

INDUSTRIAL TRANSFORMATION IN INDIA: OPPORTUNITIES AND CHALLENGES OF THE MAKE IN INDIA PROGRAM

Dr Himanshu Rastogi,

Professor

Amity Business School,

Amity University Uttar Pradesh Lucknow campus, India

Abstract: The manufacturing sector plays a crucial role in economic development by generating employment, enhancing productivity, and promoting exports. In India, the sector has long been recognized as a key driver of structural transformation and industrial growth. The Government of India launched the Make in India initiative in 2014 with the objective of transforming the country into a global manufacturing hub, attracting foreign investment, boosting domestic production, and creating employment opportunities. This research paper examines the growth of the manufacturing sector in India and evaluates the impact of the Make in India initiative on industrial development. The study reviews existing literature, analyzes policy initiatives, and evaluates the current status and progress of manufacturing in India. It further identifies major challenges such as infrastructure gaps, technological limitations, skill shortages, and global competition that affect the sector's growth. The paper concludes by offering policy suggestions to strengthen manufacturing competitiveness and achieve the government's target of increasing the manufacturing share of GDP to 25 percent. The findings indicate that although the Make in India initiative has improved investment flows, exports, and industrial infrastructure, significant reforms and coordinated policy efforts are still required to fully realize India's manufacturing potential.

Keywords: Manufacturing sector, Make in India, industrial growth, economic development, foreign investment, industrial policy

I. INTRODUCTION

Manufacturing has historically played a vital role in the economic development of nations by increasing productivity, creating employment opportunities, and promoting technological advancement. Industrialization is widely regarded as a crucial step in the transition from an agrarian economy to a modern, diversified economy. In developing countries such as India, manufacturing is particularly important because it has the potential to absorb a large labour force and stimulate economic growth.

India's manufacturing sector contributes approximately 15–17 percent of the country's Gross Domestic Product (GDP) and employs more than 27 million workers across various industries including automotive, pharmaceuticals, electronics, textiles, chemicals, and engineering goods. The sector is expected to become a major engine of growth as India seeks to strengthen its industrial base and increase its share in global manufacturing.

Recognizing the importance of manufacturing, the Government of India launched the Make in India initiative in September 2014. The initiative aimed to promote India as a global manufacturing hub by encouraging domestic and foreign investment, improving ease of doing business, and enhancing infrastructure and skill development. The program targeted 25 priority sectors such as automobiles, defence manufacturing, electronics, renewable energy, and biotechnology.

The initiative also sought to increase the share of manufacturing in India's GDP from around 16 percent to 25 percent while creating millions of employment opportunities. Over the years, various policy measures such as Production Linked Incentive (PLI) schemes, industrial corridors, and infrastructure development have been implemented to support manufacturing growth.

Despite these efforts, India still faces several structural challenges that limit the sector's expansion. This research paper explores the progress made in the manufacturing sector since the launch of Make in India and examines the issues and opportunities that influence its future growth.

II. REVIEW OF LITERATURE

The role of manufacturing in economic development has been widely discussed in economic and industrial policy literature. Scholars have long emphasized that industrialization and manufacturing expansion are fundamental drivers of economic transformation, productivity growth, and employment creation.

Early development economists highlighted the importance of manufacturing as a catalyst for structural change in national economies. Classical growth theories emphasize that as economies develop, labour and resources shift from agriculture to manufacturing and later to services. Studies on long-term economic growth have shown that countries with strong manufacturing sectors tend to experience faster industrialization and higher income levels.

Research on India's industrial development suggests that despite significant economic progress after the economic reforms of 1991, the country's manufacturing sector has grown more slowly compared with other emerging economies such as China and South Korea. According to studies on manufacturing employment trends, India's industrial sector has often been characterized by relatively low employment generation despite growth in output, indicating structural constraints within the sector.

Several scholars have examined the macroeconomic role of manufacturing in India. Studies analysing the sector's contribution to GDP emphasize that manufacturing plays a vital role in promoting economic growth, technological advancement, and export development. However, researchers note that the share of manufacturing in India's GDP has remained relatively stagnant over the past few decades, which has limited the sector's potential to drive large-scale industrial employment.

A number of studies have also explored the structural weaknesses of India's manufacturing sector. Research examining industrial performance highlights issues such as low productivity, infrastructure deficiencies, regulatory constraints, and inadequate technological adoption. These factors have prevented the manufacturing sector from achieving the growth rates observed in East Asian economies. Scholars argue that addressing these structural issues is essential for strengthening India's industrial competitiveness.

