



Challenges confronting economic development of Bihar: Critical dynamics and prospective solutions

Dr. Biju Kaipparadan Abraham¹, Sheethal Pious Cyriac²

¹ Director, Indian Institute of Knowledge Management, Kottayam, Kerala, India

² Faculty, Indian Institute of Knowledge Management, Kottayam, Kerala, India

Abstract

Key causes, persistent obstacles, and strategic restoration options are identified in this research of Bihar's economic trajectory. Reforms implemented after 2005 resulted in substantial growth; for example, Bihar experienced a 20% decrease in poverty and double-digit expansion thanks to investments in infrastructure, education, healthcare, and governance practices. But there are still systemic problems, such as high unemployment, unequal access to healthcare, and dispersed agricultural landholdings. Net State Domestic Product (NSDP) and Per Capita Net State Domestic Product (PCNSDP) growths are examined, with sectorial contributions highlighted, using workforce indicators from the 2017–18 Periodic Labour Force Survey and 2011–12 base-year data. Although the state of Bihar shrank by 5% in 2020–21 due to the pandemic, it recovered with a rise of 14.02% the following year. Disparities in infrastructure, industrialization, and income are seen, however, when comparing the state to Gujarat and Tamil Nadu. Because 80 percent of Bihar's population works in agriculture, the state's economy needs to diversify. Industrialization, pro-business policies, and expanded infrastructure are key growth factors. Recurring floods, ineffective government, and caste-based political dynamics are some of the obstacles that slow down development. The policy recommendations centre on three main points: creating an environment that is conducive to business, improving human capital via training and education, and bringing state policies in line with national and international economic trends. Critical insights for sustainable and inclusive growth can be gleaned from additional research on the socio-environmental repercussions of industrialization, inter-state differences, and Bihar's long-term economic trajectory, as highlighted in this paper.

Keywords: Net state domestic product (NSDP), per capita net state domestic product (PCNSDP), growth rates, sustainable growth, economic challenges, strategic pathways

Introduction

Advancement of Bihar's Economy

A fundamental factor propelling social advancement is economic growth, which is characterized as the persistent increase in the production and consumption of goods and services. Raising living standards and being a key measure of economic health, it is indispensable. The intricate web of commerce, industry, and finance that makes up an economy determines the dynamics at the national and regional levels. Strategically located in eastern India, Bihar benefits from favourable geography that fosters economic expansion. Bihar is strategically located near key markets in the east and north thanks to its shared borders with West Bengal, Uttar Pradesh, Jharkhand, and Nepal. Its expansion prospects are enhanced by the fact that it is close to mineral-rich states and ports such as Haldia and Kolkata. Regardless of all these benefits, Bihar only added 2.75 percent to India's GDP in the fiscal year of 2022–23. With a per capita GDP of only ₹35,119, it has the lowest GDP in the country despite housing almost 9% of the population. Bihar has a glaring economic inequality. If it declared its independence, its economy would be on par with Japan's or Mexico's in terms of total size, and its population would place it at number twelve in the world. Still, it would have one of the lowest per capita incomes, behind even Sudan and Somalia. There is a noticeable disparity in per capita income between Patna and Sheohar in Bihar, with Patna having ₹131,064 and Sheohar having ₹19,592. This highlights the significant regional disparities and the state's poor performance compared to national norms.

Notwithstanding these obstacles, Bihar achieved considerable strides from 2015–16 to 2022–23. Per capita Net State Domestic Product (NSDP) increased by 13.41% whereas Gross State Domestic Product (GSDP) increased by 13.21% (CAGR). Even if we started from a low point, these measurements show a tremendous recovery in the economy. With an employment rate far above the national average, 80 percent of Bihar's population works in agriculture. When it comes to producing fruits and vegetables, the state ranks seventh and fourth, respectively, in the nation. Thanks to its inexpensive labour population, Bihar has attracted investments in a wide variety of industries, including agriculture, food processing, sugar, healthcare, tourism, education, and renewable energy.

In developing nations like Bihar, where poverty and unemployment are major issues, growth and development go hand in hand. Reallocation of resources, increased labour productivity, and transitions from the primary (agricultural) to the secondary (industrial) and tertiary (services) sectors are central to structural transformation theories' claims about sustainable development. Any area moving from a subsistence to an inclusive growth trajectory must undergo these transformations.

Growth rates in the double digits and a drop-in poverty of 20% were both brought about by reforms that took place in Bihar after 2005. These reforms improved the state's infrastructure, governance, and policies. But the state is struggling with issues including low literacy rates, insufficient healthcare, migration of skilled and unskilled labour, agricultural holdings that are fragmented, and

persistent unemployment. In spite of all, Bihar showed that it can recover and grow even after facing exogenous shocks like COVID-19 [1-23].

This research looks at how the economy of Bihar has changed over the last 10 years by looking at NSDP patterns, sectorial contributions, and structural changes. This review examines the effectiveness and sustainability of growth drivers, highlighting obstacles and potential for long-term revitalization, using data from the 2011–2012 base year and the 2017–2018 Periodic Labour Force Survey on the workforce.

An Introduction to Bihar's Economy

Geographically, the Ganges River divides the 94.2 km² state of Bihar into two parts: North Bihar, which is 53.3 km², and South Bihar, which is 40.9 km². Nearly 80% of the population works in agriculture, which is much higher than the national average and contributes to the state's largely agricultural economy. The importance of agriculture to the socioeconomic structure of Bihar is emphasized by this.

The importance of agriculture to Bihar's economy was highlighted in 2004–05, when it contributed 42% of the state's GSDP. The agricultural sector in Bihar is still struggling with issues including low crop productivity and people's over-dependency on farming for their livelihood, despite this heavy reliance. Constraints like these keep people in poverty and make them economically vulnerable. The state's largely rural and agricultural makeup is reinforced by the stunted growth of the industrial and service sectors, which in turn has hampered revenue diversification.

