the deficit came from the state's budget because the central part of the state's revenue was used to pay salaries, pensions and interest payments. These are the three main sources of revenue for heads of state, which is why there is no appropriate development expenditure. Finally, the government has identified the lack of development expenditure, and the central government has taken proper measures to control it to maintain the fiscal balance by recommending a hike in the state's share in central tax from 29.5 per cent to 30.5 per cent. The budgetary deficit was always a question for the government, as the corrective measures cannot work for an extended period of time. Anyhow, the fiscal deficit reduction essentially reduced the expenditure on development activities, especially the social sector expenditure.

This paper also provides a background analysis of the fiscal discipline in India after independence. It checks all the fiscal components separately, along with a

rationale for the contemporary situation of each. This provides the reader with historical context and insight into the characters. The exclusive analysis of the components ensures the concrete detailing of them with the all concepts hidden in the conceptualisation.

Singh (2007) examines the influence of political institutions on the fiscal federal mechanism. Assignments of Revenue and Expenditure authorities and Inter-Governmental arrangements are the key variables in this study. And reform is the only significant element of the basis of the analysis. The political dynamics influence the transfers to the states by providing various recommendations by various political institutions through the Planning Commission (PC) and the Central Ministries. Creating politically acceptable packages rather than ideal, isolated reform and application of the traditional compensation principle may lead to redesign and changes in the functioning of institutions.

Das and Mishra (2008) discussed statutory transfers and the Thirteenth Finance Commission for the horizontal equity. The authors critically analyse all aspects related to the Thirteenth Finance Commission. Fiscal transfers are not appropriate to help the poorer states reduce disparities. Poorer states are frustrated by the availability of funds or even the investments in their economy for growing towards the market, preserving federalism. The finance commission criteria for allotting funds to the states are not enough to address their problems, especially in the poorer states, because the concerns are highly manipulated by the variables included in the transfer process. Among these, the per capita income is the most challenging one, which means poorer states cannot address in this regard. The Grants-in-aid are not sufficient because they do not meaningfully achieve horizontal equity. Even grants cannot meet the actual purpose. In this regard, we need a proper way to scrutinise the problems of finance commission transfers to attain horizontal equity. This paper suggests that a need for another criterion to address the poorer states and rich states for finance commission transfers and requires a serious concern to overcome the disparities in transfers of the poorer states.

Gupta (2009) studied regional disparities in the devolution of finance commission funds. Income disparities between and within states are discussed here. The study observes that in earlier times, the finance commission used the gap-filling approach in the case of transfers. Still, from the eleventh finance commission onwards, norm-based equalisation leads to the efficiency in the system of devolution of funds through the finance commission. However, it is noted that the norm-based approach of the finance commission transfers brings disparities on the side as a critique against this approach. The shift towards tax effort and fiscal discipline is widening the gap in regional inequality. The Finance Commission's constitutional mandate may be violated because of the presence of disparities in vertical and horizontal devolution. The inter-state and intra-state disparities have widened over the years. Finance commission transfers aim to address these, but the criteria are not meaningful for reducing them. Finance Commission transfers from the tenth Finance Commission onwards have given more emphasis on the regional disparities. Thus, it is opined that the Finance Commissions should address this aspect of disparity when designing centre-state transfers.

Sharma (2010) focused on the Vertical Fiscal Imbalance (VFI) and used it to evaluate the Fiscal Policies in the public sector. VFI is the asymmetry between expenditure and revenue at two levels of government. The absence of proper transfer is the main reason behind VFI. The problem is that there is no conceptual background to VFI, or that the policies are terminologically ambiguous. The study considers conceptual classification and defines the concepts rather than an accounting principle. The study takes the data on revenues and expenditure of two levels of government. Some variables are considered independent for removing structural problems. But in the conventional theory, which does not consider independent variables or treats them as dependent. It focuses on Structural rather than Actual Budget Balances. A structurally balanced fiscal system is present in the present study. The balancing approach is necessary to rectify the imbalance. By using it, moving into resolving structural problems and providing suggestions for restructuring the imbalance.

Minocha (2010) discusses the strengthening of State Finance and Central Finance links. The Eleventh and Twelfth Finance Commission Reports give many recommendations for the State Finance Commissions. State Finance Commission (SFC) Reports are classified into first-generation and second-generation SFCs. It is based on the 20 State Finance Commission Reports. Central Finance Commission (CFC) supplements the State Finance Commission. The SFC reports serve as the basis of recommendations to the CFC. Removing or reducing the fiscal gap is the main aim of CFC and SFC.

Aziz (2010) provided an analytical overview of the system for transferring funds from the central government to the state government. It gives a deeper analysis of the various channels associated with the transfer of funds. It evidently describes the different weights assigned by the Finance Commission in the devolution process. At the same time, critically evaluate the weights in each Finance Commission period and conduct a separate analysis on them. This paves the way for the states' share in the funds, so a map of this state's share has also been sketched here. The role of Grants-in-aid is illustrated in a pictorial representation of the importance of vertical imbalances in the sharing mechanism. It undoubtedly designates the Planning Commission, the Finance Commission, and the central ministries in the process of devolution of resources from the central government to the various state governments. The role of federal transfers in the vertical imbalance reduction says that the transfer does not depend upon the need of the state alone; it also considers the revenue gap of each state, which is why the criterion is included in the Finance Commission transfer. Here, the vertical as well as the horizontal imbalances were considered, and it was noted that the system itself did the correction. The sub-national governments' monetary control plays a dominant role in the stabilisation policies. In the end, the improvements in the transfer of funds to the states were not the solution to correct the vertical imbalances. Finally, we can say that this paper is an introductory paper on fiscal transfers, the channels of devolution, problems in the devolution process, imbalances in the transfer mechanism, and the suggested measures to correct the system.

Rao and Sen (2011) observe that the incentivised reform in revenue transfers at the state level is a total failure. The study considers three Finance commissions (11th, 12th and 13th) and their recommendations. The data on transfers from the Centre to the states have been analysed in this study. Revenue deficit and fiscal deficit are the two essential factors considered. The study covers fourteen central states and takes the data of their GSDP for analysing the incentivised reforms to the centre's GDP. Providing valuable lessons for improving the design and implementation mechanism, as the earlier studies have done, but the lessons are different in these different studies.

Jha (2014) studied the situation of Fiscal federalism after the global financial crisis. This crisis created some kinds of deficit in the Economy. The study is based on Planning Commission and Finance Commission transfers to the states as General Category States (GCS) and Special Category States (SCS). Studies cover the deficit indicators, debt, grants and taxation policies of state governments and the Central government. Transfers through the Planning Commission are used to reduce disparities among states. But it does not work correctly because it creates three liabilities to the states. This article criticised the Gadgil and Mukherjee formula because, to the author, the formula does not monitor the benefits and costs of programs. Further, he observes that deficit reduction is essential, and for that, expenditure-increasing or revenue-raising programs are to be carried out. The Fiscal Responsibility Act of 2003 provides a better way to reduce the fiscal deficit for the centre and state governments. It led to primary surpluses in the years after the act was passed. But after the global financial crisis, the primary deficit and debt burdens became major issues in the Indian economy, increasing significantly, and states became the engine of India's economic growth. In this respect, traditionally laggard states are growing faster than the others, and the growth rates exceed the national average. This paper observes that Fiscal reform is an ongoing process in India and faces twin challenges: the fiscal deficit and the harmonised GST. The paper called for an urgent review of transfers of centre, state and local governments to ensure stability and predictability for a fruitful system.

Mohan (2014) analyses horizontal tax devolution and grant disbursement within India's fiscal federalism, highlighting the political dimensions identified by commissions such as the Sarkaria and Punchhi commissions. The study outlines India's shift from a highly centralised federal phase to a market-preserving model. Tax devolution, constitutionally guided by the Finance Commission, is based on rule-driven criteria emphasising vertical and horizontal equity. For the Fourteenth Finance Commission, horizontal devolution relied equally on population and per capita revenue gap, with the 1971 base favouring middle-income states and the 2011 base benefiting low-income states. The study also examines grants, noting a movement away from Centrally Sponsored Schemes toward more flexible statutory transfers. It identifies three core purposes of transfers: addressing vertical imbalance, correcting externalities, and ensuring horizontal equity. Using data for 2000–2005 across Special Category and General Category States, Mohan finds that about 60% of transfers occur through the Finance Commission, with the rest routed via the Planning Commission and CSS. The study highlights the role of political alignment in influencing fund flows. It concludes that although transfers remain crucial for correcting fiscal imbalances, reforms are needed to enhance efficiency, equity, and the equalisation role of grants.

Sahoo (2015) attempts to study the new directions of the Centre-State Financial relations in India. The paper discusses the move towards cooperative federalism and the establishment of NITI Aayog. Liberalisation, globalisation and judicialisation are the three primary triggers faced by Indian federalism. This trigger brings federalism into the new spotlight. Regional political parties play a significant role in the centre-state relations. The policies of liberalised and globalised markets have driven unprecedented growth in states like Gujarat, Tamil Nadu, and Maharashtra, which are on a development path and rarely depend on the centre for economic matters. The major issues faced by the centre-state financial relations are discussed in this paper. Fiscal relation is the mother of all battles. Taxation and resource sharing, successive coalition governments at the centre, and the rise of regional parties are among them. Vertical fiscal imbalance is built into the constitution itself. The finance commission is achieving the objective of transferring resources to states

through the redistribution of their resources. The planning commission transfers are distributed in a discretionary manner. This brings more disruption in fiscal federalism. The author observes that a harmonious centre-state relation is necessary, and institutions like the finance commission, the interstate council, interstate tribunals and national development councils can play a major role in the harmonisation of Fiscal Federalism.

Chakraborty and Gupta (2016), in their study based on Budget 2016-17, examine the implications of increased Tax devolution and the New Framework for Grants (NFG) on the transfers to the states. Plan and non-plan transfer analysis is used in this study. Finance Commission, Planning Commission and Centrally Sponsored Schemes are analysed by their role in state transfers. The grants and their new dimension were explained by the 14th FC and various Budgets from 2010-11 to 2016-17. The transfers through the Divisible Pool were increased by the 14th Finance Commission, and the role of the Planning Commission and the Centrally Sponsored Schemes was reduced.

Available literature on Centre-State financial relations indicates that till the late sixties, federal finance and an overview of the Centre-State fiscal relations, including a discussion on the Finance Commission and the Planning commissions, constituted the main focus of research. But now, horizontal devolution is gaining more interest, and some scholars have attempted to address issues related to the equalisation of transfers through Finance Commissions.

- **Reviews on Social Sector Expenditure / Social Sector Development**

The recent studies are focusing on the empirical part of government spending and have examined the impact of the spending activities. The trend shows that these studies can contribute more to the policy suggestions or improvements, so such studies are more demanding in the field of development economics. In this respect, the present research needs to go through such studies to explore the new ideas and new pathways in this domain. So here are some studies which cover the

developmental aspects of social sector expenditure along with the human development.

Filmer and Pritchett (1999) assess whether public health spending significantly affects child mortality across countries. Through cross-country regression analysis, the authors incorporate variables such as public health expenditure, female education, income, and household characteristics. Their findings show that health expenditure has a limited direct impact unless supported by improvements in education and living conditions. The study concludes that health outcomes are determined by a combination of socioeconomic factors rather than expenditure alone. This is relevant to explain the need for more focus on determinants of health outcomes, and it explains the causation between expenditure and outcomes. The social sector expenditure must be assessed alongside institutional and social indicators to understand improvements in human development.

Baqir (2002) considers the country-wide variations in the social sector spending and considers each economy's political and economic determinants of development in the social sector. The feature of this paper is that it considers the democratic features of different countries in the social sector spending. The social sector spending of countries contributes a smaller change when compared to the total spending. The idea of democratisation of social sector spending is deeply examined to determine the wider aspects of it. The various analytical tools and indices used to express the influential determinants of democracy in the social sector spending. The study covers 167 countries and considers the social sector spending of these countries from 1985 to 1998. considers health and education as social sectors in this study also. The major findings note that almost 3 per cent of GDP in the general government spending is devoted to the social sector. The increase in total spending is less than that associated with the social sector spending. This is noted as a point of consideration. The spending in the social sector increases as the proportion of total spending increases during the periods of fiscal contractions. The important contribution is that the democratisation is closely associated with the social sector spending, and the political ideologies in different governments in different countries

may promote or discourage the spending. It means there is political influence in the disbursement of funds to the social sector in different countries.

Gupta et al. (2002) examine whether government spending on education and health improves social outcomes in developing countries. Using cross-country regression analysis and efficiency examinations, the authors analyse public expenditure alongside outcome variables such as literacy, school enrolment, and infant mortality. The results indicate that while social sector expenditure positively influences outcomes, effectiveness varies significantly due to governance and institutional quality. The study concludes that spending alone is not sufficient; efficiency and accountability are crucial. This study is directed to express the relationship between social sectors and development outcomes in the economy. The study highlights that strong institutions must accompany higher SSE to enhance development outcomes.

Dev and Mooij (2002) attempt to picturize the expenditure on the social sector by differentiating it as the centre's contribution and the state's contribution. The study uses the social sector as the combined expenditure under the heads of social services and the rural development of the economy. The study observed that the use of combined expenditure on the social sector provides the most profound understanding of this sector and concluded that the states' share contributes a lion's share in the social sector expenditure and shows fluctuations in the sharing. Still, the centre contributed only a minute share during the 1990s. It is noted that from 1990 to 1998, the spending on the social sector shows a declining trend in the combined expenditure of the state and centre. The paper also considers the external aid for the social sector as the centre's contribution, and the primary contributor of this external aid is the World Bank. The international comparison of some countries in expenditure on education and health is included, as well as public expenditure as a percentage of GDP. India's share is very low compared to the other countries, and on the other hand, the private expenditure as a percentage of GDP is much higher compared to the other countries. The paper observed that when going through the social sector expenditure as a proportion of GDP, it was not increased during the reform period, and the mid-1990s contributed to an increase in social sector

expenditures. The increase in the mid-nineties shows a significant improvement in social sector expenditure, and the study concluded that the contributions of the centre and the state can be explained simultaneously because one supplements the other, so they can contribute together to improve the social sector in the country. The study provides a greater understanding of the field of social sector expenditure by analysing the combined effect of expenditure and comparing major and minor heads of expenditure with the state's and the centre's contributions. Also, an interstate and international comparison of expenditure in the social sectors in India after the reform was conducted. The significant finding is that the majority of the central and state schemes for the social sector are showing a poor performance. Hence, the need for rechecking the efficiency in the allocation of such schemes is a mandatory requirement.

Chandrasekhar and Ghosh (2002) provide a critical assessment of social sector spending trends in India during the period of economic liberalisation. Using fiscal data analysis, trend comparisons, and policy evaluation, the authors examine how macroeconomic policy shifts especially budgetary consolidation, market-oriented reforms, and structural adjustments affected social-sector allocations. The study evaluates spending patterns across major sectors, including health, education, rural development, nutrition programmes, and welfare schemes, using both central and state-level budgetary data. The study incorporates variables such as total and per capita SSE, sectoral allocation ratios, growth rates of expenditure, and trends in the fiscal deficit. The authors demonstrate that reforms in the 1990s prioritised macroeconomic stability, fiscal restraint, and market liberalisation, thereby limiting the government's ability to expand social sector spending. The study concludes that economic policy frameworks directly influence social spending patterns, and without adequate fiscal space, social services fail to develop in proportion to developmental needs. The findings of the study highlight why examining SSE in a later period is essential the study incorporates the evolution of SSE after major reforms such as the Fiscal Responsibility and Budget Management (FRBM) Act and the 14th Finance Commission. The study strengthens the argument that the policy

environment and fiscal structure influence SSE, which, in turn, affects human development outcomes.

Devarajan and Reinikka (2003) offer a profound analysis of why public service delivery often fails in developing countries, despite substantial public spending. Using comparative institutional analysis, policy diagnostics, and case studies from Africa, South Asia, and Latin America, the authors identify governance-related failures as the primary constraints that undermine the effectiveness of social sector expenditure. The study employs qualitative methods, drawing from government reports, service delivery surveys, Public Expenditure Tracking Surveys (PETS), and cross-country institutional assessments. Variables in focus include public expenditure levels, transparency indicators, accountability mechanisms, service delivery leakage rates, and institutional performance metrics. The study finds that inefficiencies, corruption, leakage, and poor oversight often result in a significant portion of public funds failing to reach the intended service-delivery points. They argue that the level of public expenditure is less important than how well it is governed. Their central conclusion is that improving institutional quality through better monitoring, decentralisation, community participation, and administrative reforms is essential for ensuring that SSE produces meaningful improvements in education, health, and welfare outcomes. The study supports the inclusion of governance variables, institutional capacity indicators, and fiscal accountability measures in the analytical model, and it strengthens the rationale for examining why some states with similar SSE show higher human development while others lag.

Kaur and Misra (2003) attempt to assess the effectiveness of social sector spending from 1985-86 to 2000-01 in the non-special category states (15 states). The study considers health and education as social sectors and considers various sub-sectors which constitute the main sectors' development and which are the crucial determinants of social sectors. The welfare of the people is a significant concern in social sector development, so spending on it is a decisive factor in development. The critical concerns of this paper are listed out in health and education, which are: education- primary education and secondary education, productivity of the education

sector, effectiveness among the rich and poor sections of the society, focus on female education and in the health sector, the efficiency of spending and the reasons for inefficient expenditure, etc. By pointing out these main streams of concerns, the significant findings indicate that, in the general, spending on education is more efficient than the health sector in the social sector spending. In the deeper analysis, it is expressed that poorer sections are more benefited in the primary levels of education. When moving into the health sector, the study probes the weaker and inadequate expenditure patterns in this sector and clearly mentions the inefficiency, but positively notes the reduction in the infant mortality rate by a good infrastructure facility. The paper also describes the patterns and effectiveness of government spending on social sectors such as health and education. The international comparison of some selected states is done in this study by considering the performance indicators in the survey, which are Gross Enrolment Ratio (GER), Life Expectancy at Birth and Infant Mortality Rate (IMR).

Psacharopoulos and Patrinos (2004) studied a meta-analysis of the global returns to educational investment. Using hundreds of empirical estimates, the study evaluates patterns of economic and social returns to public education spending. The findings of the survey highlight consistently high returns to education, particularly in low-income countries, reinforcing the value of public investment. The study concludes that education expenditure is among the most productive forms of public spending. The study reinforces the inclusion of educational expenditure as a core component of social sector expenditure, influencing human development.

Tilak (2006) undertakes a comprehensive examination of long-term trends in public expenditure on education in India, covering multiple decades of fiscal and educational data. The study uses trend analysis, focusing on expenditure-to-GDP ratios, sectoral budget allocations, and inter-state distribution patterns. Tilak evaluates the adequacy, efficiency, and priorities of public spending on education at both the central and state levels. The study incorporates variables such as per capita education spending, share of education in total government expenditure, enrolment rates, literacy trends, and dropout rates. Studies reveal that India continues to

underinvest in education relative to international standards and even in comparison to its developmental needs. Public expenditure frequently fell short of the recommended 6% of GDP benchmark set by various policy bodies. The study shows significant inter-state disparities, with some states consistently prioritising education while others lag due to fiscal stress or policy neglect.

Chaudhury et al. (2006) deliver a ground-breaking empirical investigation into the problem of teacher absenteeism in India and other developing countries. Using large-scale nationally representative primary surveys, rigorous field verification, and econometric modelling, the authors explore the performance and accountability of public service delivery systems. Variables considered in the study include teacher attendance, school infrastructure, community monitoring, school management practices, fiscal provisions, and local institutional controls. The methodology employs direct unannounced school visits, cross-sectional and multivariate regression analyses, and comparisons across states. The findings reveal alarmingly high rates of teacher absenteeism often exceeding 25% with substantial variation across states. The study identifies weak governance, poor monitoring systems, insufficient incentives, and a lack of community participation as significant factors contributing to inefficiencies. Despite considerable public expenditure on education, the study demonstrates that the effectiveness of SSE is undermined by institutional failures, leading to suboptimal educational outcomes. The study concludes that increasing SSE alone does not automatically enhance human development unless accompanied by improved governance, accountability mechanisms, and institutional reforms. It argues for stronger monitoring systems, decentralised oversight, and incentive-based management to ensure the intended impact of public spending.

Subbarao (2007) presents an in-depth exploration of the role of fiscal federalism with social development of the economy in enabling inclusive growth in India, focusing particularly on how the design of intergovernmental fiscal transfers affects states' capacity to invest in social sector development. Employing descriptive fiscal analysis, institutional evaluation, and historical policy interpretation, the study analyses the functioning of Finance Commissions, the horizontal and vertical

devolution of resources, central grants, and state-level fiscal space. Subbarao examines variables such as tax devolution ratios, grants-in-aid, state budgetary deficits, debt levels, and patterns of social-sector expenditure, and connects them to broader developmental outcomes. The findings underscore that central transfers are crucial for states with limited own-revenue capacity, especially poorer or fiscally stressed states. States with higher dependency on central devolution often exhibit volatile SSE patterns because transfers are not always stable or predictable. The study argues that the fiscal architecture comprising the Finance Commission, Planning Commission (pre-2015), and central ministries creates overlapping and sometimes contradictory incentives, leading to inefficiencies in resource allocation. The study concludes that strengthening fiscal federalism through predictable, adequate, and equitable transfers is essential to improving social-sector spending and human development outcomes.

Rajkumar and Swaroop (2008) analyse the impact of governance quality on the effectiveness of public spending using an extensive cross-country panel regression. The central question of the study was whether countries achieve better health and education outcomes when governance quality is high, even when expenditure levels are similar. The study uses governance indicators from the World Governance Indicators (WGI), such as rule of law, government effectiveness, control of corruption, and public-sector accountability. The methodology incorporates multiple-year panel regressions with health outcomes (infant mortality, child mortality, life expectancy) and education outcomes (literacy, enrolment rates) as dependent variables, while the independent variables include public spending, governance scores, and economic controls. The study finds that public expenditures yield far better results in countries with high governance quality. In contrast, in poorly governed environments, increased SSE does not translate into equivalent improvements in outcomes. The key conclusion is that governance amplifies the impact of public spending, and governance failures dilute the developmental effect of SSE. This provides a theoretical and empirical justification for integrating governance indicators directly into expenditure–development models.

Chakraborty (2010) conducts a rigorous examination of how fiscal decentralisation impacts social sector spending (SSE) across Indian states. The study uses state-level panel data regression models, constructs and uses variables such as budgetary autonomy indicators (ratio of state own revenue to total revenue), decentralisation indicators (local government revenues, functional devolution), per capita SSE, and demographic controls. The methodology employs fixed- and random-effects models, controlling for state-specific heterogeneity and macroeconomic conditions. The study demonstrates that states with higher levels of fiscal autonomy i.e., those that generate more of their own revenue tend to allocate a greater share of their budgets to social sectors such as health, education, and welfare. This is explained through the incentive structure of decentralisation. When states are less dependent on central transfers and more reliant on their own fiscal efforts, they tend to prioritise social investments that directly benefit their populations. The findings indicate that decentralised fiscal structures strengthen accountability, increase efficiency in resource utilisation, and encourage states to respond to local developmental needs. The study concludes that fiscal decentralisation is a key enabler of human development because it enhances the fiscal space available for productive social spending.

Dreze and Sen (2013) assess India's development trajectory using historical, policy, and comparative analysis. Their methodology blends descriptive statistical review with institutional critique. The study finds that India's human development performance lags behind comparable economies, primarily due to inadequate social-sector investment and governance deficiencies. The study concludes that strengthening social services is essential for inclusive development. This is strongly connected to the topic of social sector expenditure because it empirically supports the argument that state-level social sector expenditure is crucial for improving the development outcomes. The study also focused on the interstate disparities in social sector expenditure and development.

Mate et al. (2018) discuss social sector development in the countries in the paper titled "States' social sector spending and Sustainable Development Goals". Their

paper explores the social sector development of the economy with a cross-country comparison in the light of the Sustainable Development Goals of the economy. The paper provides an exploratory coverage of the social sector spending in different countries. The paper gives attention to the sustainable development goals in the view that the social sectors, like education and health, contribute much more to the social development of the economy. The analytical perspectives are noticeable in the points included in the study. The inner backdrops are more significant to the understanding of ideas related to the human capital. This paper gives much more attention to the Sustainable Development Goals (SDGs) in the context of social sector development across the states. The methodology uses a comparison of the SSE of different countries as a percentage of GDP. The index ranking, trend analysis, decadal growth rates and the variables are analysed as a result of the Social Sector Expenditure (SSE). The findings are that the importance of education and health expenditure improves the primary, upper primary and secondary enrolment ratios, and the improvement in the health status of students helps the economy to contribute more to the human capital. This shows the importance of the SDGs in social sector development, and the third and fourth SDGs focus on the upliftment of the education and health sectors through public spending.

Kumar (2019) conducted a comparative fiscal analysis as an NITI Aayog study to capture the trends and patterns of social sector expenditure in India before and after the fourteenth finance commission. The study considers all the states' sectoral expenditure as a percentage of their GSDP. The study named social sector expenditure of states: pre and post the fourteenth finance commission. The study has considered an 8-year period from 2010 to 2018, which covers the fourteenth finance commission period. Their examination of the social sector expenditure explains that the average SSE to GSDP increases but on a moderate pattern, and that's a reflection of the fiscal decentralisation. The study concluded that the education sector gets more funds than the health sector during this period. The findings focused on the wide interstate disparities among the states and pointed out that this is because of the lack of targeted policies for the various states and for the various sectors. So, they have summarised those states need proper policy intervention to upgrade them and

for a proper targeted human development of the states, otherwise, it does not reflect in the human development level.

Chadha and Chadda (2020) examine inclusive growth through social sector development using data from 1985–86 to 2015–16, applying principal component analysis at constant 2004–05 prices. The study constructs nine indicators of inclusive growth grouped into poverty reduction, economic participation, and employment creation and links them with nine indicators of social sector development derived from RBI expenditure data. A composite index is developed to assess how social sector spending influences inclusive growth. The findings show that social sector progress has been slow, and while expenditure on marginalised groups supports inclusiveness, spending on rural development and welfare/social security exhibits a negative relationship. The authors attribute this to corruption, leakages, weak implementation, favouritism, poor monitoring, and low public awareness, concluding that despite numerous schemes, inadequate delivery systems prevent benefits from reaching the intended population.

Ray and Sarangi (2021) explain the relation between social sector spending and the economic development from the period 1972-73 to 2019-20 in the country. The author examines the relationship between GDP per capita and expenditures across various social sector heads in this study. The causality check shows unidirectional causality from health expenditure the economic development. The study uses various heads of social sector expenditure rather than general health and education in the social sector analysis. The findings indicate that the expenditure under the heads of various segments of the health sector provides a platform for the development of the economy, especially in the case of a developing economy. Every study is concentrated on the social sector expenditures only. Still, the peculiarity of this study is that it uses the country's economic and social expenditures over the years. The results express that the social sector expenditure is overwhelming the way to development than the economic expenditures in terms of spending as a percentage of total expenditure. The component-wise expenditure map shows an increasing trend over the years in this study. Here, social sector expenditure refers to

the expenses under the social services heading in government budgets. The study also pointed out that there is a negative causal relation between health and education, and the states' spending on it in the African countries, due to the corruption, underinvestment, and the bureaucratic deficits of the economy. The values of the variables of social sector expenditure and the GDP per capita show a long-run relationship in the study. The concluding remarks emphasise the importance of the social sector and the need to increase spending on it, thereby contributing to the country's economic growth. The efficiency of allocation of resources in the social sectors is ensured with effective policy formulation along with the appropriate welfare schemes in the country. The study suggests the importance of optimal management of public expenditure across sectors for improving India's ranking in various development indices, such as the Human Development Index and the Poverty Alleviation Index.

Purohit (2023) discusses the Efficiency of Social Sector Expenditure in India, which offers a clear and rigorous examination of how effectively Indian states use public funds in essential social sectors, particularly health and education. Using advanced efficiency tools such as Stochastic Frontier Analysis, the book highlights large inter-state differences in the ability to convert expenditure into outcomes, showing that higher spending does not always guarantee better performance. Its key strength lies in demonstrating that efficiency depends heavily on governance quality, planning, and institutional capacity, rather than just on expenditure volume. Although the analysis focuses mainly on health and education and uses earlier datasets, the book remains relevant for understanding the quality of social spending. It provides policymakers with valuable insights to improve human development outcomes in India.

- **Reviews on Social Sector expenditure and Human Development**

The multidimensionality of the concept of human development underscores the importance of focusing on the overall development process of each economy. This connects many of the developmental components and puts efforts to deliver overall impacts into the quality of life of the individuals. Here, the role of social sector

expenditure is more relevant to ensure its signature on the improvements in individuals' quality of life. A few studies are focusing on these areas to connect them and empirically examine the various aspects across regions or nations under different components; some of these studies, focusing on human development, are reviewed here. The studies consider global, national, and regional studies. Some of the studies which are closer to the present study are reviewed here.

Sen (1990) studied human capabilities and argued that development should be expressed as the expansion of human capabilities rather than income growth in the economy. The study establishes the foundation for understanding human well-being as a multidimensional phenomenon in the economy. The study considered conceptual and theoretical analysis using philosophical and economic reasoning and considered the aspects of social sector expenditure to achieve the necessary outcomes in the human development of the economy. The study concluded that development must enhance individuals' freedoms, capabilities, and opportunities. Income is only a means to development, not the end. The study provides the theoretical basis for using HDI as a dependent variable and justifies examining how the development of various sectors contributes to the expansion of capability across states.

Sen (1999) studied Development as Freedom as the comprehension of human development studies that have put forward the idea of the expansion of human capabilities. Sen deepens the capability approach by arguing that freedom is both the means and the end of development. He identifies five categories of freedoms, including social opportunities like health and education a conceptual framework supported by case studies and international development experiences. The study noted that public expenditure on education, health, and social welfare strengthens essential freedoms and directly contributes to development. Adopting a qualitative and philosophical methodology, the study uses comparative evidence from around the world to show that countries that invest in education, health, and welfare achieve better human development outcomes. The study concludes that deprivation of basic social services restricts individual freedoms; hence, public policy must prioritise

social sector spending. The paper seeks to justify treating social sector expenditure as a facilitator of freedom and, therefore, a legitimate determinant of HDI. Finally, the study interlinks the social sector expenditure with the components of human development.

The UNDP's first Human Development Report (1990) introduced HDI as an alternative to GDP-based development measures. Using indicator construction, comparative analysis, and descriptive statistics, the report combines life expectancy, education, and income into a composite index. It concludes that development must be people-centred and multi-dimensional. This report is foundational to the study of human development because the HDI is the dependent variable used to measure outcomes under the concept of human development. Its relevance lies in providing the conceptual and methodological foundation for evaluating interstate variations in human development and assessing how social-sector expenditure influences human development outcomes.

Anand and Sen (1994) provide a technical evaluation of the HDI, explaining its conceptual foundations, normalisation techniques, and sensitivity to data choices. Their methodology involves analytical critique and statistical reconstruction of HDI components. They conclude that although HDI simplifies complex development processes, it remains helpful in comparing well-being across regions. The study validates the use of HDI and supports the construction of a panel dataset of HDI across states. Its relevance lies in strengthening the credibility of using HDI as an outcome variable for assessing how SSE affects human development across states.

Noorbakhsh (1998) critically evaluates the Human Development Index, assessing its statistical limitations and conceptual strengths through a methodological critique and the construction of an alternative index. The study finds that HDI's equal weighting and scaling methods may oversimplify reality, yet HDI remains a meaningful and accessible measure of human development. The conclusion is that HDI should be used with caution but remains useful for comparative analysis. This connects to your study by acknowledging potential limitations in your dependent variable while

reinforcing its appropriateness for interstate comparison. Its relevance lies in helping you justify HDI's continued validity despite its known limitations.

Ranis, Stewart and Ramirez (2000) empirically analyse the two-way relationship between economic growth and human development using a cross-country panel regression. Their methodology includes econometric modelling, correlation analysis, and causal interpretation. The study finds strong evidence that human development promotes economic growth, and public investment in social sectors plays a critical role in this process. They conclude that neglecting human development leads to unsustainable growth. This directly relates to the study by highlighting public expenditure as a key determinant of human development, supporting the use of SSE as a primary explanatory variable. Its relevance lies in providing international evidence for the positive relationship between SSE and HDI.

Das and Mishra (2004) investigate the relationship between public expenditure and human development using state-level regression analysis, making it one of the early empirical contributions in the Indian context. The study focuses on how variations in public spending on education and health translate into improvements in key social indicators such as literacy rates, enrolment ratios, infant mortality rates, and life expectancy. Variables used in the analysis include per capita health and education expenditures, HD components, poverty indicators, and demographic factors. The study employs econometric models that assess the responsiveness of human development indicators to changes in public spending. The study controls for differences in demographic characteristics and state-specific structural factors. The findings strongly suggest that states with higher public spending on social sectors tend to perform better on human development indicators. The study concludes that public spending is a critical driver of human development, especially in environments where private investment in social services is inadequate or uneven. The study emphasises that consistent and targeted social spending leads to measurable improvements in human well-being.

Kurian (2007) offers a comprehensive examination of persistent inter-state disparities in India's development trajectory, drawing on panel data analysis,

regional comparative methods, and inequality measurement tools. The study focuses on long-term differences in economic performance, human development indicators, and social sector investment across Indian states. The study uses variables such as state-wise SSEs (in health, education, and rural development), HDI components (literacy, life expectancy, and income), per capita income, poverty ratios, and inequality indices to analyse structural disparities. The findings reveal that inter-state inequalities have widened over time, particularly between more advanced states (such as Kerala, Tamil Nadu, and Maharashtra) and backward states (such as Bihar, Uthar Pradesh, and Odisha). The study attributes these disparities to uneven fiscal capacity, differential ability to attract investment, and historical variations in social policy emphasis. States with stronger fiscal bases and better governance tend to invest more in SSE, resulting in higher human development outcomes. In contrast, fiscally weaker states struggle to maintain consistent spending on core social services.

Thakur and Ghosh (2011) empirically analyse the link between public expenditure and human development across Indian states using panel regression models. The study incorporates variables such as state-wise SSE (health, education, and welfare expenditure), HDI scores, and disaggregated indicators such as literacy, infant mortality, and life expectancy. Their methodology uses fixed- and random-effects models to account for structural differences across states and capture temporal dynamics. The findings reveal a robust and statistically significant positive relationship between SSE and human development outcomes. The study emphasises that long-term commitment to SSE is more effective than short-term increases, as capability-building requires continuous investment. The study concludes that public expenditure is an essential policy tool for strengthening human development, especially in regions characterised by socio-economic inequalities. It argues for increasing budgets, improving allocation efficiency, and ensuring targeted interventions in the lagging areas.

Bhanumurthy et al. (2016) conducted a case study of Madhya Pradesh's public spending and human development of the state. They have analysed the economic,

political, administrative, and social dimensions of public expenditures and constructed a composite index to assess the effectiveness of public spending on the human development regime from 1991 to 2011, a 20-year analysis to capture long-term changes. They have named the index they constructed the Composite Governance Index (CGI), based on district-level public spending on human development indicators. Actually, the study investigates the quality of public spending governance to contribute to human development indicators and thereby impact the state's human development. The findings noted that the poorly governed districts need more expenditure, but it does not work on their human development indicators. That means proper governance is necessary for higher reflections of higher spending and thereby improvements in the human development indicators. It tells us that good governance is equal to high human development and vice versa. The efficiency channel of public spending is really a matter of improvement in the human development.

Mittal (2016) conducted an all-India analysis of social sector expenditure on the human development in the context of development of the states with public spending in it from 1990 to 2015. The only constraint in this study is that it considers only the central states, so it is difficult to generalise the result, because it ignores many of the special category states in India. While we go through the analysis part of the study it shows a statistically significant relation between SSE and HDI, even though there is exceptional cases of two states namely Kerala and Tamil Nadu. There is a positive and statistically significant correlation between the variables. Kerala and Tamil Nadu are exceptional in terms of efficient management of their social sector expenditure and high HDI. Many of the other states have higher SSE, but their HDI value is lower because of the weak governance. The noted point in this study is that among the major states, the efficiency and administrative quality led to the proper and higher human development of the states. It explains the linkage between expenditure and developmental concerns through efficient public spending management.

Paliova, McNown and Nulle (2019) conducted a cross-country analysis of 150 countries from 1990 to 2017, discussing the connection between public sector spending and the human development of those 150 countries in the IMF working paper. They have cross-checked the components of human development, which are health, education and income, with the social sector expenditure in the areas of health, education and social protection. The fixed effect of each variable is tested here. The results of the paper concentrated on the relation between social sector expenditure and the human development aspects of these 150 countries. The findings show a positive and significant relationship between the two variables considered here. Specifically, the health sector and the education sector show a relevant and significant relationship. They have noted that not only does the increase in social sector spending alone contribute to human development, but also the composition and the efficiency of the expenditure side explain the positive and significant public spending for improvements in the quality of life of the people.

Ruzima (2023) conducted a sector-specific study to assess the impact of public spending on education and the health sector on human development in India. The study focused on the. It considers a period of 29 years from 1991 to 2020 for analysing the short-run and long-run behaviour of the spending and its reflections on the human development of the states. It uses the Autoregressive Distributed Lag Model (ARDL) to capture the picture of the analysis. The interesting observation regarding the study was an insignificant relation between education expenditure and health expenditure to the human development in the short run, and in the long run, there is a positive relation between them, which means an increase in spending on these two sectors directly contributes to an improvement in the human development of the states. In this regard, the study is important to reflect the necessary policy changes in this area. The final findings suggested that to minimise the time lags in policy formulation and its implementation, as it creates inefficiencies in the outcomes.

Lescano et al. (2024) analysed the inequality aspect in relation the human development and highlighted the importance of properly channelled public spending

across sectors. The study considers 82 countries from 2010 to 2021 and uses the Generalised Method of Moments (GMM) for analysing the endogeneity in the study. The study aims to capture the realities of inequality-adjusted human development among the selected countries. Like the other studies, they have considered the sectors like health, education and social protection to investigate the impacts on the human development index. They agree with the IMF working paper (2019) that the increase in social sector spending directly contributes to the human development of the countries, and it is shown in their human development index. The study interpreted that the social protection activities were demonstrated through a wide variety of programmes, which reduces the inequality. The milestone of their study is that they have found that the social protection activities demand more spending on them, and they contribute more to the process of ensuring equality for the population. It highly reduces the human development disparities among the countries. The quantity of public spending is less important than the quality and its target.

2.4 CHAPTER SUMMARY

This chapter brought together the key theoretical perspectives and empirical evidence relevant to understanding the interlinkages between fiscal federalism, social sector expenditure, and human development across Indian states. The theoretical foundations outlined how federal structures, intergovernmental transfers, expenditure responsibilities, and public finance principles shape state-level development outcomes. Concepts such as vertical and horizontal imbalances, equalisation, externalities, fiscal capacity, and tax effort provided the analytical base for interpreting variations in social sector performance. The literature review complemented this framework by synthesising major studies on fiscal decentralisation, transfer mechanisms, social sector financing, inclusive growth, and human capital development. The reviewed works highlighted persistent issues, including inefficiencies in fund allocation, gaps between expenditure needs and actual spending, political influences on transfers, and disparities in fiscal capacity across states. Overall, the combined theoretical and empirical insights emphasise the

centrality of well-designed fiscal arrangements and effective resource utilisation in advancing social sector development. This synthesis provides the conceptual rationale and empirical grounding for the analytical approach adopted in the subsequent chapters.

CHAPTER III

MATERIALS AND METHODOLOGICAL PROCEDURES

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- 3.1 *Introduction*
 - 3.2 *Sample and Data frame*
 - 3.2.1 *Sources of data*
 - 3.2.2 *Types of data*
 - 3.2.3 *Geographical and Temporal Coverage of the Study*
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3.1 INTRODUCTION

The present chapter provides an in-depth analysis of the tools and techniques used to explore the long-term relationship in the study. It also tries to explore the specific behaviour of the data employed here to analyse the human development of the states in India. The study investigates the trend and components of the social sector development, along with the determinants of human development in the states. The fifth and sixth chapter provides a theoretical foundation of fiscal federalism and social sector expenditure of the states; at the same time, the seventh chapter provides an empirical understanding of the human development and its determinants. The study identified six variables as the determinants of human development after a long search in the available literature. Why these variables are considered as the determinants of human development is mentioned in the coming parts, and the answer is that they capture the essential social and economic conditions that directly influence improvements in human capabilities and wellbeing.

An empirical understanding of the influence of social sector expenditure on human development critically investigates the interconnection among the variables, both dependent and independent. It also considers the temporal behaviour of the significant variables in the study to provide valuable insights into the structural progress and policy effectiveness of the states. By analysing trends, the study aims to capture how sustained investments in social sectors contribute to the human development of the states. The econometric model helps to dig into the linkage between the conceptual methodologies incorporated in the study. The research integrates fiscal policy structure, social sector spending, governance and the developmental concerns of both social development and human development. The analytical part of the study aims to investigate the determinants of human development in India, as well as the role of social sector expenditure in the development of the states. It uses panel data to model this relationship. Here, we have considered both time and space simultaneously, which is why we have employed a panel data analysis in this study. The 28 states over 18 years are being treated simultaneously across different variables. Social sector expenditure is a

pivotal variable to explain the human development and thereby the overall development of the economy. The study ensures a logical sequence of statistical observations and the appropriate statistical techniques. The methodological framework provides an interconnection between theory and empirical findings.

3.2 SAMPLE AND DATA FRAME

3.2.1 Sources of data

The study relies exclusively on secondary data obtained from authoritative institutions. Which are Reserve Bank of India (RBI) Publications (State Finances: A Study of Budget, Handbook of Statistics on the Indian Economy), NITI Aayog – HDI Indicators, SDG Index, and related publications, Census of India – Demographic variables, State Budget Documents & Economic Surveys, National Institute of Public Finance and Policy (NIPFP), Ministry of Statistics and Programme Implementation (MoSPI), Various Finance Commission Reports, Ministry of Finance, United Nations Development Programme (UNDP) Reports and Global Data Lab (GDL)

3.2.2 Types of data

Quantitative data: numerical measures of transfers, social sector expenditure and determinants of human development.

- Secondary data: Collected from published reports and databases.
- Panel data (longitudinal): Observations for 28 states across 18 years

A panel data structure enriches the analysis by allowing both time-series and cross-sectional examinations.

3.2.3 Geographical and Temporal Coverage of the Study

Geographical coverage: The study includes 28 Indian states, excluding Telangana due to its creation in 2014, which disrupts data continuity. One more exclusion is that the study did not consider the union territories, as devolution of resources is considered part of fiscal federalism. For the union territories, devolution is considered differently. The majority of the budgetary considerations of union territories are different from those of states, which causes a misperception of the

concepts used in the study. The inclusion of a wide set of states that exist in the period 2004-2021, as states are considered here for the study. It facilitates a comprehensive interstate comparison of human development outcomes and fiscal patterns across states. One more point is that here, Jammu and Kashmir is considered a state. The states which are considered here are Andhra Pradesh, Bihar, Chhattisgarh, Goa, Gujarat, Haryana, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, West Bengal, Arunachal Pradesh, Assam, Himachal Pradesh, Jammu and Kashmir, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura and Uttarakhand.

Temporal coverage: The period from 2004 to 2021 is selected because the significant socioeconomic and fiscal policy reforms occurred during this period. This period covers major initiatives such as NRHM, RTE, NFSA, restructuring of Centrally Sponsored Schemes, FRBM Act, NITI Aayog and the implementation of the 14th Finance Commission. The extended timeframe enables analysis of both short-term fluctuations and long-term trends. One more reason is that the continuous data availability of the selected variables is only available during this period.

3.2.4 Research design

The study adopts a descriptive, analytical, and econometric research design. This mixed approach ensures both conceptual clarity and empirical robustness.

Descriptive design: It is used to portray the relationship between fiscal federalism, social sector expenditure, and human development.

Analytical design: It enables interstate comparisons and the examination of variations across states and time.

Econometric design: It utilises panel-data regression models to investigate the influence of key determinants on human development empirically.

3.2.5 Population and sample of the Study

The population comprises all states of India for which the human development index, determinants of HDI and social sector expenditure data are available.

Sample of the Study: The study uses a sample of 28 states, selected based on the availability of continuous data for the period 2004–2021.

3.2.6 Variables used for the study

Dependent Variable: Human Development Indicator (HDI)

Independent Variables: Capital Formation (CF), Gross Fiscal Deficit (GFD), Corruption Perceptions Index (CPI), Pension Expenditure (PE), State-Wise Power Availability (SWPA) and Social Sector Expenditure (SSE).

Independent variables are grouped into the following dimensions:

1. Governance indicators (institutional performance, state capacity)
2. Fiscal indicators (SSE, health and education expenditure, capital formation)
3. Infrastructure indicators (health and educational infrastructure)
4. Institutional indicators (policy orientation and administrative quality)
5. Welfare indicators (social protection)

3.2.7 Tools and Techniques of Analysis

The study employs a comprehensive set of statistical and econometric tools, which are:

- Descriptive Statistics
- Trend Analysis
- Correlation Analysis
- Unit Root Test (Levin–Lin–Chu)
- Fixed Effect Model (FEM)
- Random Effect Model (REM)
- Hausman Test

This chapter has presented the methodological foundation of the study, covering the research design, data sources, variable structure, analytical tools, and econometric techniques. The use of panel data methods provides a robust framework for understanding the factors influencing human development across Indian states. The next chapters presents the empirical results derived from these methods.

3.2.8 Projected Empirical Model

The model set for the study is given below

$$HDI_{it} = \beta_1 CF_{it} + \beta_2 CPI_{it} + \beta_3 GFD_{it} + \beta_4 P_{it} + \beta_5 SSE_{it} + \beta_6 SWPA_{it} + \epsilon_{it}$$

Where, HDI= Human Development Index, CF= Capital Formation, CPI= Corruption Perceptions Index, GFD= Gross Fiscal Deficit, P= Pension, SSE= Social Sector Expenditure, SWPA= State-wise Power Availability ϵ =idiosyncratic error.

3.3 UNDERSTANDING THE FRAMEWORK

The research framework set for the study is both descriptive and analytical. At the core of the framework is a panel data structure that captures cross-state variations and temporal dynamics simultaneously. This allows the study to analyse how changes in state-level social expenditure influence human development outcomes over time. The framework incorporates identified independent variables representing key determinants of human development with socio-economic indicators that shape developmental outcomes. These variables were selected based on theoretical relevance, empirical evidence, and their significance for social-sector budgeting and state-level development planning. The study employs a sequence of statistical and econometric steps, including trend analysis, correlation assessment, unit-root testing, and model specification tests, to ensure the robustness of results. This systematic framework helps establish the direction and magnitude of the relationship between SSE and human development while controlling for structural differences across states. In general, the framework provides a coherent structure that links conceptual understanding, variable selection, and methodological procedures. It guides the empirical investigation by clarifying how social investments translate into human development gains, thereby contributing insights for policy formulation and inter-state developmental strategies. From the analytical standpoint, the study considers various techniques such as descriptive analysis, inferential techniques, and finally

diagnosing the policy framework. The descriptive version of the study examines the trend, pattern, and general understanding of the variables in the study. The econometric tests and analysis verify the statistical significance of the study, and they also determine the relationship between the variables, including their direction of movement.

Here, the panel data uses some of the available panel unit root tests to check the stationarity. The tests, such as the Levin-Lin-Chu (LLC - 2002), Im-Pesaran-Shin (IPS - 2003), Fisher-type Augmented Dickey-Fuller (ADF), Fisher-type PP, and Breitung (2000), are used to test for stationarity. The study conducts a Hausman test to ascertain the appropriate estimation method for the study, whether it is Fixed Effects (FE) or Random Effects (RE), and the following regression analysis provides a means to evaluate the hypothesis.

The variables considered here for understanding the human development of the states are HDI (Human Development Index), CF (Capital Formation), CPI (Corruption Perceptions Index), GDF (Gross Fiscal Deficit), SWPA (State-wise Power Availability), and SSE (Social Sector Expenditure) and Pension Expenditure (PE). The analytical framework of this study is designed to examine the linkage between Social Sector Expenditure (SSE) and human development across Indian states, integrating both theoretical and empirical dimensions. The framework rests on the premise that sustained public investment in social sectors, particularly education, health, and welfare services, plays a pivotal role in enhancing human capabilities and improving the quality of life. In line with the human development perspective of UNDP, the study conceptualises SSE as a critical determinant of the multidimensional progress reflected in the Human Development Index (HDI).

3.4 PANEL COMPOSITION: STATES AND TIME FRAME

The empirical framework of this study is based on a balanced panel dataset comprising 28 Indian states observed over the 18 years from 2004 to 2021. The time frame is carefully chosen because it represents one of the most transformative phases in India's economic and social policy environment. This period witnessed several major structural reforms, such as the implementation of the Fiscal Responsibility and Budget Management (FRBM) Act, the replacement of the Planning Commission with NITI Aayog, the introduction of the Goods and Services

Tax (GST), and the COVID-19 pandemic, all of which significantly influenced public expenditure patterns, fiscal discipline, and human development outcomes at the state level. Selecting this period also ensures data continuity and completeness for the set of independent variables incorporated in the study. Critical variables such as the Human Development Index (HDI), Capital Formation (CF), Corruption Perceptions Index (CPI), Gross Fiscal Deficit (GFD), Pension Expenditure (PE), Social Sector Expenditure (SSE), and State-Wise Power Availability (SWPA) are consistently available for all 28 states during these years. This uniform availability enables the construction of a robust and comparable dataset, allowing reliable econometric estimation and meaningful interpretation of inter-state variations. Thus, the 2004–2021 period offers both theoretical relevance, capturing a phase of drastic economic, fiscal, and institutional changes, and empirical strength, as it provides complete, continuous, and high-quality data required for analysing the dynamic relationship between SSE and human development across Indian states.

The study comprises 28 Indian states, compiled from the state-wise data in the original dataset. The states included are: Andhra Pradesh, Bihar, Chhattisgarh, Goa, Gujarat, Haryana, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, West Bengal, Arunachal Pradesh, Assam, Himachal Pradesh, Jammu & Kashmir, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, and Uttarakhand. These states are selected because consistent and comparable data are available for all of them across the required time period. Newly created or reorganised states (after 2005) are not considered here for the conceptual and analytical clarity of the study. The study focuses on the period 2004 to 2021 to maintain uniformity, reflect recent policy reforms, and ensure that restructured states (such as Chhattisgarh, Jharkhand, and Uttarakhand) have full-year data coverage. This broad panel structure captures both cross-sectional diversity (differences across states) and temporal variation (changes over time). It allows the study to explore long-term trends in Social Sector Expenditure (SSE) and the Human Development Index (HDI), thereby enabling stronger inference through panel econometric techniques, including stationarity tests, fixed- and random-effects models, and the Hausman test. The richness of this dataset strengthens the analytical capacity of the study and provides a reliable base for understanding how variations in SSE influence human development across

Indian states. It ensures adequate cross-sectional and temporal variation, which is essential for analysing the dynamic relationship between Social Sector Expenditure (SSE) and human development outcomes. The inclusion of 28 states enables the study to capture the diversity of India's socio-economic landscape, reflecting variations in fiscal capacity, developmental priorities, and demographic profiles. By observing each state over 18 years, the dataset provides rich longitudinal information that enables the study to trace evolving patterns, identify persistent structural characteristics, and assess the impact of policy changes over time.

