Dynamics of FDI in India: Key Determinants in Top 10 FDI-Receiving States

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Abstract

Foreign Direct Investment (FDI) serves as a critical driver of economic growth and globalization, bringing capital, technology, and expertise that accelerate industrial development and enhance market competitiveness in emerging economies like India. This study investigated the dynamics of Foreign Direct Investment (FDI) in India, identifying key determinants such as infrastructure development, financial sector performance, Gross State Domestic Product, labor costs, and political alignment between centre and state. Using a robust methodological framework combining Principal Component Analysis (PCA) and Structural Equation Modeling (SEM), the findings reveal that infrastructure and financial development significantly enhance India's appeal to foreign investors by improving operational efficiency and facilitating capital access. GSDP emerges as a strong positive determinant of FDI, indicating the critical role of regional economic size and market potential in attracting investment. Conversely, average daily wages demonstrate a dual-edged impact: while competitive wages attract cost-sensitive investors, higher wages signal productivity and purchasing power, appealing to high-value production ventures.

Political stability, represented by election alignment, shows limited direct influence on FDI inflows, suggesting that macroeconomic factors outweigh short-term political considerations. The findings underscore the importance of balanced regional development and targeted infrastructure investments to address state-level disparities in FDI inflows. This study provides actionable recommendations, emphasizing the need for enhanced infrastructure, deeper financial market reforms, and policies that align labor competitiveness with equitable growth. By addressing these determinants, India can position itself as a preferred global destination for sustainable foreign investment.

Introduction

Foreign Direct Investment (FDI) has emerged as one of the most critical drivers of economic globalization and development in the contemporary world. The dynamics of FDI hold profound implications for developing economies, including India, which has positioned itself as a significant player in the global economic landscape. FDI represents cross-border investments where a firm or individual from one country acquires ownership or control over a business in another country. This infusion of capital brings along not just monetary resources but also technological know-how, managerial expertise, and access to international markets. The relevance of FDI in today's interconnected world lies in its ability to foster industrial growth, create employment opportunities, and spur technological innovation, which are essential components for achieving sustainable economic development. As globalization deepens and economies increasingly integrate, understanding the underlying dynamics of FDI becomes imperative for policymakers aiming to optimize its benefits and mitigate associated challenges. India, with its diverse economic structure, strategic geographical location, and burgeoning consumer market, offers a compelling case study to delve into the factors influencing FDI inflows.

The significance of studying the dynamics of FDI in India is amplified by the country's evolving policy landscape and its ambition to become a $5 trillion economy. Over the past few decades, India has undertaken substantial economic reforms to create a conducive environment for foreign investment. From liberalizing key sectors to simplifying bureaucratic processes, these measures have played a pivotal role in attracting foreign capital. However, despite these efforts, the inflow of FDI has been uneven across states and sectors, pointing to the existence of underlying determinants that merit further investigation. The global competition for FDI has intensified, with countries vying to create the most attractive destinations for investment. For

India to maintain its competitiveness and maximize the developmental impact of FDI, it is crucial to identify the key factors that influence foreign investors' decisions.

The existing body of literature underscores the multifaceted nature of FDI determinants. For instance, Dunning's eclectic paradigm provides a theoretical framework, emphasizing the significance of ownership, location, and internalization advantages in driving FDI. According to this paradigm, the location advantage—which encompasses factors such as infrastructure, labor costs, and market potential—is particularly relevant for host economies like India. Empirical studies have also highlighted the role of economic stability, regulatory frameworks, and institutional quality in shaping FDI inflows. For example, a study by Balasubramanyam et al. (1996) illustrated the positive impact of trade openness and infrastructure development on FDI attraction in developing economies. Similarly, Agarwal and Khan (2011) examined sectoral FDI trends in India and found that industrial policy reforms and the development of physical infrastructure were key enablers. While these studies provide valuable insights, they also reveal gaps that warrant further exploration, such as the interplay between state-level factors and sectoral preferences of foreign investors. Addressing these gaps forms the crux of this study, as it seeks to unravel the determinants of FDI at a more granular level, shedding light on regional disparities and sector-specific trends.

The present study focuses on a set of variables that are hypothesized to influence FDI inflows in India. These variables include average daily wages in construction, infrastructure development, industrial growth, financial sector performance, gross state domestic product (GSDP), and FDI inflows. Average daily wages in construction serve as a proxy for labor cost competitiveness, which is a critical determinant for foreign investors seeking cost-efficient production bases. Infrastructure development, encompassing transportation networks, power supply, and digital connectivity, is another key factor, as it directly impacts operational efficiency and market accessibility. Industrial growth reflects the economic vibrancy and

sectoral opportunities available in a region, which are crucial for attracting investment. The performance of the financial sector, including the availability of credit and depth of financial markets, plays a significant role in enabling businesses to thrive, thereby making the host economy more appealing to foreign investors. GSDP serves as an indicator of overall economic activity and market size, both of which are essential considerations for FDI. By examining these variables, the study aims to identify patterns and causal relationships that can provide actionable insights for policymakers and stakeholders.

This study primarily identifes and analyzes the key determinants of FDI inflows in India, with a specific focus on understanding their regional and sectoral dimensions. By doing so, the research seeks to bridge the gap between macroeconomic trends and micro-level factors influencing investment decisions. The study aims to contribute to the broader discourse on economic development by providing evidence-based recommendations for enhancing India's FDI attractiveness. This involves not only identifying the variables that significantly impact FDI inflows but also examining their interrelationships and the contextual factors that amplify or diminish their influence. In the process, the study aspires to offer a nuanced understanding of how policy interventions, infrastructure investments, and labor market dynamics can be aligned to create a more favorable environment for foreign investment.

