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Being Bangalored: Tracing the Trajectory of Bangalore's Multidimensional Growth OverTime

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ABSTRACT

Bangalore's growth into a metropolitan city is often attributed mainly to the rise of IT and IT-related industries. However, the contributions of the Mysore Rulers, the Second Five-Year Plan, and economic liberalization also played significant roles in the growth of Bangalore. The Mysore Rulers invested in education and industries, while the Second Five-Year Plan focused on developing Public Sector Undertakings and rapid industrialization. These efforts laid the groundwork for entrepreneurs to establish companies in various industries, including IT. The New Economic Policy further accelerated this growth path by liberalizing the economy and opening markets to foreign and private players. This combination of historical investments and policy changes turned Bangalore into a hub of public sector undertakings, providing better jobs, housing and quality education for the middle class. As a result, many people in Karnataka found opportunities in Multi-National Companies, leading to the city's overall growth and development into a major metropolitan area.

Key Words: Industrial Areas, Special Economic Zones, Investment in Infrastructure

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Introduction

Americans, whenever they lost their jobs often said they had been “Bangalored” due to outsourcing of business operations. This term, coined by Americans, refers to companies moving operations to India, particularly Bangalore, for saving money. Known as the Silicon Valley of India, Bangalore has built a strong reputation over four decades, with many IT and BT-related companies among others, earning India its sobriquet "Back Office of the World." As Karnataka's main hub of administration, culture, commerce, industry and knowledge, Bangalore is expected to become the fastest-growing economy by 2035, with a GDP growth rate of 8.5 per cent per year, according to Oxford Economics (Sudhira & Nagendra, 2013).

Bangalore's vibrancy was fuelled by institutions like the Indian Institute of Science (IISc) established in 1909 and the University College of Engineering (UVCE) in 1917. Graduates from these institutions took advantage of employment opportunities available in Public Sector Undertakings (PSUs) such as Hindustan Aeronautics Limited (1940), Indian Telephone Industries (1948), Hindustan Machine Tools (1953) and Bharat Electronics Limited (1954) for their career growth (Bala Subrahmanya, 2017) (Table 1). Additionally, many multinational engineering, technology, automobile and aerospace companies, including Robert Bosch GmbH, began operations in India in 1951 and set up factories in Bangalore in 1953 (Table 2) (Bala Subrahmanya, 2017).

Over time, many multinational automobile companies like Hitachi, SKF, Mercedes, Toyota, Volvo and General Motors have set up their production units and R&D centers in Bangalore and nearby areas,either through undertaking joint ventures with Indian companies or by establishing their own facilities. This trend also has extended to aerospace companies like Boeing, Airbus and Liebherr, which have set up operationunitsin the last two decades (Table 2).

The city of Bangalore is believed to have been founded way back in 1537 by Kempe Gowda of the Yelahanka Nada Prabhu dynasty, descended from the dynasty’s founder, Rana Bhaire Gowda. The city was ruled by several dynastic kingdoms, including the Gangas, the Cholas, the Hoysalas and the Vijayanagara Empire. Later, the administration shifted from the Yelahanka Nada Prabhus to the Bijapur Sultanate, which gifted the city to Maratha general Shahji Bhonsle. Bangalore was also ruled by Hyder Ali and Tipu Sultan from 1758 to 1799, before it was taken over by the British (Nagendra, H. 2016).

Bangalore, often called the "Silicon Valley of India," is a major hub of the global Information Technology (IT) sector, including software development and outsourced business processes. It is interesting to note that earlier, it was known as the capital of India's Public Sector Enterprises (PSEs), the reason being, after independence, the Indian government established many PSEs across the country, with Bangalore

mainly chosen for the establishment of high-tech companies in the fields of defence, telecommunications, aerospace research and machinery development. This made it the "capital" of the Public Sector Enterprises in India, with the headquarters of many major Central PSEs housed (Carlson, H. J. 2018).

Objectives:

1. To assess the contributions of the Wadiyar Dynasty and the Mysore State to Bangalore's Growth.
2. To highlight the investments made in education and industries in Bangalore and nearby areas during different periods: Pre-Independence, Post-Independence and after the New Economic Policy, showing how these investments helped the city's growth over time.
3. To highlight recent major investments in infrastructure and industries in the Bangalore Metropolitan Region, including Bangalore Urban, Bangalore Rural, Ramanagara and Kolar districts.

The study is based on secondary data. Information has been sourced from published sources such as government reports, research articles, books and official databases.