3.5 FUNDAMENTAL VARIABLES UNDER EXAMINATION

To analyse the relationship between social sector expenditure and human development across Indian states, the study employs a set of carefully selected variables that capture fiscal capacity, governance quality, infrastructural strength, and outcomes in human well-being. These variables represent the essential economic, social, and institutional dimensions influencing human development. Each indicator included in the analysis plays a distinct role in shaping developmental outcomes, and together, they provide a comprehensive framework for understanding how state-level characteristics contribute to variations in the HDI. The variables are listed below.

1. Capital Formation (CF) – Physical investment supporting long-term development.
2. Corruption Perceptions Index (CPI) – Governance Quality – effectiveness and integrity of public spending.
3. Gross Fiscal Deficit (GFD) – Fiscal sustainability and available fiscal space.
4. Pension Expenditure (PE) – Committed liability affecting developmental spending.
5. Social Sector Expenditure (SSE) – Direct investment in education, health, welfare.
6. State-Wise Power Availability (SWPA) – Infrastructure essential for health, education, and livelihoods.

7. Human Development Index (HDI) – Outcome variable indicating the overall well-being of the people.

3.6 MEASUREMENT OF VARIABLES

Variable description and its measurement are given in the following Table 3.1.

Table 3.1

Variables used for the analysis and their measurements

Variable	Description	Measurement
Human Development Index (HDI)	Composite measure of human well-being, including education, health, and income	Standardised HDI value (0–1)
Capital Formation (CF)	Public investment and creation of productive assets	Gross State Capital Formation (₹ crore) of the states
Corruption Perceptions Index (CPI)	Indicator of perceived corruption and governance quality	CPI ranges from 0 to 100, where 0 represents the most corrupt areas, and 100 represents the least corrupt (best governance) areas
Gross Fiscal Deficit (GFD)	Fiscal imbalance reflecting borrowing needs	Total GFD of the states in (₹ crore)
Pension Expenditure (P)	Committed expenditure on pensions	Total pension payments (₹ crore)
Social Sector Expenditure (SSE)	Spending on education, health, welfare, housing, etc.	Total SSE of the states (₹ crore)
State-Wise Power Availability (SWPA)	Electricity availability and infrastructure capacity	Per capita availability of the states

Data source: compiled by the researcher from multiple datasets, including Global Data Lab and Reserve Bank of India-State finances, a study of the budget.*

* Note: Gross values are used in this study because they provide a complete and unadjusted representation of the fiscal and economic magnitude of each variable. Using gross measures, such as Gross Fiscal Deficit, Gross State Capital Formation, and Total Social Sector Expenditure, helps capture the full scale of state-level financial commitments and economic activities without distortion from ratios or per-capita adjustments. By using gross values, the study maintains uniformity, avoids data gaps, and provides an accurate foundation for analysing the relationship between social sector spending and human development.

3.7 CONCEPTUAL AND ANALYTICAL FRAMEWORK OF THE STUDY

The conceptual framework that connects the entire study is presented in the following figures. The first figure presents the theoretical interconnections used in the study, and the second shows the interconnections among the variables used in the analytical framework.

3.7.1 CONCEPTUAL FRAMEWORK OF THE STUDY

The conceptual framework of the study in its intense format is given in the following Figure 3.1.

Figure 3.1

Conceptual framework of the study



Data source: Prepared by the researcher

Figure 3.1 shows the conceptual framework of the study. The study considers three conceptual components: the transfer of resources from the centre to the states, social sector expenditure or social sector development, and human development of the states. The transfers are actually focusing on the components of fiscal federalism. It considers various subject matters related to the transfer of financial resources from

the centre to the states. The second part focuses on the SSE or SSD to examine the sectoral development of various social sectors. The last component of human development concerns the key determinants of human development, along with the HDI. This explores fiscal capacity, governance quality, public investment, and infrastructure to enhance the lives of individuals in the country. Together, these three sections provide a comprehensive framework of the interconnection of these factors in human development.

1. Fiscal Federalism to Intergovernmental Transfers

Fiscal federalism shapes the financial relationship between the Union and the States through mechanisms such as tax devolution, Finance Commission grants, and centrally sponsored schemes. These arrangements determine the vertical distribution of resources (between the Centre and the States) and the horizontal distribution across states based on need, equity, and fiscal capacity. Through these channels, fiscal federalism influences the magnitude, stability, and flexibility of intergovernmental transfers, which form a crucial part of state revenues, especially for those with weak own-revenue bases. Thus, fiscal federalism directly affects the financial capacity of states to undertake developmental functions.

2. Transfers to Social Sector Expenditure (SSE) / Social Sector Development (SSD)

Intergovernmental transfers enhance the fiscal space of state governments, enabling them to allocate funds toward priority social sectors. When transfers increase, states are better positioned to invest in education, health, nutrition, welfare, housing, water supply, and other social development activities. Transfers, therefore, serve as the primary funding channel for states to finance SSE and SSD. States with higher, more predictable transfers are better able to sustain long-term social programmes, expand welfare coverage, and improve service delivery. Consequently, transfers are closely associated with the quantitative and qualitative expansion of social sector development.

3. Social Sector Expenditure (SSE) to Human Development

SSE acts as the most direct driver of improvements in human development. Expenditure on education enhances literacy, schooling, and skill formation;

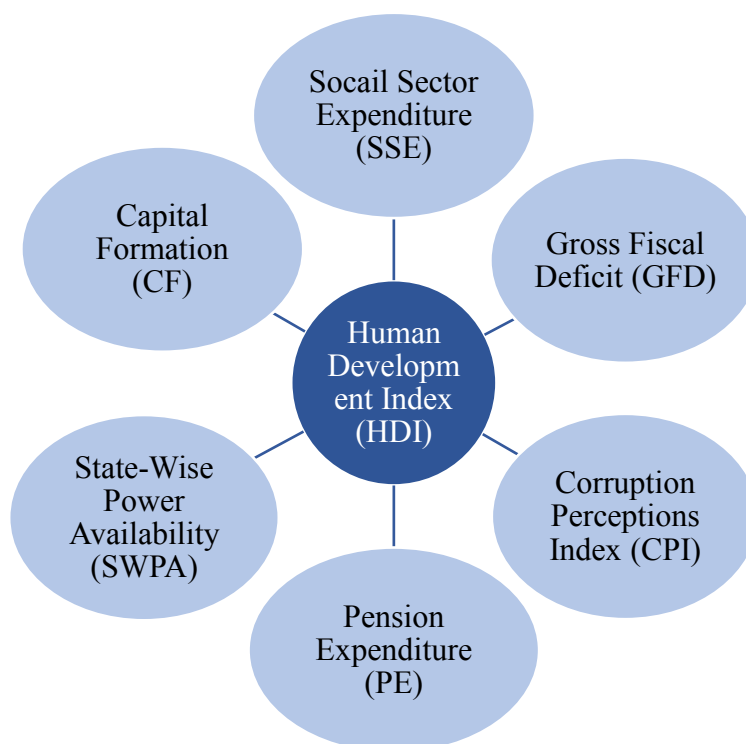
spending on health improves life expectancy and reduces morbidity; welfare and nutrition programmes strengthen overall well-being and reduce inequalities. Therefore, higher and well-targeted SSE leads to significant improvements in the components of human development, especially health, education, and standard of living. This creates a strong and positive link between SSE and human development outcomes at the state level.

3.7.2 ANALYTICAL FRAMEWORK OF THE STUDY

The final part of the study considers the broader areas of human development, with its determinants considered for this study. It provides a holistic view of the factors that contribute the human wellbeing in society. The significant variables considered in this study are clearly given in Figure 3.2. The Figure 3.2, given below, explains the significance of considering each variable that contributes to the human development of the states.

Figure 3.2

Analytical framework of the study



Data source: Compiled by the researcher

Figure 3.2 outlines the variables in the study. Human development is shaped not only by SSE but also by broader determinants, including capital formation, governance quality (CPI), fiscal health (GFD), pension liabilities (welfare perspective), and infrastructure availability (such as power). These variables determine the enabling environment for development and influence how effectively states convert resources into outcomes.

Together, these determinants interact with SSE to shape the final level of human development reflected in the HDI. HDI therefore becomes the cumulative result of social investment, governance quality, fiscal capacity, and infrastructure.

3.8 ANALYTICAL TOOLS AND STATISTICAL TECHNIQUES

The study uses a combination of analytical tools and statistical techniques to examine fiscal variables, social sector expenditure, developmental variables, and human development across 28 Indian states over the period from 2004 to 2021. The analysis employs both descriptive and analytical methodology to explain the study. The study begins with the descriptive tool, trend analysis in the transfer of resources from the centre to the states, and then the social and human development of the states. Further, the study applies the statistical tool correlation analysis, and so on, and finally, the Hausman test. All the analytical tools used for the study are given in the Table 3.2 below.

Table 3.2
Analytical tools and their functions in the study

Sl. No.	Analytical tool	Function of the tool
1	Trend Analysis	Trend analysis is used to observe the long-term direction and movement of key variables, such as Transfers, SSE, and HDI, over the study period. It helps to identify rising, falling, or stable patterns and provides a descriptive foundation before econometric modelling.
2	Descriptive Statistics (Mean, Standard Deviation,	Descriptive statistics summarise the basic characteristics of the dataset used in the study. Mean shows central tendency, standard deviation indicates

	Skewness, Kurtosis)	variability, skewness measures symmetry, and kurtosis reflects the peakedness of the distribution.
3	Correlation Analysis	Correlation analysis examines the strength and direction of association between variables. It helps detect multicollinearity among determinants before running regression models.
4	Panel Data Analysis	Panel data analysis combines cross-sectional and time-series information, allowing the study to account for state-specific effects and temporal changes. This method improves accuracy and controls for unobserved heterogeneity.
5	Panel Unit Root Test	The Levin–Lin–Chu (LLC) unit root test checks the stationarity of variables. It ensures the variables do not exhibit non-stationary behaviour that could lead to spurious regression results.
6	White–Arellano Estimator	The White–Arellano estimator is used to correct for heteroscedasticity and autocorrelation in panel data models. It provides robust standard errors, improving the reliability of coefficient estimates.
7	Random Effects Model (REM)	The random effects model assumes that individual state effects are uncorrelated with the explanatory variables. It is used to estimate variation across states when random differences exist but are not correlated with regressors.
8	Fixed Effects Model (FEM)	The fixed effects model controls for time-invariant state characteristics by allowing each state to have its own constant. It is suitable when unobserved variables are correlated with the predictors.
9	Hausman Test	The Hausman test determines whether FEM or REM is appropriate. A significant result favours FEM, while a non-significant result indicates that REM provides consistent and efficient estimates.

Data Source: Compiled from literature

3.9 OVERVIEW OF PRINCIPAL TOOLS EMPLOYED

The empirical examination in this study is supported by a set of main analytical and statistical tools designed to scientifically explore the relationships among fiscal structures, social sector expenditure, and human development across Indian states. These tools help to describe data behaviour, evaluate variable associations, examine statistical properties, and estimate the effects of key determinants on the Human

Development Index (HDI). By combining descriptive techniques with advanced panel econometric methods, the study provides a comprehensive, methodologically sound analysis that captures both cross-sectional diversity and temporal dynamics. The following section outlines the principal analytical tools employed to achieve these research objectives.

3.9.1 Trend analysis

The study used the trend analysis to capture the directional movements and behaviour of the SSE and the HDI across states over the period of analysis in India. Since both the SSE and the HDI evolve gradually over time, understanding their temporal behaviour provides insight into the progress of the policies. Trend analysis helps to identify whether SSE has increased consistently, whether HDI have shown parallel improvements, and whether fluctuations correspond to policy interventions or socio-economic changes. The technique is particularly relevant in time-series and panel-data settings to capture the realities of developmental pathways. In this context, trend analysis serves as a preliminary yet critical step, offering a visual and statistical foundation for deeper econometric investigation. It allows the study to detect patterns such as upward or downward movements, stability, cyclical behaviour, and structural breaks, which collectively help interpret how social spending relates to human development over time.

3.9.2 Descriptive statistics

The descriptive statistics diagnose the features of the data set used here and employ measures of central tendency, dispersion, and frequency distribution. These techniques are used to provide a peripheral understanding of the nature of the data used for the study. It provides a detailed summary of the data used to analyse the relationship between the variables and is the primary information regarding the study, providing a diagnosis of the data. These preliminary measures help to get a primary understanding of the nature of the variables for the future further analysis. It also explains the need for future adjustments and transformations to the data set. The descriptive statistics provide a summary of the quantitative characteristics of the

dataset used for the study. These are actually the initial diagnostics of data quality and distribution regarding the deterministic for future statistical analysis.

3.9.3 Correlation analysis

The correlation analysis usually explains the association between two variables when they move together. Here, the correlation analysis considers each of the variables and what happens when one variable moves with another variable. If the variables move together, we can say there is a correlation between them, whether positive or negative. If the variables move independently, there is no relation between them. The no relation indicates that there is no significant relationship between the variables, and they did not follow a consistent pattern of movement, meaning that an increase or decrease in one variable did not explain changes in the other. Correlation measures the strength and direction of relationships among the variables incorporated in the study. The correlation analysis is used to identify the statistically significant association and correlation between the variables in the study.

3.9.4 Stationarity test analysis

Here, the study examines panel data from 28 states spanning the period from 2004 to 2021. In this respect, to check the stationary nature of the data incorporated in this study. It explains the statistical characteristics of the data, such as the reliability of the model, avoids spurious correlations and explains more about the population to test the hypothesis and the confidence intervals. The study employs a unit root test to examine the stationarity of the data (the unit root test explains changes in the mean, variance, and autocovariance over the years).

- **Unit Root Analysis**

A unit root test is the statistical test to check whether the variables are stationary or non-stationary. The unit root test is actually an econometric method to analyse whether the data contains a unit root or not. Here, we have used the panel data for the empirical understanding, so we need to go for a stationarity check of the selected variables for further analysis. Usually, there are several stationarity tests to

determine whether the variables are stationary, such as first- and second-generation tests, and in this study, we are using the unit root test to check whether the variables are stationary. For a stationary variable, the mean, variance, and covariance are constant over time. In the case of a non-stationary variable, the mean, variance, and covariance change over time. In the present study, we have considered a unit root analysis to avoid the spurious regression. That means that sometimes variables show a significant relationship, leading to a false result. By applying unit root analysis, we can restrict the results to show such findings by identifying the stationarity of the variables. The upward or downward movement of variables at a given time can lead the spurious regression, which shows a significant relation between them. The unit root analysis ensures the statistical validity of the variables used in the econometric analysis in the panel or time series data analysis. If the variables are non-stationary, that means there is co-integration of the variables; the co-integration tells us the simultaneous move of the variables in the same direction in the long run, and the relation is economically meaningful. Here we need to analyse the stationarity and then go for the further understanding of the movement of the variables. The present study uses the relevant unit root tests available in the panel data analysis, which are given below.

1. **Harris-Tzavalis (1999):** It is used for the panel with limited time coverage. Generally used for short fixed time and large N conditions.
2. **Breitung (2000):** It is a first-generation panel unit root test and assumes a common unit root process across cross-sections. The test uses a power and bias-reducing transformation.
3. **Breitung and Das(2005):** It is applied to examine the stationarity of variables under flexible deterministic components, offering improved power and reduced bias compared to the standard Breitung test.
4. **Levin-Lin-Chu (LLC, 2002) test:** It is the first-generation test. The test assumes a common unit root across panels. It assumes that the variables are cross-sectionally independent.

5. **Im-Pesaran-Shin (IPS - 2003) test:** It is the first-generation test. It permits different unit roots for each state in the study. It assumes cross-sectional dependence of the variables.
6. **Fisher-type Augmented Dickey Fuller (ADF) or Fisher-type PP:** This test is based on combining the P values in all the panels to assess the null hypothesis of the unit root across multiple cross-sectional analyses.

Among the available unit root tests, the study used Levin-Lin-Chu (LLC), Im-Persaran-Shin (IPS), Fisher-type Augmented Dickey Fuller (ADF) and Fisher-type PP. These unit root tests are using a null hypothesis that the panels are non-stationary, that is, there is a unit root in the panel.

3.9.5 Fixed Effect Model (FEM)

The Fixed Effects Models (FEM) are used to explain the unobserved individual effects on the explanatory variables, so they assume that they are highly correlated. That means it discusses the within-state variations in the study. That explains the variations in social spending and the governance. Here we have 28 states for 18 years, so the fixed effect model tells us that the changes within each state over the 18 years affect the dependent variable. That means changes within the states affect the HDI, while all other state-specific features are constant. Here, the fixed effect model describes the effects of determinants of HDI on Human development in the states. The other variables play a significant role in determining the human development from a different perspective. At the same time, the test for fixed effects on human development explains the results of the Hausman test on the data. The model considers that all the state-specific features are constant over time, like the geographical setup, historical milestones, institutional setup and cultural domain of the state. It protects the unique characteristics of the states and does not account for the influence of HDI determinants on human development in the fixed-effect model. Here, actually, the model restricts all the invariant features of states to the impact of determinants of HDI on human development across states.

3.9.6 Random Effects Model (REM)

The REM is used to point out the individual-specific effects, which means it assumes the individual-specific impact on the independent variables is considered as random, so they are uncorrelated. Random effect model uses both the within-state and between-state variations, making it efficient when the assumption holds. It permits the inclusion of time-invariant factors that cannot be estimated under the fixed-effects model. The random effects are beneficial when states are viewed as a random sample from a larger population, and the interest lies in generalising results across all states. So, the study strictly follows the previous model and does not consider it under the random effects model.

3.9.7 Hausman test

The Hausman test is used to determine whether the model is a fixed-effects model or a random-effects model. Here, the null hypothesis is that the individual effects are uncorrelated with the regressors; that is, it assumes REM, and the alternative hypothesis is that the model supports FEM. This test is used to select between REM and FEM. The significant test results indicate that FEM is the consistent and preferred estimator for this study. And in the second case, the non-significant results suggest that REM is efficient and appropriate, which is not applicable for this study, and here the observation is that the FEM is suitable for the study.

3.10 PANEL DATA ANALYSIS

The following table provides a brief overview of the tests applied in the study to obtain the results. To ensure the robustness, reliability, and validity of the empirical results, the study employs a range of statistical and econometric tests suited for panel data analysis. Each test serves a specific methodological purpose, from checking the stationarity properties of the dataset to selecting the most appropriate panel regression model. The following Table 3.3 provides a concise overview of the major tests and estimators applied in the study, along with their respective purposes within the analytical framework.

Table 3.3

Panel data tests were used for the study

Name of the test	Purpose
Unit Root Test	To test whether a panel dataset exhibits stationarity
White-Arellano Estimator	To address heteroscedasticity and serial correlation in panel data
Random Effect Model	To test whether the key factors have a significant impact on random variables
Correlated Random Effects Hausman Test	To choose whether the Fixed Effects Model or the Random Effects Model is appropriate for the dataset.
Fixed Effects Model	To test whether the key factors have a positive or negative impact on Human Development
Redundant Fixed Effects Tests	To determine whether cross-sectional fixed effects are influencing the study results, a redundant fixed effects test is done within a fixed cross-sectional scenario.

Data source: Compiled from literature.

3.11 METHODOLOGICAL APPROACH: PANEL DATA ANALYSIS AND MODEL SPECIFICATIONS

The stationarity test result follows the majority rule across all the tests used for the study. Here, the study needs to check the stationarity test and needs to examine all the properties of stationarity in the panel data, so the first-order autoregressive model (AR(1)) is used to check each of the variables. It uses different unit root tests such as Levin - Lin - Chu (LLC), Im - Pesaran - Shin (IPS), Fisher-type ADF and PP tests, and the Pesaran (CIPS) test to study cross-section dependence across Indian states. The model used for the test is given below.

$$\Delta Y_{it} = \alpha_i + \rho_i Y_{i,t-1} + \sum_{j=1}^{p_i} \beta_{ij} \Delta Y_{i,t-j} + \varepsilon_{it}$$

Where, i : cross-sectional unit (states), t : time period (year), j : lag order (time lag), Y_{it} : dependent variable, α_i : state-specific intercept, ρ_i : autoregressive parameter, β_{ij} :

lag length (chosen by AIC/BIC), β_{ij} : coefficient of lagged differences and ε_{it} : idiosyncratic error term.

Usually, the panel unit root test is used to test the null hypothesis. Here, the null hypothesis (H_0), that is $\rho_i=1$ for all i , is the result of the test, which rejects the null hypothesis and accepts the alternative (H_1): $\rho_i<1$. That means the data exhibits stationarity. The application of the Levin-Lin-Chu (LLC, 2002) test proves that the series is stationary. The study uses Im-Pesaran-Shin (IPS) test, ADF-Fisher & PP-Fisher Tests and concluded that the majority of the unit root tests are exhibiting stationarity in the series. So, the null hypothesis (H_0) of the panel data noted that the variables are stationary and classified all the variables under the head of stationary at $I(0)$.

When we consider the panel data model, we are dealing with the panel-specific measures because we have two dimensions: states as the cross-sectional units and years as the time periods. The panel specific to the study is unique to each cross-sectional unit but constant or estimated separately for the unit across time. When we go for panel-specific effects in the model, the model becomes

$$Y_{it} = \alpha_i + \beta X_{it} + \varepsilon_{it}$$

Where, α_i - panel - specific intercept (unique for each state), β - common slope (same for all states unless specified otherwise) and ε_{it} - error term

The panel-specific effects are actually the unique, state-level attributes that influence the dependent variable and retain the variable as constant over time. These effects are usually used to identify the unobserved heterogeneity among the states in the panel data set. In this study, the term α_i (panel-specific intercept) is included to study the structural and institutional differences across the states in India, and that may affect other variables such as social sector expenditure, fiscal deficit and human development of the states.

3.12 MODEL SPECIFICATION FOR HDI DETERMINANTS

The study adopts a panel econometric model to examine the determinants of HDI across 28 Indian states over the period 2004–2021. The model captures both cross-

sectional variation among states and time-series changes over the selected period, enabling the analysis to incorporate unobserved heterogeneity and dynamic development patterns. In this specification, HDI serves as the dependent variable representing overall well-being in terms of health, education, and standard of living. The independent variables include Capital Formation (CF), Corruption Perceptions Index (CPI), Gross Fiscal Deficit (GFD), Pension Expenditure (PE), Social Sector Expenditure (SSE), and State-Wise Power Availability (SWPA), all of which reflect the fiscal, governance, institutional and infrastructural dimensions of development. The panel data regression examines the empirical relationships among the variables mentioned above. The study captures interstate heterogeneity and the temporal evolution of the developmental pathways of the states, along with changes in their fiscal behaviour. The panel framework produces a more reliable estimate of human development by considering social-sector spending, the budgetary nature of governance, its efficiency, and other indicators.

The panel regression is used here to explain the variations across states over the years. The available panel regression models are the FEM and the REM. Suppose the regression isolates the within-state variations over the years in the study. In that case, it is the FEM, and the REM considers both the variations within the entities (states) and between entities. Panel data is used to study the effects of social sector expenditure and the determinants of human development on states' human development. Here, some variables are identified to catch the fixed effect and the random effect of these variables on the 28 states. The variables are considered to explore the correlation between determinants of human development and the Human Development Index of the states.

The simple regression model is expressed as

$$Y_{it} = \alpha_i + \beta X_{it} + \mu_i + \varepsilon_{it}$$

Where, Y_{it} : Dependent variable: HDI, α_i : Constant term, β : Coefficient measuring the effect of X on Y, X_{it} : Independent variable, μ_i : Unobserved individual effect (state-specific effect) and ε_{it} : Random error term. The i represents states and t represents the year.

Here, we have more than one independent variable, so we can use multiple regression. Then, entering the general regression model used for the study is

$$Y_{it} = \alpha_i + \beta_1 X_{it} + \beta_2 X_{it} + \beta_3 X_{it} + \beta_4 X_{it} + \beta_5 X_{it} + \beta_6 X_{it} + \mu_i + \varepsilon_{it}$$

Where $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ and β_6 are the coefficients of the independent variables. This is the general form, and the specific model used for this analysis is given below.

$$HDI_{it} = \alpha + \beta_1 CF_{it} + \beta_2 CPI_{it} + \beta_3 GFD_{it} + \beta_4 PE_{it} + \beta_5 SSE_{it} + \beta_6 SWPA_{it} + \mu_i + \varepsilon_{it}$$

HDI_{it} : Human Development Index of state I at time t , α : constant term, CF_{it} : Capital Formation (States Fiscal Capacity), CPI_{it} : Corruption Perception Index (Governance Indicator), GFD_{it} : Gross Fiscal Deficit (Fiscal Prudence), PE_{it} : Pension Expenditure (Welfare), SSE_{it} : Social Sector Expenditure, $SWPA_{it}$: State Wise Power Availability (Proxy to Infrastructure), μ_i : Unobserved, time-invariant state-specific effects and ε_{it} : Random error term

This model explores the suitability of the Hausman test in the study, which will help to identify the fixed effects in this model, and is more convenient than the random effects model. In short, the model specification for assessing the determinants of HDI in this study integrates fiscal, governance, social sector, and infrastructural variables within a robust panel econometric framework. By incorporating both cross-sectional and time-series dimensions, the model effectively captures state-level heterogeneity and temporal dynamics over the 2004–2021 period. The inclusion of variables such as capital formation, corruption perceptions index, gross fiscal deficit, pension expenditure, social sector expenditure, and state-wise power availability provides a comprehensive representation of the multidimensional factors influencing human development. The use of Fixed and Random Effects Models, supported by panel unit root testing and the Hausman specification test, ensures statistical consistency, efficiency, and model validity. The adoption of robust standard error corrections further strengthens the reliability of the estimated coefficients. Overall, the econometric model is well-specified, theoretically grounded, and methodologically suitable for identifying the drivers of HDI across Indian states, enabling credible policy-relevant insights.

3.13 THE HAUSMAN TEST

To determine the most appropriate panel data specification for analysing the relationship between fiscal federalism, intergovernmental transfers, SSE and human development outcomes across Indian states, the study employs the Hausman specification test. The test evaluates whether the regressors are correlated with the unobserved individual-specific effects, thereby guiding the selection between the FE and RE models. The Hausman statistic is computed as:

$$H = (\hat{\beta}_{RE} - \hat{\beta}_{FE})[\text{Var}(\hat{\beta}_{FE}) - \text{Var}(\hat{\beta}_{RE})^{-1}(\hat{\beta}_{RE} - \hat{\beta}_{FE})$$

Where, $\hat{\beta}_{FE}$ and $\hat{\beta}_{RE}$ denote the coefficient vectors obtained from the FE and RE estimations, respectively. A statistically significant Hausman statistic ($p < 0.05$) indicates systematic differences between the estimators, implying that the RE assumption of no correlation between explanatory variables and state-specific effects is violated. In such cases, the FEM is preferred for producing consistent estimates. Conversely, a non-significant test result suggests that the REM is both consistent and efficient. Incorporating the Hausman test thus strengthens the empirical strategy of this study by ensuring that the chosen estimation technique appropriately captures the underlying structure of state-level heterogeneity in fiscal and social-sector dynamics.

3.14 SUMMARY OF THE PANEL DATA ANALYSIS

The study employs panel data analysis to examine the determinants of Human Development across 28 Indian states over 18 years. Panel data techniques are chosen because they combine time-series and cross-sectional information, allowing the model to capture variation across states and changes within each state over time. This approach effectively controls for unobserved, time-invariant state characteristics such as historical, institutional, and geographical factors that could otherwise bias the results. To estimate the impact of fiscal, governance, and social-sector variables on HDI, the study uses two key panel-data regression models: the FEM and the REM. FEM controls for state-specific factors that may correlate with the explanatory variables, while REM assumes these effects are random and

uncorrelated. The Hausman test is applied to determine the appropriate model for reliable estimation. Before running these models, panel unit root tests are conducted to ensure stationarity, and robust White–Arellano standard errors are used to correct for heteroscedasticity and serial correlation. Overall, panel data analysis provides a statistically rigorous method for identifying how fiscal structures and social sector spending influence human development.

OVERVIEW OF FISCAL FEDERALISM AND SOCIAL SECTOR EXPENDITURE IN INDIA

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4.1 INTRODUCTION TO FISCAL FEDERALISM

The federal form of government provides a standard structure, but it differs across countries according to their discretion. The existing federal setups across countries vary, including their own discretionary roles in the powers and responsibilities of different layers of government. The USA, Canada, Australia, Germany, Switzerland and India are the countries following a federal form of government. Federalism in India is characterised by the constitutional demarcation of revenue and expenditure powers among the three levels of government. The Seventh Schedule to the Indian Constitution specifies the legislative, executive, judicial, and fiscal domains of the Union and State governments, as well as the Union, State, and Concurrent lists. The Constitution also requires the President to appoint a Finance Commission every five years, or earlier, to review the finances of the Union and the States, and to recommend the devolution of taxes and grants-in-aid, which form a significant source of revenue for them for the ensuing five years. In addition to these transfers, the Planning Commission (plan transfers) also assists the states based on a formula determined by the National Development Council (NDC) and specific-purpose transfers for the various central schemes implemented by different ministries of the Union Government (Rao, 2001). The plan transfers are distributed through the budget transfers in each year, and since 2015, the planning commission has been replaced with a new institution called NITI Aayog. The transfers are channelised with the Finance Commission and Budget transfers. The 80th Constitutional amendment (1999) brings a significant change in the sharing of the net proceeds of all central taxes, except certain cesses and surcharges. The sharing of central taxes to states is based on different criteria for different finance commissions. Population and income distance are the two primary criteria used by the finance commissions for the sharing process, along with other criteria such as fiscal discipline, area, tax effort, and infrastructure index. The budget transfers for plan transfers and centrally sponsored schemes change annually based on the weights assigned to the different sectors, and a small amount of politics is involved in the allocation mechanism.

Fiscal federalism refers to the way financial authority and expenditure responsibilities are shared between different levels of government in India's case, the Union and the States. There is an inherent imbalance between revenue-raising capacity and expenditure responsibility, creating a vertical fiscal imbalance that makes states dependent on the Centre for financial support. To address these imbalances, India has developed a structured system of fiscal transfers that includes tax devolution, grants-in-aid, centrally sponsored schemes, plan transfers and special assistance grants. These transfers help not only to correct financial disparities but also shape the developmental choices of states. The various institutions play a significant role in ensuring equity across states by redistributing resources from richer to poorer regions, thereby addressing horizontal fiscal imbalance. At the same time, conditional transfers through centrally sponsored schemes help achieve national social goals by guiding state spending in critical sectors. Article 280 of the Indian Constitution provides the base for a Federalist form of government with multiple layers of government. The central government is the apex body of the Federal government. The second layer is the state governments, followed by local bodies. Federalism means the co-existence of multiple layers of government with respect to functions, powers and financial matters.

4.2 HISTORY OF FISCAL FEDERALISM IN INDIA

Fiscal federalism in India, unlike in many wealthy countries, has to satisfy the competing demands to deliver many essential and basic socio-economic services. As a paramount objective, fiscal federalism is expected to enable the national and sub-national governments to operate in such a way that leads to efficiency in the use of resources - not only in terms of the quality of services provided by the various levels of government but also in terms of creating the environment in which all economic agents use resources efficiently (Rangarajan, 2004).

Fiscal federalism is about “understanding which functions and instruments are best centralised and which are best placed in the sphere of decentralised levels of

government"(Oates, 1999). It discusses the vertical and horizontal sharing of resources among the various levels of government. The transfer system is a significant concern in the centre-state financial relations. Tax sharing and the allocation of grants and loans are significant areas in this regard. Despite India's essential non-unitary character, the Constitution grants considerable powers to the Centre. It is commonly held that constitutional provisions tilt the balance of power in favour of the Union Government while also seeking to strike a balance by establishing a more or less federal financial structure. However, some critics in public finance believe that, in the attempt to ensure control over the states in the political as well as financial arena, the Union Government has on several occasions gone beyond the constitutional framework in trying to legitimise a centralisation process by means of specific policies and/or institutions. The establishment of the Planning Commission itself has been under attack from several quarters because of its 'extra-constitutional' nature and its unitary objectives and functions. Some critics (e.g., Thimmaiah, 1997) have gone further to show that the Union Government has not been content even with the instrumentality of a Planning Commission set over and above the constitutional body of the Finance Commission, acting as an alternative mechanism to monitor the financial relationship between the Centre and the states.

Statutory flow is predetermined and largely formulaic regarding distribution between states, accepted as mandated by Finance Commissions and implemented without modification. It has two components: shares of central tax revenues and grants, both as prescribed by the Finance Commissions. The statutory flow was supplemented by a range of non-statutory flows for developmental assistance, known as Plan flows. Though non-statutory, these were permissible under Article 282 of the Constitution. The Union Government allocates a portion of its total revenue, including tax, non-tax and loan receipts, for transfer to state governments under Article 282 in the form of central assistance for state Plans. The Planning Commission distributes this based on the Modified Gadgil Formula (Biswas, Marjit, and Marimoutou, 2008).

In India, Fiscal Federalism shows the political dimensions like other countries. The tax assignment and the division of responsibilities are the traditional concerns in the federal context. The concepts of horizontal and vertical imbalance are always a problem in India, and they continue to be so. Devolution plays an important role in the correction of horizontal and vertical imbalance. Fiscal federalism aims to ensure the provision of many essential socio-economic services. Fiscal Federalism is trying to satisfy the national and sub-national objectives for achieving efficiency in the resource allocation and its use by different states.

India is a federal country with constitutional and fiscal judicial support for the centre, state, and local bodies. Effective federalism in India depends on two layers of government: the centre and the states. In India, too, the various instruments of central transfers have assumed the most prominent place in the centre-state relations. Notwithstanding their wide use in bringing growth, equity and efficiency in the country, central transfers have remained the most debated and controversial topic, particularly since the mid-sixties. The importance of the institution of central transfers stems from the fiscal history that India inherited from the British and the social, economic, and political problems it faced at the time of independence.

After independence, India structured the system of government on the federal principles on the one hand and economic planning on the other. Given the country's complex composition and economic problems at the time, the Constitution-makers opted for a strong central government within a federal system. Bhargava (1967) rightly points out that the country was suffering from the pangs of partition, and the political unity of India was in danger due to the threats from some of the princes on the eve of the partition. Besides, India, unlike the US and Canada, had a nation already existing which could be better preserved by having an intense centre, particularly because the national feeling developed slowly. To ensure unity-in-diversity in a multi-lingual, multi-racial and multi-religious country with wide regional and socio-economic disparities and to develop the country faster, it was natural and realistic to adopt the federal system of governance with the centre having overriding powers.

Thus, although the fiscal structure has been decentralised and fiscal functions, including the rights and responsibilities, are divided among the different levels of government through the Constitution, the centre has been enjoined to exercise an important fiscal role. To quote Ambedkar, “The legislative and the executive authority are partitioned between the centre and states not by any law to be made by the centre, but by the Constitution itself. The centre and states are coequal in this matter. It may be that the Constitution assigns to the centre too large a field for operation of its legislative and executive authority than is to be found in other federal Constitutions”. It appears that a compromise was sought between the political benefits of a more minor degree of autonomy or lesser relative freedom for the small units and the economic gains of a Union.

It may be mentioned that the fiscal co-operation and status of equality among the states and the centre sought through the Constitution has a long history. In the background, the slow evolution of the federal structure, the long tradition of centralisation, the severe poverty in pre-independent India, and the urgency to develop the country faster had profound effects. The advent of planning after gaining independence was another important development which had a pervasive influence on federalism. Federalism allows the flexibility and adaptation in its policies. To quote Buchanan (1964), “like keeping a satellite in place, with centrifugal and centripetal forces keeping each other in check”. As a nation, India depends on federalism and its strength. This ensures a peaceful space for vertical and horizontal cooperation of states and the centre.

4.3 CENTRALIZED V/S DECENTRALIZED GOVERNMENT

A centralised government is one in which the authority and responsibility of governing rest with a small group at the highest level of government. Decentralisation is the process of redistributing or dispersing functions, powers and revenue. The Indian government has a centralised as well as a decentralised character, which necessitates the division of powers and finances between different

layers of government. Federalism improves the efficiency of public policies and brings government closer to the people.

However, Federalism never allows equalising the burden of expenditure to the revenue, especially in the case of inter-governmental transfers. Now, states are demanding more autonomy. State autonomy brings more power to the states in deciding their domestic and economic aspects. In India, financial decentralisation grants the states significant powers in economic decision-making. In this case, states are demanding greater autonomy within the decentralised framework. A quasi-federal system characterises the initial stages of Indian Federalism. The Constitution of India proclaims that India is a union of states rather than a federation. The Constitution provides an extensive concurrent list of powers and residuary powers to the Centre. Many observers labelled the Indian constitution as unitary or quasi-federal. The extent of federalism in it is essentially watered down by the needs of progress and development of a country which has to be nationally integrated, politically and economically coordinated, and socially, intellectually and spiritually uplifted (Bagchi, 2003). The globalising economy brings significant changes to the federal fiscal system and to the roles and policies of national and sub-national governments.

4.4 DECENTRALISED V/S CO-OPERATIVE CUM COMPETITIVE FEDERALISM

The 1991 liberalised policies brought considerable changes in the restoration of the powers of the states. States gained more space for their own social and economic priorities. Decentralisation gives a base for the move towards cooperative federalism. The controls of the Centre on the States were reduced a little bit. The Planning Commission acts as a channel of fiscal transfers parallel to the Finance Commission. After 2015, the Planning Commission was replaced by NITI Aayog, and a drastic change was mandated in the role of NITI Aayog, which works as a think tank for the policies of the government. The number and scope of centrally

sponsored schemes were reduced because they failed to achieve their objectives. Earlier, it was 300, but in 2015 the number was reduced, and many schemes were merged. In 2025, there the 54 centrally sponsored schemes under various heads. In the earlier periods, that is, after independence, Indian Federalism suffered mainly due to over-concentration of power at the centre. Then it changed, especially after the initiation of economic reforms. The assignment of powers and responsibilities is the problem in the transfer system forever.

For obtaining the state autonomy, there needs to be a move from centralised federalism to cooperative federalism. In cooperative federalism, states get veto power over the central government's policies. It ensures remarkable growth across various states by reducing poverty and increasing GDP. At the same time, the disparities have widened because all the states are not alike with respect to the level of socio-economic achievements, and this creates a negative impact on cooperative federalism. The competition results in greater disparities across states because some are unable or less able to attract investment due to poor infrastructure. Coordination failure and fiscal indiscipline are the other negative impacts. The changing character of India's federalism seems to be affecting its redistribution function negatively as well. The tilt towards equity in the transfer formulae of the Finance Commission has been neutralised considerably by other factors, such as transfers that are not visible (Bagchi, 2003). A study by Rao and Singh (2006) found some evidence for the importance of variables that may proxy the bargaining power of the states.

4.5 INTERGOVERNMENTAL FISCAL TRANSFERS

Intergovernmental fiscal transfers in India refer to the flow of resources from the Central Government to State Governments through different mechanisms designed to address fiscal imbalances and support developmental expenditure. Intergovernmental transfers are crucial because states are the primary providers of social services, such as health, education, nutrition, welfare, and social protection, and often lack adequate revenue capacity to finance these sectors fully. Intergovernmental fiscal transfers explain the more significant mechanism through which the central government influences the fiscal space and spending priorities of

the state governments. These transfers are considered under several heads, especially tax devolution, grants-in-aid, and Centrally Sponsored Schemes (CSS).

Tax devolution consists of the share of divisible central taxes that the Finance Commission recommends to the states, based on the shares allotted under various criteria. This expected, and unconditional flow of funds, allows the states to plan and implement social sector programmes according to the needs of the state governments. Tax devolution constitutes the largest component of transfers and plays a significant role in shaping the states. These taxes are the major contributors to state governments' social sector spending on various sectors like health, education, nutrition, and welfare.

Grants-in-aid complement tax devolution by providing targeted or general-purpose resources to States. These grants can be unconditional, giving States full autonomy over how funds are deployed, or conditional, tying expenditure to specific sectoral outcomes. Sector-specific grants are particularly relevant for social sector spending. For example, grants targeted at health or education often aim to ensure that national minimum standards are maintained, regardless of a State's fiscal capacity. Such grants are critical for equalising access to essential public services.

Centrally Sponsored Schemes (CSS) are another central channel of fiscal transfers. These schemes are co-financed by the Union and State Governments and are designed to address national priorities in the social sector. Schemes such as the National Health Mission, Samagra Shiksha, ICDS/Anganwadi Services, and PM-POSHAN (mid-day meal) significantly influence state-level expenditure patterns. The cost-sharing ratios sometimes impose a financial burden on fiscally weaker States, but they also guarantee a consistent flow of funds into social services. Overall, intergovernmental transfers are an indispensable element of fiscal federalism, determining how States shape their SSE and human development outcomes.

4.6 FISCAL IMBALANCES IN INDIA (VERTICAL AND HORIZONTAL)

In India, the concept of fiscal federalism always looks deep into the fiscal imbalances, both the vertical and horizontal imbalances in the country. This imbalance arises from the constitutional division of revenue and expenditure responsibilities across the union and the states. Fiscal imbalance refers to the financial instability in meeting expenditure obligations and threatens the government's financial sustainability. The country witnesses vertical and horizontal imbalances.

Vertical fiscal imbalance explains the discrepancy between the revenue-raising powers of the Central government and the expenditure responsibilities of the state governments. Even though the Central government demands more elastic and broad-based taxes (such as income tax, corporation tax, and customs duties) at the same time, state governments bear the responsibility for providing public goods and services that directly influence human development, including health, education, nutrition, drinking water, and social welfare. That means the state governments are directly linked to the people by addressing their needs through the expenditure responsibilities. This operational gap creates some dependency of state governments on central transfers to meet the expenditure obligations of the state governments, particularly in the social sector, where significant financial commitments are required to ensure equitable service delivery.

Horizontal fiscal imbalance arises from discrepancies in economic capacity, demographic characteristics, resource endowments, and administrative efficiency across States. Some States possess strong revenue bases and developed economies, enabling them to invest adequately in social services. In contrast, poorer States with limited tax capacity face challenges in mobilising resources for social expenditure. As a result, these States are unable to match the social investment patterns of wealthier States, which leads to discrepancies in human development outcomes across the country. The disparities in health indicators, literacy rates, enrolment ratios, and poverty levels reflect this imbalance. Horizontal fiscal imbalances in this study refer to the inter-state disparities in revenue capacity, economic performance,

demographic needs, and administrative efficiency, which lead to unequal levels of SSE and, consequently, divergent human development outcomes. These imbalances justify the presence of fiscal transfers and equalisation mechanisms in India's federal system and form a critical analytical dimension of the analysis on SSE and HDI.

Horizontal fiscal imbalances in this study refer to the inter-state disparities in revenue capacity, economic performance, demographic needs, and administrative efficiency, which lead to unequal levels of SSE and, consequently, divergent human development outcomes. These imbalances justify the presence of fiscal transfers and equalisation mechanisms in India's federal system and form a critical analytical dimension of the study on SSE and HDI. The research focuses on how SSE influences Human Development across Indian States. Here, horizontal imbalances become crucial because the states with higher fiscal capacity (e.g., Kerala, Haryana, Maharashtra, Tamil Nadu) can invest more in social services. The states with lower revenue capacity (e.g., Bihar, Odisha, Uttar Pradesh, Jharkhand) struggle to allocate adequate resources to human development sectors. This creates inter-state disparities in HDI outcomes, even though social sectors fall broadly under State responsibility. Thus, horizontal imbalances directly shape the variation in HDI and SSE patterns, which is central to the research.

4.7 NEED FOR INTERGOVERNMENTAL TRANSFERS IN INDIA

Addressing these imbalances is the fundamental role of intergovernmental transfers, which aim to equalise fiscal capacity and ensure minimum standards of social services nationwide. Without such transfers, States with low revenue capacity would remain trapped in a cycle of low human capital formation and limited economic growth, further widening regional inequalities. Transfers increase the state's fiscal capacity to meet the developmental expenses and to strengthen the budgetary capacity. Here, the present analysis focused on intergovernmental fiscal transfers under the SSE heading to the states, which act as a significant determinant of the country's development, especially its human development.

Many of the developing states have limited resources to enhance their social sectors to achieve a better position in the development stage. In this regard, the role of intergovernmental transfers through various channels under different sub-sectors is playing a significant role in establishing a proper base to move ahead for achieving the goal of the state economies. In this case, the SSE is the leading economic factor that contributes to the development outcome in the form of human development of the country. The intergovernmental transfers are a matter of SSE because the SSE covers various social sectors, which are financed by the budgetary transfers. The states own revenue sources are inadequate to finance these sectors so there is a crucial role to finance these expenditures through the intergovernmental transfers.

Thus, fiscal imbalances constitute a foundational element of fiscal federalism and play a serious role in determining each State's ability to find adequate and sustained SSE. Thus, these transfers:

- Expand the fiscal space of States
- Influence levels and patterns of SSEs
- Affect inter-state equality in human development
- Reduce horizontal disparities in social sector outcomes

The primary objectives of intergovernmental transfers always lie in the correction and reduction of vertical and horizontal imbalances, respectively. In this regard, briefings on intergovernmental transfers are provided below.

a. To Correct Vertical Imbalances

The Centre controls central taxes (income tax, corporation tax, GST share), while States carry heavier expenditure responsibilities in the social sector. Transfers help to correct the gap between revenue powers and expenditure needs between the centre and the states.

b. To Reduce Horizontal Imbalances

States differ broadly in income, economic base, tax capacity, and demographic characteristics. Transfers ensure that fiscally weaker states can still spend adequately on health, education, and welfare. It tries to uplift the weaker states to reach a balanced growth stage for competing with the other states, and to ensure better social services for its people.

4.8 COMPONENTS OF INTER-GOVERNMENTAL TRANSFER OF RESOURCES FROM CENTRE TO THE STATES

Intergovernmental transfers are an essential feature of India's fiscal federal system, designed to balance the distribution of financial resources between the Union and the States. These transfers help to correct revenue–expenditure mismatches, support States with limited fiscal capacity, and ensure uniform provision of social services across the country. In India, these transfers operate through three broad channels: Finance Commission, Budgetary Transfers and Central Ministries. Each of these components plays a distinct role in improving the fiscal health of States and strengthening their ability to invest in social sector development.

The components ensuring the financial flow from the centre to the states under various projects and economic divisions in the economy. The majority of the funds are allotted for the social sector development programmes of the states, or in other words, the transfers are aiming to ensure the welfare of the economy. The components under the transfer of resources from the centre to the states help the economy to supplement the implementation of various projects. The different elements are acting as the channels to flow funds from the centre to the states. They also monitor or manage the programmes under multiple heads. The components of the transfer of resources from the centre to the states are divided into six, each with its subdivisions. The components of devolution and the transfer of resources are given in Table 4.1.

Table 4.1
Composition of Devolution and Transfer of Resources from the Centre

Sl. No.	Component Head
I.	States' Share in Central Taxes
II.	Grants from the Centre (1 to 5)
1.	State Plan Schemes
2.	Central Plan Schemes
3.	Centrally Sponsored Schemes
4.	NEC/Special Plan Schemes
5.	Non-Plan Grants (a to c)
a)	Statutory Grants
b)	Grants for Natural Calamities
c)	Non-Plan Non-Statutory Grants
III.	Gross Loans from the Centre (i+ii)
i)	Plan Loans
ii)	Non-Plan Loans*
IV.	Gross Transfer (I+II+III)
V.	Repayment of Loans and Interest Payments Liabilities (a+b)
a)	Repayment of Loans to the Centre
b)	Interest Payments on the Loans from the Centre
VI.	Net Transfer of Resources from the Centre (IV-V)

Data source: State Finances: A Study of Budgets, Reserve Bank of India.

The components listed here are briefly explained under the following heads.

I. States Share in Central Taxes

The share in Central tax comes under the head of devolution of resources from the centre to the states. The allocation of financial resources to states from the central government's revenue through taxes is included under this head. This amount of shares in the central tax collection is directly transferred to the state governments. These transfers are carried out only in accordance with the recommendations of the respective Finance Commission in the country. The share in these central taxes is measured using various criteria set by the Finance Commission, including Income Distance, Population, Demographic performance, Forest and Ecology, Tax Effort, and Area. These criteria change across different Finance commissions. The share is

purely based on these criteria, along with the need and other measures of the finance commission. The states always enjoy a considerable amount of share in central taxes because no need for repayment of this amount to the centre, so they are enjoying the larger amount. This leads to the clamouring of states for a greater share of the centre tax pool.

II. Grants from the Centre

Grants are usually the financial help or assistance. So, the grants to the states are actually the centre's financial assistance to the states. The grants are of two types: general-purpose and specific-purpose. Under this head, the specific purpose grants are the primary concern of financial assistance. The specific purpose grants aim to provide financial support for specific objectives of the states. The major grant categories are listed below.

1. State Plan Scheme

The grants are for the developmental activities of the states. The state plan schemes focus on the development of the state by prioritising social sectors in the developmental process, including health, education, and infrastructure. The state plan scheme transfers are usually the transfers for state schemes in the prescribed sectors in the developmental schemes. These schemes are prepared and implemented by the state alone and funded by the centre.

2. Central Plan Schemes

The funds for the central plan schemes are actually the transfer of funds for implementing the centre's scheme. The central government introduces the schemes, and the state implements them in their development path. The funds are used to finance schemes initiated by the central government and run by the state government.

3. Centrally Sponsored Schemes (CSS)

The Centrally Sponsored Schemes (CSS) are run by both the Union and state governments. That means the financing of these schemes is shared by both the central government and the state governments. The share of finance differs across

the same programme between General Category States (GCS) and Special Category States (SCS). The central government undertakes the lion's share of the expenses, and the respective state governments undertake the remaining portion. These schemes are playing a significant role in the development process of the country.

4. North Eastern Council (NEC)/Special Plan Scheme

As the name indicates, these grants are specifically for the developmental projects of the north-eastern states. The aim is to provide the financial platform for the development of the North Eastern Region (NER) through financial assistance in the form of grants to them. The objective is to foster the regional development of the special regions in the country. The North Eastern Council (NEC) manages the schemes for the development of such special areas in the country. These grants are purely for such special regions and the north-eastern regions in the country, for boosting the social as well as the economic development in these areas through various schemes for them.