Another important area of research focuses on the role of manufacturing strategies and organizational practices in improving industrial performance. Empirical studies of Indian manufacturing firms have found that technological improvements, process optimization, and operational strategies significantly influence productivity and efficiency. Research based on surveys of manufacturing firms indicates that technical factors such as advanced manufacturing technologies and production systems have a stronger impact on performance than purely managerial factors.

Manufacturing competitiveness has also been examined through the lens of industrial strategy and operational management. A survey of Indian manufacturing industries found that companies increasingly prioritize quality improvement, innovation, and rapid product development in order to compete in global markets. These strategies are particularly evident in sectors such as automobiles and electronics, where firms have adopted modern manufacturing technologies and integrated management systems.

The literature also highlights the importance of Micro, Small, and Medium Enterprises (MSMEs) in India's manufacturing ecosystem. MSMEs are considered the backbone of the industrial sector because they contribute significantly to industrial production, employment generation, and export promotion. Research on MSMEs indicates that these enterprises account for a substantial share of manufacturing output and value addition in the Indian economy. However, many MSMEs face challenges such as limited access to finance, outdated technology, and low levels of innovation.

Innovation and technological advancement have been identified as key drivers of manufacturing competitiveness. Studies examining innovation in MSMEs suggest that investment in research and development, technology adoption, and process innovation can significantly enhance productivity and global competitiveness. At the same time, scholars note that many Indian manufacturing firms still lag behind global standards in technological capabilities.

Another stream of literature examines the impact of government policies and industrial initiatives on manufacturing growth. One of the most widely discussed initiatives in recent years is the Make in India program launched in 2014. The initiative was designed to promote India as a global manufacturing hub by encouraging domestic production, attracting foreign investment, and improving the business environment. The program focuses on twenty-five key sectors, including automobiles, defence manufacturing, electronics, and renewable energy.

Studies evaluating the Make in India initiative suggest that the policy has helped improve investor confidence and attract foreign direct investment in several industrial sectors. Research examining the impact of the initiative indicates that it has contributed to expanding industrial infrastructure, promoting manufacturing clusters, and strengthening India's position in global supply chains.

However, scholars also emphasize that the success of the initiative depends on addressing several structural challenges within the manufacturing sector. These challenges include inadequate infrastructure, skill shortages, regulatory complexity, and high logistics costs. Without resolving these issues, the initiative may not achieve its full potential in transforming India into a global manufacturing hub.

Another growing area of research focuses on workplace conditions and occupational safety in manufacturing industries. Studies highlight that improving workplace safety and health standards is essential for sustainable industrial development. New technological approaches such as predictive analytics and data-driven safety systems are increasingly being explored to enhance occupational safety in industrial environments.

Overall, the literature indicates that while India possesses considerable manufacturing potential, the sector faces several structural and institutional challenges that limit its growth. Government initiatives such as Make in India have created new opportunities for industrial expansion, but achieving long-term manufacturing competitiveness requires sustained policy reforms, technological innovation, infrastructure development, and skill enhancement.

The existing literature provides valuable insights into the factors influencing manufacturing growth in India. However, there remains a need for comprehensive studies that evaluate the effectiveness of industrial policy initiatives and examine the evolving dynamics of India's manufacturing sector in the context of global economic changes.

III. OBJECTIVES OF THE STUDY

The major objectives of this research paper are:

- To examine the growth and significance of the manufacturing sector in India.
- To analyze the objectives and policy framework of the Make in India initiative.

- To evaluate the current status and progress of manufacturing under the initiative.
- To identify key issues and challenges affecting manufacturing growth in India.
- To suggest policy measures for strengthening the manufacturing sector.

IV. RESEARCH METHODOLOGY

This research paper is based on secondary data and qualitative analysis. The study relies on information collected from government reports, academic journals, industry publications, policy documents, and research articles.

Data sources include reports from organizations such as the Ministry of Commerce and Industry, India Brand Equity Foundation (IBEF), economic policy studies, and scholarly research papers. Relevant statistical information related to manufacturing growth, GDP contribution, foreign investment, and employment trends has been analyzed to evaluate the impact of the Make in India initiative.

The research methodology involves:

- Review of academic literature and policy reports
- Analysis of statistical data related to manufacturing growth
- Evaluation of government initiatives and industrial policies
- Identification of key challenges and policy implications

V. CURRENT STATUS AND PROGRESS OF THE MAKE IN INDIA INITIATIVE

The Make in India initiative, launched in 2014, was designed to transform India into a global manufacturing hub by encouraging domestic production, attracting foreign investment, improving infrastructure, and enhancing technological capabilities. Over the past decade, the initiative has contributed to notable progress in investment inflows, industrial output, and sectoral development. However, its achievements remain mixed, with several structural challenges still affecting manufacturing growth.