With 51.91 percent of its people experiencing multidimensional poverty, Bihar is the poorest state in India, according to the NITI Aayog's Multidimensional Poverty Index (MPI). This clearly demonstrates the seriousness of Bihar's socioeconomic issues. In light of this data, it is very clear that the state's economic woes necessitate immediate structural changes and focused actions.

Realizing Bihar's Full Economic Potential

Investment is a key factor in economic growth since it increases government income, creates jobs, improves technological capabilities, and boosts productive capacity. India has taken many governmental steps in the past to improve its saving-investment ratio. The Five-Year Plans and the 1969 bank nationalization significantly enhanced financial inclusion and mobilized domestic savings. By opening the door to international investment and encouraging private sector involvement, the liberalization of FDI in the 1990s accelerated economic growth even further. Investment in India's economy surpassed 35% of GDP during the 12th Five-Year Plan (2012–2017), which resulted in 8.2% GDP growth. Future planning periods are projected to see investment rates rise even higher, reaching 38.4% and 41.4%, respectively. Bihar surprised everyone by surpassing national growth statistics during the 12th Plan, but falling behind in socioeconomic metrics. In order to promote equitable growth and reduce regional inequities, it is critical to maintain this momentum in future development policies. The best way to maximize investment returns and guarantee inclusive growth is to do a sectorial analysis of the agricultural, industrial, and service sectors.

The Green Revolution, modernized agriculture, and increased food production are examples of post-

independence policies that have impacted India's structural transformation and contributed to uneven growth across sectors. Industrial and service sectors, on the other hand, saw fast expansion as economic deregulation in the 1990s redirected attention there. Both the national and Bihar economies are presently dominated by the service sector, with agriculture and industry making relatively small contributions. To realise its maximum economic potential, Bihar needs a well-rounded investment plan.

While research by Mazumdar and Mallick, among others, highlights the importance of industrial investment as a growth driver, there is a dearth of thorough sectorial assessments in these studies. A tailored investment strategy that addresses structural constraints in Bihar while balancing agriculture, industry, and services is necessary due to the state's shared problems. Profit maximization and long-term sustainability can only be achieved by strategic investments in physical infrastructure, human capital, and institutional capability.

Bihar: From Ancient to the Medieval Periods

Bihar was an important part of early Indian civilization because of its historical importance, which stems from the Mauryan and Gupta empires. These dynasties had a major impact on India's politics, economy, and ideas. The Mauryan Empire (321–185 BCE) was an advanced system of government in India that linked Central Asia and beyond with its centralized administration, effective tax systems, and vast commerce networks. Its capital was Pataliputra, which is now known as Patna. Roads, irrigation systems, and city planning were some of the infrastructure projects undertaken by Emperor Ashoka that accelerated economic expansion, which in turn boosted trade and agriculture throughout the eastern empire.

During what is commonly considered India's "Golden Age" (around 319–550 CE), the Gupta Empire made scientific, mathematical, and artistic breakthroughs that brought Bihar to the forefront. Aryabhata transformed mathematics and astronomy, Charaka improved medicine, and Kalidasa created classic literature. These advancements cemented Bihar's position as a centre of knowledge on a global scale, impacting systems of knowledge well beyond India's boundaries. Scholars from all over the world flocked to Nalanda and Vikramshila because of the excellent multidisciplinary education they offered in fields as diverse as philosophy, linguistics, mathematics, astronomy, and medicine. The impact of Bihar on India's socioeconomic development was magnified by thinkers such as Kautilya, whose Arthashastra established the rules for government and economic policy.

Decline Post-Independence

A combination of the mineral-rich southern districts (now in Jharkhand) and the fertile Gangetic plains allowed Bihar's economy to flourish before the state split in 2000. With its abundant coal reserves, iron ore resources, and manufacturing centres, Bihar was able to capitalise on both its main (agricultural) and secondary (industrial) economic strengths. But these industrial assets were taken away from Bihar in the 2000 split, which made the state extremely dependent on agriculture and susceptible to weather and market swings, drastically changing its course of growth. Bihar had one of India's lowest per capita incomes between 2000 and 2005 due to economic stagnation marked by poor

public and private investment, inadequate infrastructure, and little industry diversification. The state of Bihar's gross state product (GSDP) grew at a rate of 8.6% between 2005 and 2010, which was higher than the national average of 7.04%, thanks to extensive reforms in governance that took effect after 2005. There were 1,723 new bridges, more highways, and complete electrification of villages, but only 48% of homes had the technology.

As a result of investments made by the social sector, the infant mortality rate has dropped from 75 to 27 per 1,000 live births, and the rate of school dropouts has been substantially reduced. The necessity for long-term changes to guarantee inclusive prosperity is underscored by the fact that Bihar's literacy rates lag below the national average.

Related Works

Economically, Bihar is heavily influenced by factors like as periodic floods, imbalances between sectors, and legislative initiatives. Floods affect 73.06% of Bihar's land area, according to research by Kansal, Kumar, and Kumar (2017) (3), which has a significant impact on agriculture and slows growth. An integrated strategy that involves non-structural interventions such as floodplain management, land-use laws, and improved forecasting is necessary as embankments and other structural flood protection techniques have not been enough. Adaptive techniques and community-based disaster preparedness are essential for reducing socioeconomic vulnerabilities.

Addressing Bihar's economic issues has been greatly facilitated by legislative measures. In their analysis of state policies on poverty, infrastructure deficiencies, and floods (PRS Legislative Research (2020–2021) 24), the authors emphasized the need of governance reforms and strategic investments in building economic resilience. Achieving equitable growth in Bihar will require legislative initiatives that are in line with the state's socioeconomic and geographical characteristics.

