

# Determinants of Investment in Indian States: An Empirical Study

Dr Garima Raghuvanshi

Associate Professor, Rungta International Skills University, Bhilai, Chhattisgarh, India

## Abstract

Investment is a critical driver of economic growth, employment generation, and regional development. In India, the level of investment varies significantly across states due to differences in infrastructure, human capital, policy environment, governance, and socio-economic factors. Understanding the determinants of investment at the state level is crucial for designing effective policy interventions and promoting balanced regional development. This study empirically investigates the factors influencing investment in Indian states using panel data from 2010 to 2022. Key determinants such as gross state domestic product (GSDP), infrastructure development, labour force quality, ease of doing business, and government incentives are examined. The study employs econometric techniques, including fixed-effects and random-effects models, to analyze the data. The results indicate that infrastructure, labour availability, policy support, and market size significantly impact investment inflows, while fiscal health and corruption levels also play a role. The findings provide actionable insights for policymakers to attract investment and stimulate economic growth in lagging states.

**Keywords:** Investment, Indian States, Infrastructure, GSDP, Policy Environment, Empirical Analysis

## 1. Introduction

Investment plays a vital role in economic development by enhancing productive capacity, creating jobs, and fostering innovation. In India, states exhibit considerable heterogeneity in investment levels due to variations in economic structure, governance quality, resource endowment, and policy frameworks. Understanding what drives investment at the state level is essential for promoting equitable growth and reducing regional disparities. Historically, states like Maharashtra, Gujarat, Karnataka, and Tamil Nadu have attracted substantial investment due to industrial clusters, better infrastructure, and a favorable business environment. Conversely, states in the northeastern region and parts of central India lag in attracting investment, primarily due to inadequate infrastructure, low human capital, and governance challenges.

This research aims to empirically identify the determinants of investment in Indian states. By examining macroeconomic, institutional, and socio-economic factors, the study provides a comprehensive understanding of the key drivers of investment and offers policy recommendations to enhance investment inflows across all regions.

## 2. Review of Literature

Investment determinants have been extensively studied at the national and sub-national levels. Classical theories emphasize capital accumulation, interest rates, and savings as primary drivers of investment (Keynes, 1936; Harrod, 1939). Later studies highlight the role of infrastructure, human capital, institutional quality, and policy incentives (Rodrik, 1999; Aghion & Howitt, 2006). Infrastructure and Investment: According to Calderón and Servén (2010), well-developed infrastructure reduces transaction costs and increases the attractiveness of investment. In the Indian context, studies by Kumar (2015) and Singh (2018) show a positive relationship between infrastructure quality and industrial investment. Human Capital and Labor Market: Labor availability, skill levels, and education influence investment decisions. Bhattacharyya (2012) finds that states with higher literacy rates and skilled workforce attract more foreign and domestic investment. Institutional Quality and Policy Environment: Ease of doing business, governance, and political stability are critical for investment. Rao and Sahu (2017) note that states with better institutional frameworks witness higher capital inflows.

Macroeconomic Factors: Market size, state GDP, and fiscal stability influence investment allocation. Larger and economically stronger states tend to attract higher investment due to market potential (Ghosh, 2014). Investment decisions at the sub-national level are influenced by a complex interplay of economic, institutional, and socio-political factors. Extensive research has been conducted to understand these determinants, both in developed and

developing economies. Classical economic theories, such as those proposed by Keynes (1936) and Harrod (1939), suggest that investment is primarily driven by interest rates, expected returns, and the availability of capital. However, in the context of regional economies, additional factors such as infrastructure quality, human capital, governance, and policy incentives play a significant role in shaping investment patterns.

Several empirical studies have emphasized the role of infrastructure in attracting investment. Calderón and Servén (2010) argue that infrastructure development reduces transaction costs, enhances productivity, and increases the competitiveness of regions, thereby encouraging investment. In India, Kumar (2015) demonstrates that states with better roads, electricity availability, and connectivity tend to attract higher levels of both domestic and foreign investment. Similarly, Singh (2018) highlights the importance of industrial corridors, urbanization, and transport facilities in shaping regional investment patterns, noting that states in southern and western India outperform other regions due to superior infrastructure networks.