In summary, this dissertation endeavors to explore the dynamics of FDI in India by identifying its key underlying determinants. The relevance of this topic in the contemporary global economic context cannot be overstated, given the critical role of FDI in driving growth and development. By building on existing literature and focusing on variables such as average daily wages, infrastructure, industry, finance, FDI, and GSDP, the study aims to provide a comprehensive analysis of the factors shaping FDI inflows in India. Ultimately, the findings of this research are expected to inform policy decisions and contribute to the ongoing efforts to position India as a preferred destination for foreign investment.

This section argues that foreign direct investment (FDI) is a crucial driver of growth in developing countries, especially India, where economic reforms have spurred uneven inflows across states and sectors. Drawing from Dunning's eclectic paradigm and other empirical studies, the author identifies key location advantages—such as infrastructure, labor costs, and market potential—as pivotal for attracting foreign capital. Variables including average daily wages, infrastructure, industrial growth, financial development, and GSDP are examined to uncover state-level dynamics and sector-specific trends. By bridging macroeconomic analyses with micro-level decision factors, the research aspires to inform policies that enhance India's FDI attractiveness and ensure balanced regional development.

Review of Literature

Foreign Direct Investment (FDI) is a pivotal driver of economic growth, especially in emerging economies like India. Understanding the determinants of FDI is crucial for policymakers aiming to attract and sustain foreign investments. This literature review delves into the key factors influencing FDI inflows into India, focusing on variables such as infrastructure (Infra), financial development (Fin), industry, gross state domestic product (ln_GSDP), election dummy (Election_Dummy), and average daily wages (ln_Avg_Daily_Wage_CONST).

Objectives of the Study

1. To analyze the impact of infrastructure development on the industrial sector in India.
2. To examine the relationship between financial development and industrial growth.
3. To assess how industrial performance influences the Gross State Domestic Product.
4. To evaluate the effect of financial development on GSDP.
5. To investigate the influence of GSDP on FDI inflows.
6. To explore the role of political alignment between central and state governments in attracting FDI.
7. To analyze the effect of average daily wages on infrastructure development.

Foreign Direct Investment (FDI) plays a crucial role in enhancing productivity, fostering innovation, and promoting economic development. The determinants and impacts of FDI in this sector have attracted considerable attention from scholars and policymakers, especially in the period from 2014 to 2022. This review summarizes the existing research on key factors influencing FDI inflows and the associated economic effects.

Several studies highlight the importance of economic, institutional, and political factors in determining FDI inflows. According to Atm and Faruq (2023), market size, trade openness, and capital formation significantly affect FDI inflows into emerging Asian economies,

including the agricultural sector. Their panel data analysis reveals that natural resources and economic conditions, rather than political factors, are key drivers of FDI inflows in these regions. This finding aligns with Maksimov (2023), who reports that Indonesia, Brazil, and the United States were the top recipients of FDI between 2018 and 2022, indicating the critical role of resource endowment in attracting foreign investment.

The relationship between FDI and regional inequality has also been explored. Acharyya (n.d.) points out that increased FDI inflows, coupled with trade openness, have exacerbated regional disparities in India, with wealthier states attracting more FDI while poorer states remain underdeveloped. This trend is particularly evident in the agricultural sector, where the size of domestic markets and the presence of supporting industries significantly affect the distribution of FDI across regions (Mukherjee, 2012). The disparity in FDI inflows across states mirrors broader trends of uneven development within developing countries.

Moreover, intellectual capital has been identified as a determinant of FDI. Johnson (1999) provides a framework for understanding the role of human, structural, and relational capital in attracting foreign investment. The ability to leverage intangible assets like knowledge, expertise, and innovation is essential for sustainable competitive advantage. Countries with well-developed intellectual capital infrastructures are better positioned to attract FDI that contributes to long-term growth.

The effects of financial crises on FDI have also been examined. Stoddard and Noy (2007) analyze the impact of financial crises on FDI inflows and find that crises reduce the value of all types of FDI. However, their study does not support the "fire-sale" hypothesis, which suggests that foreign investors opportunistically acquire distressed assets during crises. Instead, financial instability tends to discourage FDI across all sectors.

Lastly, infrastructure and profitability are identified as key determinants of inter-state FDI variations. Chatterjee, Mishra, and Chatterjee (2013) argue that the profitability of existing enterprises is a significant factor in attracting FDI. However, physical and social infrastructure, along with R&D intensity, play a less important role in determining variations in FDI inflows to Indian states. This finding is particularly relevant where profitability often hinges on factors like access to markets, resource availability, and technological adoption.

Infrastructure development is a cornerstone for industrial growth, as it enhances efficiency and reduces operational costs. Empirical studies have demonstrated that the availability of quality infrastructure significantly influences FDI inflows, which in turn bolster industrial expansion. For instance, a study analyzing fast-growing economies found that infrastructure availability plays a pivotal role in attracting FDI, thereby fostering industrial growth (Sahoo, 2006). Similarly, research focusing on India's manufacturing sector revealed that improvements in physical infrastructure, such as transportation and power supply, are positively correlated with increased FDI in the industrial sector (Chakraborty and Nunnenkamp, 2008). Furthermore, a comprehensive analysis of emerging markets identified infrastructure development as a key factor enhancing a country's attractiveness to foreign investors, leading to industrial advancement (Kumar, 2007). These findings underscore the importance of robust infrastructure in facilitating industrial development by attracting necessary foreign investments.