The agricultural sector is extremely susceptible to floods, which worsen poverty and force people to leave their homes in Bihar. Critical strategies for agricultural expansion are emphasized in research by Sinha (2017, 2019, 2023 a-c, 2022 a-b) [13, 14, 16-19, 21, 23] and Kansal *et al.* (2017) (3), as well as in Sinha & Sinha (2020, 2022, 2023) [15, 20, 22]. Capital investment, infrastructure reinforcement, mechanization, skill development, and effective lending are all part of the package. Although forestry plays a little part in the economy, it is vital for the environment because of the services it provides. Resolving agricultural issues and guaranteeing long-term economic growth requires strategic investments and interventions guided by policies.

Infrastructure and the service sector have grown since 2005 because to better governance, but Bihar's total economic potential is still limited by agricultural underperformance. Infrastructure gaps and industrial stagnation are two examples of the structural restrictions highlighted by the sectorial study. According to the Annual Survey of Industries (2021-22), Bihar's industrial footprint is somewhat small, accounting for just 1.37 percent of India's operating industries and contributing a meager 0.62 percent to the country's Gross Value Added (GVA). The necessity for job development and economic diversification is shown by the fact that industrial employment has been declining at a CAGR of 1.65% from 2014–2015 (25-28).

With a share of 20.56% in 2021-22, agriculture continues to play a major role in Bihar's GDP. Northern Bihar is particularly vulnerable to natural disasters; 74% of the region gets inundated every year, and the southern parts of the state suffer from droughts on a regular basis. Sustained investment in water resource management is necessary for agricultural resilience, as initiatives like the Kosi-Mehsi intrastate link project seek to increase irrigation coverage and reduce climate risks.

Manufacturing, agro-processing, and export-driven sectors are the focus of Bihar's efforts to reverse the state's economic downturn. One such endeavour is the Gaya industrial node, which is part of the Amritsar-Kolkata economic Corridor. Employment and economic diversification are anticipated to be enhanced by these strategies. There is a lot of economic potential in Bihar because of its cultural legacy, which includes places like Nalanda and the Mahabodhi Temple. These locations have the potential to position Bihar as a worldwide tourism destination, creating jobs and local economic prosperity. They might be developed strategically, taking inspiration from schemes like the Kashi Vishwanath Corridor.

To restructure Bihar's economy, a multi-pronged growth plan is required, one that takes a holistic view of the state's agricultural, industrial, and touristic sectors. A strong foundation for sustainable development can be established by improving infrastructure, industrial corridors, and cultural assets; this will allow for the creation of both forward and backward links across sectors. Regional development initiatives in other impoverished places can be informed by lessons learned from Bihar's economic trajectory.

Promoting sustainable development in Bihar requires a multi-pronged strategy, according to recent studies [29–36]. Integrating non-structural (forecasting, land-use planning) and structural (embankments) elements is critical for a complete flood management system. Crops that are more resistant to flooding, diversification, and the growth of related industries like dairy and fisheries can all help to make agriculture more resilient. To lessen regional inequalities, it is essential to expand infrastructure, which includes connecting rural areas, electrifying cities, and providing services to urban centres. Policy implementation and the promotion of public-private partnerships should be the primary goals of legislative and governance reforms aimed at achieving long-term economic growth.

The need for focused actions to boost inclusive growth and speed up Bihar's economic development is highlighted by this study. Unlocking the state's economic potential requires a comprehensive policy framework that addresses flood management, agricultural modernization, industrial regeneration, and tourism development. Sustainable growth is within Bihar's reach with certain tweaks to the state's infrastructure, better leadership, and the involvement of the private sector.

Purpose of this Research

1. The goal is to find out what's really going to propel Bihar's economy forward by looking at the contributions of different sectors like agriculture, industry, and services, as well as infrastructure, human capital, and promising areas like food processing, renewable energy, tourism, and healthcare.

2. The objective is to identify limitations in development by studying the effects of calamities, social and economic issues including poverty, unemployment, and migration, and governance shortcomings, such as insufficient investment in industry and infrastructure.
3. The goal is to create a plan to help Bihar's economy thrive in the long run, one that benefits everyone. This plan will include measures to make the state more resilient to disasters, boost certain industries, improve governance, and increase private sector involvement.

Scope of the Study

Despite many policy and economic shifts between 2011 and 2023, this analysis tracks Bihar's GDP growth during that time. To help with sustainable development, it pinpoints important factors that drive growth, fills in gaps in our understanding, and offers strategic advice. With a structured methodology, the research identifies important growth areas and cross-sectorial linkages, focuses on Bihar's high population density, agrarian dependency, and flood susceptibility, and assures data integrity. Part of the analytical framework involves looking at trends to see how the economy is doing over the long run, at different sectors to see what's driving growth and what's holding it back, at the effects of development on society and the economy as a whole, and at the recovery and resilience of the economy after disasters.

Research Methodology

In order to guarantee accuracy, relevance, and dependability, this study employs a rigorous analytical framework to systematically analyze options for Bihar's economic growth. Following a descriptive and analytical research strategy, it uses secondary data sourced from various government agencies and organizations, including the Ministry of Statistics, NITI Aayog, NSSO, Bihar Economic Survey, peer-reviewed literature, and studies on

policy implications and economic trends. Using trend analysis, comparative analysis, sectorial evaluation, and impact analysis, the study covers the period 2011–2023, focuses on important policy reforms after 2005, and examines Bihar's gross state product growth, employment trends, and sectorial contributions and performance relative to other states. It also evaluates agriculture, industry, and services, and the effects of natural disasters and policy measures. The theory of structural transformation, growth models, and frameworks for evaluating policies are all part of the conceptual framework. Nevertheless, when it comes to micro-level insights and localized economic assessments, relying on secondary data has its limitations.