Human capital is another critical determinant of investment. The availability of a skilled and educated workforce increases productivity and reduces training costs for investors. Bhattacharyya (2012) finds a positive relationship between literacy rates, vocational training programs, and investment inflows in Indian states. Rao and Sahu (2017) further argue that the quality of human capital not only affects the quantity of investment but also the nature of industries attracted, with high-tech and knowledge-intensive industries favoring regions with a better-educated labor force. This indicates that states aiming to attract high-value industries must focus on skill development and education policies.

Institutional quality and governance play a pivotal role in shaping investment decisions. Rodrik (1999) emphasizes that political stability, regulatory quality, and transparency significantly influence investors' confidence. In India, states that perform well on the Ease of Doing Business rankings, such as Gujarat and Maharashtra, have consistently attracted higher investment compared to states with weaker governance structures (Rao & Sahu, 2017). Moreover, corruption and bureaucratic inefficiencies act as deterrents, increasing operational costs and risk for investors, which is supported by Ghosh (2014) in his analysis of investment patterns across Indian states.

Macroeconomic factors such as market size, GSDP, and fiscal health also affect investment. Larger states with higher GSDP provide greater market potential, making them more attractive for both manufacturing and service-oriented investments (Bhattacharyya, 2012). Fiscal discipline, low debt, and manageable deficits enhance investor confidence, whereas high fiscal deficits can crowd out private investment (Singh, 2018). Regional disparities in economic potential often translate into uneven investment flows, reinforcing the need for targeted policy interventions to promote equitable development. While most studies focus on one or two determinants, there is limited research that simultaneously examines economic, infrastructural, human capital, and institutional factors at the state level in India using recent panel data. This gap is particularly significant given the rapid economic changes and policy reforms in India, including the implementation of GST, Make in India, and ease of doing business initiatives. The present study addresses this gap by providing a comprehensive empirical analysis of the determinants of investment across Indian states from 2010 to 2022, thereby contributing to both academic literature and policy formulation.

In conclusion, the literature indicates that investment decisions are multidimensional, influenced by economic size, infrastructure quality, human capital availability, governance, and fiscal health. Understanding these determinants is crucial for promoting balanced regional growth, attracting high-value investments, and reducing disparities across Indian states. While many studies examine national-level determinants, few provide a systematic analysis of investment determinants at the state level in India using recent panel data, considering both economic and institutional factors. This study aims to fill this gap.

### 3. Objectives of the Study

The primary objectives of the study are:

- I. To analyze the level and pattern of investment across Indian states.
- II. To identify the economic, infrastructural, and institutional factors influencing investment inflows.
- III. To evaluate the relative importance of various determinants in attracting investment.
- IV. To provide policy recommendations for promoting investment in underdeveloped states

### 4. Hypotheses

The study tests the following hypotheses:

- H1:** Higher state GDP positively influences investment inflows in Indian states.
- H2:** Better infrastructure development is positively associated with investment.
- H3:** Availability of skilled labor positively affects investment decisions.
- H4:** Favorable institutional and policy environment attracts more investment.
- H5:** Fiscal deficits and poor governance negatively affect investment inflows.

### 5. Research Methodology

#### Data Sources:

The study uses secondary data from 28 Indian states for the period 2010–2022. Data are collected from sources such as the Reserve Bank of India (RBI), Ministry of Finance, Ministry of Commerce & Industry, World Bank’s Doing Business Reports, and state statistical abstracts.

#### Variables:

- **Dependent Variable:** State-level investment (gross fixed capital formation).
- **Independent Variables:**
  - Economic variables: GSDP, per capita income.
  - Infrastructure: Power availability, road density, internet penetration.
  - Human capital: Literacy rate, skill index, labor force participation.
  - Institutional quality: Ease of doing business score, governance index.
  - Fiscal factors: State debt, fiscal deficit.

#### Modelling:

The study employs panel data regression using fixed-effects (FE) and random-effects (RE) models to account for unobserved heterogeneity across states. Hausman tests are applied to determine the suitability of the model. Correlation and multicollinearity tests are performed to ensure robustness. The general model is:

$$Investment_{it} = \alpha + \beta_1 GSDP_{it} + \beta_2 Infrastructure_{it} + \beta_3 HumanCapital_{it} + \beta_4 Policy_{it} + \beta_5 Fiscal_{it} + \epsilon_{it}$$

Where *i* represents states and *t* represents years.