5.1. Growth in Foreign Direct Investment (FDI)

One of the most significant achievements of the Make in India initiative has been the rise in foreign direct investment in the manufacturing sector. Government data indicates that FDI inflows in manufacturing increased by approximately 69% over the last decade, reaching about US\$165 billion between 2014 and 2024.

Annual FDI inflows into India also increased significantly, rising from about US\$45 billion in 2014–15 to around US\$83 billion by 2021–22.

These investments have come from multiple countries and sectors such as electronics, automobiles, pharmaceuticals, defence manufacturing, and renewable energy.

5.2. Expansion of Manufacturing Production

Manufacturing production has expanded in several industries since the introduction of Make in India. The sector has benefited from policy measures such as the Production Linked Incentive (PLI) scheme, which provides financial incentives for domestic manufacturing across 14 sectors.

The PLI schemes have attracted investment commitments of about ₹3.65 lakh crore, with realized investment of around ₹62,500 crore, generating incremental production worth more than ₹6.75 lakh crore and creating about 3.25 lakh jobs.

In electronics manufacturing, India has moved from being largely import-dependent to becoming a major exporter of mobile phones and telecom equipment.

5.3. Growth in Industrial Output and Manufacturing Activity

Recent industrial data shows continued expansion in manufacturing activity. India's Index of Industrial Production (IIP) recorded approximately 4.8% year-on-year growth in early 2026, with manufacturing contributing significantly to the increase.

The expansion of industrial infrastructure, manufacturing clusters, and industrial corridors has also supported the growth of production activities across different states.

5.4. Development of Key Manufacturing Sectors

Several sectors have shown significant growth under the Make in India initiative:

- **Electronics manufacturing:** Mobile phone production increased dramatically, turning India into one of the major exporters of smartphones.
- **Automobile and auto components:** Investment and production have expanded with support from PLI incentives.
- **Pharmaceuticals and medical devices:** India has strengthened its position as a global supplier of generic medicines.
- **Defence manufacturing:** Increased emphasis on domestic production and export of defence equipment.
- **Renewable energy equipment:** Policies supporting domestic manufacturing of solar modules and related technologies.

These sectors have attracted multinational corporations and strengthened India's integration into global supply chains.

5.5. Infrastructure and Industrial Ecosystem Development

The government has implemented several initiatives to support manufacturing development, including:

- **Industrial Corridors** such as the Delhi–Mumbai Industrial Corridor.

- **PM Gati Shakti National Master Plan** to improve logistics and reduce transportation costs.
- **National Single Window System** to simplify regulatory approvals.
- **Semicon India programme** to promote semiconductor manufacturing.

Such initiatives aim to build a strong industrial ecosystem and enhance India's manufacturing competitiveness.

5.6. Employment Generation

The expansion of manufacturing activities has also contributed to job creation. Industrial projects and government schemes have generated employment opportunities across several sectors. For example, PLI-related investments alone have created hundreds of thousands of jobs, with more employment expected as projects reach full production capacity.

State-level industrial development has also contributed to employment. In some states, thousands of new factories and industrial units have been established, employing large numbers of workers in sectors such as electronics, textiles, and automobiles.

5.7. Manufacturing Share in GDP

Despite improvements in investment and industrial activity, the share of manufacturing in India's GDP has remained around 15–17 percent, which is below the government's long-term target of 25 percent. Achieving this target will require sustained policy support, technological advancement, and infrastructure development.

5.8. Emerging Global Manufacturing Role

India is increasingly seen as an alternative manufacturing destination as global companies diversify supply chains beyond traditional manufacturing hubs. Multinational firms have expanded their production facilities in India, particularly in electronics and automotive manufacturing. India is also expected to significantly increase its manufacturing exports, potentially reaching US\$1 trillion in exports by 2030 if current industrial growth continues.

VI. ISSUES AND CHALLENGES IN THE MAKE IN INDIA INITIATIVE

The Make in India initiative was introduced to strengthen India's manufacturing sector and position the country as a global production hub. Although the initiative has helped attract investment and improve the policy environment for industry, several structural and operational challenges continue to affect its effectiveness. Addressing these issues is essential for ensuring that the initiative achieves its long-term objectives of expanding manufacturing output, increasing employment opportunities, and enhancing global competitiveness.

6.1. Infrastructure Limitations

One of the major obstacles to the success of the Make in India initiative is the inadequacy of infrastructure in many parts of the country. Manufacturing industries rely heavily on efficient transportation networks, reliable electricity supply, and modern logistics systems. In India, high logistics costs and uneven infrastructure development increase production expenses and reduce the competitiveness of domestic manufacturers in international markets. Although the government has undertaken several large-scale infrastructure projects such as industrial corridors and freight corridors, many regions still lack adequate connectivity and industrial facilities.