A well-developed financial sector is essential for industrial growth, as it provides the necessary capital for expansion and innovation. Studies have shown that financial development, characterized by efficient banking systems and accessible credit facilities, positively impacts industrial performance. For example, empirical research on emerging markets indicates that financial development significantly contributes to industrial growth by facilitating investment and technological advancement (Alfaro et al., 2004). In the context of India, a study examining the determinants of FDI found that financial development enhances the country's industrial

sector by improving access to finance for industrial enterprises (Kumar, 2007). Additionally, a panel data analysis of developing countries revealed that financial market development is a crucial factor in attracting FDI, which subsequently promotes industrial growth (Hermes and Lensink, 2003). These studies highlight the integral role of financial development in supporting industrial expansion through improved access to financial resources.

The industrial sector is a significant contributor to economic growth, as measured by Gross State Domestic Product (GSDP). Research has established a positive relationship between industrial output and GSDP, indicating that industrialization drives economic development. A study focusing on India's economic growth found that the industrial sector's performance is a major determinant of GSDP growth, emphasizing the sector's importance in the state's economy (Chakraborty and Nunnenkamp, 2008). Similarly, an analysis of FDI determinants in India concluded that industrial development, supported by foreign investments, leads to substantial increases in GSDP (Kumar, 2007). Furthermore, cross-country studies have demonstrated that industrialization is a key factor in achieving higher economic growth rates, as it enhances productivity and creates employment opportunities (Sahoo, 2006). These findings illustrate the critical role of the industrial sector in driving economic growth at the state level.

Financial development significantly influences economic growth, with a well-functioning financial system facilitating efficient resource allocation and investment. Empirical studies have shown that financial development, through mechanisms such as improved access to credit and financial services, positively affects GSDP. For instance, research on developing economies found that financial sector development leads to higher economic growth by supporting investment in productive activities (Hermes and Lensink, 2003). In India, studies have indicated that states with more developed financial markets experience greater GSDP growth, highlighting the importance of financial infrastructure in regional economic

development (Kumar, 2007). Additionally, analyses of FDI inflows suggest that financial development enhances a region's capacity to attract foreign investment, which in turn contributes to economic growth (Alfaro et al., 2004). These studies underscore the pivotal role of financial development in promoting economic growth through improved financial intermediation and investment facilitation.

Economic growth, as indicated by GSDP, serves as a magnet for Foreign Direct Investment (FDI). A robust GSDP reflects a thriving economy with substantial market potential, making it attractive to foreign investors. Empirical evidence supports this positive relationship between GSDP and FDI inflows. For example, a study analyzing FDI determinants in India found that higher GSDP levels are associated with increased FDI, as investors seek to capitalize on the growing market (Chakraborty and Nunnenkamp, 2008). Similarly, research on emerging markets concluded that economic growth, as measured by GDP, is a significant determinant of FDI inflows, with investors favoring economies exhibiting strong growth prospects (Kumar, 2007). Furthermore, cross-country analyses have demonstrated that countries with higher GDP growth rates tend to attract more FDI, highlighting the importance of economic performance in investment decisions (Sahoo, 2006). These findings illustrate that a higher GSDP enhances a region's appeal to foreign investors by signaling economic vitality and market opportunities.

Political alignment between central and state governments can significantly influence Foreign Direct Investment (FDI) inflows. The Election Dummy variable captures this alignment, with a value of 1 indicating that the same party governs both the central and state governments, and 0 otherwise. Studies have shown that such political congruence can reduce perceived political risk, thereby attracting more FDI. For instance, research indicates that center–state relations in a federal structure play a role in creating perceptions about the relative political risk involved in different investment destinations, which can influence FDI distribution . Furthermore, the concept of "competitive federalism," where central and state governments compete for

investment opportunities, suggests that political alignment can lead to more favorable investment climates . However, it is essential to ensure that states do not suffer due to a lack of political alignment with the central government, as this can also influence FDI flows . These findings suggest that political alignment, as captured by the Election Dummy, may play a role in influencing FDI inflows by promoting policy stability and coherence.

Labor costs, reflected in average daily wages, are a crucial factor in infrastructure development. Competitive labor costs can attract investments in infrastructure projects by reducing overall project expenses. India boasts some of the most competitive labor costs in Asia, with a national-level minimum daily wage of approximately INR 178 (equivalent to US$2.13) . This cost advantage can make infrastructure projects more financially viable, encouraging both domestic and foreign investments. However, it's important to note that while lower labor costs can attract investment, they must be balanced with fair compensation to ensure sustainable development. The International Labour Organization highlights that despite competitive labor costs, there is a need to address wage disparities and ensure decent living standards for workers . Therefore, while average daily wages play a significant role in infrastructure development, policymakers must consider both economic and social factors to promote equitable growth.

Research Gaps

While existing studies provide valuable insights into the determinants of FDI in India, certain areas require further exploration. The specific impact of political alignment between central and state governments on FDI inflows, as captured by the Election Dummy variable, remains underexplored. Additionally, the interplay between average daily wages and infrastructure development needs more in-depth analysis to understand how labor costs influence investment decisions in infrastructure projects. Addressing these gaps would offer a more comprehensive understanding of the dynamics influencing FDI in India and inform more effective policy formulation.