Evolution of Public Sector Undertakings and Research Institutes in Bangalore

Table 1: Major Public Sector Undertakings and Research Institutes established overtime in Bangalore

Year	Automobile Production Companies
1940	Hindustan Aeronautics Limited
1942	Coffee Board of India
1948	Indian Telephone Industries Limited
1953	Hindustan Machine Tools Limited
1954	Bharat Electronics Limited
1959	National Aerospace Laboratories
1959	Gas Turbine Research Establishment
1960	Central Power Research Institute
1962	Central Manufacturing Technology Institute
1962	Electronics and Radar Development Establishment
1964	Bharat Earth Movers Limited
1969	Indian Space Research Organisation
1984	Rail Wheel Factory, Yelahanka Bangalore
1986	Defence Avionics Research Establishment
1988	Council of Scientific and Industrial Research – Fourth Paradigm Institute

Source: Compiled by the author from various sources

Table 2: Automobile Production Hub in Bangalore Metropolitan Region overtime

Year	Automobile Production and Aerospace Industries (includes Manufacturing Units or R&D centers)
1953	Robert Bosch GmbH
1961	Tata Hitachi Construction Machinery Company Pvt Ltd
1989	SKF India Limited
1994	Mahindra Electric Mobility Limited (formerly Reva Electric Car Company)
1995	Tyco Electronics Systems India Private Limited
1996	Mercedes-Benz R&D India (MBRDI)
1997	Toyota Kirloskar Motor Private Limited
1997	ABB India, Hoskote – Bangalore Rural
1998	Volvo Group Trucks
1998	Larsen & Toubro Limited
2003	General Motors India Private Limited
2007	Tata Advanced Systems Limited (TASL)
2009	Boeing Research & Technology - Bangalore
2013	Ather Energy
2013	Honda Motorcycle & Scooters India Private Limited - Narsapura, Kolar
2015	Scania AB
2015	Airbus BizLab India
2017	Liebherr Aerospace
2018	ABB India – Smart Factory, Nelamangala – Bangalore Rural

Source: Compiled by the author from various sources

Bangalore's diverse growth: The role of different actors

During his visit to Bangalore, India's then Prime Minister, Jawaharlal Nehru, described it as a glimpse into India's future, noting its concentration of science, technology and public sector industries. These Public Sector Enterprises (PSEs) not only provided employment, but also ensured financial security, housing, food, healthcare, education and social welfare. This contributed to the growth of Bangalore's middle class, supported by industrial townships like Hindustan Aeronautics Limited (HAL), Bharat Electronics Limited (BEL), Hindustan Machine Tools Limited (HMT) and Indian Telephone Industries Limited (ITI) built between 1961 and 1971. Over time, Bangalore transitioned into a neoliberal city, witnessing a shift from public sector dominance to the rise of new economic forces driven by global financial capital. The foundation laid by the public sector played a crucial role in fostering a scientific, technological, and managerial ecosystem, with enduring impacts, both locally and across India (Carlson, 2018).

Bangalore's transformation from being a town to becoming a bustling metropolis could be attributed to several key events. These include the shift of the State Capital from Mysore after India gained independence, the merger of the Cantonment area with the city, the establishment of Public Sector Undertakings, the growth of textile industry and most significantly, the development of IT and related industries (Verma et al., 2017). The construction of the Bangalore Metro began in 2007, withvarious

stations functioning from 2011 onwards, greatly improving connectivity for people employed in the IT and IT-related sectors (Sharma & Newman, 2018).

The automobile industry has been playing a crucial role in the economies of many large developing countries, contributing significantly to manufacturing output and employment. It has strong linkages with other industries, particularly in terms of consumption of materials like iron, steel products and aluminium alloysas intermediate products, which further boost its impact on economic development (Kumar & Subrahmanya, 2010).

Until the 1990s, the Indian automobile industry was shielded from international competition. However, with the government endingthe 'License Raj' in 1993 following economic liberalisation, global players began entering the market, intensifying competition significantly. Although automobile manufacturing units have spread across India, they are mainly concentrated in Chennai and Bangalore in the south, Pune in the west, the National Capital Region in the north, and Jamshedpur and Kolkata in the east (Nag & De, 2020).

The automobile industry is undergoing significant changes globally, with a growing number of firms and expansions. Major players such as Honda, Toyota, Suzuki, Hyundai, General Motors, Ford, Daimler Chrysler and Fiat are expanding into industrializing economies like Southeast Asia, China and India (Kumar & Subrahmanya, 2010). This growth is accompanied by increased subcontracting relationships between these global automobile companies and local small and medium enterprises (SMEs) in their respective economies.

Bangalore has also become a significant hub of the Indian aerospace industry, driven by increased demand for aircraft service domestically due to a rapid growth in air travel, the presence of R&D companies and ongoing outsourcing of projects to these firms. Over the past two decades, major companies like Boeing, Airbus, and Liebherr Aerospace have established important facilities in Bangalore. Boeing opened its Bangalore Research and Technology Center, Airbus launched the Airbus Engineering Centre India (AECI) and Liebherr Aerospace established a regional office for supporting Indian aircraft operators and manufacturers. Bangalore's abundance of engineering colleges and management schools ensures that graduates have ample opportunities in this sector (Shekar & Raghavendra, 2015).

The role of Wadiyar Dynasty and the Mysore State in shaping Bangalore's growth

John Sankey, the Lord Chancellor of Great Britain and a human rights activist, declared at the First Round Table Conference in London in 1930 that "Mysore is the best-administered state in the world." This statement was made because of the remarkable progress made in various fields during the period from 1881 to 1950. These advancements laid the groundwork for Karnataka's emergence as an industrial and Information Technology hub.