An Analytical Assessment of Bihar's Economic Structure

Bihar's economic trajectory has undergone a fundamental transformation from an agrarian foundation to a service-oriented economy, which today represents the greatest share of the state's Gross State Domestic Product (GSDP). The partition of Jharkhand in 2000 resulted in a significant decline in economic output, especially in high-value industries like mining, quarrying, and industrial manufacturing, leading to an estimated 30% decrease in Bihar's total economic output. This structural dislocation presented considerable problems to Bihar's industrial foundation, intensifying its dependence on basic and tertiary industries.

Nonetheless, the state has exhibited resilience through continuous rise in agricultural production and swift expansion in services, accompanied by gradual improvements in the secondary sector. The continuous diversification of Bihar's economy, along with policy-driven efforts in infrastructure and industrialization, has established a basis for enduring structural reform. Refer to Table 1 and Table 2 for empirical insights.

Table 1:

Sector	Period	India			Bihar		
		Agri. & Allied	Industry	Services	Agri. & Allied	Industry	Services
Share of the Sectors (%) in the GDP	1980-81	36.54	25.22	38.24	51.74	10.58	37.68
	1990-91	30.21	26.59	43.20	44.98	12.43	42.49
	2000-01	23.22	24.97	51.81	37.72	11.66	50.62
	2010-11	14.98	24.62	60.60	21.99	19.05	58.96
	2022-23	12.19	23.91	63.90	18.19	21.17	60.64
Semi-logarithm annualized growth rate (%)	1980-81 to 1995-96	3.24	7.95	4.74	2.06	24.59	6.11
	1996-97 to 2006-07	2.46	4.33	5.85	(-) 3.11	(-) 9.80	3.29
	2007-08 to 2022-23	2.48	7.89	5.84	(-) 0.82	(-) 2.06	6.47

Share and semi-logarithm annualized growth rate of the major Sectors in the total gdp at 2004-05 prices for Bihar and India.

(Source: Author's calculation)

Structural transformation is a complex process influenced by the interaction of human capital, infrastructural development, institutional effectiveness, and industry investments. Based on the strategic alignment of these components, structural change can either facilitate or hinder economic progress. Empirical evidence highlights this dichotomy: countries like India and Thailand have effectively managed growth-promoting structural transitions, while Argentina, Brazil, Nigeria, and Zambia have experienced

structural changes that hindered long-term economic performance (Ahsan, 2012; McMillan, Rodrik & Sepulveda, 2017) [25].

In Bihar, structural reform was sluggish prior to 2005. The establishment of stable administration after 2005 commenced a phase of rapid economic growth and sectorial reconfiguration. The building of essential infrastructure has been pivotal to Bihar's economic comeback. From 2005-06 to 2015-16, the state experienced the building of 1,723 bridges and a substantial expansion of road networks.

Table 2:

Period	National / State	The average share of value added			Contribution to the growth rate			Aggr- egate
		Agri. & Allied	Industry	Servi-ces	Agri. & Allied	Industry	Servi-ces	
1980-81 to 1995- 96	India	0.28	0.30	0.42	0.52	0.26	2.37	4.80
	Bihar	0.42	0.16	0.42	1.32	0.02	2.16	4.32
1996-97 to 2005- 06	India	0.23	0.29	0.48	0.53	0.39	2.67	4.67
	Bihar	0.33	0.20	0.47	0.05	(-)0.01	0.36	0.54
2006-07 to 2022- 23	India	0.17	0.25	0.58	0.75	0.24	4.13	6.67
	Bihar	0.25	0.19	0.56	0.22	0.01	3.32	4.56

Average share of value-added and contribution in the growth rate of the agri. & allied, industry, and service sectors in GDP of Bihar and India at 2004-05 prices

(Source: Author's calculation).

The national highway network grew from 3,410 km in 2001 to 4,595 km in 2015, but state highways rose from 2,383 km in 2011 to 4,253 km in 2015. Electrification initiatives progressed significantly, with 95.50% of villages obtaining electricity by 2014-15. Public expenditure trends indicate Bihar's strategic emphasis on economic and social advancement. Between 1999-00 and 2013-14, yearly capital expenditure increased by 16.7%, whilst social sector investments rose by 14.94% and 21.76%, respectively, emphasizing human capital development and welfare initiatives after 2005. These policy-driven expenditures have produced measurable enhancements in health metrics, including reductions in infant mortality, birth rates, and fertility rates. Furthermore, poverty alleviation programs like Jeevika have facilitated socioeconomic advancement;

nonetheless, enduring hurdles, like low literacy rates and significant regional inequities, persist in obstructing equitable development. The growing economic structure of Bihar underscores the essential importance of infrastructural development, social sector improvements, and investments in human resources for fostering sustainable growth. Ensuring long-term inclusion requires specific policy actions to address regional disparities and improve educational results. Refer to Table 3 for empirical validation. Although mining and quarrying are frequently categorized inside the secondary sector, they are routinely incorporated into primary sector assessments. Advanced economies exhibit agricultural contributions ranging from 1% to 8% in value-added, whereas North America accounts for less than 1%.