The literature consistently identifies infrastructure quality, financial development, industrial performance, economic growth, political alignment, and labor costs as significant determinants of Foreign Direct Investment (FDI) inflows into India. Robust infrastructure and a well-developed financial sector enhance industrial growth, which in turn contributes to higher Gross State Domestic Product (GSDP). A thriving economy, as indicated by GSDP, attracts more FDI. Political alignment between central and state governments can further influence FDI by reducing perceived political risks. Competitive labor costs also play a crucial role in infrastructure development, making investment projects more financially viable.

Data

This study utilizes a robust dataset to analyze the dynamics influencing Foreign Direct Investment (FDI) in Indian states. Covering a 10-year period from 2014 to 2023, the dataset spans 10 Indian states, including Andhra Pradesh, Delhi, Gujarat, Haryana, Jharkhand, Karnataka, Maharashtra, Rajasthan, Tamil Nadu, and Uttar Pradesh. The balanced panel structure ensures data consistency, enabling an in-depth evaluation of both temporal trends and spatial variations in FDI determinants.

Key Variables

The dataset includes a comprehensive set of variables to capture the economic, infrastructural, industrial, financial, and political factors influencing Foreign Direct Investment (FDI) inflows in Indian states. Each variable has been carefully selected to align with the objectives of the study and is outlined in detail below:

Foreign Direct Investment (ln_FDI)

Foreign Direct Investment (FDI) is the dependent variable and the focal point of this study. It is represented as the logarithmic transformation of annual FDI inflows at the state level, expressed in millions of INR. FDI serves as a critical measure of a state's ability to attract foreign capital, reflecting its economic competitiveness and investment potential. By using the logarithmic transformation, the study normalizes the data distribution and enables elasticity-based interpretations, allowing for the evaluation of percentage changes in FDI due to variations in explanatory variables. FDI is a key driver of economic growth, particularly in emerging economies like India, as it brings capital inflows, technological advancements, and employment opportunities.

Gross State Domestic Product (ln_GSDP)

The Gross State Domestic Product (GSDP) is one of the most significant independent variables in this study. It measures the total economic output of a state and is expressed in its logarithmic form to capture the proportional changes more effectively. GSDP reflects the market size and purchasing power of a state, making it a primary indicator of its economic potential. A larger GSDP signifies greater economic activity and consumer demand, both of which are attractive to foreign investors seeking profitable markets. This variable provides insights into how the overall economic health and performance of a state influence its ability to attract FDI. Higher GSDP levels often correspond to well-developed infrastructure, higher labor productivity, and greater economic opportunities, making states with robust economies more appealing to foreign investors.

Infrastructure (Infra)

Infrastructure is a composite variable derived using Principal Component Analysis (PCA) and includes key components such as power availability, the length of national highways, railway routes, and telecommunication penetration. This variable captures the quality and availability of physical infrastructure, which is a critical determinant of investment attractiveness. Infrastructure plays a dual role in FDI attraction by reducing operational costs and improving logistical efficiency. States with better-developed infrastructure can support large-scale industrial operations and ensure the smooth functioning of supply chains, making them more attractive to foreign investors. The PCA results show that the first principal component explains 87.31% of the variance, indicating the dominance of infrastructure in influencing FDI inflows. This highlights the need for consistent investments in infrastructure to sustain and enhance FDI attractiveness.

Industry (Industry)

The industrial sector's performance is measured through a PCA-derived composite index, incorporating variables such as the number of factories, total input costs, gross output, gross fixed capital formation (GFCF), and net state value added from the industry. This index reflects the scale and productivity of the industrial sector within a state. Industrial development acts as both a driver and beneficiary of FDI. A robust industrial base signals a state's capacity to support investment and production, while FDI inflows further enhance industrial growth through capital investments and technological advancements. The first principal component explains 91.83% of the variance, underlining the importance of the industrial sector in economic performance. Industrial growth also plays a mediating role in the relationship between infrastructure and FDI, showcasing its integral position in the broader economic framework.

Financial Development (Fin)

Financial development is another crucial composite variable derived from PCA, comprising indicators such as the number of bank offices, the credit-deposit ratio, and credit to the industrial sector. This variable reflects the depth and accessibility of financial systems within a state, which are instrumental in supporting both industrial and infrastructural investments. The first principal component explains 63.48% of the variance, highlighting the significance of financial intermediation in driving economic activities. A well-developed financial system facilitates the smooth flow of capital, reduces transaction costs, and enhances investor confidence. For foreign investors, financial depth and efficiency are critical as they ensure the availability of credit and the stability of financial institutions.

Average Daily Wage (ln_Avg_Daily_Wage_CONST)

Labor costs are captured through the logarithmic transformation of average daily wages, adjusted for constant prices. This variable plays a dual role in influencing FDI. On one hand,

lower wages enhance cost competitiveness, particularly for labor-intensive industries, making states with low labor costs more attractive to foreign investors. On the other hand, higher wages can signal a skilled workforce and greater purchasing power, which may attract investors seeking high-value production capabilities or larger markets for consumer goods. This variable provides nuanced insights into how labor market conditions influence investment decisions.

Election Dummy (Election_Dummy)

The Election Dummy is a binary variable that captures the political alignment between the central ruling party and the state government. A value of 1 indicates alignment, while 0 represents a lack of alignment. Political congruence often translates to policy stability and coherence, which are critical for creating a predictable and secure investment environment. Foreign investors value political stability as it reduces uncertainty and the likelihood of abrupt policy changes. This variable is used to explore how governance and political dynamics affect FDI inflows, adding a unique dimension to the analysis of investment determinants.