5. Non-Plan Grants (A to C)

These plans are used for non-developmental projects in the states. It is also used to address the special problems like natural disasters. The grants are aiming to ensure the special purposes other than the development of the states. The majority of such grants are for the immediate needs of the states to meet their emergency needs. The non-plan grants include the grants prescribed in the Constitution. Such grants are classified into three heads, as given below.

A) Statutory Grants

The statutory grants are grants prescribed in the constitutional provisions. The Constitution of India authorises the grants under Article 275 of the Constitution. These grants aim to meet the special needs of the states. The statutory grants are mandated and are allotted by the Finance Commission of India. These grants are provided based on various factors related to the needs of the states.

B) Grants for Natural Calamities

As the name indicates, the grants for natural calamities are the grants or financial assistance from the centre to meet the needs of states for the recovery from natural

disasters. These grants are only used for this purpose to meet the financial needs of states that have suffered financial stringency due the natural calamities. It includes the financial assistance for dealing with the natural disasters like floods, droughts and earthquakes.

C) Non-Plan Non-Statutory Grants

These grants are purely the discretionary grants provided by the centre to the states. These grants include the character of other general or specific grants to the states for emergencies or other unplanned expenditures of the central government. It means the central government exercises discretionary power in granting financial assistance to the states in the form of grants. They can provide the non-plan non-statutory grants as per their discretionary power to allot them to the states.

III. Gross Loans from the Centre

Under this head, the transfer of resources from the centre to the states is explained through different channels of loan allocation to the states. The central government's loans to states are classified under the following heads.

i) Plan Loans

These loans from the central government to the states are provided the meet developmental projects under various schemes prescribed in the developmental plan pathways of the state governments. That means these are the loans for the developmental programmes of the state governments. These loans are actually prescribed in the budgetary allocation for the special developmental projects of the state.

ii) Non-Plan Loans (includes Ways and Means Advances from the Centre)

These loans are used for the non-developmental activities of the state. Means these loans are used for meeting the fiscal emergencies or liquidity issues, and so on. The non-plan loans are usually used to bridge the gap between the fiscal variables of the state. These loans help them find finance the meet Ways and Means Advances of the states. It is also used to manage the day-to-day fiscal requirements of the states.

I. Gross Transfers (I+II+III)

The gross transfer of the states includes major components such as the share in central tax, grants to the states, and loans and advances to the states. These components constitute the Finance Commission allocation of funds as well as the budgetary allocation of funds from the centre to the states. The assistance covers both the plan and non-plan assistance through various heads. The gross transfers are actually the sum of all the financial aid provided by the centre to the states for their development and non-development activities.

II. Repayment of loans and Interest Payment Liabilities

The states must always repay the loans provided by the centre to meet their financial emergencies or other developmental needs. Loans are actually a form of short-term financial assistance, and states need to repay such loans to the centre with interest. It is actually a short-term relief for states in need of finance. However, in the long term, states are needed to repay such loans provided by the centre. The main hidden component in the loans the central government makes to the states is the interest rate. The loans are actually the repayable financial assistance to the states from the centre.

a) Repayment of Loans to the Centre

The total repayable amount due from the states to the centre is included here, and the centre previously provided this amount to the states to meet their financial needs.

b) Interest Payment on the Loans from the Centre

It is the total amount of funds, other than the principal amount, provided by the centre to the states in the form of loans. It is actually the extra amount paid to the centre for using its money in the form of loans. This includes the interest charged by the central government for its financial assistance to the states in the form of loans to them.

VI. Net Transfer of Resources from the Centre (IV-V)

This is the final total amount of money transferred from the central government to the states after deducting the repayable financial assistance to the states. That means

the states do not repay this actual amount to the centre. The net transfers are the total financial support from the central government to the states for their developmental and non-developmental financial needs. The net transfers are the actual amount of central expenditure to the states for developing the state economies to contribute to the development of the country.

4.9 BUDGETARY TRANSFERS OF THE CENTRAL GOVERNMENT

The budgetary transfers of the central government to the states are identified with many of the variables that contribute to the transfer process of the central government. These components of transfers are discussed in the previous section on transfer and devolution of resources from the centre to the states. Here, the rationale for budgetary transfers from the centre to the states is discussed. These budgetary transfers are characterised by their unique nature in the transfer of financial resources from the centre to the states. It encompasses the constitutional framework for the execution of a proper pathway for the development of the economy. The central government and the state governments have two different types of expenditure provisions, and the centre has the duty to support the state governments in their developmental pathways. This constitutes the financial assistance, social assistance and special central assistance to the states. The constitutional provisions ensure the shared responsibility of the state and the centre in both economic and administrative matters. The revenue-raising capacity or powers differ between the state and the centre, creating vertical imbalances between the centre and the state. The centre is always trying to reduce the imbalances in the revenue capacity of states by providing financial assistance to states, which constitutes the reduction of horizontal imbalances in the fiscal matters. The budgetary transfers are usually used to provide financial assistance to states with the aim of horizontal fiscal equity.

The budgetary transfers are the way to provide financial assistance to states by using various components of the transfer mechanism of the central government. It is the allocation of economic resources from the central government to the states of the country. The different mechanisms are used for providing funds to states from the central government. The union budget document is a crucial instrument for

implementing the policies outlined in the agenda to transfer resources from the centre to the states. The transfer of resources from the centre to the states is crucial for the development of the states, both economically and socially. The transfers are actually meeting the obligations prescribed in the constitution by supporting the state economies for the development.

The concept of budgetary transfers is the prime responsibility of the centre, which is clearly mentioned in the fiscal federal structure of the country. Because the states are not at all capable of meeting their expenditure needs from their own income, the constitutional provisions for the transfer of financial resources from the centre to the states provide them with assistance. This understanding offers the idea to bridge the gap between revenue and expenditure of the state governments. This fiscal gap is being addressed in several aspects of state economies to cover their expenditure needs. The budgetary transfers are actually the way to meet states' financial requirements, and focus on the development goals of the states

4.9.1 PURPOSE OF BUDGETARY TRANSFERS

Budgetary transfers serve as a key mechanism for reallocating resources, supporting state priorities, and ensuring effective financial management. They strengthen state capacity to implement development programmes and maintain fiscal discipline. The primary purposes include:

1. **Fiscal equity:** Transfers help reduce disparities in states' revenue–expenditure positions, support developmental capacity, and enable states to undertake projects that enhance their fiscal health.
2. **Support for state budgets:** Central assistance guides states in planning and financing their schemes. It provides clarity on available resources and helps states structure their budget strategies effectively.
3. **Addressing horizontal imbalances:** Since states differ in their fiscal characteristics, transfers use specific criteria to equalise opportunities and support weaker regions in project implementation.

4. Policy implementation: Budgetary transfers ensure that centrally designed schemes are executed at the state level in alignment with national development priorities.
5. Regional development: Funds targeted at backward or special-attention regions promote balanced regional growth, with the centre financing schemes and states implementing them.
6. Overall supervision: Transfers enable monitoring of state-level projects, fostering coordination between the centre and states and improving programme management.
7. Crisis management: States rely on central transfers to meet unforeseen expenditures during disasters, pandemics, or economic shocks.
8. Promoting cooperative federalism: Transfers strengthen collaborative functioning between the centre and states, ensuring mutual support in policy prioritisation and implementation.
9. Balanced growth: Developmental and inequality-reducing programmes financed through transfers address state-specific issues and promote equitable growth across regions.
10. Strengthening states' fiscal structure: Performance-based transfers encourage budgetary discipline, reduce inefficiencies, and improve states' structural adjustment efforts.
11. Supporting social sector expenditure: Central transfers finance significant parts of states' social sector programmes, reinforcing development in health, education, welfare, and related areas.

Overall, budgetary transfers aim to ensure equitable development, fiscal stability, and coordinated governance across India's federal system.

4.9.2 CATEGORIES OF BUDGETARY TRANSFERS

1. Centrally Sponsored Schemes (CSS): CSS are cost-shared between the Union and States and focus on national priority sectors such as health, education, rural development, and welfare. Funds are tied to specific objectives, limiting state flexibility but ensuring uniform standards of service delivery across regions.
2. Central Sector Schemes: These schemes are fully funded by the Union Government and implemented either directly by central agencies or with states as partners. States bear no financial burden. They support programmes of national importance mainly on infrastructure, digital initiatives, and targeted welfare interventions.
3. Special Assistance / Special Purpose Grants: These flexible grants provide targeted support for capital investment, infrastructure, and reform-linked projects. They may be tied to performance or developmental milestones and are intended to address specific gaps and promote balanced growth.
4. Scheme-Based Grants and Sectoral Support: Released under various ministries, these tied grants support priority sectors like health, education, agriculture, and women and child development. They follow strict guidelines and reporting norms, helping states strengthen social sector delivery systems.
5. State-Specific or Region-Specific Packages: Need-based assistance for states or regions with notable disadvantages such as Himalayan states, the North East, drought-prone areas, or aspirational districts. These packages support infrastructure, connectivity, and livelihood development to reduce regional disparities.
6. Disaster Relief and Emergency Support (Non-FC Portion): Allocations made through the National Disaster Response Fund to help states manage calamities like floods, cyclones, or droughts. These demand-based transfers supplement Finance Commission grants and provide immediate relief during crises.

4.9.3 EVOLUTION OF BUDGET CATEGORIZATION IN TRANSFERS

Earlier, the budgetary transfers and expenditures were classified as plan and non-plan transfers and expenditures. Still, now they have been abolished totally and use a different terminology for categorising the budgetary transfers and expenditures. The new terminologies used to represent the fiscal transfers are Revenue Transfers and Capital Transfers. Like that, the expenditure is classified as Revenue Expenditure (RE) and Capital Expenditure (CE). In the transfer mechanism, the classification. This exchange of the usages of revenue and capital, instead of plan and non-plan, is carried out in the 2017-18 budget. This reform is part of the budget restructuring the simplify it.

● Before the 2017 budget reform

The broader classification of budgetary transfers is into plan and non-plan transfers. All the components of transfers are coming under these two heads. The transfers are directly linked to the developmental programmes and administrative programmes. The plan transfers represent the developmental programmes, and the non-plan transfers are related to the administrative and operational transfers. So, the plan and non-plan transfer of resources represent the purpose of transfers.

Plan transfers

The plan transfers are the long-term transfers aiming for the developmental activities of the states. The developmental perspective includes both the economic and the social development of the economy. The plan transfer considers the state plan schemes, centrally sponsored schemes, plan loans and special plan loans or assistance to the states. The objective of financing under the plan transfers is to directly focus on meeting the developmental goals of the country. The plan transfers allocate the amount of financial assistance by preparing an economic development plan before the unveiling of the budget documentation. There is no constitutional obligation, is there, to put financial aid under the plan transfers of the central government.

Non-plan transfers

The non-plan transfers are usually the special assistance, as the name indicates. The non-plan transfers are for the state's special or immediate needs. The financial assistance under this categorisation assists with emergencies or maintaining the fiscal stability in states. The non-plan transfers are not correctly prescribed, their transfer amount is not determined before the preparation of the budget, and they mention the amount of financial assistance only after considering many variables which are not in the plan of the economy. The share in central tax, revenue deficit, grants and disaster relief grants are some non-plan transfers of the central government. The non-plan transfers are purely dependent on the constitutional provisions of the statutory transfers to the states.

● After the 2017 budget reform

The plan and non-plan classification of budgetary transfers was removed in the 2017 budget reform, and after 2017, the transfers are categorised under the heads of revenue transfers and capital transfers. The classification of the revenue and capital transfers is based on the purpose of the transfer of resources from the centre to the states or the outcomes of these transfers. The transfers are actually the intergovernmental allocation of resources, so the resources are allotted with a clear objective of change in the state economies. This change is reflected in the outcome of the transfers. Hence, the division of revenue and capital transfers represents such an outcome-based classification of transfer of resources from the centre to the states through the budget. The budgetary reform of 2017-18 correctly uses the terminology of revenue and capital transfers to describe the outcomes generated by the different schemes.

Revenue transfers

The revenue transfer classification of budgetary transfers includes the programmes which are only for the development of the society. The revenue transfers include the transfer of resources of the central government to the states, which are non-asset-creating transfers. The purpose of transfers determines the classification. If they do

not generate any assets through the implementation of programmes using those funds for them, such transfers are known as the revenue transfers. The revenue transfers include transfers for Centrally Sponsored Programmes and grants, which do not create any assets in the economy.

Capital transfers

If the transfers are creating any assets in the economy through the implementation of programmes, using those transfers is called capital transfers. These transfers involve the transfers which are the creators of the assets in the economy. The investment in the infrastructural facilities is the major one under the capital transfers. Actually, the tangible and non-tangible asset creation is included in the capital transfers. The loans for the construction of capital instruments or investments in asset-creating projects are capital transfers.

4.9.4 PROBLEMS IN BUDGETARY TRANSFERS

Budgetary transfers are essential for supporting state development, but several issues reduce their efficiency and effectiveness. The major problems include:

1. Delays in fund disbursement: Bureaucratic procedures often slow down the release of funds, leaving states unable to meet immediate expenditure needs and delaying programme implementation.
2. Complex transfer structures: Multiple schemes, frequent policy changes, and shifting guidelines create confusion and administrative burden for states, complicating planning and resource use.
3. Unequal distribution of funds: Uniform schemes overlook diverse state needs, resulting in inadequate support for backward regions and widening developmental gaps.
4. Over-dependence on the Centre: States rely heavily on central transfers, raising concerns about their fiscal autonomy. Disputes frequently arise over tax devolution and prioritisation of transfers.

5. Misalignment of priorities: State-level needs often do not match national priorities, causing insufficient funding for state-specific programmes and inefficiencies in resource use.
6. Lack of transparency and clear criteria: While Finance Commission transfers follow set formulas, many budgetary transfers are discretionary, leading to opacity in allocation and inconsistent fund distribution.
7. Political interference: Transfers sometimes reflect political considerations, with states governed by the ruling party at the Centre receiving preferential treatment, undermining cooperative federalism.
8. Insufficient capital transfers: Budgetary transfers are dominated by revenue grants, limiting capital formation and slowing long-term infrastructure and social sector development.
9. Mismatch between needs and allocations: States frequently receive funds that fall short of their developmental requirements, causing tensions between state expectations and actual central support.
10. Weak monitoring of implementation: The Centre allocates funds, while states implement schemes, creating gaps in oversight and leading to delays, inefficiencies, and poor utilisation of resources.
11. Centralised programme design: Uniform schemes often ignore local conditions and limit state flexibility, resulting in poor programme fit and underutilisation of funds.

4.10 NON-BUDGETARY TRANSFERS IN INDIA'S FISCAL SYSTEM

Non-budgetary transfers refer to the financial flows from the Union to the States that do not depend on annual budget allocations, ministry-wise schemes, or discretionary spending decisions. Instead, they are governed by constitutional mandates, statutory rules, and institutional mechanisms. These transfers function outside the ordinary spending framework of the Union Budget and form the most predictable, stable, and rule-based part of India's intergovernmental fiscal relations. Unlike budgetary

transfers, which fluctuate annually based on policy priorities, sectoral allocations, and ministerial schemes, non-budgetary transfers are automatic, formula-based, and largely untied. This means states have considerable freedom to use these funds in line with their development needs. Because they are not tied to specific schemes or programmes, they directly strengthen the fiscal autonomy and governance capacity of the states. They also play a pivotal role in addressing the structural budgetary imbalance between the Centre and states, a core principle of fiscal federalism.

1. Tax Devolution: The Core of Non-Budgetary Transfers

Tax devolution is the single most significant component of non-budgetary transfers. Under Articles 270 and 280, the Finance Commission recommends what portion of the divisible pool of central taxes should be transferred to the states every year. This is done through a vertical devolution (centre–state share) and horizontal devolution (distribution among states). Because these transfers flow automatically once the President accepts the Finance Commission’s recommendations, they do not form part of scheme-specific budgeting. Tax devolution is entirely untied, creating space for states to finance welfare programmes, maintain essential services, and invest in social and infrastructure development in line with local needs. This unconditional nature makes it the most essential instrument for strengthening cooperative federalism.

2. Finance Commission Grants: Statutory but Non-Budgetary

Finance Commission grants such as revenue deficit grants, grants to local bodies, and disaster management grants are also non-budgetary because they do not arise from ministry budgets or centrally designed schemes. They are recommended once every five years and remain valid for the entire award period. They matter because they address inter-state disparities, support states that face inherent fiscal disadvantages, and provide resources to local governments, thereby strengthening decentralisation, which is another layer of budgetary federalism. Finance Commission grants operate parallel to the Union Budget but are distinct from budget-based schemes, making them central to India’s rule-based transfer system.

3. Off-Budget Institutional Transfers: Beyond the Traditional Budget

Some transfers occur outside the budget accounting framework through financial institutions or special mechanisms: Loans facilitated by institutions such as NABARD, REC, PFC, or multilateral agencies (World Bank, ADB), Funds channelled through Special Purpose Vehicles (SPVs) for missions like Smart Cities, borrowing space provided under FRBM relaxations (example: additional 0.5% fiscal space in exchange for reforms). These are not “Budget Expenditure” items but still enhance the budgetary capacity of states and function as indirect transfers.

4. Disaster Relief Transfers Beyond Budget Estimates

Although initial provisioning is made in the budget, a significant portion of disaster relief support is released outside the budget cycle. When states face severe calamities, additional assistance from the NDRF is approved through statutory guidelines and expert committee assessments, not through ministry budgets. These transfers: Allow quick responses during emergencies, operate independently of routine budgeting and support the stabilisation function of public finance.

5. GST Settlement Transfers (IGST Adjustments)

The Goods and Services Tax has created a new type of non-budgetary transfer. The Centre must settle IGST shares between the Centre and the states based on consumption patterns. These settlement transfers are formula-based, do not require budgetary allocation, and are purely statutory adjustments under GST laws. They play a crucial role in maintaining the fiscal stability of consuming states.

Non-budgetary transfers form the foundation of fiscal autonomy for states. Because they are untied, predictable, and formula-driven, they allow states to:

- Strengthen SSE (health, education, welfare)
- Build institutional capacity for service delivery
- Invest in human development priorities
- Manage day-to-day governance without excessive central control

In contrast, budgetary transfers are tied funds that reflect central priorities, leaving states less flexibility. Thus, studying the role of non-budgetary transfers helps explain variations in SSE and HDI outcomes across states, especially when combined with your empirical findings.

4.11 PATTERN OF INTERGOVERNMENTAL TRANSFERS DURING THE STUDY PERIOD

The study considers all the components of intergovernmental transfers (both devolution and transfer of resources from the centre) in India from 2004 to 2021. The analysis period witnessed significant changes in the intergovernmental transfer of financial resources in India. The major shift can be considered in different phases. These years have seen major fiscal reforms, Finance Commission recommendations, changes in scheme structures, and a historic shift in tax devolution. By addressing both vertical and horizontal budgetary imbalances, transfers ensure minimum standards of essential services and promote equitable human development across Indian States. In this study, intergovernmental transfers are recognised as a central mechanism shaping SSE and influencing variations in Human Development Index (HDI) outcomes among States. The most critical channels play a significant role in shaping SSE and human development across Indian States. The major patterns identified in the period 2004 to 2021 are given below.

- Tax devolution became the most significant component, especially after 2015 (FFC)
- Untied funds increased, giving states more flexibility to fund SSE.
- CSS share declined as schemes were rationalized and merged (core of the core, core and optional schemes).
- The Fiscal Responsibility and Budgetary Management (FRBM) Act 2003 introduced strict fiscal deficit and debt targets for both the centre and states, compelling them to adopt greater fiscal discipline and transparency in public finances.

- NITI Aayog was established in 2015, acts as India's central policy think tank guiding states on reforms, performance monitoring and effective utilisation of transfers, especially in social sectors.
- Grants remained minor but important for local bodies, health and disaster relief.
- Goods and Services Tax (GST) era changed the composition, adding compensation grants.
- COVID-19 created temporary spikes in grants for health and welfare.

4.12 TREND AND COMPOSITION OF TRANSFERS IN INDIA FROM 2004 TO 2021

Intergovernmental fiscal transfers refer to the flow of resources from the Central Government to State Governments through tax devolution, grants-in-aid, Centrally Sponsored Schemes and other forms. These transfers provide States with the financial capacity to meet their substantial responsibilities in the social sector. The primary role of transfers is to correct vertical imbalances and reduce horizontal imbalances. Between 2004 and 2021, intergovernmental transfers in India experienced a clear transformation. During 2004–2010, transfers were dominated by grants and scheme-based funding, with limited fiscal autonomy for States. The period 2010–2015 brought a more balanced mix of devolution and grants, though CSS still played a major role. The most significant shift occurred in 2015–2021 when the 14th and 15th Finance Commissions dramatically increased tax devolution, reducing central discretion and enhancing State autonomy. CSS were rationalised, grants became more targeted, and performance-based transfers gained prominence. Overall, the pattern reflects a shift from centralised, scheme-driven transfers to a more formula-based, autonomy-enhancing system centred on tax devolution. Here, Table 4.2 presents a comprehensive analytical view of the contributions of the different components of intergovernmental transfers during the study period 2004-2021.

Table 4.2

Trend and Composition of Transfers in India

Period	Tax Devolution (United)	Grants-in-Aid (FC Grants)	Centrally Sponsored Schemes (CSS)	Overall Trend	Key Notes
2004–2009 (12th FC)	Moderate and steadily rising	Stable but moderate	High share; CSS dominant	Transfers increasing moderately	Higher reliance on tied schemes; states are dependent on CSS for the social sector.
2010–2014 (13th FC)	Rising strongly	Increase in revenue deficit & local body grants	CSS restructuring begins	Transfers grow steadily	More untied fiscal space; SSE strengthened.
2015–2020 (14th FC)	Sharp increase (share raised to 42%)	Some grants reduced; local body grants increased	CSS rationalised; tied funds decline	Most considerable rise in untied transfers	Greater autonomy; SSE expands due to flexible spending.
2015 (NITI Aayog)	Support formula-based devolution	Promoted performance-linked grants	Rationalised CSS and improved efficiency by continuous monitoring	Shift towards cooperative federalism	Advocates for more autonomy to the states and a strengthened outcome-based transfer mechanism.
2017–2020 (GST period)	Stabilizes after initial rise	Grants reorganized; GST compensation becomes key	CSS streamlined; fewer schemes	Transfers are stable, but composition shifts	GST compensation crucial; states rely on grants.
2020–2021 (COVID period)	Decline due to economic slowdown	Surge in temporary health & disaster grants	CSS increases for health & welfare	Transfers volatile	Extra spending on health; borrowing limits relaxed.

Data source: Compiled from State finances: A study of budgets

The intergovernmental transfer of financial resources from the centre to the states facilitates the allocation through various channels. All the resources are distributed under the multiple channels, such as the finance commission through devolution, central ministries through centrally sponsored schemes and grants-in-aid. The transfers under different channels are considered here to understand the role and significance of these transfers in the intergovernmental transfers.

4.13 BUDGETARY ALLOCATION TO SSE

The budgetary allocation ensures the improvement in the quality of life of people in the country. The human development target ensures that the budgetary allocation to the SSEs is really the government's necessary contribution to the social sector development of the economy. It is the actual spending of the government which reflects in the outcomes of SSEs. The immediate impact is not there in the economy, but there is a long-run impact as the improvement in the human development of the country. The long-term objectives in the SSE can materialise through the budgetary allocation of the country. Actually, the budgetary allocations are the way to incorporate the government's spending with the social sectors' developmental objectives. The target of the fiscal allocation in this field is to enhance the social sectors in the economy by reducing inequality and removing poverty. The budgetary allocation to the SSEs covers the areas of education, health care, social security, housing and urban development, rural development, women and child development, water and sanitation, environment and climate change and minority affairs.

Budgetary allocation to SSE refers to the share of government resources set aside for programmes and services that aim to improve the well-being of the population. This includes spending on sectors such as education, health, nutrition, housing, water supply, sanitation, social welfare, employment schemes, and other services that directly enhance human development. When governments prepare their annual budgets, they distribute available financial resources across different sectors. The portion assigned to the social sector reflects the priority given to improving the quality of life, reducing inequalities, and promoting inclusive growth. Higher allocations generally indicate a more substantial commitment to strengthening human capabilities and expanding access to essential public services. In essence, budgetary allocation to SSE shows the government's priority for social development,

how resources are channelled to programmes that support vulnerable groups, and how public spending contributes to long-term improvements in human development outcomes.

4.14 COMPONENTS OF SSE IN THE BUDGETARY ALLOCATION

SSE includes all budgetary commitments made by the government to improve human development, reduce socio-economic disparities and strengthen overall societal well-being. Each component of SSE represents a critical area of public investment that shapes the quality of life and opportunities available to citizens. The significant components are explained below:

1. Education

Education is a foundational sector in SSE, as it builds the human capital necessary for long-term growth. Budgetary allocation supports school infrastructure, teacher training, curriculum improvement, digital learning initiatives and inclusive education for disadvantaged groups. It also covers higher education, vocational programmes and skill development to enhance employability. These investments aim to expand access, improve quality and create an equitable education system.

2. Health Care

Health expenditure under SSE focuses on strengthening public health systems, expanding hospital networks, and improving service delivery across primary, secondary and tertiary levels. Funds support disease prevention, maternal and child health, immunisation, nutrition programmes and emergency health services. By reducing financial burden on households and promoting universal access, health spending directly contributes to better human development outcomes.

3. Social Protection and Welfare

This component ensures that vulnerable sections elderly, disabled, unemployed, children, and women receive necessary support. Programmes include pensions, disability assistance, rehabilitation, welfare schemes, DBT, and social security measures. These interventions reduce poverty, protect individuals against livelihood risks and promote inclusive growth by ensuring that no group is left behind.

4. Housing and Urban Development

Urban development spending focuses on improving living conditions through affordable housing, slum redevelopment, sanitation systems, waste management, public transport and smart city initiatives. These investments address challenges emerging from rapid urbanisation, ensure basic amenities and improve the overall quality of urban life. Housing support also reduces poverty and provides security for low-income families.

5. Rural Development

Rural development targets the improvement of livelihoods and infrastructure in villages. Allocations support employment generation, rural roads, drinking water, sanitation, agriculture, allied activities and poverty eradication schemes. These programmes aim to reduce rural-urban disparities, strengthen local economies and improve socio-economic conditions for rural households.

6. Gender and Social Equity

Budgetary allocation promotes gender equality and the inclusion of marginalised communities. Funds support women's empowerment programmes, gender-responsive budgeting, initiatives for Scheduled Castes, Scheduled Tribes, minorities, and other disadvantaged groups. Programmes address discrimination, expand educational and employment opportunities, and ensure adequate political and social representation.

7. Employment and Livelihood

This component focuses on creating sustainable livelihood opportunities through skill development, entrepreneurship promotion, employment guarantee schemes and wage-support programmes. The aim is to raise income levels, reduce unemployment and strengthen economic security. These initiatives also support informal-sector workers, farmers, self-help groups, and youth.

8. Food Security

Food security expenditure ensures that all citizens have access to affordable and nutritious food. It finances the Public Distribution System (PDS), food subsidies, mid-day meal schemes, nutrition missions and agricultural productivity improvements. Strengthening food security reduces hunger, enhances nutritional outcomes and promotes a healthier population.

9. Water Supply and Sanitation

This component focuses on ensuring universal access to safe drinking water, adequate sanitation facilities, waste management and hygiene awareness. These investments improve public health, reduce water-borne diseases and support sustainable ecosystems. Programmes include rural and urban water supply schemes, Swachh Bharat initiatives and wastewater management projects.

10. Energy and Environment

Environmental sustainability and energy security are supported through investments in renewable energy, pollution control, climate-resilient infrastructure, afforestation and waste management. These allocations promote clean energy access, reduce environmental degradation and align development with sustainability goals. They also ensure that vulnerable communities are protected from climate risks.

11. Disaster Management and Resilience

Budgetary allocation to disaster management strengthens preparedness, early warning systems, response capacity and post-disaster recovery. Funds under NDMF and SDMF help states manage natural calamities such as floods, cyclones, earthquakes and droughts. This component aims to protect lives, reduce socio-economic losses and build resilient communities capable of withstanding future risks.

Together, these components form the backbone of SSE, enabling governments to meet essential social needs and promote human-centred development. The budgetary allocation to SSE ensures that education, health, welfare, housing, livelihoods and environmental safety are adequately financed laying the foundation for equitable and sustainable progress across all states.

4.15 INTERGOVERNMENTAL TRANSFERS AND SSE

The transfer of resources from the centre to the states aims to support the states in their spending on developmental activities. The prioritisation of funds across various heads focuses on the centres' support to the state to enrich its expenditure on social sector expansionary activities. The transfers are actually the financial help made by the central government to its state governments. The transfers are aiming to redistribute the funds in the various developmental activities. The main objective of transfers is to maintain equity in the economy. The central government allocates funds through direct and indirect transfers, as well as other means. The SSEs are actually the government's expenditure on various social sectors. These spending aim to achieve social development in the country. The SSE ensures the improvement in the human well-being along with the welfare of the economy. The SSE plays a prominent role in the poverty reduction and the removal of inequality in the country. The social sector spending is a significant part of the government's fiscal policy to address the social issues in the country. The essential components of SSE are education, health, social protection, housing and urban development, rural development, water and sanitation, employment and skill development, environment and wildlife, minority affairs and women and child development.

The interconnection between the transfers to the SSE is a platform for solving the social issues economically. The transfers are acting as a medium to finance the social sector development of the states through SSEs. The primary concerns of transfers under SSEs are given below.

Act as a supportive mechanism to SSE: Transfers complement the SSE. It tries to reduce the financial burdens of the government. The transfers are allocated under different social sectors as the central government expenditures in them, which create an impact on the social sectors of the economy.

Focused development targets: Transfers under the SSEs are targeted at the development concerns across the various social sectors the supporting overall social development of the economy. They try to insist on the developmental policies through the direct involvement in the spending activities. The allocation of transfers to focused areas ensures the efficiency in the satisfaction of achieving social goals in the economy.

Objective-specific approach: The allocation of funds, through the transfers to the states, sets proper objectives that must be satisfied under the specific quantity of transfers to the states. Transfers act as a medium to tackle various objectives of the central government among the states in their social sectors. The aim of the transfers is ultimately to meet the social goals of the economy through various segments of the economy, as outlined in the objectives of the transfers.

Social goal of poverty and inequality reduction: The transfers are allocated through SSE to the states, and then these expenditures are subdivided under various sectors. All the programmes under this transfer focus on a single objective: reducing poverty and inequality in the economy. The diverse programmes are financed by these transfers to reduce the poverty in the economy, along with the reduction of inequality among the individuals. Finally, transfers through the SSEs aim the improve the economy's well-being.

Contribution to Human Capital: The final destination of SSE to social sector development is nothing other than the improvement in the human capital. The transfers in all the social sectors are finally contributing to the human capital formation in the economy through the concentration of social sectoral development.

The transfers through the SSE are not done smoothly. It faces lots of difficulties in the allocation of transfers through the head of the SSE to the states. The problems in the transfers through the allocation mechanism depend on several variables that impact the economy. The main difficulties which challenge the transfers through the SSEs are budgetary constraints, the focusing issues, leakages in the transfer mechanism, corruption, improper monitoring and problems in the evaluation of the expenditures under the head of SSE in the economy. In conclusion, the interconnections between the SSEs and the transfers ensure a better outlook for financing the social sectors of the economy. There are some impediments to the transfers through the SSE, which hinder the development of a robust platform for achieving the country's social goals of economic growth. The transfers are actually creating a positive impact on the development path, and there are some challenges in the allocation and the functioning of these transfers in the economy. Even though the positive effects of the transfers minimise the hurdles to achieving the social objectives in the economy. The final route map of the transfers through the SSE ensures the way to the long-term developmental goal of the economy.

4.16 INTERGOVERNMENTAL RESOURCE FLOWS AND THE COMPOSITION OF SSE IN INDIA

The study examines how financial resources flow from the central government to the states and how these transfers shape the structure of social-sector spending. It connects the functioning of intergovernmental fiscal transfers with the way states prioritise and distribute expenditure across key social services. In essence, it highlights the linkage between resource flows within India's federal system and the composition of SSE, showing how fiscal arrangements shape social development outcomes. The following Table 4.3 shows the devolution and transfer of resources from the centre to the states, along with the composition of SSE from 2004 to 2021. The overall SSE of all the states in the country shows that the amount is much greater than the total devolution and transfer of resources. This larger amount is because the SSE is the expenditure of the state governments, so they will add their

share to expand the well-being of their people. The states use the entire transfer along with their share to develop the states through the social sectors. The relevance of this table explains the supportive role of the central government in financing the social sectors in the economy. It actually explains the blend of fiscal support and the fiscal capacity of states to achieve developmental goals.

Table 4.3

Total Devolution and transfer of resources and composition of SSE

Year	Devolution and transfer of resources from the centre to the states (amount in rupees billion)	Composition of SSE (amount in rupees billion)
2004	1010.3	1640.8
2005	1575.8	1894.3
2006	1926.7	2229.9
2007	2473.0	2654.7
2008	2791.2	3315.4
2009	3030.1	3929.4
2010	3738.1	4519.4
2011	4325.4	5235.7
2012	4721.8	6029.4
2013	5159.7	6792.0
2014	6613.2	8300.6
2015	8249.2	9689.4
2016	9617.8	11281.9
2017	10055.3	12257.2
2018	11849.3	13427.2
2019	11858.6	14103.3
2020	13654.3	15120.9
2021	16750.0	17163.7

Data source: Compiled from State finances: A study of budgets and handbook of statistics on the Indian economy.

Table 4.3 shows an increasing trend in SSE along with the devolution and transfer of resources from the centre to the states. The parallel upward trend suggests that

higher central transfers have supported states in expanding their social sector commitments. This relationship highlights the crucial role of fiscal federalism in enabling social development, with increased resource flows helping states enhance service delivery and improve human development outcomes. However, the States receive significant resources from the Centre through tax devolution, grants-in-aid, and centrally sponsored schemes, amounting to the overall SSE, which is higher than the transfers. This is because SSE is financed not only through central transfers but also through States' own tax revenue, non-tax revenue, borrowings, and internal reallocation of resources. Since social sector development is primarily a State responsibility, States must allocate substantial portions of their own budgets to education, health, welfare, and related sectors. Therefore, it is normal and expected that overall SSE exceeds the amount of devolution and transfers from the Centre.

4.17 BUDGETARY LINKAGES BETWEEN TOTAL EXPENDITURE AND SSE

The Total Expenditure of the Central Government represents the combined revenue and capital spending undertaken to fulfil its administrative, developmental, and welfare responsibilities. SSE forms a significant component of this spending and includes allocations for education, health, nutrition, housing, rural development, and other social services aimed at improving human capabilities. The share of SSE in total expenditure is expressed as a percentage, reflecting the priority accorded to human development in the Union Budget. A higher percentage signifies more substantial government commitment to social welfare and inclusive growth, whereas a lower share indicates competing fiscal pressures from economic services, defence, subsidies, and interest payments. The following Table 4.4 presents the total expenditure of the central government along with the proportion of SSE expressed as a percentage of total spending.

Table No. 4.4**Total Expenditure of the central government and percentage of SSE to Total Expenditure**

Year	Total Expenditure of the Central Government (in rupees billion)	SSE to Total Expenditure (per cent)
2004	4655.8	29.6
2005	5057.4	33.7
2006	5833.9	33.9
2007	7126.7	35.3
2008	8839.6	37.6
2009	10244.9	38.7
2010	11973.3	39.0
2011	13043.7	38.7
2012	14103.7	39.3
2013	15594.5	39.8
2014	16636.7	41.0
2015	17907.8	41.1
2016	19751.9	41.7
2017	21419.7	41.1
2018	23151.1	40.2
2019	26863.3	40.4
2020	35098.4	40.9
2021	37938.0	40.6

Data source: Compiled from State Finances: A study of Budgets and Handbook of Statistics on the Indian Economy

Table 4.4 shows that as total expenditure increased, the proportion of SSE also rose, especially after 2005. The sharp rise between 2004 and 2010 (from 29.6% to 39%) reflects the expansion of the social sector through schemes such as MGNREGA, NHM, SSA, and the implementation of the RTE Act. Between 2014 and 2021, the SSE share stabilised around 40–41%, indicating that nearly two-fifths of the Union Budget was consistently allocated to social development. This demonstrates a firm policy commitment to inclusive growth, welfare delivery, and strengthening human

development outcomes. The data from 2004 to 2021 shows a consistent rise in the Total Expenditure of the Central Government, accompanied by a steady increase in the proportion of spending directed towards the social sector. This reflects both the expansion of the Union Budget and the increasing priority accorded to social development. The period from 2004 to 2021 shows a strong positive relationship between the central government's total expenditure and the SSE share. While total spending expanded from ₹4,655.8 billion to ₹37,938 billion, the proportion of SSE rose from 29.6% to around 40–41%. This indicates that as the Union Budget grew, the government progressively increased the priority accorded to social development. By stabilising SSE at roughly two-fifths of total expenditure in the later years, the central government demonstrated a sustained commitment to human development, welfare programmes, and inclusive growth. The simultaneous increase in both total expenditure and SSE share suggests the government created greater fiscal space while protecting and expanding social spending. The stability around 40% after 2014 indicates a structural prioritisation of social sectors in the federal budgetary framework.

4.18 SSE OF THE STATES

SSE is the government's spending on various social services within the economy. The social services include the public services provided by the different governments, like the central government, state government and local governments. These social services aim at the social well-being of the people in the economy. The state governments are playing an integral role in the social sector spending for ensuring the development of many social sectors of the economy. The total SSE is divided between the centre and the states, with the significant share carried out by the states to implement it better. The total SSE reflects the combined share of the centre and the state in social sector development programmes. It is clearly mentioned in the programmes under centrally sponsored schemes for the social sector development of the country. The SSE of the states ensures the states and the centre's contributions to the social sector development programmes under SSE. The total transfers of the central government provide states with a share in the tax

devolution, and this is a significant source of revenue to the states, along with the own tax revenue. The states' share in SSE is taken from the total state pool of revenue.

The SSE of the states is the fundamental determinant of social-sector development in the economy. The amount spent under the SSE of the states is reflected in the state's social sector development. Actually, the SSE is the funds allocated by the state government for the implementation of various programmes for the social sector development of the economy. The expenditures under social sectors focus on the improvements in health, education, housing, water and sanitation, welfare programmes and other services. The aim of the social sector spending of the state governments is to improve the quality of life of their people in terms of social sector development. The state economies are mainly concentrating on various schemes which are suitable for their development goals and targeted groups in the development process. The state economies are always trying to implement such schemes to ensure the development of the people. All the programmes under the social sector development are financed by both the centre and the state through the SSE and implemented by the state governments. The state governments are ensuring a significant share of their public expenditure for the implementation of the schemes suitable with their developmental objectives.

The states are always concentrating on the spending under SSE in the areas of education, health, housing, social welfare and rural development of the state economies. The recent trends in the state's spending in the SSE show a drastic increase in the funding for the programmes. The majority of the programmes under social sector development are considered the government's flagship programmes, administered through the SSE head. The states are closely monitoring the implementation and focus of these flagship programmes to accelerate development in the social sectors. The other side of the expenditure under the social sectors is concentrating on the decentralised programmes by different layers of government. The state government are in power to execute all the decentralised social sector

development programmes with effective monitoring of the schemes' financing process.

The significant contribution of states in the SSE lies in major programmes for the social sector development. States are concentrating their spending on health, education, welfare programmes and the programmes for rural development of the state economies. The dominant contribution is made to reduce the regional disparities in the development programmes. Regional inequality plays a significant role in the hurdle to the development of the specific region in the economy. It restricts the development path in the stipulated area of the economy. In this respect, the state economies are more concentrated on the expenditure for reducing the regional disparities among the states. The other developmental hurdles of the state economy in the financial stringency on SSE are fiscal constraints and inefficient utilisation of funds. In conclusion, the state's role in the SSE is inevitable and significant, impacting the economy. The centre's role is to finance the schemes, and states are playing a dual role both in the financing and the implementing the schemes. The states need to ensure the necessary steps for a better role in the SSE for better performance in the development of the states. The policies, such as coordinated execution of the programmes, strategic investment plans and outcome-based funding, help the state economies to ensure improvement in the social sector development through the enhancement in SSE of the states.

4.19 SSE AND SOCIAL SECTOR OUTCOMES

SSE refers to the government's spending on various social sectors to improve society's well-being. The social sector outcome represents the results of concentrating on the investments in the social sector. By combining both the terminologies, the concept explains the input and output analysis in social sector development. Here, the input for social sector development is actually the SSE in it, and the output is the result of the proper utilisation of this expenditure for the development of social sectors. In this area, input-output analysis is a topic of discussion in the country's social sector development. The SSE is on one side, which is used for the development of various sectors under this developmental concern.

The measurement of the impact of this SSE determines the other side of the development. The outcome is reflected in the social indicators of development as the output from this SSE under various schemes.

The relation between this outcome-based analysis explains the inner connections of the SSE in various sectors of the economy. The direct relation to social sector development is that investments in SSE focus on the improvement in the social indicators of development, such as improvement in demographic indicators and the output levels of the economy. It can be briefly explained in the following points.

- **Direct correlation:** The relationship between SSE and the social sector indicators of development. This includes the improvement in the human developmental indicators. The increase in Literacy Rate, Life Expectancy, Gross Enrolment Ratio (GER), reduction in Infant Mortality, Maternal Mortality and improvement in the Income and capital formation of the economy. The more spending on social sector components, surely, reflects in the developmental indicators. Kerala and Tamil Nadu provide an example of more investments in education and health, resulting in a higher Human Development Index (HDI) for them than for the other states.
- **Quality matters:** Quality is always a matter when we consider the outcome of an activity. Here, the SSE provides adequate funds to improve the performance of social-sector variables, ensuring high-quality development outcomes in the economy. More and more spending on social sectors never ensures a qualitative result in the developmental outcomes. There are various other factors which determine the quality of the outcomes in the social sector spending in the country. The improvement in outcomes is based on the efficiency in the implementation, utilisation of funds and the governance. So, simultaneously, the efficiency in allocation, utilisation, and implementation provides a foundation for quality-based results in the SSE for social sector development. Here, quantity is a matter, but too much stress on it never generates a good result in the outcomes.

- Equality in consideration: The targeted group is always a matter in the social sector development of the economy. The significant role of an inclusive growth strategy ensures sufficient spending on various programmes for marginalised and vulnerable classes of the society. The equitable resource allocation through the social sector spending provides a notable contribution to the social sector development of the economy. The equal consideration of all regions in the country is essential to make a significant impact on the social sector development of the economy. The inclusion of the disadvantaged section generates a crucial effect on the outcome-based development of the economy for the ordinary people in the country.
- Input-based results: The concentration of SSE determines the expected outcome from it in the form of social sector development. More concentration on spending can ensure a balanced concentration on the implementation efficiency of the programmes. The sufficient amount of expenditure creates its stimulus impact in the social sector development in terms of the development indicators of social sector improvements.
- Special attention matters: The significant concentration on the special areas of social sector development makes the process faster. The special attention to critical areas of social sector development, such as the education and health of the disadvantaged, has a significant impact on their growth and is reflected in the overall development of society. So the focus on the major areas is a key to developing social sectors through sufficient investments in SSEs at the head of the economy.

The majority of the social services are directly targeting the beneficiaries, and they use AADHAR as the primary document to provide benefits or social service delivery. The direct benefit transfer system is used to ensure the proper delivery of services, which constitutes the accuracy in outcome generation of the social services. The direct connecting policies of spending to the beneficiaries are providing the real return in the social sectors. The significant challenges in the way from expenditure to the outcomes are inefficient implementation of the schemes,

leakages of funding in different layers, ignorance of regional disparities, improper targeting of various groups, improper dispensing of resources and the inefficient evaluation of the schemes. So, it is mandatory to conduct a proper assessment to ensure the allocation and utilisation of resources make a significant impact on the economy. The SSE plays a crucial role in generating notable improvements in the social sector development of the economy. The higher expenditure complements the higher output in social sector development by ensuring a higher quality of life for the population.

CHAPTER V

SOCIAL SECTOR EXPENDITURE (SSE) AND SOCIAL SECTOR DEVELOPMENT (SSD) IN INDIA: CONCEPTS, PATTERNS AND INTERLINKAGES

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- 5.1 *Understanding the Concept of SSE in India*
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5.1 UNDERSTANDING THE CONCEPT OF SSE IN INDIA

The SSE refers to the portion of government spending directed toward improving the social and economic well-being of the population. It includes public investments in essential services such as education, healthcare, nutrition, social welfare, housing, water supply and sanitation, rural and urban development, labour and employment, and other services that contribute to human development. The core idea behind SSE is that the state plays a crucial role in expanding human capabilities and ensuring equitable access to basic services. By allocating resources to the social sectors, governments aim to reduce poverty, promote social equity, strengthen social security systems, and support long-term development outcomes. Higher levels of SSE typically reflect strong policy commitment to inclusive growth, particularly for vulnerable and marginalised groups.

SSE also acts as an indicator of how governments prioritise human development within their fiscal frameworks. It shows the extent to which public resources are channelled towards improving the quality of life, building human capital, and creating opportunities for social and economic advancement. In this sense, SSE is not only a financial measure but also a reflection of the developmental approach adopted by the state. The SSE, in other words, is the government's investment in the social sectors of the economy. It is actually the financial resources allotted by the government to different industries. The prior studies focused on the need to improve India's expenditure on education and health for further development to reach the developed economies, and India spends only 8 per cent of its GDP on the social sectors (Mate, Singh and others 2018).

SSE means the government's spending on various developmental social sectors done by the government. The spending is aiming to target the key social sectors for enriching the outcomes of social development of the economy. All the expenses under the social sectors aim to improve the standard of living of individuals in the society. The costs focus on various aspects of human life to develop the economy

through social-sector development programmes. The agenda of inclusive growth ensures greater spending across various social sectors. The social sector expenses provide the root for the development of the society, ensuring the people's participation through different programmes. The aims of the SSE exhibit the focus on the reduction of inequality, nurturing the inclusive growth strategies and improving the quality of life. The major heads under the SSE cater to the social needs of the significant sectors of social sector development, such as education, health, social welfare, rural and urban development, and so on. The expenses under the social sectors provide the investments in the essential services of the social sectors. The investments are concentrated on the expansion of human development through the programmes under the social sectors. These programmes need financial backup in the name of SSE.

SSE represents the collective public spending directed toward improving the well-being, capabilities, and quality of life of citizens. It encompasses government expenditure on essential sectors such as education, health, nutrition, social security, sanitation, housing, welfare programmes, and other human development-oriented services. As these sectors directly influence the enhancement of human capabilities, SSE forms the backbone of inclusive development and equitable growth in any economy. In the Indian context, SSE plays a particularly crucial role due to the country's demographic diversity, regional disparities, and varying socio-economic conditions across states. Through sustained investments in the social sector, governments aim to reduce deprivation, expand opportunities, strengthen human capital, and ensure a minimum standard of living for all citizens. Social expenditure also acts as a stabilising force during economic shocks by protecting vulnerable groups through targeted welfare programmes and safety nets.

Fiscal federalism significantly shapes the composition and distribution of SSE in India. With responsibilities for social sectors primarily assigned to the states, the availability of adequate budgetary resources—obtained through tax devolution, grants, centrally sponsored schemes, and state-generated revenues—determines the

scale and effectiveness of social investments. Over time, SSE has expanded in both scope and scale, reflecting the government's commitment to human development and alignment with global frameworks such as the Sustainable Development Goals (SDGs). Generally, SSE is not merely a budgetary category but a developmental instrument that enables states to translate economic gains into social progress. The level, pattern, and efficiency of SSE therefore serve as important indicators of a country's political will and institutional capacity to achieve inclusive and sustainable development.

5.2 FACTORS INFLUENCING SSE IN INDIA

The SSE is the allocation of resources from the central government to its states for financing the social needs of the society. It refers to the financial transfer of resources to diverse programmes under the head of the SSE of the states. The central government actually allocates the funds for meeting the expenses of different programmes and initiatives coming under the social sectors. The programmes are aiming for the welfare of the individuals in the society. The SSEs are the public expenditure or government spending on the various social sectors. This spending includes the transfers as well as the public expenditure through the budget. The actual spending in the social sectors provides for the transfer of resources through different channels and the public expenditure. Finally, all the spending under the SSE is carried out through the budget allocation of resources to them. So, the total SSE is represented by the budgetary allocation to the social sectors through all the channels. Even though the SSEs are the expenditures for the implementation of diverse programmes and initiatives for satisfying the needs. The SSE facilitates the welfare of various social sectors in the economy, such as education, health, social welfare, sanitation, women and child development and so on. The amount of spending under the SSE depends on many the factors, such as economic, political, and institutional factors. There are many factors which influence the SSE of the centre, and some of the significant factors identified in the study are listed in the Table 5.1.

Table 5.1**Factors influencing SSE in India**

Sl. No.	Factors	
1	Economic factors	a. Fiscal Capacity b. Economic Growth c. Debt and Deficits d. Inflation
2	Political factors	a. Government Priorities and Ideology b. Political Stability c. Electoral Pressures: Influence of Interest Groups
3	Social factors	a. Demographic Changes b. Inequality and Poverty c. Public Demand and Awareness d. Cultural Attitudes and Social Norms
4	Institutional and structural factors	a. Administrative Capacity b. Decentralisation and Federalism c. Globalisation and External Influences d. Bureaucratic Processes and Accountability
5	Legal and constitutional factors	a. Legal Framework and Constitutional Obligations b. Judicial Interventions
6	External shocks	a. Natural Disasters and Emergencies b. Global Economic Conditions
7	Technological factors	a. Technology and Innovation b. Automation and Labour Market changes

Data source: Compiled from literature

The detailed explanation of each factor influencing the SSE in the country is given under the respective heads.

SSE in India is shaped by a wide range of economic, political, social, institutional, legal, external, and technological factors. These determinants influence not only

how much is spent but also how effectively social spending is planned, prioritised, and delivered.

1. Economic Factors

- a. **Fiscal Capacity:** The ability of the Centre and states to mobilise revenue determines the level of SSE. States with stronger fiscal capacity can allocate more resources to education, health, welfare, and basic services. Criteria-based devolution by the Finance Commission also reflects differences in budgetary capacity across states.
- b. **Economic Growth:** Periods of high growth expand fiscal space and allow governments to increase spending on new social programmes. During slowdowns, governments often restrict spending to essential schemes, limiting the scope for expanding SSE.
- c. **Debt and Deficits:** High debt levels and fiscal deficits reduce the funds available for social programmes. States with significant debt burdens prioritise fiscal consolidation over welfare expansion, resulting in lower SSE.
- d. **Inflation:** Persistent inflation reduces the real value of budget allocations. Rising costs make earlier allocations insufficient, reducing the efficiency of service delivery and weakening the impact of social programmes.