The rulers of Mysore always emphasized the importance of education for modernization. During the reigns of Chamarajendra Wadiyar X, Krishnaraja Wadiyar II, Maharaja Krishnaraja Wadiyar IV and Jayachamarajendra Wadiyar, several educational institutions were established across the state with their support (Mysore and the Making of a Modern Science Institution).

Table 3: Institutions and Universities established by Mysore Rulers

Year	Institutions/Universities
1885	Department of Archaeology
1889	Maharaja's College - Mysore
1891	Oriental Research Institute - Mysore
1906	Hardwicke School of Commerce
1909	Indian Institute of Science - Bangalore
1913	Mysore Agricultural Residential School – Now known as the University of Agricultural Sciences, Bangalore
1916	University of Mysore
1916	Yuvaraja's College – Mysore
1917	University Visvesvaraya College of Engineering – Bangalore
1917	Maharani's Science College for Women – Mysore
1921	Government Science College - Now known as Government Arts and Science College)- Bangalore
1924	Mysore Medical College
1925	National Institute of Mental Health and Neurosciences (NIMHAMS) – Bangalore
1934	Raman Research Institute - Bangalore
1938	Maharani's College for Women – Bangalore
1943	Sri Jayachamarajendra Polytechnic, Bangalore
1950	Central Food Technological Research Institute - Mysore

Source: Compiled by the author from various sources

Under the guidance of Maharaja Krishnaraja Wadiyar and his advisor M. Visvesvaraya, Mysore undertook several initiatives towards enhancing higher education, with a specific focuson technology and sciences. In 1905, the Mysore government persuaded J N Tata to establish the Indian Institute of Science in Bangalore, supported by a land grant and an annual subsidy of Rs. 50,000. These efforts contributed significantly towards the production of generations of skilled engineers and scientists in the state,besides fostering a conducive environment for valuable researchthatin the course of time led to significant scientific and technological innovations. These strategic decisions were in Bangalore's (now Bengaluru) development and its eventual global recognition (Kadekodi et al., 2007).

The Wadiyars were instrumental in establishing numerous educational institutions and universities across the state. They also supported training centers, hostels for all communities, scholarships for disadvantaged groups and provided free books and slates.

Table 4: Major achievements of Institutions and Universities established by Mysore Rulers

Indian Institute of Science – Bangalore (now Bengaluru)	• IISc (101-125) is the highest-ranked Indian Institute in the Rankings in annual World Reputation Rankings 2022 by Times Higher Education (From World's Top 200 most prestigious universities). • Scientists and researchers have filed 585 patents in the year 2022 making it an average of two patents every three days.
University Visvesvaraya College of Engineering – Bangalore	• First Engineering College of Karnataka has recently completed 100 years • Karnataka Government's assurance to develop the institution on par with the Indian Institute of Technology.
Central Food Technological Research Institute - Mysore	• 9 CFTRI researchers in Stanford database of top scientists – Among the world's top 2% scientists. • Council of Scientific and Industrial Research – CFTRI currently has a portfolio of 108 Indian and 77 International patents
University of Agricultural Sciences, Bangalore	• 306 high-yielding crop varieties/hybrids in different crops – released since inception
National Institute of Mental Health and Neurosciences (NIMHANS) – Bangalore	• Declared as an Institute of National Importance
Raman Research Institute - Bangalore	• Alumnus –Anna Mani – Weather Woman of India • Quantum Information and Computing (QuIC) lab

Source: From official websites of the Institutions and Universities and various other sources

Table 4 highlights the notable achievements of institutions and universities established by the Mysore rulers. The Indian Institute of Science (IISc) in Bangalore stands out as India's highest-ranked institute in the Times Higher Education World Reputation Rankings 2022,withresearchers filing 585 patents in 2022 alone. University Visvesvaraya College of Engineering, marking its centenary, is poised for further development comparable to Indian Institute of Technology standards, as assured by the Karnataka government. The Central Food Technological Research Institute (CFTRI) in Mysore boasts of its nine researchers featuring in Stanford's top scientists' database,while holding a significant portfolio of

national and international patents. The University of Agricultural Sciences in Bangalore has released 306 high-yielding crop varieties, while NIMHANS in Bangalore has been declared an Institute of National Importance. Raman Research Institute in Bangalore, known for its Quantum Information and Computing lab, highlights Anna Mani as a distinguished alumna, recognized as the "Weather Woman of India." These institutions are enhancing not only Karnataka's and India's global reputation, but also are upholding standards of quality education.

Way back in 1881, Diwan Rangacharluhad emphasized the importance of balancing agricultural and manufacturing industries for a country's prosperity and also the importance of development of various industries for the nation's well-being. Under Krishnaraja Wadiyar IV's leadership, the State of Mysore earned recognition as a "Model State" among Indian princely states, focusing on state capitalism towards drivingindustrial development (Raj, 2015).