These variables collectively provide a multidimensional framework for understanding the determinants of FDI inflows in Indian states. By integrating economic, infrastructural, industrial, financial, and political dimensions, the dataset captures the complex interactions that influence investment decisions, forming the basis for a detailed empirical analysis.

Utility of Variables

Together, these variables form a comprehensive framework for understanding FDI determinants. They capture economic potential (GSDP), infrastructural capacity (Infra), industrial productivity (Industry), financial facilitation (Fin), labor cost competitiveness (ln_Avg_Daily_Wage_CONST), and political stability (Election_Dummy). This

multidimensional approach ensures a holistic analysis of factors influencing FDI inflows in

Indian states.

This study's dataset spans ten major Indian states over a ten-year period, offering a comprehensive and balanced view of FDI inflows and their key determinants. By integrating diverse measures—such as GSDP, infrastructure, industrial performance, financial development, labor costs, and political alignment—the data shed light on the complex interplay of factors shaping FDI decisions. The infrastructure, industry, and finance components (constructed via principal component analysis) help isolate core dimensions of economic capacity and institutional support, while labor costs and election alignment introduce essential nuances related to cost competitiveness and governance stability. Overall, this multidimensional approach provides a robust foundation for empirical analysis, illustrating how various structural and policy-related variables jointly influence foreign investment in India's regional economies.

Methodology

This study employs a two-stage approach involving Principal Component Analysis (PCA) and Structural Equation Modeling (SEM) to investigate the key drivers of FDI in India. In the first stage, PCA is used to condense multiple observed indicators into three composite indices— Industry, Finance, and Infrastructure. Each index encapsulates a dimension of economic development, with "Industry" reflecting indicators such as factory counts and manufacturing output, "Finance" representing variables like bank availability and credit ratios, and "Infrastructure" capturing measures of roads, power, and other public utilities. Prior to conducting PCA, all variables are standardized and examined for missing data to ensure that each component's variance is accurately comparable (Jolliffe, 2002).
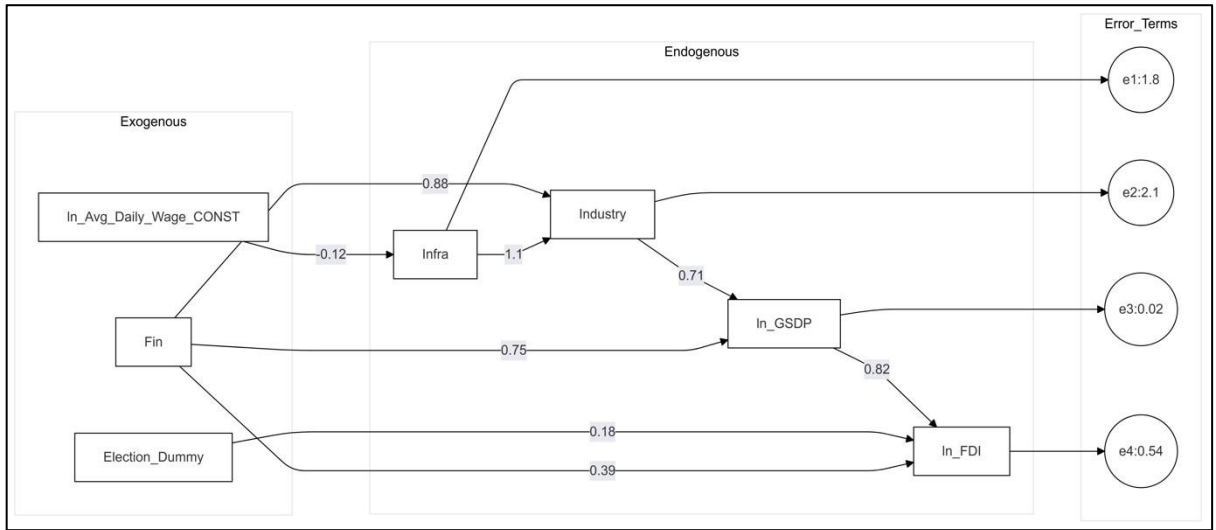

Figure 1: Framework of Structural Equation Model

In the second stage, these PCA-based indices are incorporated into an SEM framework (see Figure 1). The model includes exogenous constructs— and Election_Dummy—as well as endogenous constructs—Infrastructure, Industry, and . The core structural relationships are represented by the following system of equations:

1. Industry = β0 + β1 * Infrastructure + β2 * Fin + ε1
2. ln(GSDP) = γ0 + γ1 * Industry + γ2 * Fin + ε2

3. $\ln(FDI) = \alpha_0 + \alpha_1 * \ln(GSDP) + \alpha_2 * Election\backslash Dummy + \alpha_3 * Fin + \varepsilon_3$

4. $Infra = \delta_0 + \delta_1 * \ln(Avg\_Daily\_Wage\_const) + \varepsilon_4$

Maximum likelihood estimation with missing data (MLMV) in Stata is used to derive parameter estimates, standard errors, and fit indices (Bollen, 1989). This integrated PCA–SEM design allows for both dimensionality reduction and rigorous testing of theoretical pathways, providing clearer insight into how industry, finance, and infrastructure collectively shape economic performance and FDI inflows.