6.2. Skill Shortages and Workforce Challenges

The manufacturing sector requires a workforce that is capable of operating advanced machinery, understanding production technologies, and adapting to modern industrial processes. However, a mismatch often exists between the skills possessed by the labour force and the requirements of manufacturing industries. Many workers do not have adequate technical training, which creates difficulties for industries that depend on specialized skills. Strengthening vocational education and expanding skill development programs are therefore essential to support the growth of manufacturing activities.

6.3. Technological Gaps

Another challenge faced by the manufacturing sector is the limited adoption of advanced technology, particularly among small and medium enterprises. Many firms operate with outdated equipment and traditional production techniques, which restricts productivity and efficiency. Low investment in research and development further slows technological progress. Without continuous innovation and modernization, it becomes difficult for domestic manufacturers to compete with global firms that use advanced production systems.

6.4. Complex Regulatory Environment

Despite improvements in the business environment in recent years, regulatory procedures can still be complex for many manufacturing enterprises. Companies may need to obtain multiple licenses and approvals from different government agencies before establishing or expanding their operations. These administrative processes can delay project implementation and increase compliance costs. Simplifying regulatory frameworks and ensuring transparent governance can help attract greater domestic and foreign investment.

6.5. Financial Constraints for Small Enterprises

Micro, small, and medium enterprises play a vital role in India's manufacturing ecosystem, contributing significantly to production and employment. However, these enterprises frequently face financial constraints, including limited access to credit and high borrowing costs. Without adequate financial support, many small firms are unable to invest in technology upgrades or expand their production capacity. Improving access to finance through supportive credit policies and financial institutions is therefore important for strengthening the manufacturing sector.

6.6. Global Competition

India's manufacturing sector faces strong competition from other countries that have well-established industrial bases and efficient production systems. Nations such as China, Vietnam, and South Korea have developed strong manufacturing ecosystems supported by advanced infrastructure, skilled labour, and large-scale industrial clusters. Competing with these economies requires significant improvements in productivity, innovation, and cost efficiency within Indian industries.

6.7. Regional Imbalance in Industrial Development

Industrial development in India is unevenly distributed across different states. Manufacturing activities are concentrated in a few regions that have better infrastructure, investment opportunities, and policy support. Many other states remain relatively underdeveloped in terms of industrial growth. This regional imbalance limits the overall potential of the manufacturing sector and reduces the inclusive impact of the Make in India initiative.

6.8. Environmental and Sustainability Concerns

Rapid industrial expansion may also create environmental challenges, including increased pollution, higher energy consumption, and pressure on natural resources. Sustainable manufacturing practices are therefore necessary to ensure that industrial growth does not harm environmental quality. Encouraging the adoption of green technologies, renewable energy sources, and environmentally responsible production processes can help achieve a balance between industrial development and environmental protection.

VII. SUGGESTIONS AND POLICY RECOMMENDATIONS

To accelerate manufacturing growth and achieve the objectives of Make in India, several strategic measures can be implemented.

First, infrastructure development must be strengthened through investments in industrial corridors, logistics networks, and energy supply systems. Efficient transport and logistics systems can significantly reduce production costs and improve global competitiveness.

Second, skill development programs should be expanded to create a workforce capable of meeting the technological demands of modern manufacturing. Collaboration between industry and educational institutions can help bridge the skill gap.

Third, innovation and research activities should be promoted through increased investment in research and development. Government incentives for technology adoption and industrial innovation can enhance productivity and competitiveness.

Fourth, regulatory reforms should continue to simplify business procedures and reduce administrative delays. Transparent and efficient governance systems can attract greater domestic and foreign investment.

Fifth, support for micro, small, and medium enterprises should be strengthened through financial assistance, technology transfer programs, and access to global markets.

Finally, balanced regional development policies should encourage industrial growth in less developed regions through infrastructure investment and special economic incentives.

VIII. CONCLUSION

The manufacturing sector remains a critical component of India's economic development strategy. It has the potential to generate large-scale employment, enhance productivity, and increase export competitiveness. The Make in India initiative represents a significant policy effort aimed at transforming India into a global manufacturing hub.

Over the past decade, the initiative has contributed to improved investment flows, expansion of industrial infrastructure, and increased manufacturing exports. Government policies such as production-linked incentives and industrial corridor development have strengthened the manufacturing ecosystem.

However, the sector still faces several structural challenges including infrastructure gaps, technological limitations, skill shortages, and global competition. Addressing these issues requires coordinated policy interventions, sustained investment, and institutional reforms.

If these challenges are effectively managed, the manufacturing sector can play a transformative role in India's economic growth and help achieve the long-term goal of becoming a leading industrial power in the global economy.

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