2. Political Factors

- a. **Government Priorities and Ideology:** Welfare-oriented governments tend to increase spending on education, health, housing and welfare. Market-oriented or fiscally conservative governments emphasise efficiency, targeted schemes, and limited public spending. Political ideology thus shapes the volume and direction of SSE.
- b. **Political Stability:** Stable governments can plan and implement long-term social programmes. Political instability, frequent leadership changes or coalition pressures often disrupt social spending and weaken implementation.

- c. Electoral Pressures: Elections influence SSE, with governments increasing allocations to welfare schemes, subsidies and employment programmes to gain voter support. Such spending may rise temporarily due to political competition.
- d. Influence of Interest Groups: Teachers' unions, health associations, NGOs, and civil society groups play a role in shaping SSE priorities. Their advocacy and lobbying influence budget allocations toward particular social sectors.

3. Social Factors

- a. Demographic Changes: Population growth, ageing, youth bulges, and changing dependency ratios increase pressure on education, healthcare, and welfare systems. These demographic shifts necessitate higher SSE.
- b. Inequality and Poverty: High levels of poverty and social exclusion require targeted social spending to reduce vulnerability. States with larger socio-economic disparities demand greater investment in welfare and basic services.
- c. Public Demand and Awareness: Greater awareness of rights and rising expectations for quality public services place pressure on governments to expand SSE. Media, community mobilisation and citizen participation influence spending decisions.
- d. Cultural and Social Norms: Values relating to education, gender roles and social inclusion affect the type and scale of social spending required. Addressing caste, gender or ethnic inequalities requires targeted programmes and higher spending.

4. Institutional and Structural Factors

- a. Administrative Capacity: Effective planning, budgeting and monitoring systems determine how well social spending is utilised. Strong administrative capacity enables higher and more efficient SSE.

- b. Decentralisation and Federalism: Greater fiscal autonomy and devolution empower states and local bodies to allocate more funds to social sectors. Variations in decentralisation across states lead to differences in SSE.
- c. Globalisation and External Influences: International commitments (such as SDGs), global norms, and economic shocks influence domestic social spending. External economic pressures may either expand or constrain social budgets.
- d. Bureaucratic Processes and Accountability: Transparent systems, strong audits, and accountability mechanisms improve spending utilisation. Weak governance reduces efficiency and discourages the expansion of SSE.

5. Legal and Constitutional Factors

- a. Constitutional Obligations: Mandates such as free and compulsory education, public health, welfare of weaker sections, and gender equality compel governments to allocate funds to social sectors. Statutory laws like RTE and NFSA create binding spending commitments.
- b. Judicial Interventions Courts influence social spending through directives and judgments related to education, health, nutrition and social justice. Judicial activism often pushes governments to increase allocations or improve service delivery.

6. External Shocks

- a. Natural Disasters and Emergencies: Floods, droughts, cyclones, pandemics and other crises create immediate needs for relief, healthcare, welfare support and rehabilitation. These events lead to sudden increases in SSE.
- b. Global Economic Conditions: Global recessions, financial crises and commodity price fluctuations affect India's fiscal capacity. Slowdowns reduce revenue and constrain SSE, while favourable conditions may expand budgetary space.

7. Technological Factors

- a. Technology and Innovation: Adoption of digital platforms, telemedicine, e-learning, e-governance and data systems requires new investments but also improves service delivery. Technology-enabled programmes often increase the efficiency and reach of SSE.
- b. Automation and Labour Market Changes: Automation shifts employment patterns, increasing the need for skill development, retraining and social protection. Governments must adjust SSE to support workers affected by technological change.

A complex interaction of economic conditions, political priorities, social needs, institutional capacity, legal mandates and external challenges shapes SSE in India. Understanding these factors helps explain variations in spending across states and periods. It highlights the importance of strengthening fiscal space, governance systems and social institutions to ensure effective and equitable social sector development.

5.3 UNDERSTANDING THE SOCIAL SECTORS IN INDIA

The social sectors are the main contributors to the overall development of the economy. The social sectors play a significant role in contributing to the human development by employing their components in the developmental process. The basic facilities for the human life are coming under various heads of social sectors. There are so many variables which influence the social sectors and which contribute to the social sectors in the economic prosperity. The primary focus of the social sectors is on the generation of human capital and its determinants. The social sectors are the broad areas that fall under the social sector of the development process in the economy. They are really the supporting sectors of the overall development of the economy. The social sectors are aiming to improve the quality of life of human beings in the society, and they focus the well-being. The social sectors generally target the inclusion of all individuals in the developmental process, and they mainly focus on the marginalised sections of the society. These sectors are rightly focusing

on the inclusion of multiple sectors in the developmental activities. The major social sectors are health, education, infrastructure, housing, social protection and social inclusion, rural development, and employment. The act of segmentation in various sectors of society promotes the societal development and thereby the economic development. The idea of social sectors refers to the broader set of social sectors that contribute to the development of the economy. The sectors are divided systematically to represent the society's needs through the partition of different sectors for focusing on them. The comprehensive idea of social sectors is the specialised sectors of the concept of social development in the economic development. The development of these sectors is aimed at sector-specific growth. For that sector-wise growth, the government uses different developmental tools and applies them to diverse strategic policies of the government. The targets are concentrating on the various goals to reach the final destination of social sector development.

The social services are actually the programmes coming under the head of the social sectors. That means the social services are the various service heads of the social sectors within the economic activities. All the programmes and policy implementations are used by the head of social services as the subset of social sectors to deliver the services coming under various social sectors in the economy. All the services are mentioned in the union budget of multiple governments under the expenditure head of social services. The social services are generally the specialisation of the social sector services delivery process. These are actually the application side of social sector development in the economy. The budget documents are the supreme provider of allocation of funds under the head of social services. These expenses are used to further improve various social sectors, such as health, education, and social protection.

In general, the social services are the specific programmes of the government to ensure the social sector development in the development process by allocating funds under different social sectors of the economy. These social services allow the direct assistance to provide SSEs to the economic activities. The funds are allocated

through budgetary transfers to the respective heads. The services are aiming to support the sectors in ensuring the needy sections of the society. The key fact about social services is that they cater for the specific programmes of the government to meet the sectoral growth of the prescribed social sectors in the economy. The actual understanding of social services is the international programmes done by various government initiatives to meet the sectoral advancement of the social sectors. While social sectors are the general structure of the development, social services are the practical side of these social sectors in the economy. The social services ensure the direct delivery of social services. They are concentrating on the target groups in their activities, like the implementation of minority programmes, welfare programmes, the number of hospitals coming under various projects, the number of schools coming under multiple programmes, etc. In short, the social services are the tools used to achieve the developmental goals of the social sectors in the economy. The social services are considered under the category of the social sector in the Budget documents of the central government. The social sector programmes and expenditures are spent through the different services provided by the head of social services. There are nine sub-sectors of social sectors classified under the head of social services. The following chart gives a detailed conceptualisation of the social services in the economy.

5.4 TYPOLOGY OF SOCIAL SECTORS: SERVICE-BASED CLASSIFICATION

The classification of social sectors in India is understood through two complementary frameworks: the functional classification used in government budgeting and the policy-based classification used for development planning and analysis.

Under the functional classification, defined by the Ministry of Finance and standardised by the Comptroller and Auditor General (CAG), SSE is grouped under the accounting head “Social Services.” This includes major functional areas such as education, health, water supply and sanitation, housing, urban development, social welfare, labour welfare, nutrition, welfare of SC/ST/OBC, disaster relief, and other social services. This classification reflects the official accounting structure and

shows how public expenditure is organised by the functions or services delivered by the government. In contrast, the policy-based classification, used by the Finance Commission, RBI, MOSPI, and NITI Aayog, adopts a broader developmental perspective. It includes not only the traditional social services but also sectors such as rural development, poverty alleviation, employment programmes, women and child development, social protection, and welfare of vulnerable groups. This classification captures the entire spectrum of government interventions that influence human development and social well-being. Together, these two classifications provide a comprehensive understanding of the social sectors. The functional classification ensures consistency and comparability in budgeting, while the policy-based classification highlights development priorities and welfare objectives. Using both frameworks allows for a more accurate assessment of SSE and its role in improving human development outcomes in India.

In this study, we are concentrating on the development outcomes, so the developmental priorities have a significant role. In this respect, the further analytical tools consider the policy-based classification of social sectors in India to provide a clear direction for concluding. In short, the study uses policy-based classification of social sectors for further analysis. Both classifications are briefly explained under the following heads.

5.4.1 FUNCTIONAL CLASSIFICATION OF SOCIAL SECTORS (BUDGETARY CLASSIFICATION OF SOCIAL SECTORS IN INDIA)

India's budgetary system classifies expenditure by function, meaning it records what the government spends money on, rather than which department spends it. This functional classification, defined by the Ministry of Finance and standardised by the Comptroller and Auditor General (CAG), helps policymakers and researchers understand government priorities, evaluate expenditure effectiveness, and analyse how public spending aligns with developmental goals especially in social sectors such as health, education and welfare.

Within this framework, Social Sector Expenditure (SSE) appears under the major budget head "Social Services." Social services represent the applied side of social-

sector development they are the specific schemes, programmes and interventions designed to deliver tangible benefits such as schools, hospitals, housing, nutrition, employment and welfare support. While the social sector represents broad thematic areas, social services reflect the actual mechanisms through which development occurs. To organise this spending, the Government of India classifies social services into nine broad functional sub-sectors. These categories capture both core social services and complementary service areas that support human development.

1. Education: Education receives a significant share of SSE because it strengthens human capital, improves literacy, and enhances productivity. Budgetary allocation covers:

- Early childhood, primary and secondary schooling
- Higher education and universities
- Technical and vocational training
- Teacher education and training
- Digital and inclusive education
- Educational infrastructure
- Research and innovation

Investment in education is directly linked with economic growth, social mobility and poverty reduction. It ensures equitable opportunities and builds a skilled workforce for the future.

2. Healthcare: Health spending aims to create an accessible, affordable and quality public health system. Key components include:

- Primary, secondary and tertiary healthcare
- Disease prevention and public health programmes
- Health insurance subsidies
- Investment in hospitals, labs and medical equipment
- Research, training and public health workforce development

- Emergency preparedness and digital health

A strong health system improves life expectancy, reduces mortality, enhances productivity and strengthens national human development.

3. Social Protection: Social protection provides safety nets for the poor, vulnerable, and excluded. Expenditure includes:

- Social insurance (pensions, disability benefits)
- Social assistance (cash transfers, welfare schemes)
- Child and family welfare programmes
- Labour welfare and employment-linked schemes
- Disaster relief and emergency support

These programmes reduce poverty, mitigate risks and promote equity by safeguarding individuals from economic and social vulnerabilities.

4. Housing and Urban Development: This component focuses on improving living conditions and managing rapid urbanisation. Allocation supports the following:

- Affordable housing schemes
- Slum redevelopment and urban rehabilitation
- Urban infrastructure (roads, water, sanitation, transport)
- Waste management and sustainable urban planning
- Smart city and urban renewal programmes
- Housing resilience and disaster-proof construction

These interventions enhance quality of life and reduce urban inequality.

5. Food Security and Nutrition: Food and nutrition spending ensures that all citizens have access to safe, sufficient and nutritious food. This includes:

- Public Distribution System (PDS)
- Food subsidies
- Nutrition programmes (ICDS, mid-day meals, Poshan Schemes)

- Agricultural support to stabilise food supply

Improved nutrition directly supports human development, better learning outcomes, and healthier populations.

6. Employment Programmes: Employment-related allocations aim to create work opportunities, upgrade skills, and improve income security. Major components include:

- Public works and employment guarantee programmes (e.g., MGNREGS)
- Vocational training and skill development
- Entrepreneurship and self-employment schemes
- Wage subsidies and youth employment initiatives
- Livelihood promotion in rural and urban areas

These programmes reduce unemployment, support vulnerable workers and enhance economic productivity.

7. Women and Child Development: This functional head focuses on protecting and empowering women and children, two groups central to human development.

Key areas include:

- Maternal and child health
- Nutrition supplementation
- Women's safety and empowerment programmes
- Child protection services
- Education and skill-building initiatives for women

Programmes such as Poshan Abhiyan, Mission Shakti and PMMVY fall under this category and contribute significantly to gender equality and inclusive development.

8. Welfare of Marginalised Groups: This category includes targeted schemes for Scheduled Castes, Scheduled Tribes, OBCs, minorities, PwDs and other disadvantaged communities. It supports:

- Education scholarships
- Health and housing benefits
- Skill development and entrepreneurship
- Social security programmes
- Economic assistance and infrastructure for marginalised communities

These interventions promote social justice, reduce inequalities and ensure inclusive growth.

9. Environmental and Community Services: This head reflects the increasing focus on sustainable development and community well-being. It includes spending on:

- Forestry and wildlife conservation
- Pollution control and climate change initiatives
- Resource management and environmental protection
- Community welfare services
- Disaster mitigation and resilience programmes

Sustainability-oriented spending helps protect ecosystems, build resilience and support long-term human development.

The functional classification of social sectors in India provides a structured framework for understanding how government spending is directed toward human development. Dividing social-sector expenditure into nine functional areas enables precise charting of government priorities, promotes transparency, assists policy evaluation, and strengthens the alignment between budgetary spending and social outcomes.

5.4.2 POLICY-BASED CLASSIFICATION OF SOCIAL SECTORS (USED BY FINANCE COMMISSION (FC), RESERVE BANK OF INDIA (RBI) AND THE MINISTRY OF STATISTICS AND PROGRAMME IMPLEMENTATION (MOSPI))

Alongside the functional classification used in government accounting, India also follows a policy-based classification of social sectors. This method is widely used by key national institutions such as the Finance Commission, the Reserve Bank of India (RBI) and the Ministry of Statistics and Programme Implementation (MOSPI), unlike the functional classification, which strictly follows accounting heads. This policy-based approach groups expenditures according to developmental priorities, welfare objectives and the broader role of the state in human development. It reflects the purpose behind expenditure rather than the department executing it. The RBI's widely adopted framework classifies social-sector expenditure into eleven major categories plus a residual "others" category. These categories provide a clear understanding of India's social policy commitments and help compare expenditures across states and between the Centre and states.

1. Education, Sports, Art and Culture: This category captures expenditure on the full spectrum of educational activities, ranging from primary schooling to universities and technical institutions. It includes:

- School infrastructure, teaching-learning resources, and scholarships
- Higher education and research institutions
- Vocational and skill training
- Promotion of sports infrastructure and athletic development
- Preservation and promotion of art, culture, museums, libraries and heritage

These expenditures build human capital, foster innovation, preserve cultural identity and contribute directly to national productivity and social development.

2. Medical and Public Health: This head covers investments aimed at strengthening healthcare delivery and improving public health outcomes. Key areas include:

- Construction and maintenance of hospitals and health centres
- Immunisation and disease eradication programmes
- Public health surveillance, sanitation and hygiene programmes
- Health insurance schemes and subsidies

These expenditures improve population health, reduce mortality rates and strengthen the resilience of the healthcare system.

3. Family Welfare: This category focuses on demographic stability and maternal-child health. Components include:

- Family planning and reproductive health services
- Maternal and infant healthcare
- Awareness programmes on contraception and reproductive rights

Investments here reduce maternal and infant mortality, ensure balanced population growth and contribute to long-term human development.

4. Water Supply and Sanitation: Ensures the provision of basic amenities essential for human survival and public health. Expenditure includes:

- Safe drinking water in rural and urban areas
- Toilet construction and sanitation facilities
- Water conservation and management programmes

These programmes improve health outcomes, reduce disease burden and support environmental sustainability.

5. Housing: This includes schemes to provide shelter and housing support to various socio-economic groups. It covers:

Affordable housing schemes

- Slum rehabilitation projects
- Rural and urban housing subsidies

By ensuring safe shelter, these programmes reduce poverty and enhance the dignity and security of households.

6. Urban Development: Urban development expenditure focuses on improving the infrastructure and livability of urban centres. It includes:

- Roads, public transport, communication networks
- Public parks, markets and civic amenities
- Smart city initiatives
- Urban renewal and redevelopment

These programmes support sustainable urbanisation and promote balanced regional development.

7. Welfare of Scheduled Castes, Scheduled Tribes and Other Backwards Communities: This category focuses on affirmative action and targeted welfare for historically marginalised groups. Expenditure covers:

- Educational scholarships and hostels
- Skill development and employment programmes
- Social inclusion initiatives
- Housing, health and basic service provision

These interventions promote social justice, reduce inequalities and enhance participation of marginalised groups in development.

8. Labour and Labour Welfare: Focuses on supporting the working population and improving labour standards. Components include:

- Social security measures such as pensions and insurance
- Skill development and worker training
- Workplace safety and enforcement of labour laws
- Minimum wage implementation

A strong labour welfare system improves productivity, protects workers and contributes to economic stability.

9. Social Security and Welfare: These expenditures cater to vulnerable population groups who require support for survival and dignified living. It includes:

- Pensions for the elderly, widows and disabled persons
- Rehabilitation services
- Welfare schemes for destitute and economically weak groups

Social security enhances welfare outcomes and protects individuals from risks and shocks.

10. Nutrition: Targets improvements in nutritional status across age groups, especially among pregnant women, infants and children. Major programmes include:

- Mid-day meals in schools
- Integrated Child Development Services (ICDS)
- Supplementary nutrition for pregnant and lactating mothers

These expenditures reduce malnutrition, improve learning outcomes and contribute to human capital formation.

11. Expenditure on Natural Calamities: This head includes expenditure for relief, rehabilitation and reconstruction after disasters such as floods, cyclones, droughts and earthquakes. It covers:

- Immediate relief and compensation
- Restoration of damaged infrastructure
- Disaster response and preparedness

These expenditures help states recover from shocks and minimise long-term economic losses.

12. Others: The residual category includes miscellaneous social-sector expenditures not covered elsewhere, such as administrative costs, support services, and other welfare schemes. It ensures that important but smaller programmes are not omitted from policy analysis.

The policy-based classification offers a developmental lens to understand social-sector spending. Grouping expenditures according to policy objectives rather than administrative boundaries helps:

- Identify priority areas
- Track human development initiatives
- Compare social-sector allocations across states
- Strengthen policy planning and evaluation

This classification, therefore, complements the functional accounting structure and provides a holistic view of India's commitment to inclusive growth and social well-being.

5.5 TRENDS AND PATTERNS OF SSE IN INDIA

Trends and Patterns in SSE in India refers to a systematic examination of how government spending on key social services has changed and evolved. SSE encompasses financial allocations made by the government toward essential services such as education, health, water supply, sanitation, housing, nutrition, and welfare programs. These services are fundamental to improving human development outcomes and ensuring social equity. The trend in SSE focuses on the progression or direction of spending, whether there has been a rise, decline, or stagnation in budgetary support for social sectors across different years. This analysis helps in identifying the consistency, growth, or volatility in public investment. On the other hand, patterns relate to how this expenditure is structured or distributed across different sectors, states, population groups, or programme areas. It reveals government priorities, the balance between sectors, and the extent to which expenditure aligns with developmental needs. Together, this provides a comprehensive exploration of the scale and structure of social sector spending in India, offering valuable insights into the country's fiscal priorities, regional disparities, and evolving policies to promote inclusive social development. The following table provides a year-wise trend of SSE in India.

5.5.1 TRENDS IN SSE IN INDIA

The year-wise trend analysis of SSE presented in this table offers a clear empirical picture of how Indian states have progressively prioritised human development over

the period 2004–2021. By examining the average SSE across 28 states over 18 years, the table highlights a continuous, uninterrupted rise in social spending, reflecting a sustained national commitment to strengthening education, health, nutrition, social protection, and welfare programmes. The trend patterns provide valuable insights into the fiscal behaviour of states, the evolution of welfare strategies, and the broader shift in development planning driven by increased fiscal devolution and expanding social responsibilities. This year-wise trajectory provides an essential foundation for understanding how public expenditure patterns align with human development needs within India’s fiscal federal structure, as shown in the following Table 5.2.

Table 5.2
Trend in SSE in India from 2004 to 2021

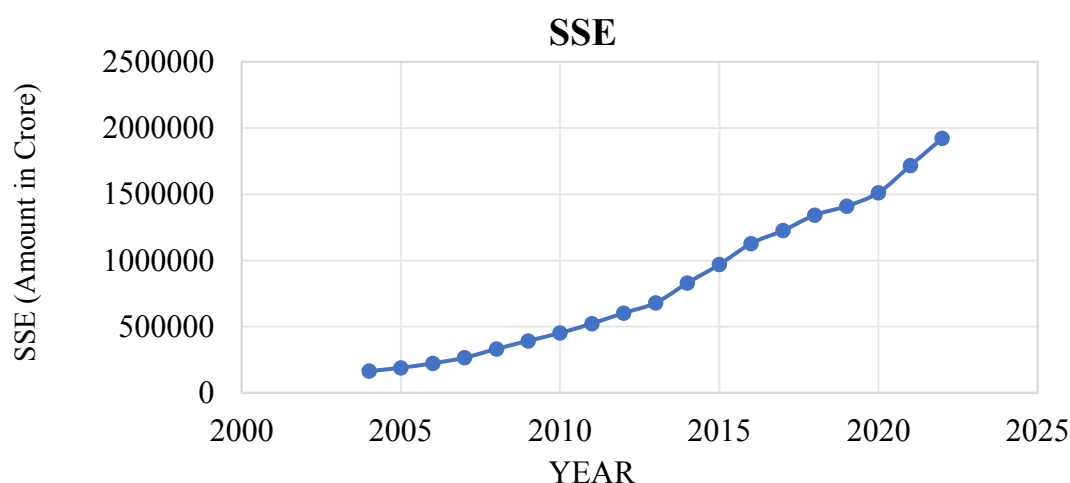
Year	Trend	Observation
2004	Base Year	Baseline level of SSE before major reforms.
2005	Increasing	Expansion of education and health spending.
2006	Increasing	Strengthened SSA and NRHM increased allocations.
2007	Increasing	Rising welfare expenditure and fiscal capacity.
2008	Increasing	Higher central transfers and social focus.
2009	Increasing	The crisis-year stimulus expanded spending.
2010	Increasing	Rapid expansion of education and rural schemes.
2011	Increasing	Enhanced state resources for flagship programmes.
2012	Increasing	Continued strengthening of social sectors.
2013	Increasing	Scaling up of welfare schemes.
2014	Increasing	Rising fiscal autonomy before the 14th FC effects.
2015	Increasing	United funds boosted SSE significantly.
2016	Increasing	Growth in health insurance and welfare.
2017	Increasing	Consolidation of welfare schemes.
2018	Increasing	Expansion of state-level welfare models.
2019	Increasing	Rise in health and social protection programmes.
2020	Increasing	Pandemic-driven surge in social spending.
2021	Increasing	Post-pandemic welfare and health augmentation.

Data source: Observed from State finances: A study of budgets.

The SSE trend in the Table 5.2 clearly demonstrates that SSE in India has experienced consistent and accelerated growth across the entire study period, underscoring its central role in the country's development strategy. Rising allocations year after year reveal that states have increasingly invested in human capital formation, social protection, and service delivery, even during periods of fiscal pressure or economic uncertainty. The uninterrupted upward movement in SSE also aligns with capability-based development thinking, as expanded social spending enhances individuals' opportunities and freedoms by improving access to essential services. Overall, the trend strengthens the conclusion that SSE is a critical determinant of human development, acting as a stable and expanding pillar of state-level policy commitment over the past two decades. It can be clearly understood by plotting the values in a graph. The following Figure 5.1 provides a clear picture of the SSE trend over the study period.

Figure 5.1

Temporal Pattern of SSE in India



The analysis of SSE in India from 2004 to 2021 reflects a clear and sustained upward trend in the above Figure 5.1, underscoring the government's increasing focus on social development. Over this period, SSE expanded from ₹1,640.8 billion in 2004 to ₹17,163.7 billion in 2021, representing a more than tenfold increase. This growth highlights the rising priority accorded to sectors such as education, health,

rural development, housing, and sanitation. In the early phase (2004–2008), expenditure grew steadily, supported by expanding fiscal space and the implementation of large-scale welfare programmes. The period between 2009 and 2014 maintained this momentum, though growth rates slightly moderated due to fiscal consolidation efforts and global economic uncertainties. A marked acceleration is observed after 2015, coinciding with the implementation of the Fourteenth Finance Commission’s recommendations, which significantly increased the share of central tax revenues devolved to states. This empowered state governments to enhance investments in core social sectors. Additionally, national flagship programmes like Swachh Bharat Abhiyan, Ayushman Bharat, and rural employment schemes contributed to the rise in expenditure during this period. The growth continued through 2020 and 2021, with increased allocations directed toward health and welfare measures in response to the COVID-19 pandemic. This period also reflects a shift toward more targeted and inclusive social protection frameworks. Overall, the trend demonstrates India’s progressive shift toward strengthening its social infrastructure. The consistent rise in expenditure reflects a long-term commitment to improving human development outcomes and promoting inclusive growth across regions. The Figure 6.1 provides an overall trend in transfers, and the study needs to conduct a deep search in the SSE of the states. So, we need to move with state-wise observation of the SSE in India during the period.

5.5.2 PATTERN OF SSE IN INDIA FROM 2004-2021

The pattern of SSE in India between 2004 and 2021 reveals a long-term shift toward expanding public investment in human development and social welfare. Over these 18 years, SSE demonstrated a steady, substantial rise, indicating a sustained policy focus on strengthening education, health, sanitation, housing, social protection, and other essential services to improve the quality of life. This growth pattern reflects a broadening of social commitments, expansion of welfare programmes, and greater fiscal space created through economic growth, improved revenue mobilisation, and intergovernmental transfers. The following Table 5.3 provides a picture of these patterns observed during the period.

Table 5.3
Pattern of SSE from 2004-2021

Year	Pattern observed	Description
2004-2021	Steady Upward Trend (2004-2021)	SSE rose consistently from ₹1,640.8 billion in 2004 to ₹17,163.7 billion in 2021, reflecting sustained government investment.
2004-2008	Growth Phase (2004–2008)	Flagship schemes such as the Sarva Shiksha Abhiyan, National Rural Health Mission, and rural infrastructure programmes significantly influenced expenditure patterns during this period. Strong expansion driven by rising allocations to education, health, and rural development through schemes like SSA and NRHM.
2009-2014	Stable Expansion (2009–2014)	Moderate yet steady growth. Despite fiscal pressures arising from global economic conditions and domestic consolidation efforts, the government continued to fund social sectors. Programmes like the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) became major components of SSE, contributing to rural livelihoods and social security.
After 2015	Acceleration After 2015	A notable shift appears after 2015. Higher tax devolution under the 14th Finance Commission enabled states to spend more on social sectors, increasing SSE. This change enhanced the financial capacity of states to invest more in social sectors, resulting in a visible acceleration in SSE.
2015-2020	Shift Toward Health & Sanitation	A greater focus on the Swachh Bharat Mission, NHM, and Ayushman Bharat redirected spending priorities.
2020-2021	Pandemic-Induced Surge (2020–2021)	COVID-19 pushed SSE upward through emergency health spending, food security, and livelihood protection. The period 2020–2021 reflects a further surge in SSE due to the COVID-19 pandemic. Emergency health spending, expanded social safety nets, food security measures, and livelihood support programmes contributed to the spike in expenditure. This demonstrates the responsiveness of SSE to emerging social challenges and crises.
2021	Broadening of Social Priorities and Increasing Role of States	Expenditure shifted from traditional areas to welfare, social protection, sanitation, and digital service delivery. States became key drivers of SSE due to greater fiscal space and expanded responsibilities.

Data source: Observed from the literature

Overall, the pattern of SSE from 2004 to 2021 highlights three major transformations:

1. A continuous rise in total expenditure, indicating long-term policy commitment.
2. A broadening of social priorities, with increasing emphasis on health, sanitation, social protection, and welfare.
3. A growing role of state-level expenditure, supported by greater fiscal devolution and targeted central schemes.

Collectively, these patterns illustrate India's evolving approach to social development moving from sector-specific interventions to a more comprehensive and inclusive framework aimed at improving human capabilities and reducing socio-economic disparities.

5.5.3. OBSERVATIONS FROM TREND AND PATTERNS OF SSE

The analysis of year-wise average SSE across 28 Indian states reveals a clear, consistent upward trend throughout the study period, making SSE one of the most steadily expanding components of state budgets. The trend demonstrates not only growth but accelerated growth over time, reflecting the rising importance of social development within India's fiscal architecture.

1. A Strong Upward and Monotonic Trend: The SSE trend from 2004 to 2021 is strictly increasing, with no single instance of decline across years. This monotonic pattern is rare in public finance datasets and indicates a structural shift in state priorities towards social development. Unlike variables such as GFD or CF, which fluctuate with fiscal cycles, SSE demonstrates policy-driven, sustained expansion unaffected by cyclical or short-term shocks.
2. Early Phase (2004–2009): Foundation of Social Spending Growth: The period from 2004 to 2009 shows a steady rise, driven by: Expansion of national flagship programmes [Sarva Shiksha Abhiyan (SSA), National Rural Health Mission (NRHM), Integrated Child Development Services (ICDS)], increased state involvement in basic service delivery and enhanced intergovernmental fiscal transfers. During this phase, most states were

building institutional and infrastructural frameworks to expand services, leading to a moderate but stable growth trajectory.

3. **Middle Phase (2010–2015): Rapid Scaling of Welfare Schemes:** From 2010 onwards, the growth in SSE becomes sharper, reflecting: growing emphasis on inclusive development, major health and education reforms and increased state-led welfare commitments (scholarships, insurance schemes, pensions). This period also coincides with improvements in fiscal capacity, enabling states to scale up social investments beyond basic provisioning.
4. **Post-2015 Phase: Accelerated Growth After Fiscal Devolution:** The introduction of the 14th Finance Commission, which increased the share of states in divisible taxes, contributed to a notable acceleration in SSE. States gained greater autonomy over expenditure decisions, resulting in larger allocations toward health, housing, and social protection; the introduction of region-specific welfare models (Tamil Nadu, Telangana, Andhra Pradesh, Odisha); and the creation of direct benefit programmes and targeted subsidy schemes. This phase shows the steepest rise in SSE, indicating a structurally stronger commitment to human development.
5. **Pandemic Period (2020–2021): Surge in Social Protection Spending:** The rise in SSE during 2020 and 2021 reflects the impact of the COVID-19 pandemic. States substantially increased spending on: public health systems, emergency nutrition supplementation, cash transfer schemes and social safety nets for vulnerable populations. The SSE expansion during this period is both response-driven and protective, preventing human development losses.
6. **Consistency Across Regions:** One of the most significant findings is that all five regional blocs, such as North, South, East, West, and Northeast, show identical upward SSE patterns. Differences exist in magnitude, but the direction of growth is uniformly positive, demonstrating that social development is a national priority; both high-income and low-income states

are expanding SSE, centrally sponsored schemes and state initiatives are aligned towards social outcomes

7. **SSE as a Capability-Building Instrument:** The continuous rise in SSE aligns closely with Sen's Capability Approach. Higher SSE expands educational capabilities, health and survival capabilities, social protection and security, and functional freedoms, enabling better participation in economic and social life. Thus, the pattern indicates that Indian states increasingly treat social expenditure as a core investment in human capabilities rather than merely as budgetary consumption.
8. **Implication for Fiscal Federalism:** The sustained growth in SSE suggests strong support from India's federal system: enhanced devolution of funds, targeted grants and flexible state-level welfare frameworks. Despite rising fiscal deficits and pension burdens, the uniform rise in SSE implies that states prioritised social development even under fiscal constraints, signalling a structural responsiveness of fiscal federalism toward human development.

The pattern in SSE from 2004 to 2021 is characterised by: steady annual increases (no declines), accelerated spending post-2010, especially post-2015, universal regional participation, strong alignment with human development priorities, and a policy-driven, capability-enhancing character. This trend confirms that SSE has evolved into a central pillar of developmental strategy, directly contributing to improvements in HDI and human well-being across India.

5.5.4 STATE-WISE ANALYSIS OF SSE

A state-wise analysis of SSE provides valuable insights into how individual states prioritise and allocate resources toward social development. Since social sectors such as education, health, housing, sanitation, and welfare fall largely within the purview of state governments, examining SSE at the state level helps reveal differences in fiscal capacity, developmental needs, and policy orientations across regions. This analysis also highlights variations in spending patterns, the influence of intergovernmental transfers, and the extent to which states invest in strengthening

human development outcomes. By comparing expenditure levels and growth across states, this section aims to identify regional disparities, evolving priorities, and the broader implications of these spending patterns for social progress and inclusive development in India. The following Table 5.4 provides an outlook of the trend in the SSE of each state. Overall, the introduction of the Table 5.4 allows us to identify both the shared national trend of expanding social spending and the state-specific reasons that shape the magnitude and direction of this growth, making it a crucial component of the study's empirical foundation.

Table 5.4
State-wise analysis of SSE from 2004 to 2021

State	Trend	Observation
Andhra Pradesh	Increasing	Welfare expansion and post-bifurcation service needs sharply raised SSE.
Arunachal Pradesh	Increasing	Higher central transfers and tribal welfare programmes expanded SSE.
Assam	Increasing	Rising allocations for health, education and disaster-related welfare.
Bihar	Increasing	Massive catch-up development and rural service expansion drove SSE growth.
Chhattisgarh	Increasing	Tribal welfare schemes and PDS reforms boosted SSE.
Goa	Increasing	Higher spending on public welfare, health and education.
Gujarat	Increasing	Industrial growth supported increased human capital and social investments.
Haryana	Increasing	Growth in education, youth programmes and social protection.
Himachal Pradesh	Increasing	Welfare-oriented governance and rural service expansion increased SSE.
Jammu & Kashmir	Increasing	Expanded welfare and restructuring of administrative services.
Jharkhand	Increasing	Higher spending on tribal regions, education and rural services.
Karnataka	Increasing	Tech-driven governance and a strong welfare focus increased SSE.
Kerala	Increasing	Continuous investment in health, education and

		welfare programmes.
Madhya Pradesh	Increasing	Higher allocations to improve low baseline health and education indicators.
Maharashtra	Increasing	Large-scale rise due to social commitments in both urban and rural areas.
Manipur	Increasing	Growth driven by central support and community development schemes.
Meghalaya	Increasing	Higher spending on health, education and community welfare.
Mizoram	Increasing	Strong welfare orientation and education-health expansion.
Nagaland	Increasing	Increased allocations for health, education and tribal welfare.
Odisha	Increasing	Strong rise driven by health, nutrition, and disaster-management spending.
Punjab	Increasing	Greater social protection and education expenditure despite fiscal strain.
Rajasthan	Increasing	Rural education, water, health and welfare expanded SSE significantly.
Sikkim	Increasing	Welfare-focused small-state model with targeted social spending.
Tamil Nadu	Increasing	Strong and sustained welfare-state expansion.
Tripura	Increasing	Expanded rural development and welfare programmes.
Uttar Pradesh	Increasing	Major expansion in schooling, health and rural welfare.
Uttarakhand	Increasing	Hill-region welfare, health and reconstruction needs raised SSE.
West Bengal	Increasing	Large-scale welfare and education spending increased SSE.

Data source: Observed from the literature

The state-wise analysis of SSE presented in Table 5.4 provides a comprehensive understanding of how India's 28 states have prioritised human development over the period 2004–2021. By examining long-term patterns in SSE, Table 5.4 highlights the degree to which each state has expanded spending on education, health, nutrition, social protection, and welfare programmes. The upward trend observed across all states reflects a structural transformation in India's development strategy, in which social investment has emerged as a central pillar of public policy. The

observations reveal that although all states exhibit increasing SSE, the underlying drivers differ significantly across regions. High-performing states such as Kerala, Tamil Nadu, Karnataka, and Maharashtra show growth driven by mature welfare systems and strong fiscal capacity. Eastern and central states such as Bihar, Madhya Pradesh, Odisha, and Jharkhand are experiencing rapid increases driven by catch-up development, expansion of basic services, and rising central support. Northeastern states show growth largely influenced by central transfers and targeted tribal development programmes. These distinctions underline the diversity of fiscal needs, administrative capacities, and social priorities across India's federal structure.

The state-wise SSE trend and observation in Table 5.4 clearly demonstrate that all 28 states have experienced substantial and continuous growth in social spending, confirming SSE as a critical driver of human development across India. The increasing trend across states reflects enhanced fiscal devolution, political commitment to welfare, and the recognition that investments in education, health, and social protection are essential for improving long-term developmental outcomes. The state-level observations highlight that while the direction of change is similar, the sources of SSE growth are not uniform. Welfare-oriented southern states expanded on already-strong social foundations, while economically lagging states accelerated spending to overcome deficits in human capital. Northeastern states relied heavily on central assistance and tribal development needs. In contrast, highly urbanised or industrialised states such as Maharashtra and Gujarat scaled up SSE in response to growing demographic and social demands.

Table 5.4 jointly explains findings that reinforce the view that SSE growth is not merely a budgetary expansion but a strategic investment in human well-being, consistent with the principles of the Capability Approach, which emphasise expanding individuals' freedoms and opportunities. The uniform upward trend across states confirms a nationwide shift toward social development as a core priority, making SSE a central determinant of India's human development trajectory during the study period.

5.6 SSE AND MILLENNIUM DEVELOPMENT GOALS (MDGs)

The SSE is the government spending on the specific areas of development of the society, including education, health, sanitation, urban development, housing and welfare. This government spending aims to improve the well-being of the society in the country. The MDGs are the global development targets adopted in 2000 that aim to improve development in specific areas of the economy by 2015. SSE is actually targeting the development of various sectors under the social sector development of the economy. The MDGs are targeting to achieve the eight development goals globally. The connection between SSE and MDGs is that both are concentrating on similar aspects of the development of the economy. The SSE provides finance to develop major areas of social sector development in the country, and the MDGs focus on the global improvement in specific developmental areas. So both are concentrating on the similar concerns of development. The only difference is that one is considering all the variables nationally, and the other considers globally. The MDGs set their objectives for 2015 and outline a wide range of policies to achieve them; after 2015, the goals are merged with the SDGs. The SDGs consider universal targeting of its goals rather than the developing economies in the MDGs. Later, the eight goals are merged with the seventeen goals of the Sustainable Development Goals in the world.

In general, the MDGs set eight global development targets. The outcome of this 15-year development process provides insight into these goals and their outcomes. The results show that the prescribed development agenda meet some of the goals, and some are still there as targets to be achieved as soon as possible. The eight goals aim to develop specific areas by addressing them. They are poverty, education, hunger, health, gender equality and environmental sustainability. The eight target points for the MDGs are given below.

1. Eradicate extreme poverty and hunger
2. Achieve universal primary education
3. Promote gender equality and empower women
4. Reduce child mortality
5. Improve maternal health
6. Combat HIV/AIDS, Malaria and other diseases
7. Ensure environmental sustainability
8. Global partnership for development

The role of SSE in achieving MDGs is prominent in the global developmental perspective for achieving these eight targets. The SSE ensures spending on various rural developmental programmes to generate employment opportunities for the rural people and promote the livelihood opportunities for them. The employment generation activities, provision for nutritious food for the vulnerable classes and many other schemes under social sector spending are providing livelihood options for the people, and these programmes are really set for reducing the poverty among them. Poverty reduction is the target included in the MDG-1, so the programmes under livelihood-generating activities help the economy to meet the goal. The employment and livelihood sector is responsible for the first MDG in the country.

The MDG-2 and MDG-3 are concentrating on the education and gender equality of the population. These two goals are coming under the social sectors of education and the women and child development. The various programmes for educational empowerment of society and components of gender equality are included in the programmes under the spending for these two sectors of the country's development. MDG-4, MDG-5 and MDG-6 are related to the health sector improvement. So, the SSE under the social sector-health ensures the implementation of various programmes for the health care facilities serving the population. These health care facilities aim to reduce infant and maternal mortality through specific programmes of child development and welfare.

Sustainability promotion is a concern of all the programmes under the social sectors and the various developmental agendas. Because the environmental sustainability has become an important matter of discussion in recent years, all the developmental policies are providing significance to the sustainable environmental policies and sustainable development concepts. MDG-7 is connected to the sustainable developmental concerns, and this goal is closely related to the social sector spending under the sectors of water and sanitation, environment, and energy concerns. The programmes and investment initiatives under these sectors are concentrating on the sustainable development policies of the government. So, the MDG-7 is included in the SSE for making a sustainable environment for the development of the country. The last goal of MDG is the global partnerships, which is distinct from the social sectors' inclusion, because the social sectors are concentrating on the country's development, apart from the global developmental concerns. The MDGs aim the global development in their agenda, so the last MDG has not met its objectives under the social sector spending in the country. The only exclusion of MDG in SSE is the MDG-8. However, there are many international agencies involved in the implementation of different programmes funded under the SSE. So, part of the MDG-8 is connected under the international interactions of programmes under the various social sectors in the country.

5.7 SOCIAL SECTOR SPENDING AND SUSTAINABLE DEVELOPMENT GOALS (SDGs)

The social sectors, such as the Education and Health sectors, provide some sort of developmental outcomes to the economy. So the spending on these two sectors is much more important to generate a growing economy with sustainability. The sustainable development goals focus the growth enhancement activities with the agenda of removing inequality with human capital empowerment, along with social sector development. The connection between the SSE and the Sustainable Development Goals is clearly rooted in the concept of human capital of the economy. In reality, it is en route to the human capital enhancement through investing in various social sectors under different schemes. The concept is strictly focused on the inequality in other regions, and the special attention is needed for

some of the geographically distinct parts of the economy. This point highlights the investment in these areas through social sector projects or schemes to empower them, with a focus on the sustainable development goals of the economy. The third and fourth sustainable development goals are pointing to the health and educational advancement, respectively.

The real asset of the economy lies in the hands of the sectors such as education and health. The theoretical and empirical evidence shows the importance of connecting this spending on education and health to the nation's asset-building in human capital and to the economy. The human capital development is actually discussed in the field of development, which ensures the transfer of resources to the well-wishers of the next generation of the economy, thereby sustaining the developmental objectives to achieve the real outcomes in economic terms through the human capital expansion. The Sustainable Development Goals are directly focused on the enhancement of human capital via improvement in social sectors. The social sector spending is indirectly channelising its roots into the development of the economy, including attention to the SDGs of the country. The focus on education and health varies across years, but both are consistently prioritised under the social sectors to boost economic resources, with a strong understanding of developmental outcomes to satisfy the needs of the economy while implementing the idea of welfare for the people.

The Sustainable Development Goals aim to protect the environment with the intention of developing the economy. The concept of sustainable development gives priority to the studies of climate change and tackles it by giving priority to the prosperous economic growth. The emphasis on the social sector development is connected to the sustainable development goals in the sense that they are ensuring the economic growth by giving importance to the welfare aspects in the economy. By focusing on the welfare concept, the sustainable development aspects are included in the social sector reforms by various projects.

5.8 CONCEPT OF SOCIAL SECTOR DEVELOPMENT (SSD)

Social sector development refers to improvements in the key areas that determine the welfare and well-being of a society. Although often spoken of as a single sector, the social sector comprises multiple sub-sectors primarily education, health, and basic infrastructure along with several other services that support human development. An economy can achieve overall development only when these social sectors advance alongside economic growth. Budgetary classifications group social-sector spending under Social Services, which includes expenditure on general and technical education, sports and culture, public health, family welfare, water supply and sanitation, housing, urban development, labour and related services. In many studies, these “social services” are treated as the operational components of the social sector.

Social sector development focuses on enhancing the welfare of all sections of society, especially marginalised groups, by improving access to essential public services. In this study, social sector development is assessed through expenditure on education and health, financed through multiple channels, including budgetary transfers, Finance Commission grants, and central sector schemes. Notably, in India, states spend more on social sectors than the Centre.

Government expenditure on social sectors is crucial for several reasons:

1. High deprivation levels require public intervention beyond market mechanisms.
2. Poor households rely more heavily on public services, making state support essential.
3. Achievement of national and global goals, such as the Sustainable Development Goals (SDGs), depends on sustained investment in education, health and welfare.

Social sector development also generates positive externalities improvements in education, health and infrastructure strengthen the workforce, enhance productivity and stimulate economic growth. A well-educated and healthy population accelerates development and supports inclusive growth strategies. As economies grow, they

increasingly integrate social sector investment into their development agendas. Higher spending on education and health is essential for nurturing a productive workforce and ensuring equitable outcomes. Trends over time indicate significant progress in India's SSE and outcomes, although gaps persist across states.

In essence, social sector development aims to expand opportunities, reduce disparities and improve the quality of life. It plays a central role in inclusive development by providing essential services, enhancing human capabilities and ensuring that all individuals particularly the disadvantaged can participate meaningfully in the growth process.

5.9 SIGNIFICANCE OF SSD

The idea of Social Sector Development gained prominence after World War II, when policymakers realised that economic growth alone cannot ensure overall development. Social development rooted in improving human well-being is multi-dimensional, encompassing economic, political, and welfare-oriented progress. It focuses on providing essential services such as education, healthcare, nutrition, clean water, housing, employment opportunities and a decent standard of living. These needs are especially critical in rural India, where deprivation and inadequate access to basic facilities persist.

SSD integrates multiple sub-sectors that collectively shape the quality of human life. Government programmes in education, health, welfare, housing, sanitation and social protection directly influence how individuals participate in and benefit from economic growth. The development of these sectors reflects in improved human capabilities and enhanced living conditions.

For India, SSD is central to achieving inclusive and sustainable development. It:

- Strengthens human capital through better education and healthcare.
- Improves HDI outcomes by advancing nutrition, sanitation and basic services.
- Reduces social and regional disparities, supporting marginalised groups.

- Builds social infrastructure, improving the accessibility and quality of public services.
- Raises economic productivity by nurturing a healthier, better-skilled workforce.
- Provides safety nets that reduce vulnerability to economic shocks.
- Promotes social cohesion by reducing inequalities and enhancing trust in public institutions.
- Aligns with national and global development goals, including the SDGs.

In essence, SSD enhances both human well-being and economic performance, making it an indispensable pillar of India's long-term development strategy.

5.10 RATIONALE FOR SSD

Social Sector Development (SSD) is central to achieving equitable and sustainable progress. It ensures that development is not limited to economic growth but is accompanied by improvements in human well-being. SSD promotes fair distribution of resources, strengthens essential services and supports the long-term developmental goals of the country, including the Sustainable Development Goals (SDGs). By expanding social investments, governments create conditions that enhance the quality of life and promote inclusive participation in the growth process.

SSD is necessary for several interrelated reasons:

1. **Human Capital Formation:** Investments in education, health and related services strengthen the capabilities of individuals. These sectors directly shape the quality of the workforce by improving skills, productivity and overall well-being. Better human capital contributes to national development and creates a foundation for sustained economic growth.
2. **Improvement in Quality of Life:** SSD enhances living conditions by expanding access to essential public services such as healthcare, housing, sanitation, safe drinking water and basic education. Targeted programmes help reduce deprivation and vulnerability, ensuring that individuals experience tangible improvements in their day-to-day lives.

3. **Poverty and Inequality Reduction:** By providing social protection, welfare schemes and access to public services, SSD helps narrow socio-economic gaps. Social-sector investments reduce poverty, improve income security and support marginalised communities. As multiple sectors interact, improvements in one area reinforce progress in others, creating a broader impact on equity.
4. **Promoting Gender Equality:** SSD includes policies and programmes that empower women and ensure equal opportunities. Gender-focused welfare schemes, education initiatives and social protection measures help reduce gender disparities and strengthen women's participation in economic and social activities. This contributes to more balanced and inclusive development.
5. **Advancing Inclusive Growth and SDGs:** SSD ensures that development benefits every group marginalised, vulnerable, rural and economically weaker sections. Inclusive policies integrate social sectors with SDG targets, promoting environmentally sustainable and socially equitable growth. These programmes align national development with global commitments.
6. **Supporting Economic Growth:** Social-sector investments create positive spillovers for the economy. A healthy, educated and skilled population enhances productivity, innovation and labour-force participation. By building human capital and strengthening social infrastructure, SSD becomes a key driver of economic expansion and long-term development.

In essence, SSD provides both the foundation and the momentum for inclusive, equitable and sustainable development. It improves human capabilities, reduces disparities, strengthens social cohesion and supports a development model that benefits all sections of society.

5.11 FACTORS INFLUENCING SSD OF THE STATES IN INDIA

The social sector development is a multi-dimensional process and influences many factors for the social sector development of the states. While we focus on the social

sector development of the state, a large number of economic and non-economic factors are contributing to its development, which include financial, social, cultural, political, demographic and institutional factors. The factors influencing the social development of the economy discuss the factors contributing to the development of human life and the inner connections in the concept of social development of the economy.

The various dimensions of the social sector development are mentioned in the previous segments. The different components of the social sector development are discussed, and the improvements in human life through prioritising these dimensions in the process of social sector development. It's time to discuss the primary influencers of social sector development in the context of the Indian economy. These points constitute the identification of the factors that contribute to the social sector development of the economy. They are given in the following Table 5.5.

Table 5.5
Factors influencing Social Sector Development (SSD)

Sl.No.	Factors
1	Economic factors
2	Socio-cultural factors
3	Political factors
4	Psychological factors
5	Technological factors
6	Geographical factors
7	Ideological factors
8	Demographic factors
9	Institutional factors
10	Biological factors

Data source: Compiled from literature

A detailed explanation of each factor listed in Table 5.5 is provided under the following headings.

Social Sector Development is shaped by a wide range of economic, social, political and structural forces. These factors determine how effectively societies can enhance human well-being and provide equitable access to essential services.

1. Economic Factors

Economic conditions form the foundation of SSD because social services depend on financial resources. Income levels, employment opportunities, wealth distribution, economic growth and public spending directly influence people's access to education, healthcare, housing and other essential services. Higher incomes and stronger economic growth expand the government's fiscal capacity, enabling greater investment in SSD. Among all variables, income and employment remain the strongest determinants of living standards and overall social progress.

2. Socio-Cultural Factors

Socio-cultural norms shape how individuals behave, interact and make decisions. Values, beliefs, traditions, social attitudes and community structures influence acceptance of education, health practices, gender equality and welfare services. These factors also determine how well people participate in development programmes. Strong social institutions and positive cultural attitudes support inclusive social development, while discriminatory norms or rigid traditions can hinder progress.

3. Political Factors

Political stability, governance quality and administrative efficiency significantly affect SSD. Transparent institutions, accountable leadership and adherence to constitutional principles create favourable conditions for the effective implementation of social policies. Stable governments can plan long-term programmes in health, education and welfare, while political instability or weak governance disrupts service delivery. Thus, good governance is a key driver of social progress.

4. Psychological Factors

Psychological elements such as motivation, emotions, mental health and social interactions indirectly influence SSD. A supportive social environment helps individuals participate in education, employment and community activities. Conversely, stress, exclusion or mental-health challenges can limit people's ability to benefit from development programmes. Healthy social relationships and strong community networks, therefore, contribute to improved social outcomes.