Within the SEM stage, special attention was given to potential confounding and mediation effects. For example, Finance may indirectly influence Industry via Infrastructure, or Infrastructure might partially mediate the effect of wages on GSDP. Although the primary equations specified direct paths (as shown in the preceding system of equations), supplemental analyses of indirect paths were conducted using standardized coefficients and bootstrapped standard errors to gauge the magnitude of any mediated relationships (Preacher & Hayes, 2008). Model diagnostics, such as residual analysis, modification indices, and comparative fit indices (e.g., TLI and CFI), guided incremental refinements while adhering to theoretical plausibility. Throughout these refinements, the cardinal principle was parsimony: only paths supported by both theory and statistical evidence were retained, in order to avoid overfitting.

Finally, all estimations were conducted in Stata using maximum likelihood with missing data (MLMV), which accommodates incomplete observations among exogenous variables without listwise deletion. This approach helps mitigate the risk of biased estimates arising from missingness and enhances the reliability of the structural inferences. Overall, by integrating PCA-derived indices into a theory-driven SEM, this methodological design captures both the underlying latent structure of key development indicators and the direct and indirect pathways linking wages, finance, and infrastructure to economic growth (ln_GSDP) and foreign investment (ln_FDI).

Variable	Obs	Mean	Std. Dev.	Min	Max
FDI	100	3.874025	1.035025	-0.69897	5.214301
GSDP	98	7.863422	0.283434	7.074609	8.382179
Infra	54	-1.26E-08	2.070702	-5.40417	2.099952
Industry	89	-9.70E-09	2.71038	-5.69471	3.93391
Fin	84	-1.51E-09	1.457364	-3.77639	2.37046
Avg. Wages	80	2.535166	0.093518	2.334655	2.732152

Table 1: Summary Statistics

Table 1 presents the descriptive statistics for the primary variables analyzed in this study. The table reports the number of observations for each variable along with their mean, standard deviation, minimum, and maximum values. Differences in the number of observations (Obs) across variables reflect data availability and missing values in the dataset. Overall, these statistics offer an initial snapshot of the distribution and range of each measure prior to any inferential analysis.

Notably, Foreign Direct Investment () is shown in logged form, with a mean of approximately 3.87 and a standard deviation of about 1.03. The minimum value (–0.699) indicates that some FDI observations, when logged, fall below zero (i.e., FDI amounts of less than one unit of measurement), reflecting a substantial spread in investment levels across regions or years. Gross State Domestic Product (), also logged, exhibits a mean of 7.86, a relatively narrow spread (standard deviation = 0.28), and a range from around 7.07 to 8.38, suggesting that economic output levels, once logged, do not vary as dramatically as FDI figures.

Infrastructure (), Industry, and Financial Development () appear standardized or centered near zero, each showing distinct variability. Infrastructure has a standard deviation of 2.07, ranging from –5.40 to 2.10, while Industry ranges from –5.69 to 3.93, with a higher standard deviation of 2.71. Financial Development's standard deviation is 1.46, with values spanning from –3.78 to 2.37. These metrics suggest that although each construct is centered, the dispersion can be substantial in Infrastructure and Industry. Finally, Average Wages (in logged form) centers

around 2.53, with relatively small variation (standard deviation = 0.09), indicating a tighter clustering of wage levels. The wage measure ranges from 2.33 to 2.73 in its log scale, underscoring modest differences in compensation structures across the sample.

Overall, these descriptive statistics highlight the inherent diversity in economic conditions and investment patterns represented in the dataset. The logged transformations of FDI, GSDP, and wages aid in normalizing skewed data distributions, while standardized measures of Infrastructure, Industry, and Financial Development facilitate straightforward comparisons. Such an overview lays the groundwork for subsequent regression or structural equation modeling, where the relationships between these variables can be more rigorously tested.
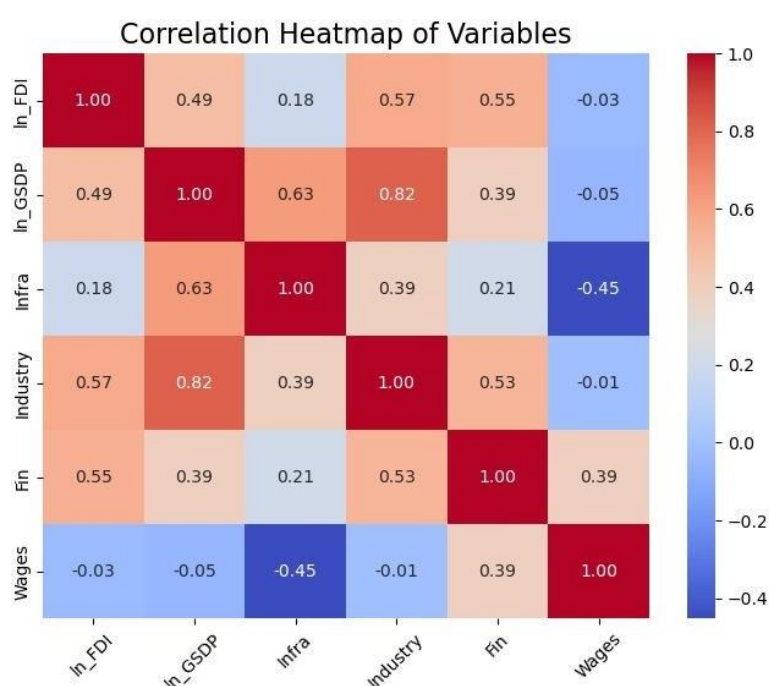

Figure 2: Correlation Plot Between Variables

The correlation heatmap provides insights into the relationships between key variables influencing Foreign Direct Investment (FDI) inflows: ln_FDI (log of FDI inflows), ln_GSDP (log of Gross State Domestic Product), Infra (Infrastructure Index), Industry (Industrial Index), Fin (Financial Development Index), and Wages (log of Average Daily Wages). Positive correlations are indicated by shades of red, while negative correlations are represented by shades of blue, with intensity reflecting the strength of the correlation (ranging from -1 to 1).