Table 5: Major developmentinitiativesin and around Bangalore during the rule of Wadiyars (Pre-Independence)

Year	Key Initiations
1902	Hydroelectric project at Shivanasamudra Falls
1903	Minto Eye Hospital – Bangalore
1905	Bangalore becomes the first city in Asia to get electric street lights
1909	State Bank of Mysore
1912	Karnataka Silk Industries Corporation Limited (KSIC)
1915	Kannada Sahitya Parishat
1916	Bangalore Printing Publishing Company
1916	Mysore Chamber of Commerce
1916	Government Sandalwood Oil Factory – Bangalore
1918	Mysore State Railways (MSR)
1918	The Mysore Chrome Tanning Company Limited – Mysore
1924	Krishna Raja Sagar (KRS) dam
1928	Krishna Rajendra Market (KR Market) – Bangalore
1929	Krishna Rajendra Textile Mills (KR Mills)
1933	Bangalore Town Hall – Bangalore
1933	Mysore Sugar Mills – Mandya
1933	Thippagondanahalli Reservoir (Chamarajasagar/ TG Halli Dam)
1934	Vani Vilas Women and Children Hospital – Bangalore
1936	Mysore Lamps – Bangalore
1937	Mysore Paints and Varnish Limited
1939	Glass and Porcelain Factory – Hesaraghatta, Bangalore

Source: Compiled by the author from various sources

Table 5 points to some of the significant developmentinitiatives undertaken in and around Bangalore during the rule of Wadiyars before India's independence. These include pioneering projects such as the Shivanasamudra Falls Hydroelectric Project in 1902, which marked Asia's first hydroelectric power

generation, providing essential electricity for industrial and residential uses. The establishment of Minto Eye Hospital in 1903, one of the world's oldest specialized eye care centers, advanced public health care service in Bangalore and beyond. Bangalore also became the first Asian city with electric street lights introduced in 1905, setting a precedent for urban modernization and safety enhancements. Other key initiatives included founding the State Bank of Mysore in 1909, which bolstered financial stability and supported economic growth and the Karnataka Silk Industries Corporation Limited in 1912, promoting the renowned Mysore silk industry. Infrastructure projects like the Krishna Raja Sagar Dam in 1924 and Thippagondanahalli Reservoir in 1933 significantly improved irrigation and water supply, vital for agriculture and urban development. These initiatives laid a strong foundation for Bangalore's industrial progress, economic vitality and improved living standards, while showcasing the visionary leadership of the Wadiyars during that era.

Table 6: Major achievements of Key Initiations established during Wadiyars ruling

Hydroelectric project at Shivanasamudra Falls	• First hydro-electric power stations in Asia
Minto Eye Hospital	• One of the world's oldest specialised ophthalmology hospitals
Karnataka Silk Industries Corporation Limited (KSIC)	• Geographical Indication Registration (GI – 11) for 'Mysore Silk'
Bangalore Printing Publishing Company	• Produces 18 lakh calendars each year and valuedat nearly Rs. 200 crore
Krishna Raja Sagar (KRS) dam	• The main source of irrigation in Mysore and Mandya • The main source of drinking water for Mysore, Mandya and Bangalore • Bangalore alone receives 910 MLD
Krishna Rajendra Market (KR Market) – Bangalore	• One of the biggest flower markets in Asia • The first locality in the whole of Asia to get electricity
Thippagondanahalli Reservoir (Chamarajasagar/ TG Halli Dam)	• The main source of drinking water for Bangalore from the 1950s to 1970s. • In the 1950s the dam had the potential to supply 148 MLD to Bangalore
Mysore Paints and Varnish Limited	• The only company in India authorised to produce indelible ink used in elections • Indelible ink is exported to countries like Thailand, Singapore, Nigeria, Malaysia, South Africa and Afghanistan

Source: Compiled by the author from various sources

Table 6 details the remarkable achievements of key initiatives established during the Wadiyars' rule in Bangalore, highlighting their enduring significance. The Hydroelectric project at Shivanasamudra Falls, initiated in 1902, was a pioneering effort in Asia, revolutionizing power generation and supporting industrial and residential electricity needs. Minto Eye Hospital, founded in 1903, has maintained its

status as one of the world's oldest specialized eye care institutions, contributing significantly to public health by addressing eye-related ailments. The completion of the Krishna Raja Sagar (KRS) dam in 1924 transformed the agricultural prospects of farmers in Mysore and Mandya, ensuring reliable irrigation and securing vital drinking water supplies for Bangalore. These achievements underscore the Wadiyars' visionary leadership and their pivotal role in shaping Bangalore's infrastructure, fostering industrial growth and enhancing the quality of life for its residents during that era.

Evolution of Bangalore as an Educational Hub: A Legacy of Excellence and Innovation

Education has long been a cornerstone of Bangalore's development, evolving significantly over the decades to become a prominent educational hub in India. Beginning with pivotal initiatives like the founding of the Indian Institute of Science (IISc) in 1909 and the University Visvesvaraya College of Engineering (UVCE) in 1917 under the patronage of the Mysore rulers, Bangalore laid the foundation for educational excellence. These institutions not only fostered a culture of innovation and entrepreneurship, but also supplied a skilled technical workforce crucial for industrial growth. Over time, Bangalore's commitment to education expanded, reflected in its substantial number of engineering colleges, both government and private, which have played a vital role in nurturing talent and attracting students from across India. This commitment is further underscored by Bangalore's recognition as a top educational destination as evidenced by interstate student in-migration and its prominence in educational choices among major origin states. Thus, education continues to be a major driving force in Bangalore's socioeconomic development, embodying its enduring commitment to excellence and innovation in teaching-learning.