Table 3:

Period (Financial year)	National / State	Rate of Investment			Growth rate			
		Agri. & Allied	Indu-stry	Serv-ices	Agri.& Allied	Indu-stry	Servi-ces	Aggre-gate
1980-81 to 1982-83	INDIA	1.84	4.37	7.43	5.86	4.25	5.35	5.37
	BIHAR	1.01	0.82	5.73	7.45	4.52	5.79	6.48
1983-84 to 1985-86	INDIA	1.58	4.82	7.11	6.42	4.63	5.86	5.45
	BIHAR	1.23	0.96	6.54	8.56	4.65	5.96	6.84
1986-87 to 1988-89	INDIA	1.37	3.47	6.74	3.43	5.37	7.01	5.67
	BIHAR	1.12	0.87	6.76	(-) 1.75	5.16	4.81	2.17
1989-90 to 1991-92	INDIA	1.31	3.92	6.32	3.21	6.23	7.57	5.76
	BIHAR	1.35	1.04	6.83	(-) 1.45	5.61	4.32	2.78
1992-93 to 1994-95	INDIA	0.98	4.14	7.34	2.96	6.21	5.26	3.95
	BIHAR	1.33	1.54	6.94	2.76	2.17	3.45	2.95
1995-96 to 1997-98	INDIA	0.65	5.11	7.11	2.57	6.08	6.01	5.98
	BIHAR	1.64	1.87	7.03	(-) 2.12	2.69	5.27	3.91
1998-99 to 2000-01	INDIA	0.84	5.32	6.95	3.02	3.47	7.53	5.73
	BIHAR	1.77	1.99	7.13	6.44	2.82	4.23	3.43
2001-02 to 2003-04	INDIA	0.98	4.88	6.79	2.06	3.78	8.51	7.38
	BIHAR	2.43	3.12	8.76	7.44	3.21	6.86	7.75
2004-05 to 2006-07	INDIA	1.32	3.52	7.32	1.84	9.32	8.63	7.63
	BIHAR	2.77	4.44	9.32	3.43	1.48	12.11	8.75
2007-08 to 2009-10	INDIA	1.23	8.64	7.65	3.04	8.27	9.64	7.53
	BIHAR	3.12	4.58	9.76	4.33	8.96	12.44	9.08
2010-11 to 2012-13	INDIA	1.29	8.35	8.94	3.45	7.28	9.74	7.76
	BIHAR	3.29	8.35	8.94	4.45	8.28	11.74	8.76
2013-14 to 2015-16	INDIA	1.31	3.92	6.32	3.21	6.23	7.57	5.76
	BIHAR	3.31	7.92	8.32	4.21	8.23	11.57	7.76
2016-17 to 2018-19	INDIA	0.98	4.14	7.34	2.96	6.21	5.26	3.95
	BIHAR	2.98	6.14	5.34	3.96	6.21	6.26	5.95
2019-20 to 2021-22	INDIA	0.65	5.11	7.11	2.57	6.08	6.01	5.98
	BIHAR	2.98	6.14	5.34	3.96	6.21	6.26	5.95

Gross public expenditure and growth rate – Bihar and India

(Source: Author's calculation)

About 14%-15% of India's GDP comes from the country's primary sector. The opposite was true in Bihar, where contributions generated by agriculture fell from 40.57

percent in 1993–94 to 19.70 percent in 2022–23, a decrease of 20.87%. While forestry and logging saw a yearly fall of about 3% in NSDP share, fishing saw no change. Despite

mining's average yearly growth rate of 34%, it only accounts for 0.35 percent of the total due to fluctuations such as a 535.57% increase in 2013–14 and a -60.61% drop in the following year. With annual growth rates of 4.47% and 6.06%, respectively, agriculture and fisheries are the principal stable contributors to NSDP. The primary sector is facing diminishing NSDP shares and inherent instability, which is threatening its crucial position in Bihar's economy. To maintain long-term stability and growth, deliberate actions are needed.

The manufacturing, construction, and utilities that make up Bihar's secondary sector are vital to the state's structural change and economic growth. Nevertheless, Bihar's industrial base was severely limited when the state was split in 2000, cutting off access to important industrial assets. After 2005, the sector continued to grow, reaching a peak of 20.85% in 2014–15 before beginning a downward trend. Its GSDP contribution increased by five percentage points between 1993–94 and 2022–23. The construction subsector has grown at a faster rate than any other, going from 2.39 percent in 1993–94 to 9.72 percent in 2022–23. From 2004–05 to 2011–12, yearly growth peaked at 23.69% and then slowed. During the research period, the manufacturing sector's share fell by 1.47%, while utilities, which include water, gas, and electricity, remained flat and lost 0.74% of its GSDP contribution. The building industry's sustainability is called into question by the halt in growth, which is an indication of fundamental issues. If Bihar wants its secondary sector to be more resilient and diverse, it needs revitalization methods.

From 45.50% in 1993–94 to 61.24% in 2011–12, the tertiary sector—which includes commerce, communication, banking, and public administration—became the leading contributor to Bihar's NSDP. From 2004–05 to 2011–12, it expanded at a pace of 9.00% per year, and from 2011–12 to 2022–23, it slowed to 8.30% per year. Nevertheless, its NSDP proportion has grown modestly every year, reaching a peak between 2004–05 and 2011–12. Based on the data we have, the trade, hotels, and restaurants (THR) subsector was the most important driver, expanding at a pace of 9.59 percent per year between 2004–05 and 2011–12; however, after that, growth decreased.

The expansion of telecommunications and the internet has caused communication to emerge as the fastest-growing segment, with an annual growth rate of 25.80% from 2008–09 to 2015–16. The finance and insurance sector also expanded, resulting in a 3.16% increase in its share between 1993–94 and 2022–23. The greatest growth has been in communication, while THR and banking have experienced a slowdown. The stagnation in railways and public administration underscores inefficiencies that impede modernization efforts.

A combination of macro-level changes brought about by industrialization, urbanization, and the agricultural transition and micro-level gains in efficiency has resulted in a structurally transformed economy in Bihar. NSDP in Bihar increased at a CAGR of 5.61% from 1993–94 to 2018–19, with several subsectors expanding at a pace of double digits between 2004–05 and 2011–12, in line with GSDP tendencies. From 1993–1994 to 2022–23, the focus shifted to the secondary and tertiary sectors, which have been the main engines of growth, especially after 2004. Jobs in the secondary sector, particularly in construction, have grown, while those in the primary sector have shrunk. Even though

certain of its subsectors are growing at a slower rate, the tertiary sector is still the largest employment in cities. While women's participation in both agricultural and non-agricultural industries has been enhanced through labour migration, there has been a noticeable lag in structural employment transitions for women, highlighting the ongoing inequities. These shifts illustrate how sectorial expansion, job patterns, and inclusion are influencing Bihar's changing economic landscape.