The analysis reveals a strong positive correlation between ln_GSDP and Industry (0.82), affirming the critical role of industrial development in driving economic output, and between ln_FDI and Industry (0.57), indicating the importance of industrial productivity in attracting foreign investments. Additionally, ln_GSDP and ln_FDI (0.49) exhibit a moderately strong positive relationship, underscoring that larger economies are more attractive to foreign investors due to their market size and economic potential. A positive relationship between Industry and Fin (0.53) highlights the pivotal role of financial accessibility in supporting industrial activities.

Conversely, a moderate negative correlation between Infra and Wages (-0.45) suggests that higher labor costs may inhibit infrastructure development, potentially influencing investment decisions. The weak or negligible correlation between ln_FDI and Wages (-0.03) implies that labor costs have minimal direct influence on FDI inflows relative to other determinants, such as infrastructure and industrial productivity. These findings emphasize the interplay between infrastructure, financial development, industrial growth, and economic size in shaping FDI dynamics and provide a basis for specifying the relationships within the Structural Equation Model (SEM).

> The methodological framework integrates PCA and SEM to provide a robust analysis of the determinants of FDI in Indian states. By combining multidimensional indices and causal modeling, the study captures the complexity of investment dynamics, offering valuable insights for policymakers aiming to enhance FDI inflows. This approach ensures a comprehensive understanding of how infrastructure, industry, financial development, and political stability interact to shape the investment landscape.

Results

Table 2 summarizes the principal component analysis performed on Industry, Finance, and Infrastructure. The Industry component yields the highest eigenvalue at 7.3462, indicating that this factor explains a substantial portion of the variance (approximately 0.9183 in proportion).

Infrastructure and Finance follow with eigenvalues of 3.4926 and 1.9043, respectively, each capturing a significant share of overall variability in their constituent indicators.

Variable	Eigenvalue	Difference	Proportion
Industry	7.34616	7.09137	0.9183
Fin	1.9043	1.1441	0.6348
Infra	3.49256	3.09528	0.8731

Table 2: Results of Principal Component Analysis

The principal component scores thus serve as weighted indices that consolidate multiple underlying measures into single composite variables. This approach addresses potential multicollinearity and measurement inconsistencies, thereby enhancing the reliability of subsequent analyses. By capturing the primary variation in Industry, Finance, and Infrastructure, the derived indices allow for a clearer interpretation of how these factors interact within the broader structural model.

In light of the results mentioned in Table 3, the structural equation model effectively identifies the key determinants of FDI inflows in India. Table 3 reports the estimation outcomes, which highlight the significant roles of infrastructure, financial conditions, and industrial economic indicators.

The results reveal that infrastructure development exerts a substantial positive impact on structural growth, with an estimated coefficient of 1.14, significant at the 1% level. This indicates that a 1-unit improvement in infrastructure leads to a 1.14-unit increase in structural development. This finding aligns with Dunning's (1998) eclectic paradigm, which posits that location-specific advantages like robust infrastructure attract foreign investors by lowering operational risks and costs. For instance, India's continued investment in highways, ports, and energy infrastructure has likely bolstered its appeal to multinational firms.

Furthermore, the financial sector demonstrates a strong and statistically significant influence on both structural growth and FDI inflows. The results show that a unit increase in financial development corresponds to an increase of 0.88 in structural growth and 0.39 in FDI, both significant at the 1% level. This implies that the development of financial markets, such as better access to credit and more efficient capital allocation, enhances the attractiveness of India as an investment destination. This finding corroborates the conclusions of Alfaro et al. (2004), who argue that well-developed financial markets reduce transaction costs and provide foreign firms with the resources needed to establish and expand their operations. For example, the liberalization of India's financial sector post-1991 has likely been instrumental in drawing higher foreign investment.

Variable	Coefficient	Std. Error	P>|z|
Structural			
Infra	1.142742	0.1077714	0.00
Fin	0.8760279	0.1668674	0.00
_cons	-0.0154608	0.2027158	0.94
ln_GSDP			
Industry	0.0710498	0.0066084	0.00
Fin	0.0745772	0.0106055	0.00
_cons	7.843383	0.0154324	0.00
ln_FDI			
ln_GSDP	0.8174417	0.3558736	0.02
Election_Dummy	0.1805555	0.179721	0.32
Fin	0.3931465	0.0734652	0.00
_cons	-2.746205	2.76425	0.32
Infra			
ln_Avg_Daily_Wage_CONST	-11.89571	1.527553	0.00
_cons	30.22138	3.885216	0.00
Means			
mean(Election_Dummy)	0.53	0.0499099	0.00
mean(Fin)	0.2449484	0.161847	0.13
mean(ln_Avg_Daily_Wage_CONST)	2.552904	0.0139585	0.00
Variances			
var(e.Industry)	2.119813	0.4615744	

Variable	Coefficient	Std. Error	P>|z|
var(e.ln_GSDP)	0.0201115	0.0031477	
var(e.ln_FDI)	0.5380725	0.0786061	
var(e.Infra)	1.814999	0.5365913	
var(Election_Dummy)	0.2491	0.0352281	
var(Fin)	2.279041	0.3717291	
var(ln_Avg_Daily_Wage_CONST)	0.0137401	0.0029878	
Covariances			
cov(Election_Dummy	Fin)	-0.320699	-3.68
cov(Election_Dummy	ln_Avg...)	-0.0252339	-3.59
cov(Fin	ln_Avg_Daily_Wage...)	0.0950595	2.92