Table 7: Engineering Colleges in Karnataka

Colleges and Universities	Karnataka	Bangalore Urban
Government Engineering Colleges	14	2
Aided Engineering Colleges	9	2
Private Engineering Colleges	146	54
Private / Deemed University Colleges	18	7
Minority Engineering Colleges	17	4
Total	**204**	**69**

Source: Department of Technical Education, Government of Karnataka

The founding of the Indian Institute of Science (IISc) in 1909 and the University Visvesvaraya College of Engineering (UVCE) in 1917, supported by the Mysore rulers, significantly contributed significantly to Bangalore's evolution into a start-up hub. These institutions became sources of entrepreneurship and provided a skilled technical workforce, which were crucial for the city's development (Bala Subrahmanya, 2017).

Table 8: Top-Five Education Destination Regions for major origin states, 2011

Origin States	Top-Five Destination States for Education				
Andhra Pradesh	Karnataka	Tamil Nadu	Maharashtra	Odisha	Kerala
Assam	Karnataka	Maharashtra	West Bengal	Delhi	Uttar Pradesh
Bihar	Delhi	Uttar Pradesh	Jharkhand	Maharashtra	Karnataka
Chhattisgarh	Madhya Pradesh	Maharashtra	Karnataka	Odisha	Andhra Pradesh
Gujarat	Maharashtra	Karnataka	Rajasthan	Tamil Nadu	Madhya Pradesh
Haryana	Delhi	Rajasthan	Chandigarh	Punjab	Uttar Pradesh
Jammu & Kashmir	Karnataka	Maharashtra	Delhi	Uttar Pradesh	Uttarakhand
Jharkhand	Odisha	Karnataka	Delhi	Maharashtra	West Bengal
Karnataka	Maharashtra	Tamil Nadu	Andhra Pradesh	Kerala	Goa
Kerala	Karnataka	Tamil Nadu	Maharashtra	Andhra Pradesh	Delhi
Madhya Pradesh	Maharashtra	Uttar Pradesh	Rajasthan	Chhattisgarh	Delhi
Maharashtra	Karnataka	Gujarat	Madhya Pradesh	Tamil Nadu	Andhra Pradesh
Odisha	Andhra Pradesh	Karnataka	Maharashtra	Delhi	West Bengal
Punjab	Chandigarh	Delhi	Haryana	Himachal Pradesh	Maharashtra
Rajasthan	Maharashtra	Delhi	Gujarat	Madhya Pradesh	Karnataka
Tamil Nadu	Karnataka	Puducherry	Andhra Pradesh	Kerala	Maharashtra
Uttar Pradesh	Delhi	Maharashtra	Madhya Pradesh	Uttarakhand	Rajasthan
West Bengal	Karnataka	Maharashtra	Uttar Pradesh	Delhi	Odisha

Source: Rajan, S. I. (2021)

Table 9: Top-Five Destinations of Interstate Student In-Migration in India, 2011

State	Migration (in numbers)	Migrants (in percentage)
Maharashtra	1,20,712	16.22
Karnataka	1,02,587	13.78
NCT of Delhi	96,615	12.98
Tamil Nadu	59,162	7.95
Uttar Pradesh	49,484	6.65
Others	3,15,459	42.39
Total	7,44,015	100.00

Source: Rajan, S. I. (2021)

Table 8 lists the top educational destination states for major origin states in India as of 2011. It shows that Karnataka is the preferred destination of education for seven out of eighteen major origin states,with 38.8per cent of students from these states choosing Karnataka for their educational needs, thus placing Karnataka at the top position among educational destinations. Bangalore, the capital city of Karnataka, boasts of highest number of colleges in any district of India, at 924 institutions. This extensive educational infrastructure has secured Karnataka the second spot as a destination of interstate student migration in India, according to the 2011 census data shown in Table 9. These tables highlight Karnataka's prominence as a hub of education in India, attracting students from various states due to its robust educational institutions and opportunities.

Industrial Development of Bangalore Metropolitan Region and Surrounding Districts

Diwan Sir M Visveswaraya's dictum "Industrialise or Perish" galvanised India towards a massive industrialisation. In the year 1970, the Karnataka Industrial Areas Development Board (KIADB) established the Peenya Industrial Area in North-West Bangalore for setting up micro, small and medium enterprises. Today, Peenya industrial area has become one of the biggest industrial areas in South East Asia and has nearly 20,000 industries have spread over a 40 square kilometre area with over 10 lakh employees (Peenya Industries Association).

In the Bangalore Metropolitan Region and surrounding districts, significant developments in industrial areas and estates have played a crucial role in the region's economic growth. Bangalore, renowned as a hub of Information Technology (IT) and IT-enabled services, hosts numerous Special Economic Zones (SEZs) focused on IT/ITES, aerospace, biotechnology and more. These SEZs and industrial estates not only support operational industries but also facilitate new investments and job creation. Other districts like Ramanagara, Kolar, and Bangalore Rural have also seen rapid industrialization, with zones dedicated to textiles, pharmaceuticals, engineering and electronic hardware. This strategic development of industrial infrastructure underscores Bangalore's status as a prominent industrial and technological hub in India, fostering innovation and economic diversification across the region.