A well-coordinated mix of policies and growth drivers has moulded Bihar's economic trajectory, playing to the state's strengths while tackling fundamental issues. The regulatory reforms and incentives for industrial development, among other pro-business policies, have made it easier to do business, which has attracted investments in new areas and encouraged economic diversification. The development of essential infrastructure, such as transportation, energy, and internet connectivity, has been crucial in opening up new markets and facilitating industrial growth. Improving production capacities and integration into local and global value chains, Bihar's industrial ecosystem has been strengthened by targeted investments in manufacturing, agro-processing, and technology sectors. The enormous population of the state acts as a huge consumer market, propelling demand in a variety of industries. Simultaneously, its plentiful workforce has the potential to greatly improve efficiency and long-term economic viability through proper training and skill development. When it comes to Gross Domestic Product (GDP) and employment, agriculture is still quite important in Bihar. Crop diversification and the creation of value-added agricultural goods have helped offset market and environmental concerns, while government policies focusing on irrigation expansion, sustainable farming methods, and technology improvements have enhanced production.

Additionally, farmer support initiatives, rural job schemes, and poverty alleviation programs have all contributed to higher living standards and more equitable economic growth. Political stability and effective governance have supported economic development; nonetheless, problems like corruption and bureaucratic inefficiency call for specific reforms. Industries in Bihar focused on export Global financial conditions and national initiatives, such "Make in India" and "Digital India," have increased their integration with the broader national development agenda, and they also impact Bihar's economic challenges. To maintain Bihar's growing momentum and ensure it continues to contribute significantly to India's economic development, it is essential to reinforce pro-business laws, increase investment in agricultural innovation, enhance governance systems, and extend worker skill development. Improvements in fiscal management and income production have contributed to a marked upturn in Bihar's financial situation in recent years. See Table 4 down below.

Still, we must keep our sights set on fair and sustainable growth because of the fundamental problems. Revenue receipts in Bihar rose 21.5% from 2019–20 to 2020–21, demonstrating the state's enhanced ability to handle fiscal responsibilities and mobilize resources in the face of exogenous shocks like the pandemic. The state of Bihar is in line with national tax devolution policies and has a stronger income base thanks to its share in central taxes, which has increased by 43.8% and is a crucial part of the state's budget. Yet, updated projections showed a fall in central tax

receipts, suggesting possible weaknesses in financial flows affected by things like economic slowdowns and the unpredictability of national tax collections. It is necessary to increase state-level revenue generation through better tax collection mechanisms

in order to decrease reliance on central transfers, even though the 15th Finance Commission has recommended that Bihar's share of central taxes will go up from 4.06% (2015-2020) to 4.13% in 2020-21. It is essential to carefully allocate and spend devolved monies in order to ensure they are used efficiently so that they can contribute to meaningful development.

Table 4:

Base Year	Bihar		All States	
	PCNSDP	% Growth	PCNSDP %	% Growth
2022-23	53478	13.07	169496	12.32
2021-22	47296	12.27	150906	18.59
2020-21	42128	(-)04.64	127244	(-)03.85
2019-20	44175	08.50	132341	05.08
2018-19	40715	10.48	125946	09.31
2017-18	36850	08.24	115224	09.86
2016-17	34045	11.97	104880	10.64
2015-16	30404	06.04	94797	09.41
2014-15	28671	06.39	86647	09.51
2013-14	26948	10.05	79118	11.45
2012-13	24487	12.58	70983	11.85
2011-12	21750	-	63462	

Per Capita Net State Domestic Product – Bihar & all states (at current prices)

(Source: National Statistical Office/ Reserve Bank of India)

Structural Shift in Bihar's Economy by Sector

There has been a dramatic change in the structure of Bihar's economy, with the tertiary sector now constituting the bulk of the state's GDP. Trade, transportation, and financial services have been vital to the growth of the economy and the creation of jobs. The changing economic environment of Bihar is brought to light by this shift, but it also emphasizes the importance of achieving balanced growth in the primary and secondary sectors for the state's long-term survival. Despite agriculture's continued importance as a means of subsistence and employment in rural areas, the sector is beset by systemic problems such as low productivity, dispersed landholdings, insufficient irrigation, and climate-induced vulnerabilities. To boost production and farmers' incomes, it is vital to invest in irrigation, mechanization, agro-processing, and market connections as part of sustainable modernization efforts. Infrastructure limitations, poor industrialization, and talent mismatches all contribute to manufacturing's limited contribution. Policy initiatives to improve the ease of doing business and attract private investment are necessary to accelerate growth in this industry. Targeted investments in logistics, workforce development, and industrial clusters are also necessary.

Factors Influencing Bihar's Economy and Its Growth

To promote sustainable development and resilience in all areas, the government of Bihar must implement growth drivers and strategic policies that play to the state's strengths while also tackling systemic problems. Reforms to regulations and incentives for industrial development are examples of pro-business policies that have helped diversify the economy by streamlining processes, attracting investments in tech, leather, and textiles, and encouraging entrepreneurship. Enhancing commerce, market access, and industrial expansion through better highways, trains, rural roads, and energy grids is the result of infrastructure development, which is a cornerstone of Bihar's progress. This development entails substantial expenditures in transportation, energy, and digital connection. There is a

strong demand for goods and services in the state because of its big population. Agricultural and industrial output are both boosted by the country's large pool of available workers and its emphasis on skill training. Policies that encourage irrigation, sustainable practices, and crop diversification strengthen Bihar's agricultural sector, which in turn boosts GDP contributions and makes the sector more resilient to changes in the market and the environment.