5. Technological Factors

Technology accelerates social development by transforming service delivery and improving access to information and public services. Digital platforms, e-governance systems, online education, telemedicine and digital payments increase efficiency, transparency and inclusiveness. The spread of technology depends on digital literacy, infrastructure and the ability of institutions to adopt new tools. Thus, technological advancement is now an essential pillar of SSD.

6. Geographical Factors

Natural features climate, terrain, water availability, and vulnerability to disasters heavily influence SSD. Floods, droughts, earthquakes and other calamities can disrupt education, health services and livelihoods. Regions with difficult terrain or scarce natural resources often lag in infrastructure and service provision. Geographic constraints, therefore, require targeted interventions to support balanced development.

7. Ideological Factors

Thought leaders, reformers and social movements shape public consciousness and influence development priorities. Ideas promoting equality, social justice, education, women's empowerment and human dignity have historically guided India's reform agenda. The philosophies of national leaders and social reformers continue to influence policy directions and societal attitudes, thereby impacting SSD.

8. Demographic Factors

Population size, age structure, fertility rates, mortality rates and sex ratios significantly affect demand for social services. A young population requires more investment in education and skill development, while an ageing population increases the need for healthcare and social protection. Balanced demographic trends support sustainable development, whereas demographic imbalances can strain resources and slow progress.

9. Institutional Factors

Institutions provide the framework through which social services are designed, implemented and monitored. Effective administration, clear policies, accountability mechanisms and decentralised governance improve the efficiency of SSD programmes. However, bureaucratic delays or weak coordination can hinder progress. Strong institutions are therefore critical for delivering education, health, welfare and infrastructure services equitably.

10. Biological Factors

Biological attributes such as genetic traits, physical characteristics and hereditary health conditions affect individual potential and shape human development outcomes. These factors influence productivity, learning ability and health status. Programmes in nutrition, healthcare and early childhood development help mitigate biological disadvantages and support human capital formation.

5.12 MULTI-DIMENSIONALITY OF SSD

The multidimensional perspective of social sector development ensures the existence of diverse dimensions in the concept. The term multidimensional refers to the various dimensions of the concept of social sector development in the economy. The multifaceted idea of social sector development points to a single objective of improving the standard of living of the people in the economy. The aim of the social sector development in the process of inclusion of development variables in the economy is the concentration of development on several initiatives. The various

ministries or departments undertake these initiatives of investment for the enactment of a single objective of social sector development. The multidimensional aspects of social sector development provide various internal connections within the concept. The diverse dimensions of social sector development simultaneously aim at social objectives such as the reduction of poverty and inequality, ensuring the social welfare of the economy and the empowerment of various social sectors. The social issues address the complex problems in the society in the process of social sector development. The multi-dimensional behaviour of the social sector development is providing the concentration of development to its various dimensions. Multidimensional variables of social sector development are actually the sectors contributing to the social sectoral development process in the country. The distribution of factors in the multi-dimensional perspective actually considers the sector as well as the provision of services in it, which are mentioned in the following points.

1. Well-being of the economy through a better health care system
2. Skill enhancement and the educational improvement
3. Gender equality and indices in it.
4. Empowerment of the vulnerable sections
5. Ensuring social protection for the weaker section
6. Implementation of the welfare programmes
7. Employment generation
8. Sustainable livelihoods
9. Housing facilities
10. Urban and rural development
11. Sustainability in environmental change and management
12. Integration of the socially weaker section into the development process

13. Addressing regional imbalances

14. Participatory governance for the programme implementation

These are the major dimensions of the country's social sector development. These dimensions discuss the special considerations and the focus of the different developmental components in the system. The majority of the dimensions are interconnected. That means the investment in one component is reflected in the other as an impact of SSE. The interesting fact in the social sector development is that the investment in any of the above-noted areas has an impact on the human development of the economy. The social sector development ensures a comprehensive approach to sectoral development for the social development of the economy. The various prescribed dimensions provide the understanding of the critical role of social sector development to connect all the areas in the process of development.

5.13 LINKING SSD TO INCLUSIVE AND SUSTAINABLE GROWTH

The role of social sectors in determining the process of inclusive growth in the economy ensures the equitable distribution of resources across different states under the various social sectors. The inclusive growth process targets the marginalised and vulnerable sections of the society. The social sectors include health, education, housing, sanitation, rural development, urban development, social security, and social welfare, among others. The major role of social sector development is to make human capital in the economy. So the inclusive growth process incorporates the different sections of the society in the process of creating human capital for the economy.

The process of inclusive growth ensures sustained economic growth by integrating all the sections of the society. The inclusive growth focuses mainly on the economic growth process of the marginalised and the vulnerable class of society. The inclusive growth actually provides benefits to all individuals in the society, but it concentrates on the programmes for the development of marginalised and vulnerable classes. The programmes are purely for addressing the issues of disadvantaged categories in

the country to provide solutions to their problems in the economy. Generally, the solution to the problems of disadvantaged categories is provided through the different programmes under the social sector development of the economy.

The improvement in the quality of life, along with the benefit of this improvement to all sections of the society, simultaneously provides the conceptualisation of inclusive growth through social sector development of the economy. The concept of social sector development is executed through the various programmes and policies of the central government. These programmes are implemented by different agencies and are monitored by the central government. The programmes are funded through the budgetary transfers of the central government. The transfers are channelised through the Finance Commission, NITI Aayog and different Central ministries in the country.

5.14 EVALUATING THE SIGNIFICANCE OF INCLUSIVE GROWTH WITHIN THE FRAMEWORK OF SSD

Inclusive growth is central to India's development strategy, as it seeks not only to accelerate economic expansion but also to ensure that the benefits of growth reach all sections of society. It emphasises equitable distribution of opportunities, participation of marginalised groups, and the removal of structural barriers that limit access to basic services. Within the SSD framework, inclusive growth strengthens programmes in health, education, welfare, skills development, and infrastructure, providing a pathway to shared prosperity. Its significance can be understood through the following dimensions:

1. **Poverty Reduction:** Inclusive growth supports income-generating schemes and livelihood programmes that directly improve the economic conditions of poor households. Integrating vulnerable groups into productive activities reduces deprivation and builds long-term livelihood security.
2. **Reducing Inequality:** Addressing disparities across income groups, regions and social categories is a core aim of inclusive growth. While the complete elimination of inequality is gradual, targeted interventions help narrow gaps and promote equitable access to public services.

3. **Employment Generation:** Sustainable poverty and inequality reduction require steady employment. Inclusive growth prioritises job creation, women's employment, entrepreneurship, innovation, and support for start-ups, helping individuals secure stable, long-term sources of income.
4. **Skill Development:** Skill-building initiatives enhance productivity and expand opportunities for upward mobility. By equipping individuals with modern skills, inclusive growth strengthens the workforce and supports higher economic output.
5. **Strengthening Social Cohesion:** When diverse groups are included in development programmes, social unity improves. Inclusive growth promotes cooperation, collective participation and social harmony, contributing to a stable development environment.
6. **Advancing Sustainable Development:** Many components of inclusive growth align directly with the Sustainable Development Goals (SDGs). Themes such as poverty reduction, health, education, gender equality and environmental sustainability reinforce both national and global development commitments.
7. **Human Capital Formation:** Inclusive investments in health and education create a stronger, more capable population. These sectors form the foundation of human capital, which is essential for innovation, productivity and long-term economic progress.
8. **Economic Resilience:** Inclusive systems help societies recover faster from economic shocks by providing safety nets, employment programmes and timely support. They enhance adaptability and stabilise economic activity during crises.
9. **Bridging Social and Regional Gaps:** Inclusive growth reduces disparities between urban and rural areas, remote regions, and marginalised communities. Targeted interventions in backward regions improve access to infrastructure, public services and economic opportunities.
10. **Empowering Vulnerable Groups:** Inclusive policies focus on the upliftment of minorities, women, differently-abled persons and other marginalised

groups. Special provisions ensure that these communities can participate more fully in the development process.

11. Promoting Gender Equality: Women's participation in education, employment and decision-making is strengthened under inclusive growth. Policies that reduce gender gaps contribute directly to social justice and economic expansion.
12. Encouraging Innovation and Productivity: Government schemes supporting innovation, entrepreneurship and technology adoption promote higher productivity and diversify the economy. This creates new sectors of growth and enhances competitiveness.
13. Enhancing Economic Stability: A more inclusive economy is typically more stable. Reduced inequalities, broader participation and improved social cohesion help maintain consistency in economic activities, reducing vulnerability to political or market fluctuations.

Inclusive growth plays a pivotal role in advancing social sector development by integrating diverse groups, regions and sectors into the development process. It ensures that economic progress translates into improved human well-being, greater equity and sustainable development. Ultimately, inclusive growth forms the foundation for a development model that benefits all sections of society and strengthens overall socio-economic stability.

5.15 CONVERGENCE BETWEEN SSD AND THE SUSTAINABLE DEVELOPMENT GOALS (SDGs)

The direct connection of the Sustainable Development Goals to Social Sector Development can be understood from the interconnections of SDGs to the social sectors. The following Table 5.6 describes this relation explicitly. The three columns in the table represent the sectoral connection, the running programmes in it and the sustainable development goal. The first column represents the Sustainable Development Goals 2030 of the 2012 United Nations conference, set universally. The second column represents the corresponding social sector in the social sector

development of the economy, and the third column represents the government's running programmes under different schemes to satisfy sectoral needs.

Table 5.6

**Integration of SDG targets with
Social Sector Development Programmes in India**

Sustainable Development Goals	Social Sectors of Social Sector Development (Programme)	Current Schemes/Programmes
No Poverty	Social Protection (Direct Benefit Transfers, Pensions and Employment Schemes)	Mahatma Gandhi National Rural Employment Programme, National Social Assistance Programme and Pradhan Mantri Garib Kalyan Anna Yojana
Zero Hunger	Food Security and Nutrition (Public Distribution Systems, Child Nutrition Programs and Agriculture)	Pradhan Mantri Poshan Abhiyan (Mid-Day-Meal Programme), Integrated Child Development Services (ICDS) and Pradhan Mantri Kisan
Good health and well-being	Health (Universal Health Coverage, Maternal and Child Health and Disease Prevention)	Ayushman Bharat (PM-JAY), National Health Mission (NHM) and Mission Indradhanush
Quality education	Education (Primary, Secondary and Higher Education, Vocational Training and Skill Development)	Samagra Shiksha Abhiyan, Pradhan Mantri e-Vidhya and Rashtriya Uchchatar Shiksha Abhiyan (RUSA)
Gender equality	Gender Empowerment (Women's Education, Workforce Participation and Legal Rights)	Beti Bachao Beti Padhao, Stand-up India, Pradhan Mantri Matru Vandhana Yojana
Clean water and sanitation	Water and Sanitation (Water Management and Sanitation Programmes, Drinking Water Programmes and Hygiene Initiatives)	Jal Jeevan Mission, Swach Bharat Mission (SBM) and Namami Gange
Affordable and clean energy	Energy Access (Renewable Energy Infrastructure and Rural Electrification)	Pradhan Mantri Kusum, Ujjwala Yojana, Deen Dayal Upadhyaya and Gram Jyoti Yojana
Decent work and economic	Employment and Livelihoods (Skill	Skill India Mission, Pradhan Mantri Mudra Yojana and Stat-Up

growth	Development and Entrepreneurship)	India
Industry, innovation and infrastructure	Infrastructure Development (Transport, Digital Connectivity and Industrial Clusters)	Smart Cities Mission, Pradhan Mantri Gati Shakti and Atal Innovation Mission (AIM)
Reduced inequalities	Social Inclusion (Welfare programmes for Marginalised Communities and Affirmative Action)	Aspirational Districts Programme, Stand-Up India and Scholarship Schemes for SC/ST/OBC
Sustainable cities and communities	Urban Development (Affordable Housing, Public Transport and Waste Management)	Pradhan Mantri Awas Yojana (PMAY), AMRUT and Heritage City Development (HRIDAY)
Responsible consumption and production	Environmental Awareness (Sustainable Production Practices and Recycling Initiatives)	National Recycling Policy, Plastic Waste Management Rules and Perform, Achieve and Trade (PAT)
Climate action	Climate Resilience (Disaster Preparedness, Sustainable Agriculture and Renewable Energy Adoption)	National Action Plan on Climate Change (NAPCC) and Faster Adoption of Electric Vehicles (FAME)
Life below water	Marine Conservation (Coastal Management and Sustainable Fisheries)	National Fisheries Development Board (NFDB), Blue Revolution Scheme and Coastal Regulation Zone
Life on land	Biodiversity and Forestry (Afforestation, Wildlife Conservation and Sustainable Land Use)	Green India Mission, National Afforestation Programme and Project Tiger
Peace, justice and strong institutions	Governance and Legal Systems (Judicial Reforms, Public Safety, Transparency and Accountability Initiatives)	Digital India, Mission Karmayogi and e-Courts Mission Mode Project
Partnerships for the Goals	Collaborative Development (International Cooperation, Public-Private Partnerships and Global Financing)	India - UN Development Partnership Fund, Public-Private Partnership (PPP) and CSR Initiatives

Data source: UNDP Report and Social Development Report

Table 5.6 lists 17 SDGs, their respective social sectors, and the schemes within them. The information in the table is enough to understand the relation between the

idea of Sustainable Development and Social Sector Development. By linking these SDGs along with the Social Sectors, it is rightly discussed that the idea of the development process is a result of interlinking both concepts into the development line.

5.16 INTERLINKING SSD AND THE MILLENNIUM DEVELOPMENT GOALS (MDGs)

The social sector development ensures the improvement of the standard of living of the people in the country, and the MDGs are concentrating on the eight developmental goals of the all developing economies in the world. The MDGs provide global acceptance, and the country's social sector development provides the national focus for the economy's developmental concerns. The concept of social sector development is inbuilt in the idea of development of the country, but the MDGs were introduced in the year 2000, and these ran their policies up to 2015, and after that, the goals merged with the SDGs. By 2015, the MDGs had met many of their targets and marked significant progress across many economies. But some of the goals have not met their targets, and they still need to meet the targets under the eight MDGs.

The relation between social sector development and the MDGs is that many social sectors are directly connected to the goals of the MDGs. The social sector development provides investments in many sectors through the various developmental programmes in the SSE in the country. The investments aim to improve sectors such as education, health, housing, gender equality, water and sanitation, social welfare, social security, and sustainable development. All the programmes under different social sectors are implemented with a single objective of improvement in the well-being of the people in the society. The primary concern of the MDGs in the country's social sector development is improving social outcomes through investments in social sectors.

All the MDGs are coming under various sectors of the social sectors, and all of the goals are covered through different programmes, as the policy is geared towards the development of the country. Various food security programmes and employment generation activities cover MDG-1, educational programmes and provision for the educational facilities cover MDG-2, gender focused programmes and the

concentration of empowerment of women and child overlap the MDG-3, the health care programmes and facilitation of better health care in the country ensuring the provision for MDG-4 and MDG-5 and MDG-6, the sustainable development programmes are the target policy for connecting social sector development to the MDG-7 in the country and finally the MDG-8 is cover through the organizational sinking programmes under social sector development via government, non-governmental organizations and the international organizations.

The MDGs, in their policy implementation, mobilise global attention to address various social issues and provide a significant role in tackling the majority of the goals under the developmental perspectives of the MDGs. The comprehensive framework provides a vast coverage of the policies, but some are not satisfied within its stipulated target time period. Even though the MDGs are linked to the Sustainable Development Goals, along with the programmes under the social sector development of the country. In conclusion, the social sector development exhibits a pivotal role in the achievement of the MDGs targets, and both are trying their utmost to ensure the improvement in the well-being of the people in the society. Social sector development is still working on the further improvement in the social well-being of the people through a wide variety of programmes. The social sector developmental objectives are changing their policies year by year to ensure an upgrade in the programmes and to ensure vast coverage and output in their programmes. The efforts to improve well-being through the MDGs continue through the Sustainable Development Goals, with the global aim of improving the well-being of the world's population.

5.17 INDICATORS AND MEASUREMENT OF SOCIAL SECTOR DEVELOPMENT

Social sector development can be measured through its indicators. So, the social indicators are actually the representation of the social development of the economy. Thus, social indicators serve as a measurable reflection of the social development achieved within the economy. Social sector development can be measured through a range of development indicators. These indicators represent the level of social progress achieved by an economy. Thus, social indicators serve as measurable reflections of improvements in social development. In some cases, the progress of an indicator is reflected in an upward trend (for example, life expectancy and literacy

rates), while in others, a decline in the indicator reflects reduced spending or poor outcomes (for example, infant and maternal mortality). These indicators collectively capture the progress made in enhancing the well-being of individuals. Real improvements are reflected in key human development dimensions such as education, health, and employment. Each component of the social sector uses specific indicators to measure its performance, and these differ across sectors based on their developmental focus. Generally, overlaps occur among indicators because several sectors may pursue similar or complementary objectives. The broader concept of social development, referring to improvements in people's overall quality of life, is challenging to measure directly. Therefore, the social development of a country is assessed through the combined performance of its social sector indicators.

Measuring social development purely in terms of people's lives is complex, as it is neither easy to capture nor straightforward to compare across regions. Therefore, the social development of a country is assessed through its social sector development, which reflects how various sectoral components interact to improve overall well-being. These components consist of developmental variables that collectively determine the progress of the social sector. Each variable functions as an indicator used to assess performance within different domains of social development. Together, these indicators act as mediating tools that enable systematic measurement, providing a comprehensive dataset essential for evidence-based policy formulation. In the education sector, major indicators include the Literacy Rate, Gross Enrolment Ratio (GER), and school Dropout Rates. In the health sector, key indicators are Life Expectancy, Infant Mortality Rate (IMR), Maternal Mortality Ratio (MMR), and Access to Safe Drinking Water. The housing sector evaluates progress through indicators such as Access to Housing and Sanitation Coverage. Employment and livelihood development are assessed using indicators like the Unemployment Rate, Labour Force Participation Rate (LFPR), and Poverty Rate. Welfare and social security are measured through Access to Pensions and the number of beneficiaries under various welfare programmes. Further, gender-related development is captured through indicators such as the Gender Parity Index (GPI), Female Labour Force Participation Rate, and the prevalence of Violence Against Women. The significance of using these indicators of social development for ensuring the attention of the notable sectors and their necessities is explained by the

role of these indices in the development of the country. The policy formulation is mainly concentrating on these variables to indicate whether the economy achieves the social development in its sectors. These indicators represent the real situation in the development path of the country through the measurement of its variables. The indicators provide actual estimates of the real scenario for generating output in the process of development. The measurement of progress in the social sector enhancement explicitly provides this as the reflection of tracking the development pathways in the country. These measures are helping the economy properly evaluate the process, to reduce inequalities in the country. The indicators correctly measure the progressive pathway of the country along with the identification process of major concentrating areas of development in the disparity reduction policies. The remarkable role of these indices of social sector development is that the enable comparison of a state's situation or current position along the development path. It makes a relative comparison of countries' performance with other countries in the world.

5.17.1 MAJOR INDICATORS OF SSD

The social sector development indicators are playing a significant role in explaining the current position of different sectors in achieving their development objectives. The indicators are the integral part of this measurement of social sector-wise performance in meeting the long-term goals of the economy. They are assuring the proper assessment of the social sectors movement and the effective governance for the programme implementation of the various social sectors in the country. The better understanding of the performance of each sector is possible through the proper measurement of them by using various indicators of sectoral development. They are correctly noticing the major challenges, focusing areas, priorities, importance and role of each sector for ensuring excellent execution of the goals in the social sector development of the country. The most common indicators of social sector development are given below.

Literacy rate: It provides an idea about the development of the educational sector. Literacy rate is the percentage of the population that can read and write. This is used as a common measure of educational improvement in the country.

Life Expectancy: Life expectancy indicates the development of health care services. It is the average number of years a person is expected to live under the current health conditions in the economy.

Infant Mortality Rate (IMR): It gives an understanding of the health sector performance in the economy. Infant Mortality Rate measures the number of deaths of children under one year of age per 1000 live births.

Maternal Mortality Rate (MMR): It extends the understanding of the role of health care services and the development of the women and child sector. The MMR measures the number of maternal deaths per 100000 live births.

Gross Enrolment Ratio (GER): The GER provides an idea about the total number of children entering the world of education. It is the percentage of eligible children enrolled in schools at different levels. It measures the education of children at lower and higher levels of education.

Dropout Ratio: It refers to the percentage of students who discontinue their education before completing a specific level, such as primary, secondary or higher education.

Labour Force Participation Rate (LFPR): LFPR is an indicator of the total percentage of employed persons in the economy. It measures the proportion of people actively engaged in the labour market.

Gender Parity Index (GPI): It is used as a measure of the gender inequality in the economy. GPI is a measure used to compare the male-female ratio in education, labour and leadership roles in the country.

Gross State Domestic Product (GSDP): It helps the economy to understand the economic capacity for ensuring social sector development in the country. GSDP measures the economic output of a state or region within a specific period.

Poverty Rate: It is used as an important measure to understand the poverty scenario in the country. Poverty rate is the percentage of the population living below the poverty line.

Per Capita Income (PCI): The PCI is used to measure the average income earned per person in the country. It measures the per-person income of the economy within

a given year. PCI is used to express the economic well-being of the country to ensure social well-being.

5.17.2 MEASURING SOCIAL PROGRESS: SOCIAL PROGRESS INDEX (SPI) ASSESSMENT OF INDIAN STATES

The social progress index is used to measure the social development at the national and international levels. It uses various indicators which represent the social development of districts, states and the nation. The focus of social development in the Social Progress Index is given to the three pillars, which are Basic Human Needs, Foundations of Well-being and Opportunity. This is the first to measure the social development with a deeper focus on the people's social progress, which is explicitly expressed in the parameters considered for this index. This index is handy to measure the progress of the people at the district level and the state level, and is also very helpful for policymakers at the government level.

The SPI is a comprehensive measure used as a tool to measure the social development of the individuals in the economy. It discusses the extent of social needs of the society along with the factors considered for the developmental perspective of the economy. It is used as a holistic measure of the social development of the economy by considering all the aspects within it. That means it considers a wide range of factors from the society's developmental viewpoint. The measure is giving priority to the output of the social sector development rather than the input components of the developmental aspects. The index uses a large set of data to provide an accurate result for the policy-level analysis. The measure is not only for the national analysis of social progress of the economy, but it can also be applied to the local or regional analysis. It provides the exact state of well-being of the society. The economic factors alone cannot give the clear picture of a country's progress, so there is a need to consider the social aspects. The main highlight of the index is that it prioritises the social problems in its indicators. By prioritising the social problems, the index ensures the solution to the issues by focusing on them in its measurement process. The comprehensive analysis provides a clear picture of the social sector development of the economy. The significant components of SPI are given in the following Table 5.7.

Table 5.7**Components of Social Progress Index**

Sl. No.	Component	Sub divisions
1	Basic human needs	Nutrition and basic medical care Water and sanitation Housing Personal safety
2	Foundations of Wellbeing	Access to basic knowledge Access to information and communications Health and wellness Environmental quality
3	Opportunity	Personal rights Personal freedom and choice Inclusiveness Access to advanced education

Data source: Institute for Competitiveness, Social Progress Index (India)

Table 5.7 outlines the major components of the SPI along with their specific sub-divisions. The SPI is built on three key dimensions: Basic Human Needs, Foundations of Wellbeing, and Opportunity. Each dimension captures an important aspect of social development. Basic Human Needs includes essential requirements such as nutrition, sanitation, housing, and personal safety. Foundations of Wellbeing focuses on factors that support long-term quality of life, including access to knowledge, information, health, and environmental quality. The Opportunity dimension reflects the extent to which individuals enjoy personal rights, freedom of choice, and social inclusion. Together, these indicators provide a comprehensive view of a society's overall social progress beyond economic measures.

The study on social-sector expenditure and human development across states needs to refer to the social development of the states. So, the measurement of social development provides the current position of the development path. In this respect, the SPI provides a proper understanding of where we are and where we want to go with the objective of overall development. Here, SPI's reliance on outcome-based, non-economic social indicators makes a robust complementary measure to traditional economic or expenditure data. Using SPI data for states/districts can help us to evaluate how effectively social-sector spending translates into tangible improvements in health, education, sanitation, rights, etc. It is actually a leading component of human development, too. So, the thorough observation of available SPI of states provides a basic understanding of the states' development path, and the

following Table 5.8 provides the available SPI of states in the years 2015-16, 2017 and 2022, along with their ranks.

Table 5.8
State-wise Social Progress Index (SPI) and Ranks in 2015-16, 2017, and 2022

State	2015-16 SPI	2017 SPI	2022 SPI	2015-16 SPI Rank	2017 SPI Rank	2022 SPI Rank
Goa	65.53	63.39	65.53	1	5	1
Sikkim	65.1	62.72	65.1	2	7	2
Mizoram	64.19	62.89	64.19	3	6	3
Tamil Nadu	63.33	65.34	63.33	4	3	4
Himachal Pradesh	63.28	65.39	63.28	5	2	5
Kerala	62.05	68.09	62.05	6	1	6
Uttarakhand	58.26	64.23	58.26	10	4	9
Nagaland	59.24	57	59.24	9	13	8
Punjab	60.23	62.18	60.23	8	8	7
Meghalaya	53.22	54	53.22	17	21	16
Karnataka	56.77	60	56.77	11	9	10
Arunachal Pradesh	56.56	55	56.56	12	17	11
Manipur	56.27	55	56.27	13	20	12
Haryana	54.15	57	54.15	14	12	13
Gujarat	53.81	57	53.81	15	11	14
Andhra Pradesh	53.60	56	53.6	16	16	15
West Bengal ¹	53.13	56.5	53.13	18	15	17
Rajasthan	50.69	52.31	50.69	22	23	21
Maharashtra	50.86	58	50.86	21	10	20
Tripura	51.7	53.22	51.7	19	22	18
Chhattisgarh	51.36	57	51.36	20	14	19
Odisha	48.19	51.64	48.19	24	24	23
Madhya Pradesh	48.11	55	48.11	25	18	24
Uttar Pradesh	49.16	50.96	49.16	23	25	22
Assam	44.92	48.53	44.92	26	26	25
Bihar	44.47	44.89	44.47	27	28	26
Jharkhand	43.95	47.8	43.95	28	27	27
Jammu and Kashmir ²	60.76	55	60.76	7	19	Nil

Data source: Institute for Competitiveness, Social Progress Index (India): compiled from 2016, 2017 and 2022 releases.*

* Notes: ¹The Social Progress Index of the state West Bengal in the year 2017 is noted as an approximate SPI value. The Actual values and ranks are not published in the sources that were used for this study. An approximate value is retained here for consistency and further processing of the data.

²In 2019, the state of Jammu and Kashmir was bifurcated as two union territories, namely Jammu and Kashmir and Ladakh. Here, Jammu and Kashmir is considered a state in the 2022 SPI data for the analytical continuity and does not consider the ranking process in 2022.

Table 5.8 presents the SPI scores and ranks for the years 2015–16, 2017, and 2022. Although these three time points are not consecutive and therefore limit a continuous year-to-year comparison, the Institute for Competitiveness provides SPI data only for these periods. Despite this constraint, the study examines the available data to assess the relative performance and current standing of states in terms of social progress. SPI is used here because it is one of the most comprehensive and suitable measures for capturing the multidimensional nature of social development across Indian states. A notable pattern emerging from the Table 6.8 is that several states recorded higher SPI scores in 2017 compared to both 2015–16 and 2022, suggesting a period of temporary improvement followed by stagnation or decline. States such as Tamil Nadu, Himachal Pradesh, Uttarakhand, and Karnataka show this trajectory, reflecting short-term gains that were not sustained over time. Middle-performing states, including Punjab, Nagaland, Haryana, Gujarat, and Andhra Pradesh, exhibit moderate improvements but lack a consistent upward trend. Their fluctuating ranks indicate uneven progress across various dimensions of social development. Lower-performing states such as Odisha, Madhya Pradesh, Uttar Pradesh, Assam, Bihar, and Jharkhand remain at the bottom across all three periods. These states show only marginal improvements, suggesting persistent structural constraints in meeting basic human needs, accessing essential services, and achieving social inclusion. Their limited progress underscores gaps in social infrastructure, governance capacity, and public investment.

Table 5.8 also provides a region-wise comparison of the SPI and the progress of states. The uneven nature of social progress in India is marked by evident disparities between the high-performing states of the South, West, and Northeast and the lower-ranked states in Central and Eastern India. It also demonstrates that improvements in social indicators are not always linear; several states show temporary gains followed by reversal or stagnation. The consistent leadership of a few states reinforces the importance of sustained investments, strong administrative capacity, and effective policy implementation in achieving long-term social progress. Sikkim and Mizoram consistently rank among the top states, even though they are the northern states, because they perform strongly across key dimensions of social progress. Both states have high literacy levels, better health indicators, and strong community-based

social structures, which contribute to inclusive development. Their relatively small populations allow for more efficient delivery of public services, while effective governance and targeted welfare programmes ensure that benefits reach communities directly. In addition, both states exhibit low levels of inequality, strong environmental performance, and greater access to basic amenities, further strengthening their social progress outcomes. Collectively, these factors place Sikkim and Mizoram in the top tier of SPI rankings. Maharashtra and Karnataka fall in the middle range of the Social Progress Index because their social outcomes show a mixed pattern. Both states perform well in economic indicators and have strong urban centres, but this development does not fully translate into uniformly high social progress. Overall, both states have strong economic bases but need more inclusive social development, better rural service delivery, and reduced inequalities to move into the top tier of SPI rankings.

5.17.2.1 PERFORMANCE-BASED CLASSIFICATION OF STATES IN SPI RANKINGS

The performance-based classification Table 5.9 clearly groups states by their SPI outcomes. By categorising all states into high, middle, and low performers, the table highlights the variations in social development across India. This classification illustrates how states differ in access to essential services, quality of life, and human development achievements. It also reveals the broader patterns of progress, showing which states have consistently invested in social sectors and which continue to face structural challenges. Organising the states in this manner allows for a more focused analysis of disparities and supports the identification of regions that require targeted policy efforts to strengthen social progress.

Table 5.9

Performance-based classification of states in SPI rankings

Category	States	Reasons for Performance
High-Performing States	Goa, Sikkim, Mizoram, Tamil Nadu, Himachal Pradesh, Kerala, Jammu & Kashmir	• Strong social indicators (health, education, sanitation) • Efficient public service delivery • Higher literacy and better human development outcomes • Effective governance and targeted welfare programmes • Low levels of inequality and better access to basic amenities
Middle-Performing States	Uttarakhand, Nagaland, Punjab, Karnataka, Arunachal Pradesh, Manipur, Haryana, Gujarat, Andhra Pradesh, West Bengal, Maharashtra, Tripura, Chhattisgarh, Meghalaya	• Moderate performance across basic human needs and quality of life • Improvements are visible but uneven across districts • Issues like regional disparities, infrastructural gaps, and variable governance quality • Urban pockets perform well, but rural areas lag behind
Low-Performing States	Rajasthan, Odisha, Madhya Pradesh, Uttar Pradesh, Assam, Bihar, Jharkhand	• Persistent gaps in education, health, and basic amenities • Higher poverty levels and weaker social infrastructure • Limited administrative capacity and slower implementation of social schemes • Large populations with widespread deprivation • Structural challenges leading to slow improvement in social outcomes

Data Source: Compiled from institute for competitiveness, Social Progress Index (India).

Table 5.9 provides a performance-based classification of Indian states according to their SPI rankings. Table 5.9 considers the group of states classified into high, middle, and low-performing categories and outlines the key factors influencing their performance based on SPI ranks. High-performing states such as Goa, Kerala, Tamil Nadu, and Himachal Pradesh exhibit strong social indicators, efficient public services, and low inequality. Middle-performing states exhibit moderate social outcomes but face challenges such as regional disparities and uneven development. Low-performing states, including Bihar, Uttar Pradesh, and Madhya Pradesh,

continue to struggle with persistent gaps in education, health, infrastructure, and high levels of poverty. It can be deeply analysed in the following heads.

5.17.2.2 REGIONAL PATTERNS IN SPI RANKINGS

By grouping states by geographic and administrative characteristics, the Table 5.10 illustrates how social development outcomes vary across different parts of the country. It shows that southern and north-eastern states generally perform better on social indicators, while central and eastern regions continue to face persistent developmental challenges. This regional classification provides a clearer understanding of the spatial distribution of social progress and helps identify areas requiring targeted policy attention. The following Table 5.10 categorises Indian states into major geographical regions to highlight the regional patterns reflected in the SPI.

Table 5.10

Regional patterns of Social Progress Index (SPI)

Region	States	Remarks
Southern States	Kerala, Tamil Nadu, Karnataka, and Andhra Pradesh	High social investment, better health and education outcomes, stronger welfare systems.
North-eastern States	Sikkim, Mizoram, Nagaland, Manipur, Arunachal Pradesh, Meghalaya, Tripura	Strong community governance, high literacy, and effective service delivery.
Western States	Goa, Maharashtra, Gujarat	Mixed performance; Goa is very high; Maharashtra and Gujarat are affected by rural–urban disparities.
Northern/North-western States	Punjab, Haryana, Himachal Pradesh, Uttarakhand, Jammu & Kashmir	Moderate to high performance, but uneven regional development.
Central & Eastern States	Bihar, Jharkhand, Uttar Pradesh, Madhya Pradesh, Odisha, Chhattisgarh, Assam	Lowest SPI performance due to structural challenges, poverty, and weak social infrastructure.

Data Source: constructed from the analysis of SPI

Table 5.10 shows that the higher level of SSE disbursement is correlated with the better position in the SPI. When we coordinate the findings with the fiscal federalism, the result demands more financial support through a variety of social development programmes, as the targeted fiscal transfers aim to minimise the disparity in social development among the states. The crucial role of improved budgetary capacity for the low-progress states is necessary to strengthen the social sectors in such states. The fiscal autonomy and fiscal capacity-building programmes are the major determinants of social progress among the states in India. In this regard, it is essential to prioritise the social sector investments in states along with the effective implementation of programmes to reduce the inter-state disparity.

5.18 PATHWAYS FROM SSE TO SSD

The concept of SSE is the government's allocation of financial resources in various government programmes and policies. The allocation of resources, especially the financial resources, is given to the social sectors of the economy. The sectors such as Health services, education, infrastructure, social security, urban development, etc, constitute the social sectors in the economy. The SSE is actually the government spending through the social development programmes under the head of SSE. These expenditures may be direct or indirect, and are purely the spending through various government programmes and initiatives. The ultimate aim of the spending in the social sectors is the social sector development, which is the development of the lives of all individuals in the society. A sufficient amount of government spending in various social sectors is necessary to develop the economy. The economic as well as social development of an economy depends upon the amount of money spent under the various schemes in the social sectors. The spending under these schemes creates its reflections in the economy.

The concept of Social Sector Development is a broad term that includes many terminologies connected to the area of development. The Social Sector Development is a continuous process, and the concept depends on the various outcomes in this field. The outcomes are prepared to get some insights to reflect on the term into the developmental path of the economy, along with meeting some general objectives to

reach the social development. For the social development, the economy brings so many programmes and projects to implement for a smooth running of the agenda behind the overall development. The various programmes and projects are the guide to reach the destination of development. The concept of Social Sector Development discusses many programmes and initiatives to change the lives of human beings by providing additional support. The main aim of these programmes and policies is to address the problems of poverty, unemployment, inequality, social security and other social issues.

The reflections of SSE are shown explicitly in the Social Sector Development of the economy. The only concern in this field is that it takes too long to produce policy reflections in the economy because it is a long-term process. The immediate effect of the SSE is evident only in its statistics of allocation under various heads, while the gradual reflections are evident in the developmental walls of social sectors. Here, we can conclude that the SSE is a tool to get the outcomes in terms of Social Sector Development. So, the relation can be explained by treating both terms as an input-output pair. Such a way that the SSE is the input to get Social Sector Development, which is the outcome as the output of the government spending in the sub-sectors of the social sector.

The SSE and the Social Sector Development are positively correlated. At the same time, considering the SSE, which creates positive externalities for the economy. The real outcome of the SSE lies in the format of human capital, which is the leading indicator of economic development, both in the social sector and in the broader economy.

5.19 SYNERGY BETWEEN ECONOMIC DEVELOPMENT AND SOCIAL DEVELOPMENT

The interconnections between economic and social development are unavoidable when we consider either concept. The economic growth is always subject to that economy's social welfare; in this context, the role of social development for the economic development is undeniable. The economic growth is always subject to its financial flow to the welfare programmes of the economy. The two concepts of

social development and the economic development are always mutually interdependent. They reinforce each other in their own development and work closely together to sustain the country's development. The improvements in one angle of development ensure its reflections in the other in the form of its progress in the country.

The economic development comprises the increase in the nation's output or the increase in national income. This stresses the improvement in the nation's productivity, income, and growth. A growing part of an economy exhibits the conceptualisation of the economic development. The economic development treats social development in different lines of its insights into the social development of the country. The economic development reinforces social development in the grounds of improvement in the accessibility of public resources, improvement in infrastructural amenities and employment creation with the introduction of diverse productive activities. Social development is a general term that represents the social sector development of the country. The social development comprises the development of many sub-sectors. The focus of social development is the improvement in the standard of living of the individuals in the country, which includes the equity, poverty reduction and provision for basic amenities. The social development enhances the economic development on the grounds of improvement in human capital, reduction in poverty and inequality and the remarkable contribution of skilled labour force.

The dual dimensions of development specify its inner connections from social development to the economic development. Both terms are closely related to each other, but both exhibit a diverse nature in the country's prosperity. The social development has a penetrating effect on its pathways to develop the economy than the economic development. Economic development ensures the pathway from a poor economy to a rich economy in terms of its national income enhancement. The economic progress explains the improvement in the country's national output or national income, and the social development explains the improvement in the well-being of the people through this national income enhancement in the country. The

synergy provides the interplay between the social development and economic development. The increase in national income determines the economic development, which leads to an improvement in the lives of the people in the country. So, the economic development provides a platform for the social development of the economy, which is the first half of the phenomenon of development. The second half of development is that the improvement in the life of people in the society leads to the improvement in income-generating capacity, which is the social development that enhances the capacity building of the economy through the enhancement in the human development. The enhancement in human development ensures the framework for income generation in the economic activities, which is the route to economic development. In short, the economic development leads the social development, and social development leads the economic development in the country. So, these two terms are closely interconnected. One is possible without the presence of the other, so the two developmental propositions are actually the two different dimensions of a single concept of development. The significant challenging aspect of the interconnections between social development and economic development is the inequitable growth due to a lack of investments in the social sectors of the economy. The synergy between the social and economic development creates a route for the sustainable development of the economy. So, both are contributing to achieving the SDGs as their ultimate developmental goal.

5.20 CHAPTER SUMMARY

This chapter provides a concise yet comprehensive understanding of SSE and SSD in India. It outlines the concept, classification, and determinants of SSE, showing how public spending on education, health, nutrition, sanitation, welfare, and social protection forms the foundation of social progress. The chapter analyses long-term trends (2004–2021) and state-wise patterns in SSE, highlighting that while overall expenditure has increased steadily, significant inter-state disparities persist. The chapter also explains the emergence, concept, and multidimensionality of social development, linking it to inclusive growth and sustainable development. The

interconnections between SSE and global development agendas, particularly the MDGs and SDGs, are discussed to show how social spending contributes to improvements in human capabilities and living standards. A key element of the chapter is the assessment of the SPI for Indian states. SPI scores across three periods (2015–16, 2017, 2022) reveal uneven social progress, with southern and some north-eastern states consistently performing better, while several central and eastern states lag behind. Temporary improvements followed by stagnation in some states reflect the need for sustained policy efforts and explain how SSE translates into broader social and economic gains. Overall, the chapter demonstrates that sustained investment in social sectors is essential for achieving equitable, inclusive, and long-term development across Indian states.

EMPIRICAL ANALYSIS OF SOCIO-ECONOMIC AND FISCAL DETERMINANTS OF HUMAN DEVELOPMENT OF THE STATES IN INDIA

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 - 6.2 Conceptual Interlinkage between SSE and Human Development
 - 6.3 Concept of Human Development
 - 6.4 Human Development Index (HDI)
 - 6.5 Dimensions and Indicators of HDI
 - 6.6 HDI in India
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6.1 INTRODUCTION

The SSE on the key human developmental variables plays a significant role in reinforcing the developmental variables in the country. The improvement in the SSE plays a substantial role in shaping the country's human development concepts. Generally, higher social development via social sector spending leads to the generation of better outcomes in the human development. The mutual reinforcement of human development variables and the social sector spending shows an interconnection between social sectors and human development in the society. High human development directly contributes to the development of the economy via improvements in economic growth and the structural outcomes of the economy. The increase in social sector spending opens the door for more investments in the social sectors such as health, education, social welfare and urban and rural development. Theoretically conceptualising the terminologies of human development and social development, and interlinking the SSE. The study empirically considers human development as the function of public spending and as the outcome of the efficient governance. The operational tools used econometric analysis to build empirical validation of the model used in the study. The methodological concept considers the human development as a multidimensional process and integrates many of the socio-economic and institutional factors.

This chapter explores the empirical relation between the HDI and determinants of the HDI across the states in India. Various statistical tools and techniques are used to capture the econometric relation between them. The SSE of 28 states from 2004 to 2021 is used here as the major determinant of HDI. The chapter ensures a comprehensive analysis to build a strong conceptual and empirical support for the study. The grassroots-level analysis provides a clear picture of the variables and their roles in determining the human development of the states. In this chapter, the study concentrates on coordinating the statistical tools and techniques to explain the econometric analysis. The core of the research is nothing other than the

methodology part and the analysis, which is arranged in this chapter. The study empirically analyses the research questions raised in the previous chapter, which is the first chapter. Any, this chapter provides a detailed analytical view of the major part of the study. This analysis part provides the outcomes of the inputs we have invested in this study. The first part of this chapter provides a theoretical understanding of the concepts used in the study, and the following parts provide a detailed empirical analysis.

6.2 A CONCEPTUAL INTERLINKAGE BETWEEN SSE AND HUMAN DEVELOPMENT

SSE is closely linked to human development, and it ensures a direct association between the two. Here, the spending on social sectors ensures the improvement of various sectors like education, health, social welfare, housing, urban and rural development and so on. This helps improve individuals' well-being and contributes to capacity building, thereby enhancing the overall quality of life. Actually, the human development provides the enhancement of life through the quality advancement. Hence, the human development provides an outcome-based analysis of the SSE of the government in terms of the quality of life, by connecting this to Amartya Sen's capability approach to the SSE, which links the human development with the enhancement of capabilities and opportunities. This strengthening occurs from the stress on the significant social sectors for the human development of the individuals in the society.

The human development indices are used to measure the actual impact of social concentration on the various dimensions of human development. The HDI is used to identify the interconnections between governments' spending on it and the improvement in life expectancy. The different sectors are closely focusing on the interconnection with SSE and the human development, with the use of its different aspects as the major contributors to development. Here, the variables such as education, health, social welfare, infrastructural development, housing, urban and

rural development, women and child development, etc, are leading to observe the impact of SSE on the human development. This provides an evident connection with the perspective of developmental outcomes in the human development.

The relationship between SSE and the Human Development Index (HDI) is inherently interconnected, as public investment in social sectors lays the foundation for the development of human capabilities. SSE encompasses state expenditure on health, education, nutrition, housing, sanitation, welfare programmes, and other development-oriented services. These sectors directly influence the quality of life and shape long-term human potential. Higher levels of SSE strengthen the health dimension of HDI by improving access to healthcare, reducing mortality, enhancing nutrition, and promoting overall well-being. Similarly, investments in education through school infrastructure, teacher quality, scholarships, and literacy programmes raise both the expected and the mean years of schooling, thereby improving the education dimension of HDI. Expenditure on welfare schemes, livelihood programmes, housing, and basic amenities also contributes indirectly to economic opportunities, thereby influencing income levels and the standard of living dimension. This conceptual interlinkage highlights that HDI outcomes are not solely determined by economic growth but are deeply influenced by the quality and distribution of public spending. SSE acts as a catalyst that expands human capabilities, reduces inequality, and enhances overall development outcomes. In this sense, the effectiveness of social sector investments becomes a crucial determinant of a state's ability to achieve higher levels of human development.

The SSE on the key human developmental variables plays a significant role in reinforcing the developmental variables in the country. The improvement in the SSE plays a major role in shaping the country's human development concepts. Generally, higher social development via social sector spending leads to the generation of better outcomes in the human development. The mutual reinforcement of human development variables and the social sector spending shows an interconnection between social sectors and human development in the society. High human development directly contributes to the development of the economy via

improvements in economic growth and the structural outcomes of the economy. The increase in social sector spending opens the door for more investments in the social sectors such as health, education, social welfare and urban and rural development. Theoretically conceptualising the terminologies of human development and social development, and interlinking the SSE. The study empirically considers human development as the function of public spending and as the outcome of the efficient governance. The operational tools used econometric analysis to build empirical validation of the model used in the study. The methodological concept considers the human development as a multidimensional process and integrates many of the socio-economic and institutional factors.

This chapter explores the empirical relation between SSE and the human development of the states, along with other determinants of human development in India. Various statistical tools and techniques are used to capture the econometric relation between them. The data of 28 states from 2004 to 2021 is used here to study the role of human development and its determinants in the country. The study ensures a comprehensive analysis to build a strong conceptual support for the study. The grassroots-level analysis provides a clear picture of the variables and their roles in determining the human development of the states. In this chapter, the study concentrates on coordinating the statistical tools and techniques to explain the econometric analysis. The core of the research is the methodology and the analysis conducted in the study. This paper empirically analyses the research questions raised in Chapter 1. The study examines the relationship between SSE and Human development, along with other independent variables across states over the years.

6.3 CONCEPT OF HUMAN DEVELOPMENT

The concept of Human development emerged as a response to the old traditional development concepts. Up to the emergence of the human development, the concept of development followed the expansion of national income as a single measure to explain the entire development of the country or economy. It considers only the economic performances in various sectors of the economy and does not consider any other factors. By the late 1970s and 1980s, the policy makers questioned the

traditional measures of economic development and considered this a narrow measure of economic development of the country. Countries with persistent poverty, inequality, poor health conditions, malnutrition and low literacy have noted that economic growth alone is not a proper measure to express the reality of development and underdevelopment among them, and it does not catch the improvements in people's lives.

The work of Amartya Sen, "Commodities and Capabilities" in 1985, brought a breakthrough with his capability approach to the concept of economic development. Human development is a comprehensive approach to understanding and enhancing people's well-being. The work explains that the capability approach considers the expansion of people's freedom and opportunities. It goes beyond traditional economic measures and places individuals at the centre of development analysis. Human development views consider the progress is not merely in the expansion of income or economic growth, but as the expansion of human capabilities. The real freedoms he explains in his work are that people must lead meaningful, productive, and dignified lives in society. The concept of human development, emerging from the theoretical foundations laid by Amartya Sen, stresses that development must expand the choices and opportunities available to individuals. These include the ability to live a long and healthy life, acquire knowledge, access resources for a decent standard of living, participate in social and political life, and act as an agent in shaping one's own future. Thus, human development is both a process and an outcome, in the sense that opportunity expansion is the process and improvements in wellbeing are the outcome. Building on Sen's concepts, Mahbub ul Haq played a crucial role in decoding this framework into a practical policy tool. As the chief architect of the Human Development Reports (HDRs) of the United Nations Development Programme (UNDP), Haq introduced and familiarised the HDI in 1990, shifting global attention from economic growth to human-centred metrics. According to Amartya Sen, development must be understood not merely as the accumulation of wealth. However, as the expansion of human capabilities, the real freedoms people enjoy to lead meaningful lives (Sen, 1999). His capability approach changed the theoretical foundation of human development and moulded global

development discourse, including the Human Development Reports of the United Nations Development Programme (UNDP). The United Nations Development Programme (UNDP) established this viewpoint in the Human Development Reports and the HDI through the institutionalisation of it. The report provides the concentration of the major factors in human development: health, education, and living standards. While HDI provides a simplified representation, the broader human development framework identifies multiple dimensions, including gender equality, social inclusion, environmental sustainability, and freedom from deprivation. In essence, human development offers a people-centred, multidimensional view of progress. It shifts the focus from what societies produce to how people live, encouraging policies that expand opportunities, reduce inequalities, and strengthen the capabilities of individuals and communities.

The core idea of human development, according to Sen, is to perceive human development as a process of enhancing or enriching people's substantive freedoms. These freedoms comprise the ability to live a long and healthy life, to access knowledge, to participate in economic and social activities, and to work as an agent in decision-making. Development, therefore, is both the process of expanding capabilities and the outcome reflected in people's enhanced well-being (Sen, 1985). This standpoint changes the attention from narrow economic indicators to the broader understanding of many factors in the development analysis. Sen highlights that the expansion of capabilities depends not only on income but also on social opportunities, institutional arrangements, and public policies. Health, education, democratic participation, social protection, and equitable access to resources all play significant roles in expanding people's choices. Thus, human development becomes a multi-dimensional framework that integrates social, economic, political, and cultural dimensions of an individual's progress.

6.4 HUMAN DEVELOPMENT INDEX (HDI)

The HDI, inspired by Sen's approach and operationalised by Mahbub ul Haq, reflects these foundational ideas by combining indicators of health, education, and living standards into a composite measure of development. HDI, however, is only a

proxy; Sen argues that no single index can fully capture the richness of human capabilities (Sen, 1999). Nonetheless, it marks a significant shift towards evaluating development through people-centred metrics. Sen's contribution lies in redefining development as freedom, asserting that societies must expand the conditions that allow individuals to realise their potential. In this sense, human development becomes both a means and an end, an ongoing process of widening opportunities and improving the quality of human life.

From a global perspective, the HDI serves as a benchmark for comparing the quality of life across countries. Since its emergence by UNDP in 1990, HDI has shifted global development discourse away from income-centred measures to a multidimensional understanding of human well-being. By connecting health, education, and income dimensions, HDI highlights the disparities in development across different regions of the world. Globally, countries in Europe, North America, and Oceania dominate the very high human development category due to strong social protection systems, advanced healthcare, high educational attainment, and stable economic conditions. Emerging economies in Latin America, East Asia, and parts of the Middle East generally fall under the high human development category, reflecting robust but uneven progress. Conversely, several nations in South Asia and Sub-Saharan Africa continue to record medium or low HDI values, primarily due to structural challenges such as poverty, limited education access, weak health systems, gender disparities, and political instability. Thus, HDI provides a global lens through which inequalities in development, capabilities, and opportunities become visible, guiding global policy priorities in health, education, gender equality, and sustainable development.