Table 10: SEZs in Bangalore Metropolitan Region and Other Districts

Location	Number of SEZs	Type	SEZ Status
Bangalore Metropolitan Region	18	IT/ITES-enabled services	Operational
Bangalore Metropolitan Region	1	Aerospace and Industry	Operational
Bangalore Metropolitan Region	1	Bio-Technology	Operational
Other Districts	4	IT/ITES-enabled services	Operational
Other Districts	1	Textile	Operational
Other Districts	1	Pharmaceuticals	Operational
Other Districts	1	Engineering	Operational
Other Districts	1	Multi Product	Operational
Other Districts	1	Precision Engineering Product	Operational
Other Districts	2	Electronics Hardware and Software/ ITES	Operational
Bangalore Metropolitan Region	1	Electronic Hardware and Software including IT/ITES	Notified
Bangalore Metropolitan Region	11	IT/ITES-enabled services	Notified
Other Districts	4	IT/ITES enabled services	Notified
Other Districts	3	Electronics Hardware and Software/ ITES	Notified
Bangalore Metropolitan Region	5	IT/ITES-enabled services	Formal Approval
Bangalore Metropolitan Region	1	Electronic Hardware and Software including IT/ITES	Formal Approval
Bangalore Metropolitan Region	1	Bio-Technology	Formal Approval
Other Districts	2	IT/ITES-enabled services	Formal Approval
Other Districts	1	Free Trade and Warehousing Zones	Formal Approval
Other Districts	1	Bio-Technology	Formal Approval
Other Districts	1	Electronic Hardware and Software including IT/ITES	Formal Approval

Source: Ministry of Commerce and Industry

Table 10 details the distribution and status of Special Economic Zones (SEZs) across the Bangalore Metropolitan Region and other districts. In Bangalore Metropolitan Region, there are 18 operational SEZs focused on IT/ITES-enabled services, along with one each for aerospace, biotechnology and electronic hardware/software. These SEZs are fully operational, providing a conducive environment for

companies in these sectors to thrive. In other districts, there are a total of 12 operational SEZs covering IT/ITES services, textiles, pharmaceuticals, engineering, electronic hardware/software and precision engineering products. Additionally, several SEZs in both Bangalore Metropolitan Region and other districts have been notified or have received formal approval, indicating ongoing development and future expansion of these industrial zones. This strategic development aims at boosting economic growth, attracting investments and creating employment opportunities in Karnataka.

Bangalore Metropolitan Region and its increasing economic activities

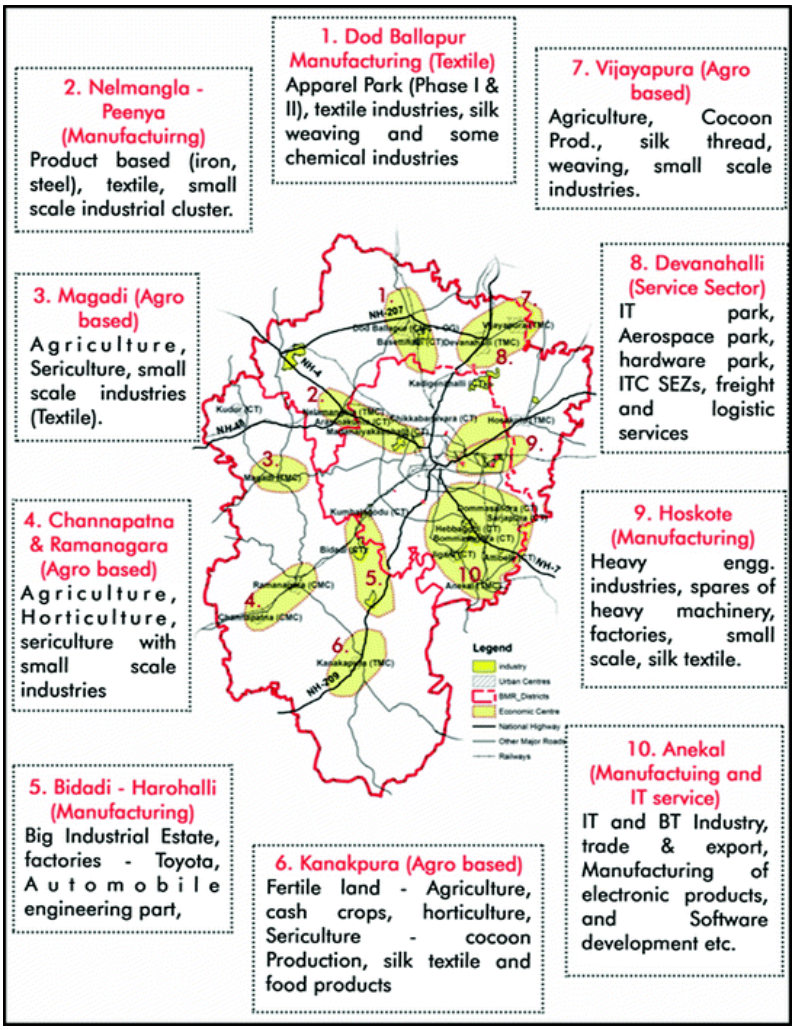


Figure 1: Potential economic activities at different sub-regions of BMR
Source: Chatterjee, et al., 2019