Important Facts and Proposals

Policies, industrialization, demographic dynamics, and governance all play a role in Bihar's growth, but the state will need focused interventions to tackle structural issues if it wants to keep growing at its current rate. More industrial growth may be attracted through investments in infrastructure and pro-business policies, and the workforce can be better positioned for high-growth industries like manufacturing and agro-processing through the expansion of skill development programs. To keep the agricultural industry resilient and making economic contributions, innovation is essential, and it can only be achieved with the help of modern technology and strong market links. Improving institutional capacity building, eliminating bureaucratic inefficiency and corruption, and guaranteeing transparent policy execution are all critical goals of governance reforms. Securing competitiveness in export-oriented industries requires Bihar to broaden its export markets and adapt to world trade trends, which will boost global integration. Economic development that lasts and Bihar's participation in national programs like "Make in India" and "Digital India" depend on a political climate that is both stable and predictable, since this encourages investment and allows for consistent policies and long-term planning.

Where to Take Future Studies

Aligning with national and global development goals through rigorous analytical methodologies, future research is vital for establishing an economic framework for Bihar

that is robust, inclusive, and sustainable. Sustainable growth drivers, structural impediments, and sectorial dynamics that influence Bihar's long-term development trajectories can be identified through longitudinal examinations of the state's economic evolution. Policies that encourage regional convergence can be better informed by econometric and geographical studies of interstate inequalities, which will show the causes of Bihar's economic dispersion. To optimize future policy design, thorough evaluations of the effects of industry promotion, infrastructural investments, and fiscal incentives will be conducted utilizing approaches such as Propensity Score Matching and Difference-in-Differences. To ensure balanced growth, research on socioeconomic and environmental trade-offs will evaluate the effects of fast industrialization on pollution, community livelihoods, resource consumption, and integrated assessment models. By pursuing these lines of inquiry, Bihar will be able to cement its place in India's larger development plan and move closer to an economic future that is diverse, equitable, and sustainable.

References

- Bhattacharya D. "Bihar after Bifurcation: A Challenging Future". *Economic and Political Weekly*, 2000;35(43-44):3800–3804.
- Das Gupta C. "Unravelling Bihar's 'Growth Miracle'". *Economic & Political Weekly*, 2010, 52.
- Kansal ML, Kumar P, Kumar A. Impact of Flood and its Management – A Case Study of Bihar. *Int. J. of adv. Res.*,2017;5:1695-1706. <http://dx.doi.org/10.21474/IJAR01/3681>.
- Gupta CD. Unraveling Bihar's Growth Miracle. *Economic and Political Weekly*, 2010, 50-62.
- Santra S, Kumar R, Bagaria N. Structural change of Bihar economy during 1999 to 2010: a district-level analysis. *The International Journal of Humanities and Social Studies*, 2014, 2(1).
- Kumar D. Structural change, employment and economic growth in Bihar, India: A disaggregated sector-wise analysis,2020;7:187–196. https://doi.org/10.14445/23939125/IJEMSV_7I8P124.
- Sabreen M, Behera DK. Changing structure of rural employment in Bihar: Issues and challenges. *The Indian Journal of Labour Economics*,2020;63:833–845. <https://doi.org/10.1007/s41027-020-00279-6>.
- Sabreen M, Behera DK. Changing structure of rural employment in Bihar: Issues and challenges. *The Indian Journal of Labour Economics*,2020;63:833–845. <https://doi.org/10.1007/s41027-020-00279-6>.
- Sabreen M, Behera DK. Determinants of non-farm employment in rural Bihar. *Indian Journal of Economics and Development*,2021;17(4):831–839. <https://doi.org/10.35716/IJED/21157>.
- Singh A, Singh A. Trends and Determinants of Labour Force Participation in Bihar: Insights from PFLS data 2021-22. *International Research Journal of Modernization in Engineering Technology and Science*, 2023, 5(6). <https://www.doi.org/10.56726/IRJMETS41273>.
- Singh G. Access to non-farm employment in contemporary India: A study of Bihar and Punjab. *Social Change*,2020;50(4):532–547. <http://dx.doi.org/10.1177/0049085720957512>.
- Kumar D. Structural change, Employment and Economic growth in Bihar, India: A disaggregated sector-wise analysis. *International Journal of Economics and Management Studies*,2020;7(8):187-196. DOI:10.14445/23939125/IJEMS-V7I8P124.
- Sinha JK. Assessing the Impact of Sectoral Investment on Bihar's Economic Growth. *International Journal of Political Science*,2023;1(1):33-42.
- Sinha JK. "Revitalizing Bihar's Economy: A Sectoral Analysis of Agricultural and Allied Investments (1980-2021)". *The Journal of Income and Wealth*, 2023;45(1&2):100-117.
- Sinha JK, Sinha AK. Declining Contribution of Agriculture to the Indian Economy in the Post-Economic Reforms Period. *Asian Journal of Economics & Finance*,2023;5(1):61-85. DOI 10.47509 AJEF.2023.v.05.i.01.04.
- Sinha JK. Economies of the Factors Affecting Crop Production in India: Analysis Based on Cobb-Douglas Production Function. *Sumerianz Journal of Economics and Finance*,2023;6(1):10-18. DOI: <https://doi.org/10.47752/sjef.61.10.18>.
- Sinha JK. Reviving Resilience: Analyzing Agricultural and Allied Investments in Bihar Amidst the COVID-19 Pandemic (1980-2022). *Open Access Journal of Economic Research*,2024;1(1):1-13.
- Sinha JK. Contribution of Investment in Economic Growth of Major Sectors: With Focus on Agriculture & Allied Sector in Bihar. *Statistical Journal of the IAOS*, 2017;33:557-564.
- Sinha JK. Influence of technologies on the GDP growth rate from agriculture: A case study of sustaining economic growth of the agriculture sector in Bihar. *Statistical Journal of the IAOS*,2019;35:277–287.
- Sinha JK, Sinha AK. Sustainable Agricultural Development Under Influence Of Technology: A Case Study of Bihar. *Indian Journal of Applied Business and Economic Research*,2020;1(1):1-18.
- Sinha JK. Public Expenditure for Agriculture Development & the Economic Growth of Bihar (1981-2019). *Asian Journal of Economics & Finance*,2022;2(2):411-424. DOI 10.47509 AJEF.2022.v.04I04.01.
- Sinha JK, Sinha AK. Syndrome of Declining Economic Importance of Agriculture in Bihar (1960-2018). *Journal of Humanities, Arts and Social Science*,2022;6(1):1-15.
- Sinha JK. Factors Influencing Sustainable Agricultural Development In Bihar. *Indian Development Policy Review*,2022;3(1):47-65.
- Ministry of Statistics and Programme Implementation. Periodic Labour Force Survey (PLFS) 2022-23. Retrieved from https://www.mospi.gov.in/sites/default/files/publication_reports/AR_PLFS_2022_23N.pdf, 2022.
- Ahsan RN, Mitra D. Can the Whole Be Greater Than the Sum of Its Parts? Lessons from India's Growing Economy and Its Evolving Structure. *Structural Change, Fundamentals, and Growth: A Framework and Case Studies*, 2017, 39-79.
- NSSO. Employment and Unemployment Situation in India (July 2011- June 2012). New Delhi: Ministry of Statistics and Programme Implementation, Government of India, 2014.