Table 3: Results of Structural Equation Modelling

State-level economic indicators, measured through GSDP, also show a clear and significant positive association with FDI. The coefficient for GSDP is estimated at 0.82 and is significant at the 5% level, indicating that a 1% increase in GSDP results in a 0.82% rise in FDI. This suggests that regions with higher levels of economic activity and stability are more attractive to foreign investors due to the availability of larger markets and more reliable economic infrastructure. This finding supports the argument by Blonigen and Piger (2014), who suggest that higher economic output creates favorable conditions for investment. The substantial influence of GSDP underscores the importance of addressing regional disparities in economic performance to maximize FDI inflows across states.

Interestingly, the election dummy variable does not demonstrate a statistically significant effect on FDI, with a coefficient of 0.18 and a p-value greater than 0.10. This result implies that foreign investors are not strongly influenced by political cycles in their short-term decisions. Instead, they may focus on long-term factors such as economic stability, infrastructure development, and regulatory certainty. This observation aligns with the findings of Busse and Hefeker (2007), who argue that while political stability is important, short-term political events are less critical in shaping FDI decisions.

Finally, average daily wages exhibit a significant negative relationship with infrastructure development. The coefficient is estimated at -11.90, significant at the 1% level, suggesting that

a unit increase in average daily wages leads to an 11.90-unit reduction in infrastructure development. This finding suggests that while higher wages can reflect increased productivity and economic development, they may also deter cost-sensitive investors, particularly in labor-intensive sectors. This dual-edged impact of wage dynamics highlights the need for balancing competitiveness with socio-economic development goals, as emphasized by Caves (1996).

The variances and covariances further underscore the interdependencies within the model. For example, the negative association between financial variables and political stability, with a covariance of -0.32 significant at the 1% level, suggests that while political factors do not directly influence FDI, they may indirectly shape the investment climate through their effect on financial systems. This interaction reinforces the importance of stable macroeconomic and political conditions in sustaining FDI inflows.

In summary, the findings underscore the central roles of infrastructure, financial development, and state-level economic activity in attracting foreign direct investment. Robust infrastructure and well-functioning financial markets not only foster industrial growth but also enhance a state's appeal to international investors, complementing the strong linkage between GSDP and FDI inflows. Although the election dummy does not emerge as a statistically significant determinant, the interplay between political factors and financial conditions suggests that a stable and supportive macroeconomic environment remains essential. Taken together, these results highlight the importance of integrated policies that simultaneously strengthen infrastructure, deepen financial markets, and promote balanced economic development to sustain high levels of foreign investment across India's regions.

Conclusion and Policy Implications

This study provides a comprehensive analysis of the dynamics of foreign direct investment (FDI) in India, highlighting key determinants such as infrastructure development, financial sector performance, gross state domestic product (GSDP), labor costs, and political factors. The findings underline the pivotal role of infrastructure and financial development in attracting foreign investment. A unit increase in infrastructure development leads to a substantial rise in structural growth, emphasizing the necessity of sustained investments in transportation, energy, and digital infrastructure to enhance operational efficiency and reduce transaction costs. Similarly, a robust financial sector significantly contributes to both industrial growth and FDI inflows, showcasing the importance of financial inclusion, credit availability, and market depth in fostering an investment-friendly environment.

The positive correlation between GSDP and FDI highlights the importance of economic size and stability in influencing investment decisions. Regions with higher economic activity and market potential are more likely to attract foreign investors, making it imperative for policymakers to address regional disparities and create balanced economic opportunities across states. However, the study also reveals that political factors, such as election cycles, have limited short-term influence on FDI, suggesting that foreign investors prioritize macroeconomic stability and structural factors over transient political events.

The negative relationship between average daily wages and infrastructure development reflects a dual-edged impact of labor costs on investment decisions. While competitive labor costs can attract investments in labor-intensive sectors, higher wages often signal greater productivity and purchasing power, appealing to investors seeking high-value production or market expansion opportunities. Policymakers must strike a balance between maintaining cost

competitiveness and ensuring equitable wage growth to sustain long-term economic development.

From a policy perspective, this research underscores the need for targeted infrastructure investments, financial sector reforms, and regional economic development strategies. Policymakers should prioritize the development of underrepresented regions to reduce disparities and foster inclusive growth. Additionally, aligning labor market policies with productivity improvements and promoting competitive federalism among states can enhance India's attractiveness as an FDI destination. Finally, ensuring political and regulatory stability remains essential to building investor confidence and sustaining FDI inflows.

In conclusion, the study provides actionable insights for policymakers, emphasizing that a holistic approach encompassing infrastructure, finance, labor, and regional development is key to optimizing FDI inflows. By leveraging these determinants effectively, India can strengthen its position as a preferred global investment destination, supporting its aspirations for sustainable economic growth and development.

> This study highlights infrastructure development, financial sector performance, and market size (as captured by GSDP) as the primary drivers of FDI in India. While political cycles have limited direct influence, stable macroeconomic and regulatory environments remain crucial. The negative link between wages and infrastructure underscores the need to balance cost competitiveness with fair labor policies. Overall, robust infrastructure, efficient financial systems, and inclusive regional growth strategies are pivotal for attracting sustained foreign investment.

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