The Bangalore Metropolitan Region (BMR) is a hub of diverse economic activities spread across its various districts. In Doddaballapur, there's a concentration of textile industries including silk weaving and some chemical industries. Nelamangala to Peenya is known for manufacturing prowess in iron, steel and textiles, hosting a cluster of small-scale industries. Magadi and areas like Channapatna and Ramanagara are centeredaround agriculture, horticulture and sericulture, supporting small-scale industries. Bidadi and Harohalli house large industrial estates, including automotive engineering parts manufacturing. Kanakapura is known for agriculture and sericulture, producing cash crops and silk textiles. Vijayapura also specializes in cocoon production and silk weaving. Devanahalli is a service

sector hotspot with IT parks, aerospace parks and logistic services. Lastly, places like Hoskote and Anekal are significant for heavy engineering, electronic manufacturing and IT services, respectively, contributing to the region's economic growth.

Bangalore Urban District – Taluks, Industrial Estates and Industrial Areas

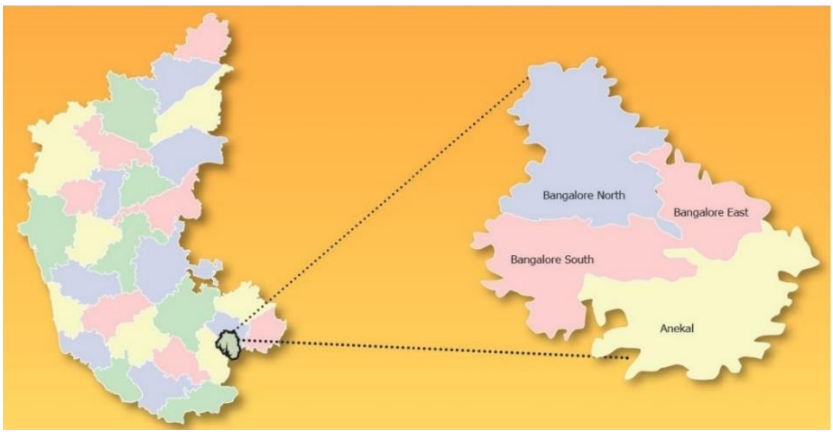
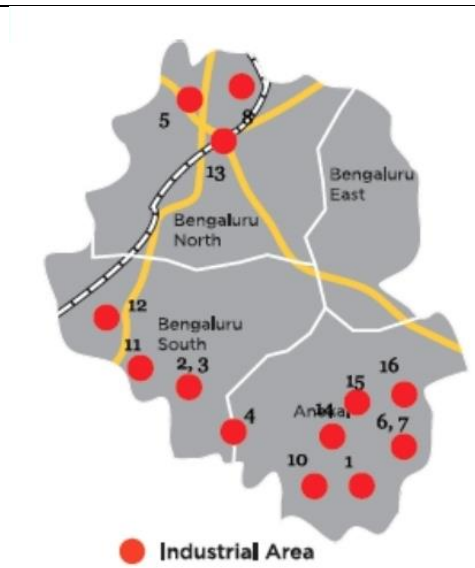
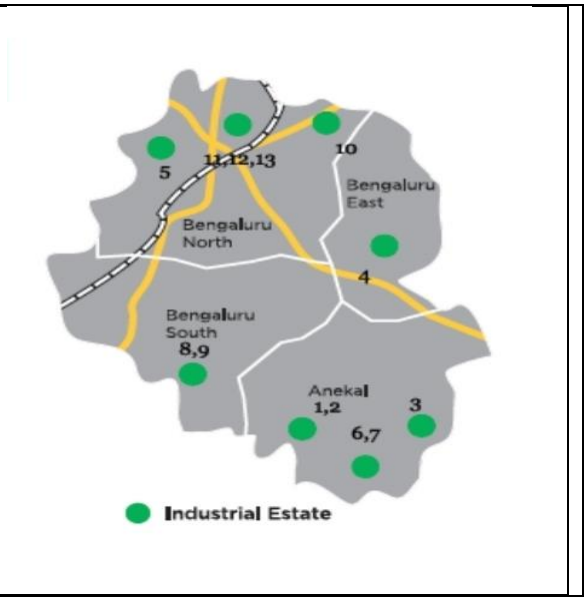


Table 11: Spread of Industrial Areas and Industrial Estates of Bangalore Urban District

Sl. No.	Industrial Areas
1.	Attibele
2.	Bommasandra I, II and III Phase
3.	Bommasandra IV Phase
4.	Bommasandra – Jigani Link Road
5.	Doddennakkundi I and II Phase Dyavasandra I and II Phases
6.	Electronic City Phase II
7.	Electronic City Phase III
8.	EOIZ
9.	EPIP I & II Phase
10.	Jigani I & II Phase
11.	Kadugodi – Sadaramangala
12.	Kumbalagodu I & II Phase
13.	Peenya I, II, III & IV Phase
14.	Veerasandra
15.	Yarandahalli, Anekal Taluk
16.	Kachanayakanahalli, Anekal Taluk