27. Department of Economic Affairs, Government of India. *The Indian Economy: A Review*, 2024.
28. Ahmad F *et al.* Natural resources and environmental quality: exploring the regional variations among Chinese provinces with a novel approach. *Resour. Pol.*, 2022.
29. Ahmad M *et al.* The dynamic impact of natural resources, technological innovations and economic growth on ecological footprint: an advanced panel data estimation. *Resour. Pol.*, 2020.
30. Akar AU *et al.* Prediction of zenith tropospheric delay in GNSS observations using support vector regression. *Adv. Space Res.*, 2023.
31. Ali EB *et al.* Green economy implementation in Ghana as a road map for a sustainable development drive: a review. *Sci. Afr.*, 2021.
32. Cascetta E *et al.* Economic growth, transport accessibility and regional equity impacts of high-speed railways in Italy: ten years ex-post evaluation and future perspectives. *Transport. Res. Pol. Pract.*, 2020.
33. Chaturvedi S. The Economics of Sustainable Development: Challenges and Solutions. *Educational Administration Theory and Practice journal*, 2024;30(5):9061-9067. DOI:10.53555/kuey.v30i5.4497.
34. Suresh Kumar J, Shobana D. A Study on Strategies And Challenges of Sustainable Development Policy In India. *International Journal of Social Sciences & Economic Environment*,2024;8(2):67–81. DOI:10.53882/IJSSEE.2023.0802005.
35. Moroz NY, Antipova OV, Psareva NY, Lyapunsova EV, Matveeva NS. Strategies for Sustainable Development of Socio-Economic Systems. *Estudios de Economia Aplicada*, 2021, 39.
36. Rajgarhia P. The Impact of Political Instability on Economic Growth: A Comparative Study Between Gujarat and Bihar from 2010-2020. *International Journal of Social Science and Economic Research*, 2024, 9(9).
37. Alam S. Nearly failed education system of Bihar: a teacher's take. *Medium*, 2020.
38. Bihar Government. *Economic Survey 2021-22*. Bihar.gov.in, 2022.
39. Gulati A *et al.* Performance of Agriculture in Gujarat. *Revitalizing Indian Agriculture and Boosting Farmer Incomes*, 2021.
40. Keshri VR. COVID-19: Why does Bihar's public healthcare system struggle so? *The George Institute for Global Health*, 2020.
41. Wang F, Wong WK, Wang Z, Albasher G, Alsultan N, Fatemah A. Emerging pathways to sustainable economic development: An interdisciplinary exploration of resource efficiency, technological innovation, and ecosystem resilience in resource-rich regions. *Resources Policy*, 2023.
42. Padder AH, Mathavan B. Structural Transformation Path Across Indian States: Findings from Panel Data Analyses. *Munich Personal RePEc Archive*, 2022.
43. Soni S, Subrahmanya MB. Growth and Structural Change in the Indian Economy: An Analysis of Pattern, Determinants, and Outcomes. *Economic and Political Weekly*, 2020, 65-70.
44. Padder AH, Mathavan B. Structural Transformation Path Across Countries: Is It Systematic Pattern. *Design Engineering*,2021;7:12679-12687.
45. Mehrotra S, Parida JK. Stalled Structural Change Brings an Employment Crisis in India. *Ind. J. Labour Econ*,2021;64:281–308. <https://doi.org/10.1007/s41027-021-00317-x>.
46. Singh S, Parida JK, Awasthi IC. Employability and Earning Differentials Among Technically and Vocationally Trained Youth in India. *Ind. J. Labour Econ*,2020;63:363–386. <https://doi.org/10.1007/s41027-020-00222-9>.
47. Mehrotra S. Make in India': The Components of a Manufacturing Strategy for India. *Ind. J. Labour Econ*, 2020;63:161–176. <https://doi.org/10.1007/s41027-019-00201-9>.
48. Sundari S. Structural Changes and Quality of Women's Labour in India. *Ind. J. Labour Econ*,2020;63:689–717. <https://doi.org/10.1007/s41027-020-00245-2>.