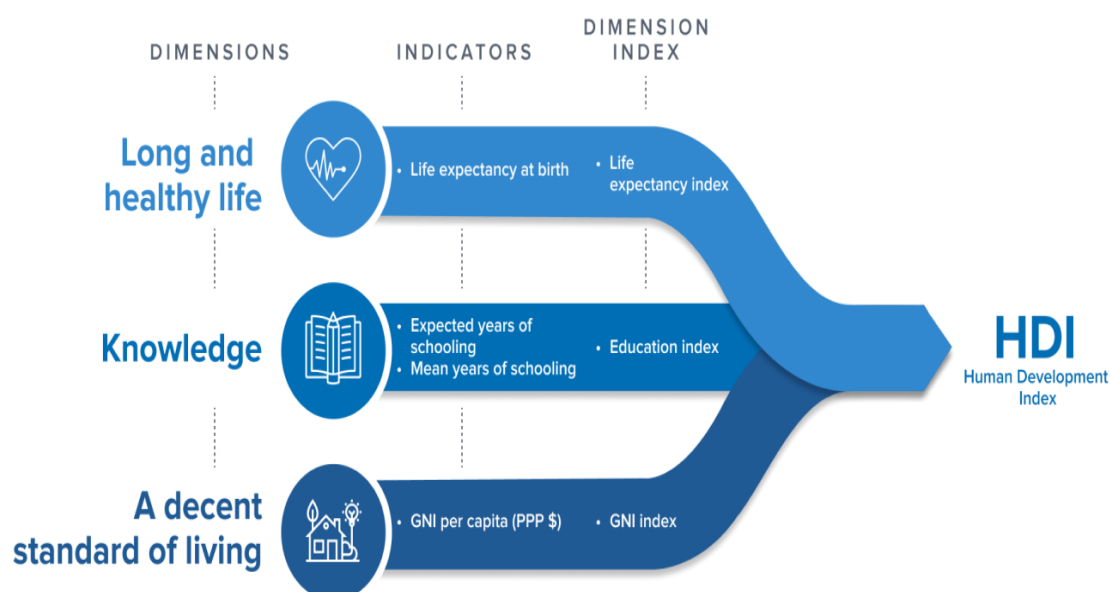
Within India, HDI offers a critical tool for understanding inter-state discrepancies in human development. While the nation has made consistent improvement in life expectancy, schooling, and income growth, the pace of improvement varies significantly across states due to changes in governance, SSE, economic structure, and institutional capacity. Some states show a significant increase in the HDI values among them because the substantial investments in public health, quality education, women's empowerment, and inclusive welfare programmes in such states ensure high HDI, and some are showing low HDI, reflecting shortcomings in healthcare

accessibility, educational attainment, and livelihood opportunities. In general, the national HDI framework helps India to identify its priority areas, allocate resources effectively, and track improvements towards inclusive and sustainable development.

6.5 DIMENSIONS AND INDICATORS OF HDI

The HDI is a composite measure of an individual's well-being or improved quality of life. It provides a summary measure of human capabilities through its indicators. The principal dimensions considered under the concept of human development are health, education and standard of living. These three directly connect to the quality of life, the expansion of people's capabilities, and the enhancement of individuals' overall well-being in society. The HDI is constructed around three core dimensions: Health, Education, and Standard of Living. Each dimension is measured using explicit indicators that adapt human development concepts into quantifiable values. Together, they offer a complete, multidimensional, comprehensive understanding of the overall development of the economy. The principal dimensions and indicators of the HDI are clearly mentioned in the following Figure 6.1.

Figure 6.1



Data source: UNDP Human Development Reports

The Figure 6.1 illustrates the three foundational dimensions of the HDI supporting the specific indicators used to measure each dimension. HDI combines these multiple indicators into a single composite index that reflects the overall level of human development in a country or state. The three dimensions of HDI are given below.

1. Long and Healthy Life

This dimension captures the health status of a population. It uses Life expectancy at birth as the indicator to measure the health dimension. It reflects the average number of years a newborn is expected to live, assuming current mortality patterns continue. This index standardises life expectancy into a value between 0 and 1 for comparison across regions. A longer and healthier life expands individuals' opportunities and is considered a core element of human development.

2. Knowledge

This dimension measures the educational attainment and learning opportunities of individuals. It considers two indicators: Expected Years of Schooling (EYS) and Mean Years of Schooling (MYS). The expected years of schooling are calculated as the number of years a child entering school is expected to receive. The mean years of schooling explains the average number of years of education completed by adults. This measure combines the two indicators to assess the overall educational level of a population. Knowledge equips people with skills, capabilities, and opportunities necessary for personal and social advancement.

3. Standard of Living

This dimension captures people's access to economic resources and material well-being. It uses the Gross National Income per capita, adjusted for purchasing power parity (GNI per capita, PPP \$). This index transforms the income values into a standardised form to compare living standards across countries. A decent standard of living enhances people's choices and supports a dignified life.

These three dimensions consider health, education, and standard of living comprehensively as the determinants of human development. They represent broad categories that encompass many underlying factors contributing to well-being. HDI combines the three-dimensional indices to provide a complete measure of human

development. A complete outlook of the construction of HDI is given in the following Table 6.1.

Table 6.1
Framework for the construction of HDI

Sl. No.	Step / Level	Element	Implication
1	Dimensions of HDI	Health	Measures longevity and overall population health.
		Education	Measures knowledge and human capital formation.
		Standard of Living	Measures economic well-being and access to resources.
2	Indicators of HDI	Life Expectancy at Birth (LE)	Indicator of the health dimension.
		Mean Years of Schooling (MYS) and Expected Years of Schooling (EYS)	Indicators of the education dimension.
		GNI per Capita (PPP \$)	An indicator of the standard-of-living dimension.
3	Components (Dimension Index) of HDI	Life Expectancy Index (LEI)	Component derived from LE.
		Education Index (EI)	Combined index from MYS and EYS.
		Income Index (II)	Component derived from GNI.
4	Measurement of HDI Indicators	Life Expectancy Index (LEI) = $(\text{Life Expectancy} - 20) / (85 - 20)$	Represents the Health Dimension and measures longevity and overall population health.
		Mean Years of Schooling Index (MYSI) = Mean Years of Schooling / 15	Part of the Education Dimension; reflects adult educational attainment.
		Expected Years of Schooling Index (EYSI) = Expected Years of Schooling / 18	Part of the Education Dimension; measures the future learning potential of children.
		Education Index (EI) = $(\text{MYSI} + \text{EYSI}) / 2$	Represents the Education Dimension as a combined indicator.
		Income Index (II) = $[\ln(\text{GNI per capita}) - \ln(100)] / [\ln(75,000) - \ln(100)]$	Represents the Standard of Living Dimension; it reflects economic capacity.

Data source: Human Development Reports^{*}

^{*} Note: The explanations for the numbers and terminology have been added to the HDI measurement. Here, the health index uses the numbers 20 and 85 in its measurements; from this, 20 is the minimum survival years in the life expectancy, and 85 is the highest stable global life expectancy prescribed by UNDP. Then the education index uses the numbers 15 and 18 in its measurements, among them the value 15 represents the global upper benchmark for the years recommended for completed schooling, and the value 18 represents the full schooling years from primary to tertiary. Regarding the income index, 100 represents the minimum income level, and 75000 is the maximum benchmark income level. The income index is defined in the logarithmic format, which is why the values are described in the format. It considers the natural logarithm to compress the significant income differences.

Combines all three dimensions to provide the final level of human development that provides the general form of the final HDI, which is expressed as

$$\text{HDI} = (\text{Health Index} \times \text{Education Index} \times \text{Income Index}) / 3$$

$$\text{HDI} = (\text{HI} \times \text{EI} \times \text{II}) / 3$$

or

$$\text{HDI} = (\text{Life Expectancy Index} \times \text{Education Index} \times \text{Income Index}) / 3$$

$$\text{HDI} = (\text{LEI} \times \text{EI} \times \text{II}) / 3$$

The HDI categorises countries and regions into different levels of human development based on their composite HDI scores. To ensure meaningful comparison, UNDP classifies HDI values into specific ranges that reflect variations in health, education, and standard of living. These ranges help identify whether a country or state has attained very high, high, medium, or low levels of human development. The following Table 6.2 presents the HDI value classifications, showing how numerical HDI scores are grouped and what each category indicates about the overall quality of life and human development achievements.

Table 6.2

HDI value ranges and interpretation

Sl. No.	HDI Range	Category	Indication
1	0.800 – 1.000	Very High Human Development	Strong outcomes in health, education, and income; long life expectancy; high quality of life.
2	0.700 – 0.799	High Human Development	Good performance across dimensions, but still some gaps in quality and equality.
3	0.550 – 0.699	Medium Human Development	Moderate progress; challenges in health, education quality, and income levels.
4	0.000 – 0.549	Low Human Development	Severe deprivation in health, education, and standard of living; significant structural challenges.

Data source: UNDP Reports

Table 6.2 presents the classification of HDI values into four categories and explains what each range indicates about a region's level of human development. HDI values between 0.800 and 1.000 represent Very High Human Development, characterised by strong performance in health, education, and income, as well as high life expectancy and overall quality of life. The range of 0.700 to 0.799 denotes High Human Development, where outcomes are generally good but some inequalities or gaps may persist. Values between 0.550 and 0.699 fall under Medium Human Development, indicating moderate progress but challenges in education quality, health outcomes, and income levels. HDI values below 0.549 are classified as Low Human Development, reflecting severe deprivation in basic capabilities, poor living conditions, and substantial developmental barriers. Overall, the table helps interpret HDI scores by linking numerical ranges with their corresponding developmental conditions.

6.6 HDI IN INDIA

The HDI provides a significant framework for understanding the quality of life and overall well-being of India's population. As a country characterised by enormous social, economic, and regional diversity, India's HDI performance reflects the collective influence of its development policies, social sector investments, and demographic dynamics. Since the introduction of HDI in the 1990 Human Development Report, India has used this index as an important tool for monitoring the improvement beyond economic growth and for recognising gaps in human development across states and regions. Over the years, India has made steady improvements in the three core dimensions of HDI: health, education, and standard of living. Gains in life expectancy, expansion of schooling, and increased access to income-generating opportunities have contributed to this development. However, the pace of development varies significantly across states. Southern and western states generally report higher HDI values due to stronger SSE, better governance, and more inclusive development strategies. In contrast, several central and eastern states continue to face challenges, including inadequate health services, educational disparities, and lower income levels. India's HDI performance also reflects the influence of structural factors such as gender inequality, social exclusion,

infrastructure deficits, and environmental vulnerabilities. Recognising these challenges, national initiatives such as the National Health Mission, the Right to Education Act, and NITI Aayog's SDG monitoring aim to strengthen human development outcomes. State governments, too, have increasingly focused on improving public health, expanding educational access, enhancing skill development, and boosting livelihood opportunities.

Despite progress, India's HDI remains constrained by persistent inequalities, regional imbalances, and multidimensional deprivations. Continued investment in human capital, social protection, and capability enhancement is essential to accelerate improvements and ensure more equitable human development across the country.

Table 6.3
Temporal trends in India's HDI

year	HDI Value
2004	0.538
2005	0.547
2006	0.557
2007	0.566
2008	0.574
2009	0.579
2010	0.59
2011	0.603
2012	0.609
2013	0.615
2014	0.625
2015	0.633
2016	0.644
2017	0.649
2018	0.648
2019	0.651
2020	0.652
2021	0.647

Data source: Sub-national HDI data, Global Data Lab (GDL)

The HDI figures summarised in Table 6.3 are visually represented in the Figure 6.2. which provides a clearer understanding of the gradual and consistent improvements in India's HDI.

Figure 6.2
Temporal pattern of HDI in India

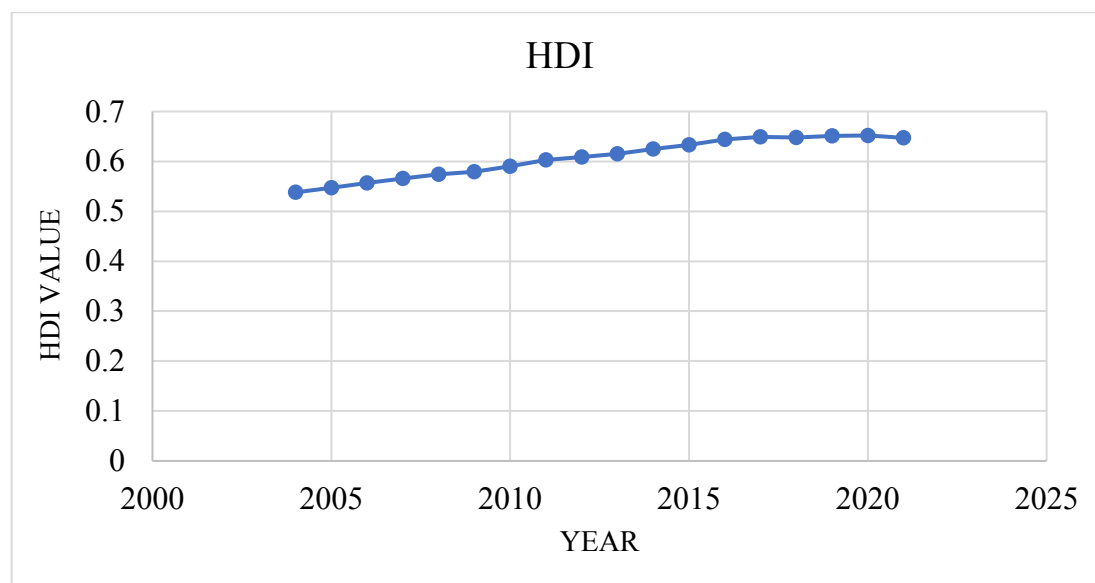


Figure 6.2 illustrates the long-term progression of the HDI in India from 2004 to 2021. The graph shows a steady, consistent upward trend, reflecting gradual improvements in the core components of human development, such as health, education, and the standard of living. Beginning at an HDI level of 0.538 in 2004, the index shows incremental gains across the subsequent years. The slope of the curve indicates that although the pace of improvement has been moderate, it has been sustained, with India reaching an HDI value of 0.647 by 2021. This upward trajectory suggests expanding access to essential services, rising literacy and educational attainment, increased life expectancy, and progressive enhancement in living standards. The slight flattening of the HDI curve around 2020 reflects the nationwide disruptions caused by the COVID-19 pandemic, which adversely affected health outcomes, educational continuity, and income levels. These shocks temporarily slowed India's progress in human development before the recovery period resumed in subsequent years.

Despite the overall positive trend, the graph also shows that India's improvement has been gradual rather than rapid, suggesting that structural challenges such as regional inequalities, uneven social-sector investments, and disparities in human development outcomes continue to influence the pace of progress. Nevertheless, the persistent year-on-year rise indicates that policy interventions, social sector expenditure, and human capital investments have contributed meaningfully to improving HDI over time. In essence, the temporal pattern underscores India's steady advancement in human development while simultaneously signalling the need for targeted efforts to accelerate progress and reduce disparities across the country. Then we can discuss the state-wise HDI over the years in detail under the following heads.

6.7 EVOLVING HUMAN DEVELOPMENT: TRENDS AND PATTERNS ACROSS INDIAN STATES

The following Table 6.4 provides a comprehensive view of the analysis of HDI performance for the period 2004–2021 across states in India. The Table 6.4 reports the average HDI for each state, the degree of variability over the years, a brief description of the observed trend, and the current level of human development. The purpose of Table 6.4 is to provide a clear and comparative understanding of how different states have progressed over nearly two decades, highlighting patterns of improvement, stability, or fluctuation. By examining the average HDI and its consistency, the Table 6.4 helps identify states with sustained development as well as those requiring targeted interventions.

Table 6.4
State-wise analysis of HDI

State	Average HDI (Mean) (2004–2021)	Variability (Std. Dev)	Trend Explanation	Pattern	Present HDI Category
Andhra Pradesh	0.605	0.042	Steady increase until 2017; slight dip after 2019	Increasing, then a slight dip	Medium
Arunachal Pradesh	0.642	0.055	Substantial rise over the years; occasional	Strong increase	Medium–High

			fluctuations		
Assam	0.588	0.030	Gradual but slow improvement	Slow increase	Medium–Low
Bihar	0.540	0.040	Consistent increase from a low base	Gradual increase	Low
Chhattisgarh	0.602	0.019	Fluctuations; improving trend overall	Fluctuating increase	Medium
Goa	0.738	0.034	Consistently high HDI with marginal variation	Stable high	Very High
Gujarat	0.627	0.030	Rising trend then slight stabilisation	Increasing then stable	Medium–High
Haryana	0.660	0.040	Steady improvement; income and infrastructure gains	Consistent increase	High
Himachal Pradesh	0.690	0.027	Consistently high HDI; stable gains	Stable high	High
Jammu and Kashmir	0.664	0.044	Upward trend with small fluctuations	Increasing with dips	High
Jharkhand	0.594	0.010	Slow rise with minimal variation	Very slow increase	Medium–Low
Karnataka	0.634	0.041	Consistent rise then stabilisation	Increasing then stable	Medium–High
Kerala	0.733	0.031	Very high and stable HDI throughout	Stable very high	Very High
Madhya Pradesh	0.568	0.040	Slow but steady improvement	Slow increase	Medium–Low
Maharashtra	0.663	0.033	Smooth upward trend; industrial growth effects	Consistent increase	High
Manipur	0.675	0.039	Strong growth with some dips after 2013	Increase with dips	High
Meghalaya	0.624	0.046	Mainly increasing with slight stabilisation.	Increasing then stable	Medium
Mizoram	0.689	0.029	High HDI with slight changes over time	Stable high	High
Nagaland	0.655	0.050	Rising trend with	Increase with	High

			noticeable fluctuations	variability	
Orissa	0.566	0.042	Consistent improvement from a low base	Gradual increase	Medium– Low
Punjab	0.676	0.034	Increasing trend; minor decline after 2016	Increase, then a slight dip	High
Rajasthan	0.587	0.052	Significant improvement over time	Increasing	Medium– Low
Sikkim	0.664	0.046	Strong continuous rise	Strong increase	High
Tamil Nadu	0.665	0.035	Steady rise, stable post-2015	Consistent increase	High
Tripura	0.620	0.029	Smooth upward trend; slight plateau after 2015	Increase then plateau	Medium
Uttar Pradesh	0.566	0.038	Gradual improvement remains low overall.	Slow increase	Medium– Low
Uttarakhand	0.666	0.015	Very stable high HDI	Stable high	High
West Bengal	0.600	0.037	Gradual steady rise	Consistent increase	Medium

Data source: Compiled from Global Data Lab (GDL), Subnational HDI.

Table 6.4 reveals considerable variation in HDI levels across Indian states. States such as Kerala, Goa, Himachal Pradesh, Punjab, and Tamil Nadu consistently exhibit high to very high HDI with stable long-term trends. In contrast, states like Bihar, Uttar Pradesh, Odisha, Rajasthan, and Madhya Pradesh show relatively lower HDI averages and slower progression. Several states demonstrate moderate variability (example: Nagaland and Arunachal Pradesh), indicating fluctuations in human development over time. Overall, the Table 6.4 underscores that while the general direction of HDI has been upward across most states, the pace and stability of progress vary widely.

6.8 REGIONAL COMPARISON OF HDI FROM 2004 TO 2021 ACROSS STATES IN INDIA

Table 6.5 provides a regional comparison of human development performance across India by grouping states into six major regions: Southern, Western, Northern, Eastern, Central, and North-Eastern. The Table 6.5 reports the regional average HDI, extent of variability, overall trend, and the current HDI category of each region. This regional lens enables a broader understanding of developmental disparities and highlights the structural differences shaping human development outcomes across the country.

Table 6.5

Regional comparison of HDI from 2004 to 2021 across states in India

Region	States Included	Regional Average HDI	Variability	Overall Trend	Present HDI Category
Southern Region	Kerala, Tamil Nadu, Karnataka, and Andhra Pradesh	0.659	Moderate	Strong and consistent increase	High–Very High
Western Region	Goa, Maharashtra, Gujarat	0.676	Moderate	Strong and stable growth	High–Very High
Northern Region	Punjab, Haryana, Himachal Pradesh, Uttarakhand, Jammu & Kashmir	0.668	Low–Moderate	Consistent improvement	High
Eastern Region	Bihar, Jharkhand, West Bengal, Odisha	0.575	Moderate	Slow-to-moderate improvement	Low–Medium
Central Region	Madhya Pradesh, Chhattisgarh, Rajasthan, Uttar Pradesh	0.580	Moderate–High	Gradual improvement	Low–Medium
North-Eastern Region	Assam, Meghalaya, Manipur, Mizoram, Nagaland, Arunachal Pradesh, Tripura, Sikkim	0.639	High	Uneven but positive	Medium–High

Data source: Compiled from Global Data Lab (GDL), Subnational HDI.

The regional comparison shows that the Southern and Western regions achieve the highest average HDI, reflecting long-standing strength in social development, infrastructure, and public service delivery. The Northern region also performs strongly, though with moderate variability due to internal differences between states. On the other hand, the Eastern and Central regions lag, characterised by lower HDI averages and slower improvement. The North-Eastern region exhibits an uneven pattern some states perform well, while others display significant fluctuations. Overall, the regional analysis reinforces that human development is unevenly distributed across India, with southern and western states leading and eastern and central states requiring more focused interventions.

All India trend: as usual, the national trend shows an upward movement of the HDI of the country with the improvements in all the three components of HDI from the projected period in the study. The steady movement of the HDI value reflects the progress in quantitative as well as qualitative technologies in terms of. The reliable advancements in the quality of life exhibit a healthy exhibition with higher educational attainment to earn more from employment to materialise human development. On average, the improvements in the national trend show an approximate increase of 0.65 points in the HDI in India, as we know that there are regional disparities in the human development and inter-state differences in the fiscal structure, even though the country maintains a standard development path in the human development. In this respect, we can conclude that there are advancements in the capabilities and opportunity generation for enjoying a better life in India.

6.9 STRUCTURAL AND FISCAL DETERMINANTS OF HUMAN DEVELOPMENT: EVIDENCE FROM INDIAN STATES

The present study assesses human development by examining a set of structural and fiscal determinants that shape the capabilities and well-being of populations across states. Beyond the traditional dimensions of health, education, and income, the analysis incorporates variables that influence the wider development environment. Capital formation reflects the productive capacity of states and their ability to

support long-term economic growth. The gross fiscal deficit indicates fiscal health and expenditure priorities that can affect the provision of essential public services. The Corruption Perceptions Index serves as a proxy for governance quality, shaping the efficiency of public spending and institutional credibility. Pension expenditure represents social protection efforts aimed at improving living conditions for the elderly and vulnerable groups. SSE captures investments in health, education, and welfare services that directly enhance human capabilities. Finally, state-wise power availability reflects infrastructure readiness and the enabling environment necessary for economic activity and improved quality of life. Together, these determinants provide a comprehensive framework for understanding variations in HDI across states in this study.

The variables selected for the study are explained here, and how they are associated with the dependent variable in the study. The variables are selected on the basis of the conceptual framework set for the study, and they are considered as a representative of the theoretical, analytical and policy level understanding incorporated in the study. This multiple-level inclusion is because of the multidimensionality of the concept of human development. These dependent and independent variables in the study simultaneously determine the socio-economic and administrative dynamics of development, especially the human development. The following variables are incorporated for the study to empirically capture the dynamics of human development.

1. Capital Formation (CF)

CF is a component that explains the capacity of an economy. It tells us about the fiscal capacity as well as the economic strength of an economy. In this respect, we can use CF as a proxy for development. More and more investments in human development are possible with higher capital investments in the economy. It explains the financial health of the economy by investing more and more in human development of the state economy. The CF is the capital investment in the economy, which is the major determinant of development, both the economic and human development concerns, because investments in major sectors of development are not

possible. In this respect, the CF can be used as an indicator of the human development of the country. It describes the state's capacity to adapt developmental policies to maintain a balance between investment and development. The investments in the form of CF directly reflect the expenditures on them. Finally, the quantum of CF focuses on the overall focus of the state and thereby the whole country. The path of development is that more investment formation leads to huge investments in development sectors, which constitute social sectors in the economy, and then the investment. Then, in the social sectors, directly improve human development indicators, and finally, improve the country's development. CF represents the accumulation of physical assets such as infrastructure, machinery, and productive public investments that support long-term economic growth. Higher levels of CF enhance the production environment of a state, improve service delivery capacity, and enable better implementation of social and economic programmes. It is considered here because stronger physical infrastructure indirectly promotes human development by expanding access to education, healthcare, and livelihood opportunities.

2. Corruption Perceptions Index (CPI)

The CPI directly explores the governance efficiency of the state/country or the economy. So, here CPI is used as an indicator of administrative efficiency, which is a measure of development. The state governments are playing a significant role in ensuring fiscal stability between resource mobilisation and utilisation. There is a chance for corruption at any level. It is crucial to utilise the funds efficiently and effectively. So, the state governments are playing a major role in ensuring the effective utilisation of resources among the various developmental projects of the social sectors. By considering the component CPI in the empirical analysis, it explains the efficiency of public service delivery at the output level. In India, the states are ruled by different powers, so it is difficult to manage their activities the improve the country's performance. So, it is relevant to address the governance quality of each state government to ensure the overall development. Here, the study considers CPI for indicating the governance quality as a measure of development.

The higher CPI represents a lower level of corruption, and the lower CPI represents a higher level of corruption. When we connect the value to HDI, the CPI generates a positive impact on HDI and expresses the transition in the fiscal structure of the social sector spending. The higher CPI also indicate the efficiency of delivering public services and the efficiency in government spending on various social sectors. The CPI captures perceived levels of integrity and transparency within the governance system. States with lower corruption tend to utilise public funds more efficiently, especially in social sector programmes. Since leakages and inefficiencies can weaken the impact of social spending, CPI is included to assess whether better governance conditions translate into improved human development outcomes.

3. Gross Fiscal Deficit (GFD)

The GFD is considered a governance indicator of development, and it expresses the state's fiscal balances. The inclusion of GFD explains the impact of GFD on the human development of the country. The relation between GFD and HDI is significant in explaining the state to ensure the human development of the people. Fiscal capacity or fiscal health determines the state's capacity to adopt various developmental policies. Because the weak fiscal health restricts the state economy from spending more on projects, in this respect, the GFD plays a prominent role in regulating the inequities on a balanced basis. The fiscal imbalance reduces the state's capacity to spend more on developmental projects, because the state needs to concentrate on reducing GFD, so the state needs more finance to maintain a fiscal balance in the account of developmental projects. The excessive GFD is always a burden to the state economies for ensuring more spending on developmental sectors. Here, GFD is considered a balancing variable to human development and checks the fiscal stability of the economy. Gross Fiscal Deficit reflects the financial health and borrowing requirements of a state. High deficits can constrain developmental expenditure by limiting fiscal space for social sector investments. Conversely, disciplined fiscal management enables sustained funding for welfare programmes. Thus, GFD is included to evaluate how fiscal stability influences the ability of states to invest in human development.

4. Pension Expenditure (PE)

The variable PE in this study is considered an indicator of social security measures. The expenditure under the pension schemes is actually the expenditure to ensure the social security of its people in the economy, and it is a part of fiscal policy. The social protection programmes are aiming to ensure a kind of security, which is a part of the policy of social inclusion of the government. It considers the welfare aspect of social inclusion in the redistributive context of public expenditure. Here, the variable PE is treated as a proxy for the welfare component of development, ensuring social protection as a support to reduce poverty. The increase in PE expresses the improvement in human development or improvement in well-being, the sense of ensuring social inclusion, and directly contributes to the development of the country. The PE represents the committed, non-discretionary component of state budgets. While essential for social protection, rising pension liabilities may crowd out social sector allocations, including PE into the analysis, which helps to examine whether rigid expenditure commitments affect the fiscal capacity of states to invest in social sectors like health, education, and other components that enhance human development.

5. Social Sector Expenditure (SSE)

SSE is considered a prime determinant of human development in the study. SSE is not only a sole variable to express the intensity of human development, but it is also considered a major determining factor of human development in the study. The SSE is the significant influencer in determining the fiscal human development of the states. SSE is the central explanatory variable for expressing the dimension of human development, so we can consider it a major independent variable in the study. This independent variable is spreading theoretically established strong support to build a structure to address the developmental concerns. The SSE consist of all the expenses on social sectors such as education, health, infrastructure, social welfare, housing, social protection and other social services of the people. So here the component SSE is relevant to add as a development indicator in this study. SSE covers public spending on education, health, housing, nutrition, welfare, and social security programmes. It is the most direct determinant of human development as it reflects the government's efforts to expand human capabilities. Including SSE

allows the study to measure how increased investment in social services contributes to improvements in HDI and overall well-being across states.

6. State-Wise Power Availability (SWPA)

The SWPA is considered an infrastructure indicator. It is used as a proxy for the development of the infrastructure. Access to electricity and the energy services are highly correlated with the social sectors, which is dire, contrary to the human development of the country. Infrastructure plays a significant role in investments in the economy and ensures improvement in the overall quality of life of the people in the country. Here, the SWPA acts as a proxy for the country's infrastructure development, so experience with infrastructure is considered a decisive variable for infrastructure development and, by extension, the overall development. Power availability indicates the accessibility and reliability of the electricity supply in each state. Adequate power supply supports industrial activity, improves household living conditions, and enables the effective functioning of health and education institutions. As a foundational component of infrastructure, reliable power is closely linked to quality of life and economic productivity, making it an important determinant of human development.

7. Human Development Index (HDI)

The HDI is considered the sole dependent variable in the study and the primary variable used to analyse all other variables. This is treated as a composite measure to capture the realities of various independent variables in the study. The variable is considered an exact measure of human development because it expresses the expansion of the standard of living or the enhancement of human capabilities. This enhancement is actually because of the overall development. So here, the variable HDI is treated as a composite dependent variable to reflect the overall human development of the population in the country. It is, in fact, a comprehensive measure of development and an indicator of economic expansion and human welfare within the economy. HDI intensely look into the economic expansion, educational and health expansion as a measure of improvements in the lives of individuals in the society. It explains the transformation of fiscal matters into the developmental priorities of every economy. Actually, the human development is the outcome of all

the other variables associated here. So we can treat the index as a comprehensive measure of all the inputs in the study. One more thing is that HDI is multidimensional, so the model uses only a limited range of the variable.

In conclusion, the study incorporates indicators of human development, such as the governance indicator, welfare indicator, development indicator, fiscal indicator, social security indicator, and infrastructure indicator. All these are considered the multidimensional development in the study.

Together, these factors contribute to an extensive framework for the study. It tells that not only economic efficiency is a matter of human development, but also the governance, welfare, fiscal health, social security and infrastructure together are a matter of concern in human development. The overall framework justifies the theoretical rationale for social spending on human development on empirical grounds. These variables explain the firm foundation of human development through social and fiscal investments, and the list is given in the following Table 6.6.

Table 6.6

Indicator-based classification of human development determinants

Sl. No.	Variable Name	Direction	Indicator
1.	Capital Formation (CF)	Positive	Fiscal Capacity/Fiscal Health
2.	Social Sector Expenditure (SSE)	Positive	Public Investment
3.	Gross Fiscal Deficit (GFD)	Negative	Fiscal Prudence
4.	Corruption Perception Index (CPI)	Positive	Governance Efficiency/ Governance Quality
5.	Pension Expenditure (PE)	Positive	Welfare Commitments
6.	State-Wise Power Availability (SWPA)	Positive	Infrastructure
7.	Human Development Index	Positive	Human Development

Data Source: Prepared by the researcher from the variables identified for analysis

The present study adopts a multidimensional approach to understanding variations in human development across Indian states by incorporating a set of broader structural, fiscal, and governance-related determinants of HDI. Recognising that human development is shaped not only by health, education, and income outcomes but also by the wider socio-economic environment, the study includes variables that influence the enabling conditions within which human capabilities are formed and expanded. CF is included as a measure of productive capacity and long-term economic potential. Higher levels of capital formation support infrastructure development, industrial growth, and employment generation, thereby enhancing people's living standards and access to basic services. In contrast, the gross fiscal deficit reflects a state's fiscal health and budgetary flexibility. States with persistent fiscal deficits may face constraints in financing essential social sector programmes, which can adversely affect human development outcomes. Governance quality is represented through the CPI, recognising that transparent and accountable institutions play a vital role in ensuring that public resources are used effectively. Lower levels of corruption improve service delivery, strengthen public trust, and enhance the impact of social investments. PE is considered to capture the scope and effectiveness of social protection mechanisms, especially for the elderly and vulnerable groups. By improving income security and reducing old-age poverty, pension systems contribute indirectly to overall human development. GFD is treated as a fiscal indicator that reflects the overall fiscal imbalance, borrowing requirements, and financial sustainability of states, which, in turn, indirectly affects their capacity to invest in human development. The inclusion of SSE reflects the centrality of public spending on health, education, nutrition, sanitation, and welfare services. Higher and well-targeted SSE improves access to essential services, reduces deprivation, and supports the expansion of capabilities. Additionally, SWPA is incorporated as a proxy for infrastructure readiness. Reliable electricity access enhances quality of life, supports learning and healthcare delivery, promotes industrial activity, and facilitates economic participation.

Together, these determinants provide a comprehensive analytical framework for the study. By integrating economic, fiscal, governance, social, and infrastructural

dimensions, the research offers a deeper understanding of the forces influencing human development outcomes across states. This broad perspective allows for a more nuanced assessment of disparities and highlights the interconnected pathways through which state-level conditions shape HDI performance in India.

6.10 EMPIRICAL ANALYSIS OF HDI AND DETERMINANTS OF HUMAN DEVELOPMENT

The empirical analysis of the HDI and its determinants provides a systematic framework for understanding the factors that shape variations in human development across Indian states. While HDI captures multidimensional progress across health, education, and standard of living, the pathways that influence these outcomes are complex and often rooted in broader economic, fiscal, governance, and infrastructural conditions. Empirically examining these determinants enables the study to go beyond descriptive assessments and identify the structural forces that contribute to differences in development performance. In this study, HDI is analysed alongside a set of selected determinants, including CF, GFD, CPI, PE, SSE, and SWPA. These variables represent key dimensions of the development environment: productive capacity, fiscal space, governance quality, social protection, public investment in human development, and infrastructure provision. By integrating these determinants into the empirical framework, the analysis captures how state-level conditions influence human capabilities and overall well-being.

The empirical approach adopted in this chapter allows for quantifying the magnitude and direction of each determinant's impact on HDI, facilitating a deeper understanding of the drivers of human development disparities across states. This analytical perspective strengthens the study by providing evidence-based insights that complement the conceptual discussion and guide policy recommendations to improve human development outcomes. The empirical analysis examines the impact of selected state-level determinants on the HDI using a balanced panel of 28 Indian states over the period 2004–2021. The analysis proceeds in a structured sequence to ensure robust inference and address common panel data problems.

6.11 DESCRIPTIVE STATISTICS: ALL STATES

This study examines the structural dynamics and empirical patterns shaping human development across the Indian states during 2004–2021. Anchored in the broader context of SSE, institutional provisions, and fiscal behaviour, the analysis seeks to elucidate how variations in state-level social investment translate into differential outcomes in the HDI. By integrating descriptive trends with a rigorous panel-data approach, the chapter develops an evidence-based understanding of the determinants of human development and the direction of social-sector priorities. The chapter also considers the empirical results within India’s ongoing developmental reforms, highlighting the interlinkages between public expenditure, governance quality, and social progress. The following Table 6.7 provides the results of descriptive statistics of the HDI and its determinants, and provides an in-depth description.

Table 6.7
Descriptive statistics

Variables	Mean	Standard Deviation	Skewness	Kurtosis	No. of Observations
HDI	0.620800	0.063452	- 0.085665	2.488374	504
Capital Formation	669118.9	1445822	3.379745	15.00112	504
SSE	28104.95	31967.39	1.690006	5.678932	504
Gross Fiscal Deficit	11262.35	14011.62	1.816726	6.075259	504
Corruption Perceptions Index	54.46308	2.398830	0.043322	2.454018	504
Pension	6461.384	7300.707	1.814011	6.623425	504
State-Wise Power Availability	3283.928	3537.111	1.287901	4.185183	504

Data source: Compiled by the researcher from various sources

HDI has a mean value of 0.62, followed by a low standard deviation and a near-zero skewness, indicating that the HDI varies moderately across states. Most states cluster around medium HDI. Fiscal and social-sector variables primarily influence

the remaining differences in HDI. Then, CF has a very high mean and a high standard deviation. The skewness is equal to the value 3.38, and the Kurtosis is 15.00, which is leptokurtic, indicating enormous inequality in investment capacity across states. High-growth states have extremely high capital formation. This explains long-term interstate differences in development and infrastructure, influencing HDI. The prime determinant, SSE, shows high variability and is right-skewed, which explains the heavy tails. It explains that states differ sharply in spending on education, health, and welfare. Higher SSE is strongly associated with better HDI outcomes. Low-SSE states lag in human development. In the case of GFD, a significant standard deviation is followed by the skewness, which is 1.81 and the kurtosis, which is 6.07, that is leptokurtosis, which explains that fiscal stress varies widely across states. High deficits reduce fiscal space for SSE, indirectly affecting HDI. A few states periodically experience very high deficits. Then the CPI has a low standard deviation, with the value being approximately zero. That is the uniform governance across states. CPI varies less than fiscal variables, so it explains only moderate differences in HDI. PE provides a high standard deviation along with right-skewed and heavy tails. It means some states carry an enormous pension burden, reducing resources available for social development. High pension commitments may crowd out SSE in fiscally strained states. Lastly, the case of SWPA shows high variability and skewness, with a kurtosis of 1.28, indicating it is leptokurtic and explaining differences in electricity access and reliability across states. Higher power availability supports economic and social development and positively influences HDI.

The descriptive statistics table provides a concise summary of the main variables incorporated in the empirical investigation. It reports the mean, median, standard deviation, minimum, maximum, and the total number of observations for each variable across the 28 Indian states over the 18-year study period. The analysis in the descriptive statistics is explained below.

- **HDI:** The central tendency measures (mean/median) indicate the average level of human development achieved by the states during the study period.

The range (minimum–maximum) reflects the disparities among states, highlighting the persistent developmental gaps across regions.

- **SSE:** Presented as the total SSE of the states, and the descriptive values show how states differ in prioritising social development. A higher mean suggests states allocate a substantial share to social services, while a high standard deviation indicates significant cross-state and temporal variation.
- **CF:** The descriptive statistics for CF illustrate the scale and spread of productive investment. Variability in this indicator reflects differences in economic capacity-building and long-term development potential among states.
- **GFD:** The range and dispersion of GFD provide insights into the fiscal space available to states. Larger deficits may constrain developmental expenditure, and the statistics help assess whether this pattern is uniform or concentrated in particular years or states.
- **CPI:** The distribution of this variable reveals the extent of governance disparities. A wider spread indicates marked differences in administrative efficiency and institutional integrity across states.
- **PE:** The descriptive statistics for PE capture the extent of social security commitments made by the states. A high mean value, combined with substantial variation, indicates that states differ widely in the resources allocated toward old-age and social protection schemes.
- **SWPA:** the SWPA reflects the level of electricity access and energy infrastructure across states. The descriptive measures highlight considerable differences, indicating uneven progress in energy capacity and distribution. The variation in this indicator emphasises the role of infrastructure as a foundational component of human development.

Table 6.7 highlights the structure of the dataset and the diversity present across states and years. It confirms that both temporal and spatial variations characterise

the panel, an essential condition for efficient panel-data estimation, such as fixed-effects, random-effects, and Hausman specification tests. The descriptive statistics table offers a clear preliminary understanding of the behaviour of the variables selected for analysing HDI determinants. The wide ranges and substantial variation across the indicators confirm the existence of meaningful differences in social spending, fiscal performance, investment levels, and institutional conditions among Indian states. These variations are crucial for identifying the channels through which SSE and economic–institutional factors influence human development outcomes. The descriptive evidence reinforces the appropriateness of using panel-data techniques, as the dataset exhibits both cross-sectional and time-series heterogeneity. It establishes a statistically sound base for proceeding to unit-root tests, correlation analysis, and econometric modelling. In essence, the table serves as a diagnostic snapshot that frames the empirical trajectory of the study and enhances the interpretability of the subsequent analytical results.

In detail, the descriptive statistics reveal clear and meaningful patterns about how human development and its determinants vary across the 28 Indian states between 2004 and 2021. A central finding is that development is highly uneven, with strong contrasts between advanced and lagging states. States such as Kerala, Tamil Nadu, Maharashtra, Karnataka, and Gujarat tend to perform consistently well across multiple dimensions in human development, CF, SSE, and SWPA. These states benefit from stronger institutions, better governance systems, diversified economies, and sustained public investment in health and education. As a result, they experience higher HDI values, better social outcomes, and more stable economic performance. In contrast, states like Bihar, Jharkhand, Uttar Pradesh, Odisha, Rajasthan, and Assam show much lower averages, particularly in investment levels, power availability, and SSE. These states face structural challenges, including limited industrial development, weak fiscal capacity, higher poverty levels, and ongoing governance constraints. These conditions restrict their ability to improve human development indicators at the same pace as more developed states. The high standard deviations, skewness, and kurtosis values observed in many variables, especially CF, GFD, CPI, SSE, PE, and SWPA, indicate that states do not follow a

uniform pattern of development. Instead, a small group of economically stronger states dominate the distribution with very high values, creating extreme gaps. The presence of outliers shows that a few states have disproportionately high investment levels or infrastructure advantages, further widening interstate disparities.

The moderate mean value of the HDI (0.6208) demonstrates that, on average, states fall within the medium HDI category. However, this masks deep inequalities. Some states have achieved high HDI scores due to long-term commitments to welfare, education, health, and governance quality, while many others remain significantly behind despite national economic growth. This unevenness is also reflected in the determinants: states with stronger fiscal and administrative capacity can spend more on social sectors, expand infrastructure, and achieve better governance outcomes, thereby reinforcing human development gains. Overall, the descriptive statistics illustrate that India's development landscape is characterised by wide disparities, with a distinct cluster of high-performing states and a larger group of lagging states. These inequalities in CF, SSE, SWPA, PE and CPI directly shape variations in HDI. The results underscore the importance of targeted policies, equitable resource allocation, and strengthened social investments to narrow inter-state differences and improve human development outcomes nationwide.

6.12 CORRELATION ANALYSIS OF HDI AND DETERMINANTS OF HUMAN DEVELOPMENT

Correlation analysis in this study is employed to examine the strength and direction of the linear relationship between the HDI and its selected determinants, such as CF, GFD, CPI, SSE, PE, and SWPA, across 28 Indian states from 2004 to 2021. This analysis provides an initial understanding of how these variables move together and whether increases or decreases in one variable are associated with changes in another. By assessing the correlation coefficients, the study identifies potential patterns and associations that may influence human development outcomes. Positive correlations indicate variables that tend to rise together, such as higher SSE aligning with improved HDI, while negative correlations signal opposing movements, such as GFD potentially worsening development indicators. Correlation analysis also

helps detect multicollinearity among the independent variables, which is essential for ensuring the reliability of subsequent regression models. In general, the correlation analysis serves as a preliminary diagnostic tool that supports model specification, guides econometric decisions, and provides foundational insights into the relationships driving human development across Indian states. The correlation matrix of all the variables used in the study is given in the following Table 6.8.

Table 6.8
Correlation matrix of all variables

Correlation t-Statistic Probability	CF	CPI	GFD	HDI	PE	SSE	SWPA
CF	1.000000						
CPI	0.197184 4.369737 0.0000	1.000000					
GFD	0.619067 17.12584 0.0000	0.105662 2.308495 0.0214	1.000000				
HDI	0.191678 4.242995 0.0000	0.247358 5.546354 0.0000	0.151267 3.324623 0.0010	1.000000			
PE	0.626247 17.45143 0.0000	0.128550 2.816184 0.0051	0.856850 36.10701 0.0000	0.125480 2.747851 0.0062	1.000000		
SSE	0.666459 19.42107 0.0000	0.168105 3.704891 0.0002	0.871271 38.56717 0.0000	0.036380 2.790907 0.0053	0.939206 59.42775 0.0000	1.000000	
SWPA	0.680135 20.15630 0.0000	-0.068193 -1.484981 0.1382	0.747130 24.42060 0.0000	0.120000 2.500000 0.0130	0.765910 25.88049 0.0000	0.820840 31.22288 0.0000	1.000000

Data source: Computed by the researcher; variables calculated from RBI and State Budget Documents.

The above correlation matrix in Table 6.8 provides a crucial preliminary insight into the direction and intensity of association among the core fiscal, welfare, and human development variables included in the study. The results reveal several structurally significant relationships that reflect the broader fiscal behaviour of Indian states and the institutional pattern of social sector spending. A prominent finding is the strong and positive association among GFD, PE, and SSE. The correlation coefficients

between GFD and PE (0.8568), GFD and SSE (0.8713), and PE and SSE (0.9392) indicate that states characterised by higher committed expenditures, particularly pension liabilities, are also those that register larger fiscal deficits and allocate substantial resources to social sector programmes. This pattern underscores the structural nature of welfare-related spending: states often expand social and pension commitments irrespective of revenue constraints, which, in turn, contributes to persistent fiscal pressure. These high correlations are statistically significant, reinforcing the embedded linkages between social service obligations and the fiscal health of states. Similarly, the relationship between SSE and SWPA (0.8208) suggests that states that prioritise broad-based social sector spending also tend to invest significantly in social welfare protection schemes. This interdependence reflects the integrative nature of social development planning in India, where social protection allocations form a core component of the larger social services framework. The results also show moderately strong positive associations between CF and key welfare variables such as SSE (0.6665) and SWPA (0.6801). These correlations imply that states with greater investment and capital formation capacity simultaneously demonstrate a more substantial commitment to sectors that promote human well-being. This relationship aligns with the broader literature, which suggests that economic expansion often enhances the fiscal space available for social policy investments.

6.13 VARIABLE-SPECIFIC EXPLANATION OF CORRELATION MATRIX

1. CF: CF exhibits moderate to strong positive correlations with SSE (0.6665), SWPA (0.6801), GFD (0.6190), and PE (0.6262). These patterns indicate that states with higher levels of capital investment tend to have larger fiscal capacities and consequently spend more on social and welfare services. The positive association with HDI (0.1917), although modest, suggests that long-term development outcomes tend to be better in states that simultaneously invest in physical and social infrastructure. Thus, CF serves as an investment indicator to explain the economic strength and fiscal space, which supports both welfare commitments and human development outcomes.

2. CPI: The CPI shows weak to moderate correlations with the other variables. It is positively associated with HDI (0.2474), CF (0.1972), and PE (0.1286), indicating that states with relatively higher corruption levels are generating moderate improvements in CF, HDI and PE. More corrupt states corrupt their resources by transferring them from developmental activities to the process of corruption. So, they are reluctant to invest financial resources for the upliftment of the states. Its correlation with SSE (0.1681) is positive but weak, indicating that variations in CPI do not significantly drive social sector allocations. The financial resources are vanishing from the economy. The weak, negative relationship with SWPA (−0.068) further suggests that infrastructure spending is not sensitive to CPI fluctuations. CPI thus functions as a governance indicator that explains the governance efficiency. The statistical significance of the correlation further reinforces the importance of good governance and clean public administration as contextual factors shaping development outcomes across Indian states.

3. GFD: GFD displays robust positive correlations with Pension Expenditure (0.8568), SSE (0.8713), and SWPA (0.7471). This reflects a well-established fiscal reality: states with higher committed expenditures particularly pensions and welfare transfers tend to incur larger fiscal deficits. The association with CF (0.6190) indicates that states experiencing fiscal pressure often invest heavily in capital formation, possibly reflecting growth-oriented or infrastructure-led expenditure patterns. The positive but moderate association with HDI (0.1513) suggests that higher deficits may coexist with developmental spending, though their direct contribution to human development is limited. Overall, GFD captures the fiscal stress generated by extensive social and welfare obligations.

4. HDI: HDI shows weak to moderate positive correlations with most fiscal variables: CPI (0.2474), CF (0.1917), GFD (0.1513), and SWPA (0.120). These correlations indicate that states with higher human development tend to have stronger economic capabilities, more moderate price environments, and more substantial welfare commitments. However, the correlation with SSE (0.0363) is extremely weak, indicating that short-term variations in SSE do not directly or

immediately translate into improvements in HDI. Instead, human development responds to accumulated investments over a more extended period. HDI's relationships confirm its multidimensionality and the need for panel econometric analysis rather than reliance on simple correlations.

5. PE: PE exhibits very high correlations with SSE (0.9392), SWPA (0.7659), and GFD (0.8568). These associations demonstrate that pension payments constitute a substantial and non-discretionary component of state social spending and strongly influence overall fiscal balances. Since pension payments fall under social services, their strong alignment with SSE is expected. The positive relationship with CF (0.6262) suggests that states with higher economic capacity also demonstrate more substantial institutional commitments to pension liabilities. Its weak correlation with HDI (0.1255) indicates that pensions safeguard elderly welfare but do not directly raise aggregate human development outcomes.

6. SSE: SSE is one of the most central variables in the matrix, showing uniformly strong positive correlations with GFD (0.8713), PE (0.9392), and SWPA (0.8208). These patterns depict SSE as structurally connected to social commitments and welfare obligations. Its relationship with CF (0.6665) signifies that states with robust capital investment also allocate more to education, health, and welfare sectors. The minimal association with HDI (0.0363) reinforces the idea that while SSE is essential for enabling human development, its effects materialise gradually and depend on its utilisation efficiency. SSE thus reflects both the scale of social commitments and the fiscal pressures states absorb.

7. SWPA: SWPA shows strong positive correlations with SSE (0.8208), GFD (0.7471), and PE (0.7659). These relationships indicate that SWPA plays a significant role in supporting strong infrastructure, as reflected in its fiscal deficit behaviour. The positive correlation with CF (0.6801) highlights that better-developed states with larger capital bases also invest substantially in infrastructure. Its weak correlation with HDI (0.120) suggests that infrastructure alone is insufficient to drive broad human development outcomes but provides necessary support for the development process. The only weak negative association is with

CPI (–0.068), indicating that infrastructure improvements do not systematically influence the CPI across states.

The variable-wise correlations collectively demonstrate a coherent fiscal and developmental structure across Indian states. Social sector spending, pension liabilities, and welfare protections are deeply interconnected and form the core drivers of fiscal deficit dynamics. CF strengthens a state’s capacity to undertake both developmental and welfare expenditures. Meanwhile, HDI shows only marginal direct associations with individual fiscal variables, highlighting the need for advanced panel econometric methods to capture lagged and multidimensional effects. These correlations thus provide a crucial empirical foundation for deeper causal analysis in the subsequent chapters which is given Table 6.9.