### 6. Results and Analysis

#### Descriptive Statistics:

The descriptive analysis reveals that Maharashtra, Gujarat, Tamil Nadu, Karnataka, and Uttar Pradesh consistently attract higher investment compared to smaller states. Infrastructure indices and human capital indicators are significantly higher in these states.

#### 1. Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max
Investment (GFCF, ₹ crore)	45,230	52,400	3,120	180,500
GSDP (₹ crore)	2,10,500	2,40,300	12,500	920,000
Infrastructure Index	67.5	15.2	35.0	92.0
Human Capital Index	71.2	10.1	50.5	88.7
Ease of Doing Business	62.3	11.4	40.2	88.0
Fiscal Deficit (% of GSDP)	3.8	2.1	-0.5	9.2

*Observation:* States like Maharashtra, Gujarat, and Karnataka have higher investment and infrastructure indices, whereas northeastern states exhibit lower values.

### Regression Results (Fixed Effects Model)

Independent Variable	Coefficient	Std. Error	t-Statistic	Significance
GSDP (₹ crore)	0.621	0.095	6.54	0.000
Infrastructure Index	0.347	0.138	2.51	0.014
Human Capital Index	0.198	0.102	1.94	0.056
Ease of Doing Business	0.224	0.097	2.31	0.022
Fiscal Deficit (% of GSDP)	-0.153	0.082	-1.87	0.064
Constant	3,210	1,024	3.14	0.002

#### Model Statistics:

- $R^2 = 0.72$
- F-statistic = 15.6 ( $p < 0.001$ )
- Hausman test favors fixed-effects model over random-effects.

#### Interpretation:

- GSDP is the most significant determinant, confirming that larger economies attract more investment.
- Infrastructure and ease of doing business are significant, highlighting the role of connectivity and policy environment.
- Human capital has moderate significance.
- Fiscal deficit negatively affects investment, though the effect is slightly weaker.

The fixed-effects regression results indicate:

- **GSDP:** Positive and significant at 1% level, confirming that economic size drives investment.
- **Infrastructure:** Positive and significant at 5% level, highlighting the importance of roads, electricity, and connectivity.
- **Human Capital:** Positive and significant at 10% level, indicating that skilled labor attracts investment.
- **Policy and Institutional Factors:** Positive and significant at 5% level; states with better governance and ease of doing business scores attract more investment.
- **Fiscal Deficit:** Negative but statistically significant at 10%, indicating that high fiscal imbalance discourages investment.

### Regional Insights Table

Region	Average Investment (₹ crore)	Avg. Infrastructure Index	Avg. Human Capital Index
Western States	78,450	81.2	74.6
Southern States	65,320	76.5	77.8
Northern States	42,110	64.7	70.2
Eastern States	28,450	55.1	63.8
Northeastern States	15,620	47.8	59.5

*Observation:* Western and southern states dominate in investment due to better infrastructure and human capital. Eastern and northeastern states lag significantly.

The results validate the hypotheses H1 to H4, showing that GSDP, infrastructure, human capital, and policy environment positively influence investment. H5 is also supported as poor fiscal health negatively impacts investment. The analysis underscores that investment decisions are multifactorial, driven by economic potential, infrastructure quality, institutional support, and fiscal prudence. Southern and western states dominate in investment inflows due to robust industrial infrastructure, urbanization, and skilled labor. Eastern and northeastern states lag behind, primarily due to inadequate infrastructure and weaker governance frameworks.

## 7. Conclusion

Investment is a key engine for economic growth and regional development in India. This study empirically analyzed the determinants of investment across Indian states using panel data from 2010 to 2022. The findings reveal that GSDP, infrastructure development, human capital, and institutional quality are critical drivers of investment inflows. Fiscal health also plays a significant role, as states with high deficits tend to deter investment.

Policymakers can leverage these insights to design targeted interventions. Investment promotion strategies should focus on improving infrastructure, enhancing skill development programs, ensuring governance transparency, and maintaining fiscal discipline. Special attention is needed for lagging states to bridge regional disparities and foster inclusive economic growth. The study contributes to the literature by providing a comprehensive empirical analysis at the state level and offers actionable policy recommendations to attract investment, stimulate industrial growth, and promote balanced regional development in India.

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