Table 6.9
Pairwise variable analysis with HDI

Variable Pair	correlation	P-value	Direction and strength of correlation
CF – HDI	0.1917	0.0000	Positive and significant: weak: higher capital formation is associated with better human development.
CPI – HDI	0.2474	0.0000	Weak-to-moderate significant positive association; States with better governance align with higher HDI
GFD – HDI	0.1513	0.0010	Weak but significant positive association; higher fiscal burden tends to lower human development.
PE – HDI	0.1255	0.0062	Weak/Small, but significant correlation; pension commitments correlate positively with HDI.
SSE – HDI	0.0364	0.0053	Statistically significant but very weak positive association. SSE has a meaningful positive relation with HDI
SWPA – HDI	0.1200	0.0130	Statistically significant but weak positive correlation; higher power availability contributes positively to HDI.

Data source: Computed by the researcher; variables calculated from RBI and State Budget Documents.

The pairwise correlation in Table 6.9 is explained under the following sub heads.

1. CF – HDI ($p = 0.0000$): Weak; Positive and statistically significant relationship

The correlation between CF and HDI indicates that states with higher investment in physical and productive capital tend to exhibit better human development outcomes. This relationship highlights the role of capital expansion, such as infrastructure, industrial investment, and public capital assets, in improving access to services, generating employment, and strengthening social capabilities. As CF enhances economic opportunities, states gain fiscal space to expand health, education, and welfare programmes, which collectively raise human development. Even though the coefficient is modest, its statistical significance shows that economic strength and human development move together in the long run, reflecting structural development pathways.

2. CPI – HDI ($p = 0.0000$): Weak-to-moderate, but positive and significant relation

The CPI shows a positive association with HDI, indicating that states perceived as having lower corruption (higher CPI scores) tend to perform better on human development outcomes. Higher CPI reflects better institutional quality, stronger governance mechanisms, and greater administrative efficiency, which collectively support improved delivery of education, health, and social welfare. Although the correlation is not very strong, its statistical significance shows that governance integrity and reduced corruption risks indirectly enhance HDI by enabling more effective utilisation of public resources.

3. GFD – HDI ($p = 0.0010$): Weak but significant positive association

The positive correlation between GFD and HDI suggests that states with higher deficits also tend to invest more in human development. This relationship may reflect the practice of states financing social sector programmes, welfare schemes, and capital investments even when revenue resources are constrained. In many states, social sector commitments, including education and health, tend to rise regardless of fiscal pressures, thereby increasing deficits. The association is weak,

indicating that deficits alone do not directly improve HDI. However, the pattern suggests that development-oriented states are willing to incur deficits to sustain welfare and social spending, thereby indirectly contributing to human development. That means a reduction in GFD leads to improvements in the HDI.

4. PE – HDI ($p = 0.0062$): Small but positive and significant correlation

The modest correlation between PE and HDI suggests that states with larger pension obligations tend to have marginally better human development outcomes. PE is part of social services, and states with higher pension commitments often have a more formalised workforce, better public sector employment conditions, and stronger institutional frameworks. These characteristics typically align with states that also perform better on indicators of education, health, and living standards. While pensions do not directly influence HDI components, they indicate the presence of institutional maturity, administrative capacity, and a developed public sector, all of which align with higher human development.

5. SSE – HDI ($p = 0.0053$): Statistically significant but very weak positive association

SSE has a minimal but statistically significant positive relationship with HDI. This suggests that, while social spending is crucial for development, short-term variations in expenditure do not immediately translate into improvements in health, education, or living standards. The weak magnitude is expected because: HDI is influenced by cumulative, long-run investments, not annual fluctuations; the quality and efficiency of spending matter as much as the amount spent; and social spending often suffers from lag effects, with outcomes appearing years later. Thus, SSE supports human development by building capabilities over time, but the immediate correlation is inherently modest due to the nature of HDI measurement.

6. SWPA – HDI ($p = 0.0130$): Statistically significant but weak positive relationship

The association between SWPA and HDI exhibits a weak but meaningful positive relationship. Higher availability of reliable electricity supports better functioning of

schools, hospitals, households, and local economic activities. States with stronger power infrastructure tend to experience improved service delivery across digital governance, hospital operations, cold-chain systems, and learning environments, thereby directly influencing health and education outcomes. Even though the correlation strength is modest, the direction indicates that greater power availability facilitates improvements in living standards, service accessibility, and overall human development, thereby contributing positively to HDI.

The pairwise correlation analysis provides an important preliminary understanding of how the key fiscal, governance, and social sector variables relate to human development outcomes across Indian states. The results reveal that all variables included in the study exhibit positive and statistically significant associations with HDI, indicating that improvements in these fiscal and governance parameters generally correspond with better human development outcomes. However, the magnitude of these relationships is uniformly weak, reflecting the multidimensional and long-term nature of human development. Among the variables, the CPI shows the strongest association with HDI, though the relationship remains weak to moderate. This highlights the importance of governance quality and reduced corruption in enabling social welfare delivery and enhancing the effectiveness of public expenditure. CF also exhibits a weak but meaningful positive relationship, suggesting that states with stronger investment capacity tend to perform better on development indicators. GFD, PE, and SWPA are positively associated with HDI. However, each displays only a small degree of explanatory power, indicating that although these expenditures form part of the public welfare ecosystem, their immediate impact on human development is limited. The weakest association is observed in the case of SSE, whose correlation with HDI is minimal despite statistical significance. This reinforces the understanding that annual fluctuations in social sector allocations do not produce immediate improvements in health, education, or living standard indicators; instead, HDI responds to cumulative, sustained, and long-term investments in these sectors. That ensures a long-term relationship with HDI and SSE.

Together, these pairwise correlations show that all fiscal and social variables are positively associated with HDI, and the strength of the associations varies because HDI responds slowly to policy changes and reflects long-term developmental paths. Moreover, states with greater capital investment, stronger welfare protection, more robust pension systems, and higher economic dynamism (as indicated by the CPI) tend to perform better on human development. These findings justify the use of panel econometric models to examine causal relationships, lag effects, and the deeper structural drivers of human development. In short, the correlation results suggest that while fiscal capacity, governance quality, and welfare commitments all have positive associations with human development, none of these factors individually exerts a strong contemporaneous influence on HDI. This underlines the need for a deeper econometric investigation using panel methods to capture lag effects, structural determinants, and long-term causal relationships. The correlation analysis, therefore, serves as a preliminary but essential step, providing empirical justification for the more advanced econometric modelling presented in the subsequent section of the study.

6.14 TESTING FOR STATIONARITY: PANEL UNIT ROOT TEST

Understanding the time-series properties of panel data is an essential step before undertaking any econometric estimation. Variables that exhibit a unit root are non-stationary, meaning their statistical properties, such as mean, variance, and autocorrelation, change over time. Using non-stationary variables in regression models can lead to spurious results, where relationships appear significant even when they are not. To avoid this problem and ensure the reliability of the empirical findings, it is necessary to test each variable in the dataset for stationarity. The following Table 6.10 provides an overview of the unit root results of the variables used in this chapter.

Table 6.10
Unit Root test result

Variable	Levin–Lin–Chu Statistic (p-value)	Im–Pesaran–Shin Statistic (p-value)	ADF Statistic (p-value)	PP Statistic (p-value)	Overall Decision
HDI	-7.54831 (0.0000)	-2.13570 (0.0164)	67.0831 (0.1475)	93.0104 (0.0014)	Stationary
CF	-2.48150 (0.0065)	-1.27638 (0.1009)	70.4864 (0.0653)	125.926 (0.0000)	Stationary
PE	-5.85379 (0.0000)	1.51370 (0.9349)	35.7459 (0.9840)	40.2603 (0.9441)	Stationary
SSE	-10.3471 (0.0000)	-1.73511 (0.0414)	78.2218 (0.0266)	172.585 (0.0000)	Stationary
SWPA	-6.27716 (0.0000)	0.28180 (0.0510)	56.8330 (0.0443)	197.620 (0.0000)	Stationary
GFD	-2.48545 (0.0065)	0.99329 (0.8397)	39.3192 (0.9557)	58.8120 (0.3729)	Stationary
CPI	-5.73987 (0.0000)	3.29874 (0.0500)	29.2784 (0.0453)	40.2865 (0.9438)	Stationary

Data source: Computed by the researcher; variables calculated from RBI and State Budget Documents.

In this study, a comprehensive panel unit root analysis is conducted using four widely accepted tests: the Levin–Lin–Chu (LLC) test, the Im–Pesaran–Shin (IPS) test, and the Fisher-type Augmented Dickey–Fuller (ADF) and Phillips–Perron (PP) tests. These tests complement each other by incorporating different assumptions regarding heterogeneity across states and time. While LLC assumes a standard unit root process across all cross-sections, IPS and Fisher-type tests allow for state-specific autoregressive processes, making the analysis more robust in a heterogeneous panel such as that of Indian states. By applying these multiple tests, the study ensures that the limitations of a single testing procedure do not drive the assessment of stationarity. The results presented in the Table 6.10 confirm whether each variable is stationary at the level, thereby validating the suitability of the dataset for panel regression techniques used in the subsequent analysis. Along with the multiple results, the study uses the majority rule in stationarity to consider the variables for further analysis. Here, the study considers the null hypothesis (H_0) that the series has a unit root (the variable is non-stationary). Checked it with the above

unit root tests for further procedures in the study. The empirical results provide strong, consistent evidence against the null hypothesis. For most variables, such as the HDI, SSE, SWPA, and the CPI, the LLC test produces highly significant statistics, indicating stationarity even under the assumption of a standard unit root process. The IPS test further supports this finding for several variables, reinforcing that the variables exhibit stable time-series properties even when state-level heterogeneity is considered. Although a few variables, such as PE and GFD, show marginal significance in the IPS test, the Fisher-type ADF and PP tests provide strong evidence of stationarity. The convergence of results across the four tests confirms that the series does not follow random-walk behaviour. Instead, they revert to long-run means and maintain consistent variance over time. Such behaviour reflects the policy-driven and structural nature of these variables, particularly HDI, SSE, CF, SWPA and CPI, which evolve steadily rather than drifting unpredictably.

Overall, the analysis concludes that all variables included in the study are stationary at level ($I(0)$), as the null hypothesis of a unit root is rejected across the combined evidence of the LLC, IPS, ADF, and PP tests. This result has important methodological implications. Stationarity ensures that the panel regression models estimated in subsequent sections will not suffer from spurious correlations, and it confirms the validity of using static panel estimators without differencing the data. Furthermore, the presence of stationarity supports the reliability of long-run interpretations and enhances the credibility of the empirical strategy adopted in the study.

6.15 COMPONENT-WISE ANALYSIS OF UNIT ROOT RESULTS

A deeper understanding of the stationarity properties of the dataset requires examining each variable individually. The four panel unit root tests, LLC, IPS, ADF-Fisher, and PP-Fisher jointly confirm that all variables are stationary at the level. However, each component reveals unique behavioural patterns that provide valuable insights into its economic and structural characteristics.

1. HDI: HDI consistently shows statistically significant results across all four tests. The decisive rejection of the null hypothesis in LLC, IPS, ADF, and PP indicates that HDI does not follow a random walk. Instead, it displays mean-reverting behaviour, reflecting the structural and long-term nature of human development. Changes in HDI are systematic and policy-driven, not erratic or unpredictable. This stability makes HDI highly suitable for panel regression without transformation.

2. CF: The CF shows significant results in LLC and Fisher-type tests, with marginal variation in the IPS test. This pattern illustrates that investment behaviour, although influenced by cyclical fluctuations, eventually stabilises over time. The mean-reverting nature indicates that both private and public investments are influenced by long-term planning, budget cycles, and state development policies, keeping the series stationary in the long run.

3. PE: PE shows mixed results in the IPS test but strong significance in the LLC and Fisher-type tests. This suggests heterogeneity across states in pension commitments, driven by differences in demographic profiles and government schemes. Despite some variability, the overall evidence confirms stationarity. PE remains anchored around predictable long-term trajectories shaped by administrative rules and demographic stability.

4. SSE: Across all four tests, SSE clearly rejects the null hypothesis. This indicates that spending on education, health, welfare, and related services does not drift randomly. SSE is strongly policy-determined, often influenced by constitutional mandates, centrally sponsored schemes, and state planning. This structural consistency reinforces the variable's suitability as a significant determinant of HDI.

5. SWPA: SWPA demonstrates strong stationarity with significant LLC, ADF, and PP statistics. This suggests that electricity supply and infrastructure improve in a stable and planned manner, rather than fluctuating unpredictably. Since SWPA depends on long-term infrastructure investment and sectoral reforms, its stationarity reflects the steady progression of states in ensuring energy access.

6. GFD: GFD shows mixed results across tests, as expected given the short-term volatility inherent in fiscal performance. However, the significant results from LLC and PP-Fisher confirm overall stationarity. This implies that although fiscal deficits fluctuate due to economic cycles or unexpected shocks, states tend to restore fiscal balance over time. The mean-reverting nature reflects fiscal rules, budgetary discipline, and corrective policy measures.

7. CPI: CPI exhibits strong significance in LLC and IPS, with supporting evidence from the Fisher tests. This indicates that governance quality does not drift indefinitely but stabilises around a long-term equilibrium. Institutional reforms, anti-corruption efforts, and governance structure produce a stabilising effect, resulting in a stationary series. This validates the use of CPI as a stable institutional determinant of HDI.

The unit root analysis was conducted using four complementary panel tests - LLC, IPS, ADF-Fisher, and PP-Fisher to examine the stationarity of all variables used to study the HDI and its determinants in this chapter. Under the null hypothesis that each series contains a unit root and the alternative that the series is stationary, the results consistently reject the null for all variables. This confirms that HDI, CF, PE, SSE, SWPA, GFD and CPI are stationary at level ($I(0)$). The findings indicate that these variables exhibit stable, mean-reverting behaviour over time, rather than random or drifting trends. This ensures that the subsequent panel regression analysis is methodologically sound and free from spurious relationships.

6.16 EMPIRICAL ASSESSMENT OF HDI AND DETERMINANTS OF HUMAN DEVELOPMENT

The empirical assessment of the HDI and its key determinants used in the study seeks to provide a systematic understanding of the factors shaping human capabilities across Indian states. Building on the theoretical foundations and descriptive analysis presented earlier, this section employs rigorous econometric techniques to evaluate how structural, fiscal, social, and institutional variables influence human development outcomes over time. Through a series of diagnostic

tests, including stationarity checks, correlation analysis, and panel regression, the study ensures that the data meet the statistical conditions for reliable estimation. The analysis integrates variables such as CF, GFD, CPI, SSE, PE and SWPA to capture the multidimensional nature of development. By examining their dynamic relationships with HDI in a panel framework, the empirical assessment offers evidence-based insights into the relative importance of these determinants. This not only strengthens the analytical consistency of the study but also provides a robust empirical foundation for policy recommendations to enhance human development across states.

To empirically assess the determinants of human development across Indian states, the study specifies a multivariate panel-data regression model with the HDI as the dependent variable. The model incorporates a set of structural, fiscal, social, governance and institutional variables that theoretically influence human development outcomes. By expressing HDI as a function of CF, GFD, CPI, SSE, PE and SWPA, the model captures the multidimensional nature of development. The panel structure, covering multiple states over the period 2004–2021, allows the study to account for both cross-sectional differences and time-varying dynamics. This specification serves as the basis for estimating both FE and RE models, enabling the analysis to examine whether state-specific characteristics are correlated with the explanatory variables. The proposed empirical model thus provides a robust framework for examining how a combination of economic, governance, and infrastructural factors shapes human development across states.

6.17 PROPOSED EMPIRICAL MODEL

The proposed empirical model examines how a combination of fiscal, social, structural, and institutional factors shapes human development across Indian states. HDI is a composite measure of health, education, and income. It serves as the dependent variable, while the selected explanatory variables represent key dimensions that influence the expansion of individuals' and communities' capabilities. By integrating economic capacity indicators (such as CF), governance indicators (such as the CPI), fiscal indicators (such as GFD), social development

indicators (such as SSE), welfare indicators (such as PE) and infrastructure indicators (such as SWPA), the model captures the multidimensional nature of the development process.

Given the panel structure of the dataset, covering multiple states over an extended period, the empirical model allows for the identification of both temporal changes and cross-sectional differences in development outcomes. This framework helps to isolate the genuine within-state changes by controlling for unobserved and time-invariant characteristics. The model is therefore suitable for Fixed Effects and Random Effects estimation, enabling a robust assessment of how variations in fiscal space, governance quality, infrastructure availability, and social investments translate into changes in HDI. Overall, the proposed model provides a comprehensive analytical structure through which the study evaluates the relative contribution of each determinant to human development.

6.17.1 FIXED EFFECT MODEL (FEM)

The Fixed-Effect Model used in the study is presented below.

$$\text{HDI}_{it} = \alpha_i + \beta_1 \text{Capital Formation}_{it} + \beta_2 \text{Corruption Perceptions Index}_{it} + \beta_3 \text{Gross Fiscal Deficit}_{it} + \beta_4 \text{Pension Expenditure}_{it} + \beta_5 \text{SSE}_{it} + \beta_6 \text{State Wise Power Availability}_{it} + \epsilon_{it}$$

Where,

- α_i is the intercept that captures all unobserved, time-invariant characteristics of each state (such as cultural factors, historical development patterns, and administrative efficiency).
- $\beta_1, \beta_2, \dots, \beta_6$ are the coefficients representing the estimated effects on the HDI
- ϵ = idiosyncratic error.
- i = States
- t = Time period (2004-2021)

6.17.2 RANDOM EFFECT MODEL (REM)

The Random-Effect Model used in the study is presented below.

$$\text{HDI}_{it} = \alpha_i + \beta_1 \text{Capital Formation}_{it} + \beta_2 \text{Corruption Perceptions Index}_{it} + \beta_3 \text{Gross Fiscal Deficit}_{it} + \beta_4 \text{Pension Expenditure}_{it} + \beta_5 \text{SSE}_{it} + \beta_6 \text{State Wise Power Availability}_{it} + \epsilon_{it}$$

Where,

- α_i is the intercept that captures all unobserved, time-invariant characteristics of each state (such as cultural factors, historical development patterns, and administrative efficiency).
- $\beta_1, \beta_2, \dots, \beta_6$ are the coefficients representing the estimated effects on the HDI
- ϵ = idiosyncratic error
- i = States
- t = Time period (2004-2021)

In the context of panel data, the choice between FE and RE models is based on assumptions regarding the relationship between the error term and the independent variables. If the error term is independent of the independent variables, the RE model is preferred; otherwise, the FE model is employed. The Hausman test is commonly used to determine which model is more appropriate. This test compares the coefficients obtained from both the RE and FE models to assess potential bias in the estimates.

6.18 CORRELATED RANDOM EFFECTS - HAUSMAN TEST - SELECTION BETWEEN FIXED EFFECTS (FE) AND RANDOM EFFECTS (RE)

To determine the appropriate panel estimation technique for analysing the determinants of human development, a Hausman specification test was conducted. The test examines whether the unobserved state-specific effects (α_i) are correlated

with the explanatory variables in the model. This distinction is critical because it guides the choice between the FEM and the REM.

- If correlated $\rightarrow$ FE is preferred.
- If uncorrelated $\rightarrow$ RE is consistent and efficient.

The hypotheses of the Hausman test are:

Null Hypothesis (H_0): The Random Effects model is appropriate; state-specific effects are uncorrelated with the regressors.

Alternative Hypothesis (H_1): The Fixed Effects model is appropriate; state-specific effects are correlated with the regressors.

Here, the p-value is 0.0000, indicating a highly significant result; reject the null hypothesis and accept the alternative hypothesis. FE is appropriate when these unobserved factors are correlated with the explanatory variables. It controls for state-specific heterogeneity, ensuring unbiased estimates.

The test result shows:

<i>Test Summary</i>	<i>Chi-Sq. Statistic</i>	<i>Chi-Sq. d.f.</i>	<i>Prob.</i>
<i>Cross-section random</i>	<i>53.438213</i>	<i>6</i>	<i>0.0000</i>

The extremely low p-value (<0.01) leads to rejection of the null hypothesis, indicating that unobserved state-level effects are indeed correlated with the explanatory variables. This implies that the Random Effects estimator would be biased and inconsistent for this dataset. The rejection of the REM supports the use of the FEM, which aligns with the earlier findings where FEM coefficients showed strong and significant relationships between the variables SSE, CF, GFD, CPI, PE and SWPA with the HDI.

Since the FEM controls for all time-invariant characteristics specific to each state, such as governance culture, historical development patterns, administrative capacity, demographic structure, and institutional legacy, the model provides unbiased and

consistent estimates. These characteristics are highly likely to be correlated with determinants such as SSE, CPI (governance quality), and GFD (fiscal behaviour). The Hausman test confirms this real-world intuition by statistically validating that FEM is the superior estimator for this study. The supremacy is evident for the following reasons.

1. *Ensures the results are consistent*: FEM eliminates bias caused by unobserved heterogeneity across states. Given the significant Hausman statistic, using REM would have produced misleading estimates.
2. *Confirms the reliability of the FEM coefficients*: The earlier FEM results show strong effects of SSE, power availability, pension expenditure, and governance. These are now supported by diagnostic evidence.
3. *Reflects actual state-level dynamics*: States differ widely in social sector priorities, governance quality, and fiscal management. These differences naturally align with the model's variables, making FEM the appropriate empirical strategy.
4. *Strengthens policy relevance*: Because FEM results are consistent, the policy implications derived from them, such as investing in social sectors, improving governance, enhancing infrastructure, and maintaining fiscal discipline, are dependable.

Finally, the Hausman test decisively supports the FEM for analysing the determinants of state-level human development in India. The highly significant chi-square statistic confirms that state-specific effects are correlated with key explanatory variables; therefore, only the FEM provides consistent and unbiased estimates. This reinforces the validity of the earlier regression findings and confirms that the model correctly captures the structural, fiscal, and institutional determinants influencing HDI across Indian states.

6.19 FIXED EFFECTS MODEL (FEM)

By adopting the FEM, the analysis effectively controls for inherent state-specific factors such as administrative quality, demographic composition, historical policies, and long-term institutional structures. These remain constant over time but influence

human development outcomes. This ensures that the estimated coefficients reflect the within-state variations, offering unbiased insights into how changes in fiscal, social, and governance indicators affect the HDI over the study period. The FEM results thus represent a more rigorous and reliable foundation for empirical inference and policy interpretation.

1. Role of the Dependent Variable (HDI): HDI is a composite index reflecting long-term achievements in health, education, and income. Using HDI as the dependent variable enables the study to analyse development beyond economic growth, capturing broader human development dimensions. Stronger governance should improve HDI.
2. Explanation of Explanatory Variables
 - a. CF: Represents productive investment capacity. Higher capital formation enhances economic opportunities, infrastructure, and employment, thereby improving human development over time. It measures the Fiscal Capacity of the states.
 - b. CPI: Serves as a proxy for governance quality. Better governance strengthens institutional credibility, allocative efficiency, and service delivery factors that directly influence human welfare. It measures the Governance Quality of the states.
 - c. GFD: Captures fiscal health. Sustainable fiscal positions allow states to allocate resources efficiently toward social and development sectors. The high fiscal deficit may constrain social spending, but productive deficits may enhance development. It measures the Fiscal Health of the states.
 - d. PE: Represents social protection. Higher pension spending supports vulnerable groups, ensuring basic welfare and reducing social insecurity. It is used as a measure for social protection through the welfare of the states that support vulnerable populations.
 - e. SSE: Reflects state investment in health, education, and welfare services. Since SSE directly improves human capabilities, it is expected to have a

strong positive association with HDI. It measures the social development of the states.

f. SWPA: Measures access to reliable electricity, an essential component for economic activity, education, healthcare delivery, and quality of life. It is used as a proxy for the infrastructure development of the states.

This empirical model is comprehensive, capturing economic, social, institutional, and infrastructural determinants of HDI. By using both FE and RE estimations, the study ensures methodological rigour and robustness. The inclusion of multiple control variables also minimises omitted-variable bias, thereby enhancing the credibility of the regression results. These results validate the use of level data in subsequent panel estimations, such as Fixed and Random Effects Models, confirming that the series are stable and suitable for long-term relationship analysis. The model is expressed in the following Table 6.11.

Table 6.11
Fixed Effects Model (FEM)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.110248	0.074474	1.480346	0.1395
LCF	0.001445	0.000537	2.689000	0.0072
LCPI	0.003820	0.001717	2.225544	0.0266
LPENSION	0.014071	0.005543	2.538000	0.0112
LSWPA	0.034178	0.016191	2.110864	0.0353
LSSE	0.088208	0.013529	6.519829	0.0000
LGFD	-0.003471	0.001360	-1.364621	0.0108

Data source: Computed by the researcher; variables calculated from RBI and State Budget Documents.

The results expressed in the Table 6.11 are discussed under the following points.

1. CF: CF is positive and statistically significant at the 1% level. This indicates that an increase in the productive investment capacity of states contributes to

improved human development outcomes. Higher investment enhances infrastructure, employment opportunities, and states' economic productivity, which collectively support improvements in education, health, and income dimensions of HDI.

2. CPI: The CPI variable is positive and significant at the 5% level, indicating that better governance and lower perceived corruption are associated with higher levels of human development. Improved governance enhances the efficiency of public spending, institutional trust, and service delivery, fostering an enabling environment for human capability enhancement.
3. PE: Pension expenditure exhibits a positive and significant impact on HDI. This reflects the role of social protection measures in improving living standards, especially for the elderly and vulnerable groups. Regular pension payments strengthen household security, reduce vulnerability, and enhance welfare outcomes, which indirectly support long-term development indicators.
4. SWPA: Power availability is positive and statistically significant. Reliable access to electricity enhances economic activities, improves the functioning of health and education infrastructure, and raises overall quality of life. Increased power availability thus acts as an important infrastructural determinant of human development.
5. SSE: SSE is highly significant at the 1% level and shows the strongest positive coefficient among all variables. This establishes SSE as a major driver of human development in India. Investments in health, education, welfare services, and social infrastructure directly expand human capabilities and improve long-term developmental outcomes. The magnitude of the coefficient underscores the critical policy relevance of sustained social-sector financing.
6. GFD: GFD is negative and statistically significant. This suggests that higher deficits may constrain the fiscal space available for developmental

expenditure. Persistent fiscal imbalances can limit investment in human capital, reduce resource availability for social programs, and weaken overall development outcomes. The negative relationship highlights the importance of fiscal discipline and prudent budgeting to support human development.

Strong Model Fit: The model demonstrates robust explanatory power with an R-squared of 78.01% and an Adjusted R-squared of 77.72%, indicating that the selected variables explain a significant portion of the variation in the HDI.

Model Significance: The high F-statistic (276.1381, $p = 0.0000$) confirms the overall significance of the model, validating the relationship between the determinants of human development and the HDI.

Fixed Effects Justification: The Redundant Fixed Effects Test (Cross-section $F = 201.23$, $p = 0.0000$) highlights the importance of including state-specific factors to account for unobserved heterogeneity, supporting the use of the FEM.

The FEM results clearly indicate that the HDI across states is shaped by a combination of economic, institutional, governance, fiscal, social, and infrastructural factors. SSE emerges as the most influential determinant, followed by SWPA, PE and CPI. CF also contributes positively, reinforcing the role of productive capacity in improving human welfare. Conversely, higher GFD adversely affect development, signalling the importance of balanced fiscal management. By controlling for unobserved state-specific effects, the fixed effects estimation provides reliable and internally consistent evidence that strengthening social spending, improving governance, expanding infrastructure, and maintaining fiscal stability are central to enhancing human development outcomes across states.

Notable observations are:

1. SSE is the strongest factor raising HDI within states.
2. CF and PE also improve HDI over time.
3. CPI reflects improved economic conditions that accompany higher HDI.
4. GFD, interpreted positively, reflects the inverse relation with the HDI, which means productive borrowing improves development.

5. The model strongly supports the idea that economic and social sector investments are key drivers of human development in Indian states.

6.20 STATE-WISE PATTERNS OF HDI AND ITS DETERMINANTS: AN ANALYSIS

HDI is increasing in all 28 states, showing that human development has improved nationwide despite fiscal and structural differences. SSE shows an increasing trend across all states, indicating universal prioritisation of education, health, welfare, and social protection. Power availability increased across all states due to national electrification programmes like DDUGJY and Saubhagya. PE rose across all states, demonstrating the rising burden of committed liabilities and shrinking fiscal flexibility. GFD increased in most states, reflecting rising welfare responsibilities, subsidies, and administrative burdens. CPI trends generally improved, showing a gradual enhancement in governance and transparency. CF increased in the majority of states, except those with structural/geographical constraints or economic shocks. The following Table 6.12 presents a comprehensive state-wise analytical assessment of seven key variables, such as HDI, CF, GFD, CPI, SWPA, SSE and PE, across 28 Indian states for the period 2004–2021. Each variable's trend is identified as increasing or decreasing, followed by a concise observation explaining why the variable behaved in that manner for each state. Table 6.12 synthesises the empirical behaviour of fiscal, governance, and developmental indicators in India's federal system. It links them to state-specific structural characteristics, including economic composition, administrative reforms, geographical constraints, welfare orientation, fiscal capacity, and infrastructural development. By integrating both quantitative data trends and state-specific reasoning for the trend, the Table 6.12 serves as a diagnostic tool to understand the role of SSE in human development, along with the determinants of human development observed in the study. Table 6.12 thus provides a clear empirical foundation for comparing states, tracking their development trajectories, and identifying the underlying factors driving progress or constraints, as well as an analytical narrative for the study.

Table 6.12

Variable-wise human development analysis of states from 2004 to 2021

State	HDI	CF	GFD	SSE	CPI	SWPA	PE	Observation
Andhra Pradesh	Increasing - welfare improved HDI	Decreasing - post-bifurcation slowdown	Increasing - welfare pressure	Increasing welfare and services	Increasing - reforms	Increasing rural electrification	Increasing - rising retirees	HDI improved due to strong SSE
Arunachal Pradesh	Increasing - service expansion	Decreasing - terrain constraints	Increasing - admin costs	Increasing - CSS and welfare activities	Increasing governance reforms	Increasing - electrification	Increasing - workforce pensions	HDI rising through central welfare
Assam	Increasing - health & literacy	Increasing - industrial expansion	Increasing - disaster-driven spending	Increasing - health & education	Increasing - administrative reforms	Increasing - grid expansion	Increasing pension load	HDI rising via SSE & CF
Bihar	Increasing - low base rise	Increasing - infrastructure boom	Increasing - welfare load	Increasing - basic services	Increasing governance reforms	Increasing - electrification	Increasing pension liabilities	Rapid HDI rise through SSE + infrastructure
Chhattisgarh	Increasing - tribal welfare	Decreasing - mining slowdown	Increasing security expenditure	Increasing - welfare schemes	Increasing - admin strengthening	Increasing power generation	Increasing pension load	Welfare-led HDI growth
Goa	Increasing - strong services	Increasing tourism capital	Increasing - mining revenue falls	Increasing - education & health	Increasing - efficient governance	Increasing - stable power	Increasing - workforce pensions	HDI is strong, but there is a fiscal strain
Gujarat	Increasing - industrial-social synergy	Increasing - industrial CF	Increasing - infra expansion	Increasing - social schemes	Increasing governance stability	Increasing power reliability	Increasing - rising employees	High CF drives HDI

Haryana	Increasing - income & health	Increasing - manufacturing CF	Increasing - subsidy burden	Increasing - welfare & education	Increasing governance improvements	Increasing - power sector	Increasing pension rise	Balanced social development
Himachal Pradesh	Increasing - strong social base	Increasing - hydropower CF	Increasing - salary+pension burden	Increasing - welfare focus	Decreasing - admin issues	Increasing - reliable power	Increasing - high pension load	High HDI with fiscal strain
Jammu & Kashmir	Increasing - improved service access	Increasing - tourism + works	Increasing - admin+security costs	Increasing welfare spending	Increasing - reforms	Increasing - electrification	Increasing pension rise	HDI improved despite constraints
Jharkhand	Increasing - rising services	Increasing - industrial CF	Increasing - low revenue	Increasing - welfare	Increasing governance reforms	Increasing - electrification	Increasing - pensions	HDI via CF+SSE
Karnataka	Increasing - education & tech	Increasing - IT-industrial CF	Increasing - welfare load	Increasing - welfare & health	Increasing - reforms	Increasing - power	Increasing pension rise	CF+SSE drive HDI
Kerala	Increasing - top performer	Increasing - service capital	Increasing - welfare deficit	Increasing - welfare-heavy	Increasing - strong governance	Increasing - universal electricity	Increasing - retired workforce	Best welfare-development model
Madhya Pradesh	Increasing - improving base	Increasing - road & irrigation CF	Increasing - welfare pressure	Increasing - SSE from a low base	Increasing - governance	Increasing power availability	Increasing - pensions	HDI rising from a low base
Maharashtra	Increasing - urban HDI	Increasing - industrial CF	Increasing - fiscal commitment	Increasing - SSE expansion	Increasing - governance	Increasing power reliability	Increasing pension load	Strong CF+SSE synergy
Manipur	Increasing service access	Decreasing - limited CF	Decreasing - improved fiscal control	Increasing - SSE & health	Increasing - reforms	Increasing - electrification	Increasing - pensions	HDI improving despite CF

								constraints
Meghalaya	Increasing health literacy	Increasing - tourism & infra	Decreasing - fiscal discipline	Increasing - welfare growth	Increasing - transparency	Increasing - power	Increasing - pensions	SSE-led HDI improvement
Mizoram	Increasing - strong social structure	Increasing - infrastructure	Increasing - deficits	Increasing - welfare	Increasing - governance	Increasing - electricity	Increasing - pensions	Welfare-driven HDI
Nagaland	Increasing - access improving	Increasing - public works	Decreasing - fiscal correction	Increasing social spending	Increasing governance reforms	Increasing - electrification	Increasing - pensions	HDI rising gradually
Odisha	Increasing - turnaround state	Increasing - ports & infra	Increasing - disaster spending	Increasing - nutrition & health	Increasing - governance	Increasing - power	Increasing - pensions	infrastructure + SSE boosted HDI
Punjab	Increasing - stable HDI	Increasing - industry CF	Increasing - subsidy+pension strain	Increasing - welfare	Increasing - governance	Increasing - reliable power	Increasing - high pensions	HDI is strong, and fiscal pressure is high
Rajasthan	Increasing - social gains	Increasing - water & road CF	Increasing - welfare burden	Increasing - SSE	Increasing - governance	Increasing - electrification	Increasing pension load	HDI driven by infrastructure +SSE
Sikkim	Increasing - high HDI	Increasing - tourism CF	Decreasing - fiscal control	Increasing - SSE	Increasing - governance	Increasing - power	Increasing - pensions	High-performing welfare state
Tamil Nadu	Increasing - high HDI	Increasing - industrial CF	Increasing - welfare deficit	Increasing - high SSE	Increasing - governance	Increasing - power	Increasing - pensions	Model welfare-development system
Tripura	Increasing -	Increasing -	Increasing - fiscal	Increasing	Increasing -	Increasing -	Increasing	SSE-driven

	steady HDI rise	infra CF	load	- SSE	governance	electricity	- pensions	HDI
Uttar Pradesh	Increasing - from a low base	Increasing - infra boom	Increasing - welfare load	Increasing - SSE	Increasing - governance	Increasing - electrification	Increasing pension increase	Slow HDI rise via infrastructure +SSE
Uttarakhand	Increasing - good social outcomes	Decreasing - slowed CF	Increasing - disaster costs	Increasing - SSE	Increasing - reforms	Increasing - electrification	Increasing - pensions	HDI rising despite CF fall
West Bengal	Increasing - welfare HDI	Increasing - infrastructure	Increasing expenditure burden	Increasing social spending	Increasing - governance	Increasing - electricity	Increasing pension load	Welfare- driven HDI growth

Data source: Computed and observed by the researcher; variables calculated from RBI and State Budget Documents.

The state-wise analysis in Table 6.12 provides a clear, empirically grounded picture of how India's states have progressed in human development and social-sector investment under the broader framework of fiscal federalism. The trends and observations demonstrate that while states differ significantly in fiscal capacity, governance efficiency, economic structure, and administrative capabilities, all states have shown positive improvements in HDI driven primarily by rising SSE, expanding infrastructure, and governance reforms. The analysis confirms that SSE, CF, and CPI are the strongest determinants of human development. In contrast, rising PE liabilities and GFD impose constraints on states' ability to sustain long-term developmental spending. Regional differences remain pronounced, reflecting historical, institutional, and geographical influences on fiscal behaviour and social development.

In conclusion, the Table 6.12 illustrates the dynamic interactions between fiscal federalism and social outcomes, revealing that states advancing on both welfare and growth fronts achieve the most sustained improvements in human development. It provides essential empirical backing for the study's argument that enhancing fiscal capacity, improving governance, and prioritising SSD are central to strengthening human development across India.

REGIONAL ANALYSIS

- Northern states such as Punjab, Haryana, and Himachal Pradesh show strong social outcomes but rising fiscal stress due to salaries and pensions.
- Southern states like Kerala, Tamil Nadu, and Karnataka demonstrate the highest social sector performance due to a balanced model of CF and welfare expenditure.
- Eastern states, including Bihar, Odisha, and West Bengal, exhibit significant improvements from a low base due to expanding infrastructure and welfare schemes.
- Western states such as Gujarat and Maharashtra show high CF and industrial growth, driving social development.

- North-eastern states rely heavily on central transfers for SSD due to terrain constraints and limited internal revenue.

MAJOR OBSERVATIONS FROM THE TABLE 7.11

The following key patterns and cross-state insights emerge clearly from the Table 6.12:

1. HDI Increased in All 28 States

Every state showed an upward trend in HDI, reflecting nationwide improvements in education, health, and welfare. The pace differed across regions: Southern and Western states showed high-level consolidation, Eastern and Central states showed rapid improvement from low baselines, and North-eastern states progressed through centrally supported welfare programmes.

2. SSE Rose Across All States

SSE is increasing across the board, demonstrating a growing commitment to education, health, nutrition, and social protection. High-SSE states such as Kerala, Tamil Nadu, Andhra Pradesh, Odisha, and Karnataka experienced sustained improvements in their HDI scores.

3. SWPA Increased in Every State

Due to national programmes like DDUGJY and Saubhagya, electrification expanded in rural and urban areas, reducing regional infrastructure gaps.

4. PE Increased Everywhere

All states show rising PE, signalling increasing committed liabilities. This reflects: A growing retired workforce, Long-term fiscal stress and Reduced flexibility for capital and social spending.

5. CF Increased in Most States but Declined in a Few

High-performing states like Gujarat, Maharashtra and Karnataka show strong CF driven by industry and services.

Declines in Andhra Pradesh, Arunachal Pradesh, Chhattisgarh, Manipur, and Uttarakhand are linked to structural constraints such as Bifurcation effects (AP), Geographical limitations (NE states), Declining mining activity (Chhattisgarh), and Disaster vulnerability (Uttarakhand).

6. GFD Increased in Most States

Growing welfare expenditure, subsidies, disaster-related spending, and pension liabilities contributed to rising GFD. Only a few smaller NE states saw improved fiscal balance.

7. CPI Improved Across Most States

Governance quality gradually increased through e-governance reforms, digitised service delivery (MeeSeva, e-Procurement), anti-corruption measures and improved grievance redressal systems.

8. Strong Regional Patterns Exist

- Southern states lead in welfare-led development.
- Western states show strong CF-driven growth.
- Eastern states display significant catch-up growth.
- Northern states show mixed development with rising fiscal burden.
- North-eastern states depend heavily on central transfers but perform well in SSE and HDI growth.

6.21 DETERMINANTS OF HDI: AN OVERVIEW OF THE OBSERVATIONS

The empirical results derived from the Fixed Effects Model (FEM), confirmed through the Hausman test, offer clear and practical insights into how different economic, institutional, and social factors shape human development across Indian states. By establishing the FEs as the appropriate estimator, the study ensures that the findings genuinely reflect the impact of changes within each state over time,

independent of their long-standing structural characteristics. The empirical analysis reveals several critical insights that carry strong policy relevance for enhancing human development across Indian states. The findings underscore that HDI outcomes respond significantly to targeted investments, improved governance, and sound fiscal practices. Based on the observed relationships, the following policy implications emerge:

1. SSE as the Most Powerful Driver

The most substantial positive impact on HDI comes from SSE. In practice, this indicates that states that invest more in health, education, and welfare services consistently achieve better human development outcomes. Higher spending translates into improved school enrollment and learning outcomes, strengthened health systems, expanded welfare schemes, and better access to essential services. These improvements directly contribute to higher HDI scores, showing that social investment is the most effective pathway to advancing human development. Since SSE shows the most potent positive effect on HDI, states should prioritise sustained and targeted investment in health, education, and welfare services. Expanding access to quality healthcare, improving educational outcomes, and reinforcing social protection systems can deliver substantial gains in human development.

2. CF Boosts Productive Capacity

The positive, significant coefficient for capital formation reflects the role of productive investment in enhancing human development. States that expand their capital base through infrastructure development, industrial investment, and employment-generating activities create an enabling environment that supports long-term improvements in income, education, and health indicators. Practically, this suggests that building roads, schools, hospitals, and economic infrastructure is a key ingredient of sustained human progress.

3. Governance Quality Matters: the role of CPI

A positive, significant effect of the CPI indicates that states with better governance, transparency, and accountability achieve higher HDI levels. In practical terms, this

means that when institutions function effectively, public money is better utilised, leakages decline, service delivery becomes more efficient, and trust in governance improves. This strengthens the overall development environment and enhances people's well-being. The significance of the CPI highlights the need for transparent, accountable, and efficient governance systems. Strengthening public institutions, improving administrative capacity, and adopting digital governance tools can reduce leakages and improve the delivery of public services, thereby improving HDI outcomes.

4. PE Enhances Welfare and Security

The positive influence of PE confirms the importance of social protection. By ensuring financial security for elderly and vulnerable populations, pensions reduce poverty, support household stability, and improve quality of life. Practically, it shows that a well-designed social protection system contributes directly to human development, especially by shielding vulnerable groups from economic shocks. It indicates that states should broaden social protection coverage, particularly for the elderly, disabled, and economically vulnerable populations. Ensuring stable, timely pension payments and improving the efficiency of welfare schemes can enhance household resilience and quality of life.

5. SWPA Strengthens Economic and Social Systems

The significant impact of SWPA underscores the importance of reliable electricity in both the economy and household life. Increased access to electricity: improves the functioning of schools and hospitals, supports digital connectivity, enhances productivity in households and industries, and improves comfort, safety, and quality of life. Thus, SWPA is a core infrastructural determinant that enables states to translate development policies into meaningful outcomes. It is considered a proxy for infrastructural developments.

6. Fiscal Deficit as a Constraint on Development

The negative coefficient for GFD demonstrates that higher fiscal deficits tend to weaken development outcomes. When fiscal stress rises, states face reduced fiscal

space for social sector spending, developmental initiatives, and long-term investments in human capital. Practically, this implies that sound fiscal management is essential to sustain development programs and ensure continuous progress in HDI. It necessitates the importance of prudent fiscal management for better performance of the states to achieve a good position in human development. States should adopt strategies to control revenue deficits, rationalise subsidies, improve tax administration, and allocate resources efficiently to developmental sectors. Maintaining fiscal space is essential for sustainable social investment.

The combined results clearly show that human development in India is shaped by deliberate policy choices and investments. States that: spend more on social sectors, invest in infrastructure, maintain good governance, ensure reliable electricity, and manage their fiscal deficits responsibly, to achieve consistently higher levels of human development. These findings align with real-world policy experiences, reinforcing that inclusive development requires both economic capacity and effective governance supported by social investment.

6.22 STATE-LEVEL PERFORMANCE CLASSIFICATION OF HDI AND ITS DETERMINANTS

Table 7.12 presents a comprehensive classification of Indian states based on their performance across seven core variables considered in this analysis, such as Cf, GFD, CPI, SSE, PE, SWPA and HDI. These indicators collectively reflect the economic strength, fiscal behaviour, governance quality, welfare commitment, infrastructural reliability and social development trajectory of each state. By categorising states into high-performing, medium-performing, low-performing, and exceptional cases, the table offers a structured understanding of how different economic and social dimensions interact to influence overall human development outcomes. High-performing states generally combine strong investment capacity, efficient governance, robust welfare expenditure, and reliable public services, enabling them to maintain superior HDI levels. Medium performers maintain balanced progress but face constraints in one or more indicators. In contrast, low-performing states face persistent structural challenges, including limited fiscal space,

weak infrastructure, and slow welfare expansion. The inclusion of exceptional cases allows recognition of states that deviate from general patterns, whether they perform remarkably well despite fiscal pressures or struggle despite resource availability. This integrated classification provides a clear empirical foundation for understanding interstate disparities, identifying policy gaps, and highlighting the areas where targeted intervention can accelerate development.

Table 6.13

State-level performance classification of HDI and its determinants

Indicator	High-Performing States	Medium Performing States	Low-Performing States	Exceptional Cases	Overall Observations
CF	Gujarat, Maharashtra, Karnataka, Haryana, Goa, Himachal Pradesh, Tamil Nadu, Sikkim	Andhra Pradesh, Assam, Bihar, Chhattisgarh, J&K, Jharkhand, MP, Meghalaya, Mizoram, Nagaland, Odisha, Rajasthan, Tripura, West Bengal, Uttar Pradesh	Arunachal Pradesh, Manipur, Uttarakhand	Kerala (High HDI despite moderate CF because the welfare model compensates for lower physical capital formation)	High CF states show strong HDI acceleration.
GFD	Sikkim, Meghalaya	AP, Assam, Bihar, Chhattisgarh, Gujarat, Haryana, J&K, Jharkhand, Karnataka, Maharashtra, MP, Mizoram, Nagaland,	Manipur, Arunachal Pradesh (high volatility)	Kerala, Punjab (High HDI despite very high fiscal deficits; welfare-heavy models create fiscal stress but maintain strong social outcomes)	High GFD is often linked with welfare spending.

		Odisha, Rajasthan, TN, Tripura, UP, WB			
CPI	Kerala, Tamil Nadu, Karnataka, Maharashtra	AP, Assam, Bihar, Chhattisgarh, Gujarat, Haryana, HP, J&K, Jharkhand, MP, Meghalaya, Mizoram, Nagaland, Odisha, Rajasthan, Sikkim, Tripura, WB	Arunachal Pradesh, Manipur, UP	Goa (Small- state advantage; efficient administration; high governance quality despite fluctuations)	Higher CPI improves governance quality, contributing to HDI.
SSE	Kerala, TN, HP, Sikkim	AP, Assam, Chhattisgarh, Gujarat, Haryana, J&K, Jharkhand, Karnataka, Maharashtra, Meghalaya, Mizoram, Nagaland, Odisha, Rajasthan, Tripura, WB	Bihar, MP, UP	Goa (High HDI with only moderate SSE due to strong tourism revenue, governance, and institutional quality)	SSE is the strongest correlate of rising HDI
PE	Kerala, Punjab, HP	AP, Assam, Bihar, Gujarat, Haryana, J&K, Jharkhand, Karnataka, Maharashtra, MP, Meghalaya, Mizoram, Nagaland, Odisha,	Arunachal Pradesh, Manipur	Goa (High pension load but high HDI—reflects ageing workforce and strong social protection)	High PE increases the fiscal burden.

		Rajasthan, Sikkim, TN, Tripura, WB			
SWPA	Kerala, TN, Karnataka, Maharashtra, Goa	AP, Assam, Bihar, Chhattisgarh, Gujarat, Haryana, HP, J&K, Jharkhand, MP, Meghalaya, Mizoram, Nagaland, Odisha, Rajasthan, Sikkim, Tripura, WB	Manipur, Uttarakhand	Sikkim (Very high reliability despite small size; hydropower advantage and efficient distribution)	Higher SWPA enables better HDI outcomes.
HDI	Kerala, Goa, Himachal Pradesh, Sikkim, Tamil Nadu	Gujarat, Maharashtra, Haryana, Karnataka, Punjab, Uttarakhand	Bihar, Jharkhand, UP, MP, Assam, Odisha	Jammu &Kashmir (HDI improving despite conflict- related disruptions; welfare expansion and service penetration drive progress)	HDI improvements align most strongly with SSE and power availability

Data source: Analyzed from State finances: A study of budgets and Global Data Lab (GDL)

The classification in Table 6.13 reveals a distinct pattern in the relationships among economic indicators, fiscal management, governance quality, welfare expenditure, and human development outcomes. States with consistently high SSE, strong SWPA, and higher CPI-based governance quality tend to achieve higher HDI rankings, demonstrating that welfare commitment and service delivery are central to enhancing human capability. Conversely, states with low SSE, constrained CF, and weaker infrastructure, such as Bihar, Jharkhand, and Uttar Pradesh, continue to lag in HDI, indicating the persistent impact of structural deficiencies. Fiscal indicators

such as GFD show a mixed pattern: while high deficits often signal welfare-driven spending, they also impose long-term fiscal stress, requiring careful balancing of development goals and fiscal prudence. Exceptional cases like Kerala, Sikkim, and Goa illustrate that strong welfare systems, stable institutions, and universal service provision can deliver high HDI outcomes even under fiscal pressures. Meanwhile, states such as Punjab and Himachal Pradesh highlight the challenge of sustaining development in the rising pension burdens and fiscal commitments. Finally, Table 7.12 underscores that SSE is the most influential driver of HDI, while governance quality reinforces these effects by improving administrative efficiency and service delivery. The classification provides a consolidated picture of interstate developmental performance. It highlights the pathways through which states can enhance human development through strategic investments in social sectors, infrastructure, and governance reforms.

6.23 COMPARATIVE ANALYSIS OF STATE-WISE HDI TRENDS IN RELATION TO SSE

The following Table 6.14 presents a consolidated state-wise analysis of HDI trends from 2004 to 2021, along with the observations from SSE. By combining the observed HDI patterns with the evidence from the key determinant, SSE. The Table 6.14 provides a holistic understanding of the developmental trajectory of each Indian state. This integrated approach allows us to identify not only whether a state's HDI has risen, remained stable, or fluctuated over the years, but also why such patterns have emerged in relation to SSE. Table 6.14 clearly distinguishes states that benefitted from substantial social investment from those constrained by fiscal stress or structural limitations. Thus, this section serves as a crucial bridge between descriptive HDI trends and the deeper analytical insights drawn from the analysis.

Table 6.14
State-wise HDI trends in relation to SSE

State	HDI Trend (2004–2021)	Empirical Findings Explanation
Andhra Pradesh	Rising with a slight dip after 2019	Moderate SSE growth; improved infrastructure; fiscal pressure slows recent progress
Arunachal Pradesh	Rising but fluctuating	Governance variability; SSE increases drive growth, but instability causes dips
Assam	Slow and steady increase	Low SSE and weak infrastructure constrain HDI despite gradual improvement
Bihar	Slow improvement from a low base	Very low SSE; high fiscal deficits; weak governance → slowest HDI growth
Chhattisgarh	Increasing with minor fluctuations	Moderate SSE; governance disruptions affect stability
Goa	Very high and stable	High SSE, strong governance, high capital formation → consistently high HDI
Gujarat	Substantial rise, then stabilisation	High capital formation, moderate SSE, strong infrastructure support HDI
Haryana	Steady improvement	High income and infrastructure; moderate SSE; stable institutional quality
Himachal Pradesh	Consistently high and stable	High SSE, strong governance, sound welfare systems → high HDI
Jammu & Kashmir	Increasing with some fluctuations	SSE expansion supports HDI; governance disruptions introduce variability
Jharkhand	Very slow improvement	Low SSE; low infrastructure; high deficits → weak HDI growth
Karnataka	Steady upward trend	Strong capital formation, moderate SSE, and better power availability drive gains
Kerala	Very high and stable across all years	Highest SSE, strong governance, and effective welfare systems explain the leading HDI.
Madhya Pradesh	Slow long-term increase	Low SSE and fiscal strain limit HDI improvement
Maharashtra	Smooth upward trend	High CF, moderate SSE, and strong institutions support the HDI rise
Manipur	Rising with dips	Governance and political instability cause fluctuations; moderate SSE supports growth
Meghalaya	Gradual improvement	Moderate SSE; infrastructure gaps slow faster HDI acceleration

Mizoram	High and steady	High governance quality; good SSE leads to stable HDI
Nagaland	Rising with evident fluctuations	Governance instability affects HDI despite SSE improvements
Odisha	Consistent rise from a low base	Increased SSE in recent years drives HDI; earlier deficits kept levels low.
Punjab	High but slightly declining recently.	Strong SSE historically; stagnation due to slowed institutional/infra improvements
Rajasthan	Significant improvement over time	SSE expansion; improved basic services support steady HDI rise
Sikkim	Strong and continuous rise	Strong governance, high SSE, and rapid social development
Tamil Nadu	Steady and stable rise	High SSE, strong pension systems, reliable power → stable high HDI
Tripura	Smooth rise, then plateau	Moderate SSE; governance improvements support growth
Uttar Pradesh	Slow improvement; remains low	Low SSE; high deficit; weak governance constrains HDI levels
Uttarakhand	Very stable and high	Balanced SSE; strong governance and infrastructure underpin HDI
West Bengal	Gradual steady rise	Improvement in SSE and governance explains HDI growth

Data source: Analysed from State finances: A study of budgets and Global Data Lab (GDL)

The above Table 6.14 provides state-wise observations that reveal that human development outcomes across India are closely aligned with the key determinant identified in the study. States such as Kerala, Himachal Pradesh, Goa, Tamil Nadu, and Sikkim, which consistently allocate substantial resources to education, health, welfare programmes, and basic social services, show very high and stable HDI levels. Their long-term commitment to SSE has strengthened public systems, improved access to essential services, and created sustained human development gains. In contrast, states like Bihar, Jharkhand, Uttar Pradesh, and Madhya Pradesh, with historically low SSE, weaker welfare provisioning, and constrained social infrastructure, exhibit slow HDI progress from a low base. The limited investments in health, education, nutrition, and social support mechanisms directly translate into slower human capability formation and persistent developmental gaps. Several

states, such as Odisha, Rajasthan, Chhattisgarh, Assam, Meghalaya, and Tripura, fall in a middle trajectory, where moderate but increasing SSE has supported gradual HDI improvement, though not at the pace of high-expenditure states. These states show how recent increases in social spending can generate significant developmental gains, especially when combined with governance improvements and infrastructure expansion. Meanwhile, states experiencing institutional or governance fluctuations, such as Nagaland, Manipur, and Jammu & Kashmir, despite moderate SSE, exhibit variable HDI trends, indicating that expenditure alone is insufficient; its effectiveness depends on stable implementation capacity.

Overall, the state-wise patterns underscore a positive association between SSE and HDI:

- High SSE → High and stable HDI
- Moderate SSE → Gradual and steady HDI improvement
- Low SSE → Slow HDI progress and persistent developmental deficits

This confirms that social sector expenditure is a critical enabling factor in strengthening human capabilities and achieving sustained improvements in social welfare and development outcomes across states. Overall, the relationship suggests that greater and sustained investment in social sectors translates into tangible improvements in human development, while underinvesting states face persistent developmental gaps. Generally, the Table 7.13 reinforces the central conclusion of the study: human development is significantly shaped by social investment, fiscal capacity, governance quality, and infrastructural support. The alignment between HDI trends and empirical findings confirms the robustness of the model. It underscores the need for targeted policies that strengthen fiscal health, enhance social spending, and improve governance to ensure sustained human development across all Indian states.

6.24 CAPABILITY APPROACH AND PANEL DATA EVIDENCE

The panel data analysis in this research supports the central tenets of Amartya Sen's Capability Approach, which views development as the expansion of individuals' fundamental freedoms and opportunities rather than merely economic growth. The consistent rise in the HDI across all states reflects improvements in core capabilities such as health, education, and standard of living. SSE, which increased in every state during the study period, emerges as the most direct instrument through which states enhance these basic capabilities. Spending on education, health, nutrition, and welfare programmes expands people's ability to lead productive and secure lives, demonstrating the Capability Approach's emphasis on public action as a driver of human well-being. Infrastructure improvements, proxied by SWPA, act as "conversion factors" enabling individuals to translate resources into valuable functionings, whether through better learning conditions, improved health services, or enhanced livelihood opportunities. Similarly, improvements in governance quality, reflected in rising CPI values in many states, strengthen the effectiveness of public expenditure by ensuring transparency, accountability, and equitable service delivery key institutional conditions for capability enhancement.

At the same time, the trends in fiscal variables such as Capital Formation (CF) and Gross Fiscal Deficit (GFD) reveal the uneven fiscal space available to states to build capabilities. States with stronger capital formation and manageable deficits show faster improvements in HDI, while states with rising fiscal stress face constraints in sustaining long-term investments in social sectors. Nonetheless, the overall increase in SSE across states highlights a collective policy commitment to expanding human capabilities within India's federal structure. In sum, the panel data results demonstrate that fiscal behaviour, governance quality, and social spending function together to expand human capabilities. This aligns closely with the Capability Approach, reaffirming that development is best understood through the enhancement of people's freedoms and opportunities rather than solely through economic aggregates.

6.25 SUMMARY OF THE CHAPTER

This chapter concludes that human development in India is the outcome of intersecting social, fiscal, infrastructural, and governance factors. By confirming the Fixed Effects Model, the analysis ensures robust, unbiased estimates that reflect actual within-state changes. The findings underscore that social sector spending, infrastructure availability, good governance, productive investment, and fiscal prudence together form the core drivers of human development. These insights provide a strong empirical foundation for policy formulation to advance human capabilities and reduce regional disparities in India.

CHAPTER VII

SUMMARY, FINDINGS AND CONCLUSION

7.1 Introduction

7.2 The Study at a Glance

7.3 Concluding Reflections of Fiscal Federalism, SSE, HDI and Determinants of HDI

7.4 Major Contributions of the Analysis

7.5 Summary of the study

7.6 Major Findings of the Study

7.7 Conclusion

7.1 INTRODUCTION

Building on the empirical insights from the exploration of fiscal, social, and institutional determinants of development, this chapter consolidates the significant findings into a coherent narrative. By synthesising the observed patterns across states and variables, it offers an integrated understanding of how social sector commitment, governance quality, and economic capacity shape human development trajectories in India. Through this summarised interpretation, the chapter moves from detailed statistical evidence to broader conceptual conclusions that frame the overall significance and policy relevance of the study. The final chapter of the present research synthesises the empirical evidence generated through the panel-data analysis of 28 Indian states over the period 2004–2021. The purpose of this chapter is to consolidate the key patterns, comparative trends, and structural relationships observed between Human Development Index (HDI) and its major determinants particularly Social Sector Expenditure (SSE), Capital Formation (CF), Gross Fiscal Deficit (GFD), Corruption Perceptions Index (CPI), State-Wise Power Availability (SWPA), and Pension Expenditure (PE). By bringing together the descriptive findings, inter-state comparisons, and econometric estimations, this chapter provides a coherent understanding of how fiscal behaviour, governance quality, infrastructural factors, and welfare expenditure shape human development outcomes across India.

The analyses undertaken in earlier chapters reveal significant differences across states in both levels and trajectories of human development. These variations are closely linked to the fiscal and institutional characteristics of states, especially the extent of public investment in social sectors, the efficiency of governance, and the reliability of essential infrastructure such as power availability. Through the classification of states into high, medium, low, and exceptional categories across multiple indicators, the analysis highlights the multidimensional nature of human development and the diverse pathways through which states progress. This chapter aggregates these insights to offer a consolidated perspective on the interactions between fiscal indicators and human development. It not only summarises the state-

wise performance patterns but also interprets the structural reasons behind exceptional cases, such as states achieving high HDI despite fiscal stress or moderate CF. By integrating statistical evidence with policy-oriented interpretation, the chapter builds a comprehensive narrative on why certain states outperform others and how sustained welfare spending, governance improvements, and infrastructure expansion influence long-term human development. The concluding section further reflects on the broader implications of these findings for fiscal federalism, social sector prioritisation, and capability-enhancing policy design in India.

7.2 THE STUDY AT A GLANCE

1. Fiscal Federalism and the basis of state-level development

The study begins by explaining that India's federal system assigns most social sector responsibilities, such as education, health, welfare, and local development, to the states. At the same time, substantial taxation powers remain with the Union. This creates a vertical fiscal imbalance, making fiscal federalism the foundation of state development. States depend heavily on financial flows from the Centre to meet their constitutional and developmental obligations. The study highlights that the design of fiscal federalism through Finance Commissions, tax-sharing mechanisms, grants, and cooperative federal institutions determines the fiscal space available to states for investing in welfare and human development. Because social sectors are revenue-intensive and require sustained funding, a well-functioning federal fiscal structure is essential for balanced and equitable development across states.

2. Intergovernmental transfers and their developmental role

Intergovernmental transfers emerge as a critical instrument for balancing the mismatch between state responsibilities and their own revenue capacity. The study details the components of these transfers: Tax Devolution, Finance Commission Grants, Centrally Sponsored Schemes (CSS), and other forms of budgetary and non-budgetary support. These transfers are not simply financial flows but tools for equalising fiscal capacities across states and ensuring that national development

priorities are uniformly implemented. By analysing the design and functioning of these transfers, the study shows that predictable and adequate fiscal flows are essential for enabling states, especially low-income ones, to maintain spending on essential social services. Without these transfers, poorer states would fall further behind in human development outcomes.

3. Budgetary transfers as the core driver of SSE

The study emphasises that budgetary transfers are the most influential component of intergovernmental fiscal flows. They directly determine the level, distribution, and direction of SSE. Key programmes such as SSA, NRHM/NHM, ICDS, MGNREGS, and social security schemes have expanded significantly due to central budgetary support. The study highlights that such transfers shape service delivery standards and ensure minimum national levels of education, health, nutrition, and welfare. Budgetary transfers, therefore, act as the backbone of India's welfare commitments, and variations in these transfers explain much of the differences observed in state-level SSE.

4. Trends, patterns, and regional disparities in SSE

Analysing SSE from 2004–2021, the study finds a clear upward trend in overall spending across all states, reflecting India's growing commitment to human development. However, this rise is uneven: southern and western states such as Kerala, Tamil Nadu, Himachal Pradesh, and Karnataka consistently invest higher shares in social sectors, while central and eastern states like Bihar, Jharkhand, Madhya Pradesh, and Uttar Pradesh lag. These disparities stem from differences in fiscal capacity, governance strength, demographic pressures, and policy priorities. The patterns show that high-SSE states tend to have better utilisation, stronger institutions, and broader welfare coverage. This section concludes that social spending growth is a necessary but insufficient condition for improving the effectiveness of expenditure, as much a matter of volume as of expenditure.

5. SSD: Conceptual foundations and dimensions

The study conceptualises SSD as a multidimensional process reflecting improvements in education, healthcare, gender equality, living conditions, social

protection, and employment. It explains the evolution of SSD from earlier welfare-based approaches to modern capability-based frameworks that emphasise human well-being and equality. SSD is shown as the measurable outcome of SSE, linking financial investments to tangible improvements in human lives. It is noted that SSD is essential for inclusive growth, economic productivity, and long-term sustainability. Dimensions of SSD, such as nutrition, gender empowerment, child development, sanitation, and livelihoods, demonstrate its broad scope and importance in achieving more profound social transformation.

6. Measuring social development through indicators and index-based assessment

To evaluate SSD, the study uses an extensive indicator framework covering literacy, enrolment, health outcomes, sanitation, pensions, poverty, and gender-based metrics. These indicators provide a complete picture of developmental gaps and sectoral strengths across states. They also highlight the multi-dimensionality of SSD and the interlinked nature of social outcomes in SPI. The study emphasises that improvements in one dimension, such as education, often amplify gains in others, such as health or employment. Thus, indicators are crucial for understanding patterns of progress and for informing policy interventions.

7. SPI: Empirical assessment of social outcomes

The SPI assessment for 2015–16, 2017, and 2022 provides a multidimensional picture of social progress across states. The study finds that high-performing states such as Kerala, Tamil Nadu, Himachal Pradesh, and Sikkim consistently achieve superior results across all SPI components. Middle-performing states such as Punjab, Gujarat, and Haryana show moderate but fluctuating performance. Lower-performing states, Bihar, Odisha, Madhya Pradesh, Uttar Pradesh, and Jharkhand, remain at the bottom in all three years, indicating deep structural challenges in basic human needs, access to essential services, and social inclusion. The SPI analysis shows that improvements in social outcomes are not linear; several states improved in 2017 but declined or stagnated by 2022. This illustrates uneven governance capacity, funding gaps, and varying policy effectiveness. SPI findings, therefore,

provide a strong empirical foundation for understanding state-level disparities in social sector development.

8. HDI: Trends and state-level comparisons

The study examines HDI trends from 2004 to 2021 and finds steady improvement across states, but with significant regional variation. Southern and western states lead, with Kerala consistently at the top, while Bihar, Jharkhand, Madhya Pradesh, and Uttar Pradesh remain at the bottom. The analysis reveals that states that invest more in SSE tend to show stronger HDI performance, confirming the strong link between public spending and human development outcomes. HDI trends also show that improvements in literacy, schooling, access to health services, and living standards are closely aligned with long-term patterns of SSE and governance quality.

9. Determinants of Human Development: Conceptual basis and variable selection

The study selects six core determinants based on theoretical, fiscal, and developmental logic: SSE, CF, CPI, GFD, PE, and SWPA, which stand for Social Sector Expenditure, Capital Formation, Corruption Perceptions Index, Gross Fiscal Deficit, Pension Expenditure, and State-Wise Power Availability, respectively. These variables represent fiscal capability, institutional effectiveness, welfare commitment, infrastructure readiness, and governance quality. Together, they create a holistic picture of the socio-economic and institutional environment shaping human development. Their inclusion ensures that the empirical model captures both financial and structural dimensions of development.

10. Empirical findings from the Panel Data Analysis (2004–2021)

Using an FEM validated by the Hausman test, the study finds strong evidence that higher SSE significantly improves HDI across Indian states. CF, which strengthens public infrastructure, also has a positive and significant effect. Governance quality (as measured by the CPI) enhances development outcomes, indicating that reduced corruption and improved transparency increase the effectiveness of public expenditure. SWPA, symbolising infrastructure and service access, further boosts HDI. In contrast, higher GFD negatively affects HDI, as fiscal stress constrains

developmental expenditure. PE contributes to well-being by strengthening social protection for vulnerable populations. The study thus empirically confirms that a combination of financial resources, governance quality, and infrastructural readiness shapes state-level human development outcomes.

11. Linking SSE and human development through Sen's Capability Approach

The study synthesises its conceptual and empirical findings through the lens of Amartya Sen's Capability Approach, which views development as the expansion of human freedoms and capabilities. SSE is shown as the main instrument through which states enhance health, education, nutrition, livelihoods, and security, which are the core components of human capabilities. The empirical results validate this theoretical framework by demonstrating that higher SSE, stronger institutions, and better infrastructure lead directly to improved HDI and SPI outcomes. The study concludes that human development is not merely an economic process but a capability-expanding process driven by sustained social investment, effective governance, and equitable fiscal arrangements.

At a broader level, the findings have substantial implications for national development goals. By linking SSE and SSD to MDG/SDG progress, the study shows that India's ability to achieve sustainable development hinges on strengthening social-sector systems at the state level. Similarly, aligning state policies with the capability approach ensures that development efforts truly expand people's freedoms, choices, and well-being. Lastly, the study implies that improving human development in India requires a coordinated strategy grounded in fiscal federalism, strengthened social-sector spending, institutional reform, better governance, and capacity expansion. The results reaffirm that economic growth alone is insufficient; sustained investments in human development must support it to create equitable and inclusive outcomes for all states.

7.3 CONCLUDING REFLECTIONS OF FISCAL FEDERALISM, SSE AND HDI AND ITS DETERMINANTS

Fiscal Federalism to Human Development: Fiscal federalism forms the structural foundation of India's development architecture, shaping how resources are mobilised, allocated, and utilised by states for social sector priorities. In the context

of this study, fiscal federalism emerges as a significant determinant of human development, as the state-wise analysis clearly shows that differences in fiscal capacity, governance quality, and public expenditure patterns significantly influence variations in HDI across Indian states. In short, the empirical results of this study reaffirm that fiscal federalism plays a decisive role in determining human development at the state level. The distribution of fiscal powers, the quality of financial management, and the prioritisation of social sector spending collectively shape the developmental trajectory of each state. Effective fiscal federalism, when supported by good governance and adequate capital formation, emerges as the most important enabling factor for sustained improvements in human development across India.

Mechanism of SSE: SSE reflects investments made by States in sectors that directly enhance human capabilities, such as education, health, nutrition, social protection, sanitation, housing, and welfare programmes. This study treats SSE as both a determinant and an outcome of fiscal capacity and public policy choices. The mechanism operates through:

- Budget allocations driven by accumulated fiscal space
- Transfer-dependent expenditure, especially in low-income states
- Schemes and grants that direct resources toward health, school education, and welfare
- Performance-based spending, influenced by governance, policy priorities, and accountability systems

SSE is therefore not only a measure of financial commitment but also a reflection of policy priorities and administrative effectiveness.

Relationship Between SSE and Human Development: The study establishes a strong conceptual and empirical linkage between SSE and human development indicators. Higher spending on social sectors leads to improvements in development sectors, which enhance the broader areas of human development. The empirical

analysis confirms that States with consistently higher SSE tend to perform better in HDI rankings, demonstrating a positive relationship between public investment and human development outcomes.

Panel Data Analysis and Interpretation: The study employs panel data econometric techniques to analyse the relationship between SSE and human development across states.

1. Trend Analysis and Descriptive Statistics: Used to analyse growth patterns of SSE and HDI. Trend analysis shows steady growth in SSE across most states, though disparities persist.
2. Unit Root Tests (Levin-Lin-Chu / Im-Pesaran-Shin): Used to check stationarity of variables. The results confirm that the variables are stationary at level($I(0)$), ensuring reliable estimation.
3. Fixed Effects (FE) and Random Effects (RE) Models: Both models are estimated to understand the variation across states and over time. The FEM captures state-specific characteristics such as governance, policy culture, and structural conditions. The REM assumes that variation across states is random and uncorrelated with independent variables.
4. Hausman Test: Determines the more appropriate model for the study. The test indicates that the FEM is more suitable, meaning state-specific factors significantly influence human development.

Interpretation of Panel Results

- SSE has a positive and significant impact on HDI.
- CPI, CF, PE, and SWPA are positively influencing human development across states.
- Fiscal transfers strengthen SSE and directly improve HDI.
- GFD shows a negative relationship, which implies that an increase in GFD reduces human development in the states.

- Social sector spending is more effective in States with better administrative capacity.

7.4 MAJOR CONTRIBUTIONS OF THE ANALYSIS

1. Integration of Fiscal Federalism with Human Development Framework: The study brings together the theoretical strands of fiscal decentralisation and human development, offering an integrated model that explains how fiscal space and institutional design influence human capability formation.
2. Comprehensive Assessment of SSE and Human Development: By analysing long-term SSE patterns across all states, the study provides a nuanced understanding of social sector priorities and their developmental implications.
3. Empirical Identification of Determinants of HDI using Robust Panel Data Techniques: The FEM (supported by Hausman criteria) offers strong evidence on how fiscal, governance, and infrastructural variables contribute to HDI.
4. State-wise and Regional HDI Trend Profiling: The study contributes a detailed state-wise and regional HDI mapping for 2004–2021, linking real trends with empirical determinants.
5. Introduction of PE and SWPA into HDI Determinant Analysis: These two variables are overlooked in mainstream literature, and were incorporated to find significant explanatory relevance.
6. Policy-Relevant Insights for Strengthening SSD: The study highlights gaps and disparities that policymakers must address to achieve balanced human development.

7.5 SUMMARY OF THE STUDY

The study “Transfer of Resources and SSE with special reference to Human Development: An empirical analysis” examines the complex interaction between fiscal federalism, SSE, and human development across Indian States. By analysing state-level panel data over time, the study investigates how the design of India’s

fiscal system, the pattern of public spending, and the socioeconomic characteristics of States collectively influence the HDI. The research integrates conceptual analysis, empirical econometric methods, and the broader theoretical framework of intergovernmental finance to provide a comprehensive understanding of the determinants of human development in a federal setting. Fiscal Federalism and Its Role in Shaping SSE. This study investigated the dynamic relationship between fiscal federalism, SSE, social sector development, and human development across Indian states from 2004 to 2021. Grounded in the theoretical foundations of fiscal decentralisation, institutional economics, and capability development, the research explored how state-level fiscal space, governance structures, and expenditure patterns shape human development outcomes, particularly through social investments. The analysis began with a detailed examination of India's fiscal federal structure, emphasising the interplay between central transfers, state autonomy, and fiscal responsibilities. The study established that the institutional design of fiscal federalism substantially influences the capacity of states to allocate resources to core social services such as health, education, welfare, and infrastructure. A detailed examination of SSE showed wide regional variations, with southern and western states consistently prioritising social spending compared to eastern and central states.

The study begins by recognising the importance of fiscal federalism in India, where expenditure responsibilities, especially in the social sectors, rest primarily with the States. At the same time, revenue-raising powers remain concentrated with the Centre. This structural nature of vertical fiscal imbalance necessitates intergovernmental transfers to ensure adequate provision of public services. Simultaneously, significant horizontal fiscal imbalances arise from differences in economic capacity, demographic pressures, administrative efficiency, and developmental needs across States. These imbalances influence how much individual States can spend on health, education, nutrition, social welfare, and public services. India uses a combination of Tax Devolution, Grants-in-aid, and Centrally Sponsored Schemes (CSS) to bridge these fiscal gaps. These transfers are trying to expand the State's fiscal space, correct regional disparities, and create scope for

states to invest more in human development. Thus, fiscal federalism serves as the foundational mechanism through which states acquire resources for SSE and improve HDI outcomes. To understand the empirical determinants of HDI, the study employed a panel data framework, incorporating critical socio-economic and fiscal variables: SSE, CF, CPI, GFD, PE and SWPA. Unit root tests indicated the all variables are stationary, while correlation analysis revealed strong positive associations among HDI, SSE, CF, and governance quality. The FEM, validated by the Hausman test, served as the core of the empirical estimation. Results clearly demonstrated that SSE is the most potent positive determinant of human development, confirming theoretical expectations about the transformative role of public expenditure in capability enhancement. Governance quality, CF, pension outlays, and power availability also contributed positively to HDI, while the GFD had a negative, statistically significant impact, highlighting the constraints imposed by fiscal stress.

A comprehensive state-wise and regional HDI trend analysis provided additional support to the empirical findings. States with high SSE, stronger governance indicators, and better infrastructure, such as Kerala, Goa, Himachal Pradesh, Tamil Nadu, and Sikkim, consistently achieved higher HDI scores. Conversely, states with chronic fiscal constraints, low SSE, and weaker institutions such as Bihar, Uttar Pradesh, Jharkhand, Odisha, Assam and Madhya Pradesh recorded lower levels of human development and slower progress over time. In general, the study concludes that fiscal federalism, if supported by adequate fiscal transfers, institutional stability, and targeted social investment, plays a crucial enabling role in strengthening human development outcomes in India.

7.6 MAJOR FINDINGS OF THE STUDY

The significant points observed in the study can be summarised as follows:

- Intergovernmental transfers significantly expand the fiscal space of states through Tax devolution, Finance Commission (FC) grants, and Centrally

Sponsored Scheme (CSS) allocations, collectively providing the financial foundation for States to undertake social sector responsibilities.

- States that receive higher transfers show better expenditure performance in key social sectors. Horizontal imbalances lead to wide disparities in SSE across states, which means that states differ significantly in their revenue-raising capacity, economic base, demographic pressures, and administrative efficiency. These variations result in uneven levels of social spending. Poorer states with low fiscal capacity spend substantially less on social services compared to richer states, contributing to interstate inequalities in human development.
- Fiscal transfers indirectly improve human development by enabling SSE through the transfers from the Centre, which not only increase social sector allocations but also improve the efficiency and stability of social service delivery. The study finds that fiscal transfers indirectly contribute to better HDI by strengthening State-level expenditure.
- Fiscal Federalism and State-Level Spending Capacity: States with stable fiscal transfers and stronger revenue capacity can allocate more resources to social services. High fiscal deficit negatively affects HDI by constraining developmental expenditure.
- SPI: The states with stronger governance structures and decentralised fiscal arrangements show a practical implementation of their development policies and provide better outcomes in high social progress in those states. It is evident in the values and ranks of the Social Progress Index for the states, and they follow a sustained development path in their socio-economic dimensions.

The analysis reveals a clear divergence among Indian states in terms of human development outcomes over the period 2004–2021. SSE has a strong and positive impact on Human Development, as explained by the empirical panel data results, which indicate that higher SSE leads to improved

outcomes in health, education, and living standards. States such as Kerala, Goa, Himachal Pradesh, Tamil Nadu, and Sikkim consistently rank among the highest HDI performers, maintaining strong human development through sustained welfare investments, efficient public service delivery, and stable institutional systems. In contrast, Bihar, Uttar Pradesh, Jharkhand, Odisha, Assam and Madhya Pradesh remain low-HDI performers, mainly due to chronic underinvestment in social sectors, weaker institutional capacity, and slower expansion of basic services.

- States differ in deep structural aspects like administration efficiency, political will, and institutional quality, which cannot be captured by fiscal variables alone but strongly affect development outcomes. Enhancing HDI is not just about increasing social expenditure, but also about strengthening governance structures that condition how those funds translate into human development. In practice, this supports targeted fiscal decentralisation and institutional strengthening within states.
- States with higher long-standing administrative capacity (examples: Kerala, Tamil Nadu) also show consistently higher SSE and better HDI performance. States with historical governance weaknesses (examples: Bihar, Uttar Pradesh) show lower fiscal capacity and lower HDI. Because these unobserved state traits correlate with the regressors, Random Effects becomes biased. Therefore, the Hausman test forces you to use Fixed Effects, which eliminates this bias.
- Panel data diagnostic tests confirm the reliability of the model-Unit Root Tests (Levin-Lin-Chu, IPS): Variables were made stationary after first differences, Hausman Test: Supported the use of the Fixed Effects Model, indicating that State-specific characteristics significantly influence human development, Model diagnostics: Confirmed that the estimations are consistent and robust.

- Fixed Effects results reveal that State-specific characteristics matter: Differences in governance quality, administrative capacity, policy priorities, and institutional efficiency significantly affect SSE effectiveness and HDI outcomes. This supports the idea that “one-size-fits-all” policy approaches may not work equally across States.
- Inter-State disparities in HDI remain substantial despite rising SSE: Although overall SSE has increased over time across India, the gap between high- and low-performing States persists. Differences in fiscal capacity, demographic constraints, and governance explain this.
- The analysis must rely on within-state variations over time (how each state’s fiscal capacity or expenditure priorities evolved and how that changed its HDI). Cross-state comparison without accounting for fixed traits would give biased estimates. The differences observed in HDI are not solely due to fiscal indicators. They are also shaped by each state’s unique and time-invariant characteristics.” These characteristics are included in the FE model by adding state-specific intercepts.
- The Hausman test ($\chi^2 = 53.43$, $p = 0.000$) clearly indicates that the unobserved state-specific characteristics in the dataset are correlated with the fiscal and governance variables used in the model. Meaning that the empirical analysis must rely on within-state changes over time, such as improvements in fiscal capacity, shifts in expenditure priorities or governance reforms, to explain improvements in HDI. This ensures unbiased estimates by controlling for each state’s unique structural characteristics.
- The significant Hausman statistic confirms that unobserved state-level characteristics (administrative legacy, social structures, institutional history) are not orthogonal to fiscal variables such as SSE or fiscal capacity. This supports the theoretical expectation that governance and historical institutional quality influence fiscal behaviour and development outcomes.

- Demographic pressures negatively influence human development: High population density, greater dependency ratios, and higher population growth create additional stress on State budgets. These demographic burdens dilute the effectiveness of social spending and pose challenges to achieving uniform improvements in HDI.
- SSE contributes more to education and health outcomes than to income components of HDI: The study finds that SSE has the most substantial impact on the education and health dimensions of HDI compared to the income dimension. This highlights the role of State governments in improving long-term capabilities rather than short-term income indicators. SSE as the Strongest Determinant of HDI. SSE has the most significant positive coefficient in the FEM. States with sustained SSE consistently exhibit higher HDI. Low SSE states lag despite national growth momentum.
- Governance (CPI) Matters Significantly. Better governance quality strongly enhances human development. States with instability (Nagaland, J&K, Manipur) show fluctuating HDI trends despite spending. CF and Infrastructure as Enabling Conditions. CF positively influences HDI by strengthening physical and economic capacity. Power availability positively impacts HDI by expanding service delivery. PE and Welfare Systems Support HDI Improvements. Pension outlays contribute to social protection, thereby improving quality-of-life indicators. Tamil Nadu and Kerala exemplify this relationship.
- State-wise HDI variation reflects empirical determinants. Very High HDI States: Kerala, Goa, Himachal Pradesh → high SSE + strong institutions. High HDI States: Tamil Nadu, Maharashtra, Haryana, Sikkim → strong infrastructure + moderate/high SSE. Medium HDI States: Karnataka, Gujarat, West Bengal, Tripura → moderate SSE/CF combinations. Low–Medium HDI States: Bihar, UP, Jharkhand, Odisha → low SSE + high deficits + weak governance.

- Strengthening fiscal federal arrangements is essential for balanced human development: The findings suggest that improving the design and predictability of fiscal transfers, ensuring fairer distribution of funds, and supporting fiscally weaker States are necessary steps to promote equal opportunities for human development across India.

Summary of Key Findings

The study establishes that fiscal federalism, State fiscal capacity, and public spending patterns are critical determinants of human development in India. SSE emerges as a powerful driver of improvements in health, education, and overall well-being. The empirical evidence clearly indicates that fiscal transfers, income levels, demographic pressures, and governance quality shape States' human development outcomes. The FE panel model confirms the significance of State-specific structural factors. Overall, the study highlights the need to strengthen intergovernmental fiscal mechanisms and ensure adequate, equitable, and efficient social-sector investment to reduce disparities and promote balanced human development across Indian States.

Fiscal federalism significantly shapes SSE: Intergovernmental transfers and tax devolution enhance the ability of states to spend on social services.

SSE strongly influences Human Development: Higher investment in health, education, and welfare improves HDI scores.

Horizontal fiscal imbalances explain disparities in HDI: Resource-poor States spend less on social sectors and lag in human development outcomes.

The Fixed Effects model best explains State-level differences, with structural factors such as governance, institutional quality, and administrative capacity playing an important role.

Determinants such as income, transfers, SSE, and demographic factors shape HDI: States with higher income and greater SSE allocations consistently exhibit stronger human development performance.

Implications for Causal Inference in Panel Data Models: Rejecting the RE model eliminates the possibility of biased parameter estimates arising from omitted-variable correlation. This strengthens the causal interpretation of the estimated coefficients by ensuring consistency and unbiasedness through FE specification.

Fiscal federalism plays a decisive role in shaping State-level SSE: The study finds that India's fiscal structure characterised by vertical and horizontal fiscal imbalances directly affects how States mobilise and allocate resources for health, education, nutrition, welfare, and other social services. States with adequate tax devolution and higher grant support exhibit higher levels of SSE compared to fiscally weaker States.

7.7 CONCLUSION

The study concludes that fiscal federalism and public expenditure form the backbone of human development in India. Through mechanisms such as tax devolution, grants, and scheme-based transfers, fiscal federalism provides States with the financial capacity to undertake critical social sector spending. SSE, in turn, significantly improves outcomes in health, education, and living standards, thereby enhancing HDI. Using panel data analysis, supported by fixed-effects estimation and stationarity tests, the study finds a strong, statistically significant relationship between SSE and human development. Key determinants of HDI include expenditure on social sectors, fiscal transfers, population pressure, and governance quality. Ultimately, the study demonstrates that strengthening fiscal federal arrangements and increasing targeted social-sector investment are essential to reducing inter-state disparities and achieving balanced human development in India. Overall, public expenditure mediated through fiscal federalism remains central to shaping long-term human development in India. The study establishes that fiscal federalism, state fiscal capacity, and public spending patterns are critical determinants of human development in India. SSE emerges as a powerful driver of improvements in health, education, and overall well-being. The empirical evidence clearly indicates that fiscal transfers, income levels, demographic pressures, and governance quality shape states' human development outcomes. The FE panel

model confirms the significance of state-specific structural factors. Overall, the study highlights the need to strengthen intergovernmental fiscal mechanisms and ensure adequate, equitable, and efficient social-sector investment to reduce disparities and promote balanced human development across Indian States.

The study confirms that human development in India is fundamentally shaped by the interplay among fiscal federalism, SSE, governance quality, and socio-economic capacity. The empirical analysis demonstrates that states with greater fiscal autonomy, robust social spending, strong institutions, and adequate infrastructure achieve superior human development outcomes. Conversely, states constrained by fiscal deficits, weak governance, and low social expenditure continue to lag. By integrating theoretical insights with detailed empirical evidence and state-level data analysis, this research establishes a clear developmental pathway: greater fiscal capacity and higher social investment lead to stronger human development outcomes. The findings underscore the importance of strengthening India's fiscal federal structure, ensuring equitable social-sector investment, and promoting institutional reforms to build a more inclusive, human-centric development model. Human development improved across all states as rising SSE and stronger governance systems expanded access to education, health, and welfare, thereby enhancing people's core capabilities. Improvements in infrastructure and capital formation further supported this process by enabling individuals to convert public resources into real opportunities. Although fiscal pressures, such as rising deficits and pension burdens, limited fiscal space, states continued to prioritise social spending, reflecting a commitment to broad-based development. These patterns affirm the relevance of the capability approach, as the expansion of human freedoms and opportunities, not merely economic growth, emerges as the central driver of development in the panel data results.

CHAPTER VIII

RECOMMENDATIONS, POLICY PROSPECTS AND FUTURE RESEARCH IN SOCIAL SECTOR EXPENDITURE (SSE) AND HUMAN DEVELOPMENT

8.1 Introduction

*8.2 Recommendations for Strengthening Research on Fiscal Federalism, SSE and
Human Development*

8.3 Future Research Prospects

8.4 Policy Directions for Enhancing SSE and Human Development

8.5 Implications of the Study

8.6 Limitations of the Study

8.7 Summary of the Chapter

8.1 INTRODUCTION

The present study examined SSE and Human Development across Indian states and highlighted several key findings that carry significant implications for future academic research. The analysis revealed wide inter-state disparities in both expenditure and development achievements, reflecting diverse fiscal capacities, governance structures and historical disadvantages. A positive association between SSE and human development was established; the relationship differed across states, demonstrating that institutional efficiency, fiscal autonomy, and governance quality also shape development outcomes. The study further identified challenges in data consistency, methodological limitations and insufficient integration of fiscal federalism into public expenditure research.

Given the findings from the previous chapter, it is essential to strengthen the academic foundations of research on social sector financing and human development. This chapter presents a set of elaborative research recommendations, future policy prospects for improving the research ecosystem, and directions for future scholarly inquiry, all grounded directly in the findings of the study. The objective is to advance the quality, scope, and relevance of future research on SSE, human development, and fiscal federalism in India.

8.2 RECOMMENDATIONS FOR STRENGTHENING RESEARCH ON FISCAL FEDERALISM, SSE AND HUMAN DEVELOPMENT

This section provides recommendations aimed at strengthening the current research ecosystem, improving the quality of data, and enhancing institutional support for research on SSE and human development.

1. **Strengthening Data Systems and Ensuring Consistent Reporting:** One of the key challenges identified in the study was inconsistency in SSE and human development data across states and years. Strengthening official data systems through standardised reporting formats, regular updating, and improved accuracy is essential to support reliable research. Enhancing coordination

between national and state statistical agencies can significantly improve data comparability and research quality.

2. **Establishing National and State-Level Research Observatories:** To support sustained research, dedicated observatories for SSE and human development should be established. These institutions can coordinate data collection, generate analytical reports, maintain long-term datasets, and facilitate collaboration between researchers, policymakers and academic institutions. Such observatories will act as hubs for evidence-based analysis and knowledge dissemination.
3. **Promoting Interdisciplinary Approaches in Social Sector Research:** Given the multidimensional nature of human development, research should integrate perspectives from economics, public policy, sociology, behavioural sciences and public health. Encouraging interdisciplinary work will allow scholars to capture the social, cultural and institutional determinants of SSE effectiveness more holistically.
4. **Enhancing Capacity-Building for Researchers and Institutions:** There is a need to strengthen the analytical capabilities of researchers working on SSE and human development. Training programmes in advanced research methods, data analytics, evaluation techniques, and policy analysis can significantly improve research outputs. Academic institutions should invest in building technical expertise and fostering research-oriented environments.
5. **Supporting Long-Term and Comparative Research Initiatives:** Short-term studies often fail to capture structural patterns in SSE and human development. Funding agencies and academic bodies should prioritise long-term, multi-state and comparative research projects that investigate evolving expenditure patterns and developmental trajectories. Such engagement encourages continuity and deeper analytical insights.

6. **Strengthening Research and Policy Linkages:** Research findings often remain underutilised due to gaps between academic work and policy-making. Creating formal platforms for dialogue through policy forums, state-level consultations, and collaborative workshops can ensure that research insights inform budgeting, programme design and monitoring processes in the social sector.
7. **Encouraging Transparent, Open-Access Data Culture:** Making SSE and human development databases publicly accessible will promote transparency, encourage broader participation in research, and facilitate peer validation. Open-access datasets also enable new methodological experimentation and broader collaboration across institutions.
8. **Promoting Ethical and Inclusive Research Practices:** Research on human development should follow ethical standards, especially when using micro-level or household-level data. Ensuring confidentiality, avoiding bias, and representing marginalised groups fairly will enhance the credibility and inclusiveness of future studies.

8.3 FUTURE RESEARCH PROSPECTS

Future research should expand the analytical depth of SSE and human development studies by exploring new methodological, thematic and empirical dimensions. The following prospects outline promising directions for scholarly advancement. The present research opens several meaningful directions for future academic inquiry. First, although the analysis captures long-term relationships between fiscal transfers, social sector expenditure, and human development, future research can extend the time dimension by incorporating more recent post-pandemic data. This will help assess how shifts in fiscal priorities, health shocks, and welfare expansions altered the dynamics of SSE and human development in Indian states. Second, the study primarily relies on aggregate state-level data. Future studies may examine district-level or sub-state disparities to better understand intra-state variations in social sector development and human development outcomes. Micro-level datasets,

including the NFHS and PLFS microdata, can reveal structural inequalities that do not appear at the state level. Third, the study can be enriched by incorporating qualitative assessments of governance capacity, fund utilisation, institutional efficiency, and administrative constraints. Combining quantitative models with qualitative field-based evidence would provide a more comprehensive picture of why some states show more substantial returns to social sector spending than others. Fourth, future research could explore dynamic panel models, causal inference techniques, or spatial econometric models to more rigorously identify spillover effects and their directionality. For instance, a spatial analysis may reveal how progress in one state influences neighbouring states through migration, labour mobility, or policy diffusion. Fifth, the scope of explanatory variables can be expanded by including indicators such as digital governance, social capital, environmental quality, and innovation capacity. These emerging determinants increasingly influence human development and may offer deeper insights into how states can accelerate social progress. Sixth, there is considerable scope to examine the effectiveness of specific CSS or state innovations in particular social sectors. Programme-level impact evaluations can provide nuanced insights into which interventions deliver maximum capability enhancement.

Finally, future research can more closely link the study to the broader Capability Approach by analysing not only outcomes but also opportunities, freedoms, and agency. This would allow researchers to develop a capability-based HDI or a multidimensional social capability index for Indian states. Together, these future research directions offer strong potential to expand the theoretical, methodological, and empirical foundations of the current study, while enriching policy debates on fiscal federalism, social investment, and human development in India. The following are some of the noted prospects of the study.

1. Longitudinal Analysis of SSE and Human Development Dynamics: Future studies should examine how sustained changes in SSE influence Human Development outcomes over long periods. Such analysis can uncover

delayed impacts, structural shifts and long-run patterns that short-term studies overlook.

2. **District-Level and Intra-State Modelling:** More granular modelling is needed to capture disparities hidden within states. District-level and spatial analyses can help identify regions with high or low expenditure effectiveness, offering more targeted policy insights.
3. **Efficiency Analysis Using Advanced Tools:** Applying techniques such as Data Envelopment Analysis (DEA) and Stochastic Frontier Analysis (SFA) will allow researchers to measure the efficiency of states in converting expenditure into development outcomes, helping identify high-performing and underperforming states.
4. **Integrating Fiscal Federalism into Empirical Frameworks:** Research should explore how GST revenues, Finance Commission transfers and state-level fiscal capacity shape SSE allocation and outcomes. Such integration can deepen understanding of India's evolving budgetary architecture.
5. **Examining the Political Economy of Social Sector Spending:** Future studies should analyse how political factors, including electoral cycles, party ideology and governance styles, influence expenditure priorities and programme implementation.
6. **Sector-Specific Outcome Analysis:** Independent research focusing on education, health and social welfare can generate detailed insights into how expenditure affects learning achievements, mortality and morbidity trends, or welfare distribution.
7. **Governance and Institutional Capacity as Determinants of Effectiveness:** Studies should explore how administrative efficiency, decentralisation, monitoring systems and institutional capabilities shape the outcomes of SSE. This will help explain variations among states with similar expenditure levels.

8. Role of Digital Governance and Technology in Service Delivery: Research should evaluate how digital innovations such as telemedicine, e-learning, welfare authentication systems and digital dashboards influence service accessibility, transparency and efficiency.
9. Socio-Cultural and Behavioural Drivers of Human Development: Future studies should incorporate behavioural science and socio-cultural analysis to understand how norms, stigma and household decisions affect the utilisation of public services.
10. Intergenerational and Long-Term Impacts of SSE: Exploring how improvements in education and health affect long-term mobility, productivity and well-being can reveal the enduring benefits of social sector investments.
11. Intersections of SSE with Climate, Migration and Demographic Change: Research should examine how climate vulnerability, population ageing and migration patterns alter social sector needs and the effectiveness of expenditure.
12. Cross-State and International Comparative Studies: Comparative research within India and with other federal countries can help identify best practices in fiscal design, governance and social sector performance.

8.4 POLICY DIRECTIONS FOR ENHANCING SSE AND HUMAN DEVELOPMENT

1. Enhance Fiscal Space for Social Expenditure: States with high GFD should adopt fiscal reforms to create room for developmental spending. Increasing untied transfers and strengthening state tax bases can support this.
2. Prioritise SSE: Policy should mandate minimum SSE benchmarks for lagging states. Focused investments in health, education, nutrition, and welfare are essential for HDI convergence.

3. Strengthen Governance and Administrative Efficiency: Transparent institutions, accountability mechanisms, and anti-corruption strategies should be reinforced to improve service delivery.
4. Expand Infrastructure and Power Availability: Reliable electricity and basic infrastructure should be prioritised as they have strong enabling effects on human development.
5. Promote Balanced Regional Development: Central support must be strategically directed toward eastern and central states that show persistent developmental lag.
6. Strengthen Pension and Social Protection Systems: As pension expenditure positively influences HDI, expansion of targeted welfare schemes can improve vulnerability outcomes.
7. Encourage Evidence-Based Fiscal Federal Reforms: Finance Commission transfers should increasingly incorporate human development indicators and SSE performance.

8.5 IMPLICATIONS OF THE STUDY

The findings of this study carry significant implications for public policy, fiscal governance, and the design of development strategies in India. The analysis establishes that fiscal policy is fundamental in the social sector. The study shows that when the system of fiscal transfers is predictable, equitable, and adequately structured, states are better positioned to invest in critical areas such as education, health, nutrition, welfare, and social protection. Thus, strengthening the transfer system, especially the formula-based components of tax devolution and statutory grants, emerges as a fundamental requirement for improving state-level development outcomes. A significant implication relates to the role of SSE. The study demonstrates that SSE is not simply an expenditure category but a strategic investment in human capital and capability expansion. Higher SSE is associated with better performance on the SPI and HDI, confirming that sustained public

spending on social services is vital for long-term progress. This indicates that states must continue to prioritise SSE within their budgets and improve fund utilisation through stronger governance, better targeting, and more efficient implementation systems. The empirical findings underscore the importance of structural determinants such as CF, CPI, and SWPA in shaping human development. These results imply that development strategies should not focus solely on increasing expenditure but also on improving the institutional and infrastructural environment in which social services are delivered. Addressing corruption, strengthening administrative capacity, and enhancing transparency can amplify the developmental impact of existing resources. Another vital implication concerns fiscal discipline. The negative relationship between GFD and HDI highlights the developmental cost of persistent fiscal stress. States that maintain fiscal prudence are better able to sustain investment in human development. This suggests that improving revenue mobilisation, managing public debt, and prioritising productive spending should remain key elements of state fiscal reforms.

The study also highlights structural inequalities across states. The wide variations in SSE, SPI, and HDI underscore the need for regionally sensitive policies that address the historical disadvantages faced by central and eastern states. Strengthening capacity-building, enhancing local governance, and providing targeted fiscal support to lagging regions can reduce these disparities and promote balanced development.

8.6 LIMITATIONS OF THE STUDY

1. Data Availability: The availability of data is a significant determinant in running a study like this. Here, 18 years of data are used for this study; a minimum of 30 years of continuous data will provide the exact picture of the influence of transfers on development, especially the human development.
2. Consistency and Reliability of data: Reliable and consistent data are essential to conducting research in this field. The continuous data should provide a good result for policy making in this field with a wide coverage of long-period data. In some years, primary data is missing, or the periodicity of data

differs across variables. So, this makes me stuck on working on it. The comparable better options are used here to picturise the situations.

3. **Measurement Errors:** the data interval differences push us to use proxies to run the tools in the available data period. It may affect the accuracy of the result.
4. **Missing Data** The presence of missing or incomplete data for certain states and variables across the study period limits the study. Inconsistent reporting, differences in data availability across years, and variations in state-level documentation restrict the construction of a fully balanced panel. As a result, some observations had to be excluded or interpolated, which may affect the precision of the empirical estimates.
5. **Exclusion of Major Variables:** Despite including key determinants, the study does not incorporate several important socio-economic or institutional variables due to data unavailability or inconsistency across states. Factors such as gender-specific indicators, environmental sustainability measures, or district-level disparities may have influenced human development outcomes but were omitted, thereby limiting the comprehensiveness of the analysis.
6. **Generalisation bias:** Since the study focuses on 28 selected states and excludes certain regions due to data limitations, the findings cannot be fully generalised to the entire country. Inter-state variations captured in the analysis may not reflect national averages or trends, leading to potential generalisation bias when interpreting results beyond the included sample.
7. **Endogeneity:** The study may be subject to endogeneity concerns arising from omitted variables, reverse causality, or unobserved heterogeneity. For instance, while social sector expenditure may influence human development, states with higher levels of development may also allocate more funds to social sectors. This interdependence can bias coefficient estimates in the panel regression models.

8. Causality problem: The use of observational secondary data limits the ability to establish strict causal relationships between social sector expenditure and human development outcomes. While panel regression models identify associations and correlations, they cannot fully isolate causal pathways without experimental or quasi-experimental methods. Therefore, the findings reflect relationships rather than definitive causation.
9. Overpressure on quantitative research: The study primarily depends on quantitative indicators and econometric modelling, which may overlook qualitative dimensions of human development such as social inclusion, empowerment, governance quality, and lived experiences of communities. This heavy reliance on numerical measures limits the ability to capture deeper socio-cultural and behavioural aspects that influence development.
10. Controlled influence of institutional variables: Although institutional indicators are included, their measurement is limited due to the scarcity of consistent and comparable state-level data. Many institutional factors, such as administrative quality, political stability, and bureaucratic efficiency, are challenging to quantify accurately. As a result, the analysis may underestimate the actual influence of institutional characteristics on human development.
11. Influence of external factors: External shocks such as economic crises, pandemics, natural disasters, global policy changes, and international market fluctuations can substantially impact both state finances and human development outcomes. Since these exogenous events are not explicitly modelled, their indirect effects remain uncontrolled, potentially affecting the reliability of the estimated relationships.
12. Changes in state boundaries (e.g., Andhra Pradesh, Jammu & Kashmir) and new states were not considered, which affects comparability.

13. Fixed Effects Model cannot capture time-varying unobserved factors (policy shifts).
14. Lack of district-level or micro-level data limits deeper analysis.
15. Absence of qualitative insights on implementation and governance.
16. Limited number of explanatory variables; other HDI determinants not included.
17. Analysis is time-bound up to 2021; recent policy changes are not reflected.

8.7 SUMMARY OF THE CHAPTER

This chapter summarised the key implications of the study. It translated them into clear recommendations, policy directions, and future research avenues for strengthening SSE and human development in India. The study revealed significant inter-state disparities in expenditure and development outcomes, driven by differences in fiscal capacity, governance quality and institutional efficiency. These findings highlight the need for stronger data systems, improved analytical approaches and enhanced institutional support for research. The recommendations focused on building a more robust research ecosystem through enhanced data quality, the creation of research observatories, interdisciplinary approaches, researcher capacity-building, long-term comparative studies, stronger research–policy linkages, open-access data practices and ethical research standards.

The chapter also outlined future research prospects, including longitudinal analysis, district-level modelling, efficiency studies, fiscal federalism integration, political economy perspectives, sector-specific outcome analysis, governance assessments, digital governance research, socio-cultural studies and exploration of intergenerational and emerging challenges such as climate change and migration. Comparative studies across states and international federal systems were also highlighted as valuable. In addition, the policy directions emphasised expanding fiscal space for social spending, prioritising SSE, strengthening governance and

administrative capacity, improving infrastructure, reducing regional disparities, enhancing social protection systems and promoting evidence-based fiscal reforms. Overall, the chapter provides a concise roadmap for advancing research quality, guiding policy formulation and supporting inclusive human development across Indian states.

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