Sl. No.	Industrial Estates
1.	Jigani Phase I
2.	Jigani Phase II
3.	Dyavasandra
4.	New Government Electrical Factory (NGEF)
5.	Rajajinagara
6.	Veerasandra Phase I
7.	Veerasandra Phase II
8.	Bommasandra I
9.	Bommasandra II
10.	Hindustan Aeronautics Limited (HAL)
11.	Peenya Phase I
12.	Peenya Phase II
13.	Peenya Phase III



Source: Ministry of MSME, Government of India

Bangalore Urban District – Year-wise trend of Industrial Units Registered

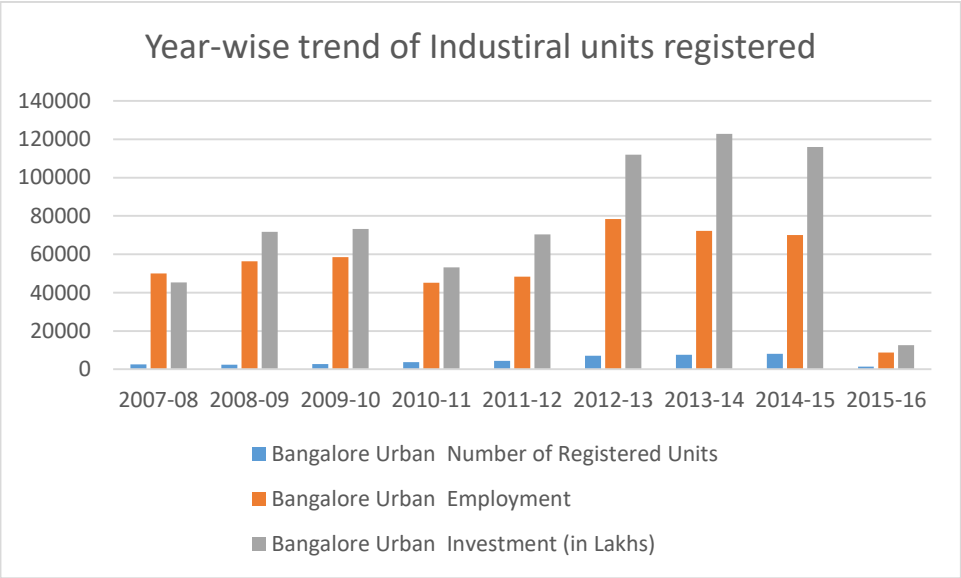
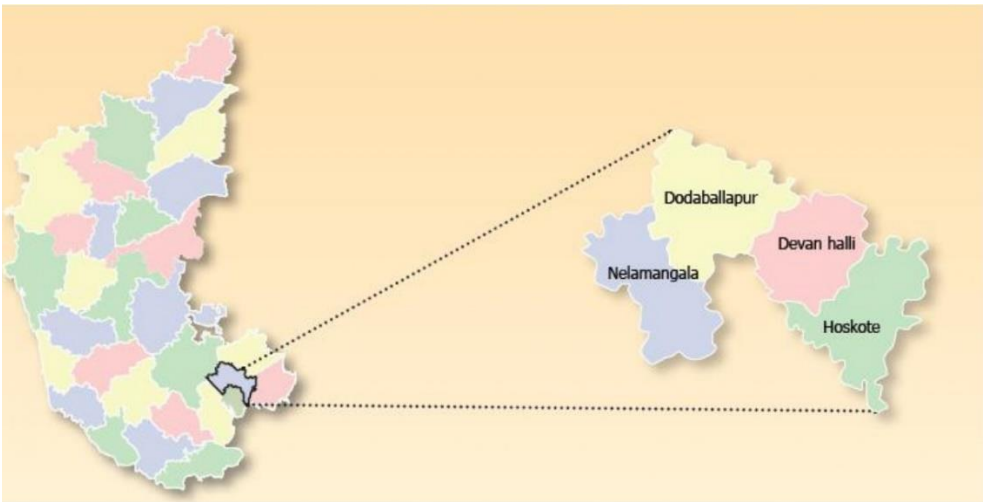


Figure 2: Trends of Industrial Units registered in Bangalore Urban district
Source: District Industrial Profile - MSME
(Note: Data considered only up to 31.03.2016)

Spread of Industrial Estates across Bangalore Urban District

The industrial zones and estates spreadacrossBangalore Urban district play a crucial role in its economic landscape. Areas like Electronic City, Peenya Industrial Areaand Bommasandra are key hubs of IT, MSMEs and the automobile industry. Bangalore has emerged as a significant center of machine tools, producing over half of India's output. Figure 2 shows how MSMEs have grown in terms of registered units, employment (487,761 people), and investments (677,024 lakhs) overtime from 2007-08 to 2015-16. These zones have been contributing significantly to Bangalore Urban's economy by promoting growth across various sectors and providing employment opportunities.

Bangalore Rural District – Taluks, Industrial Estates and Industrial Areas



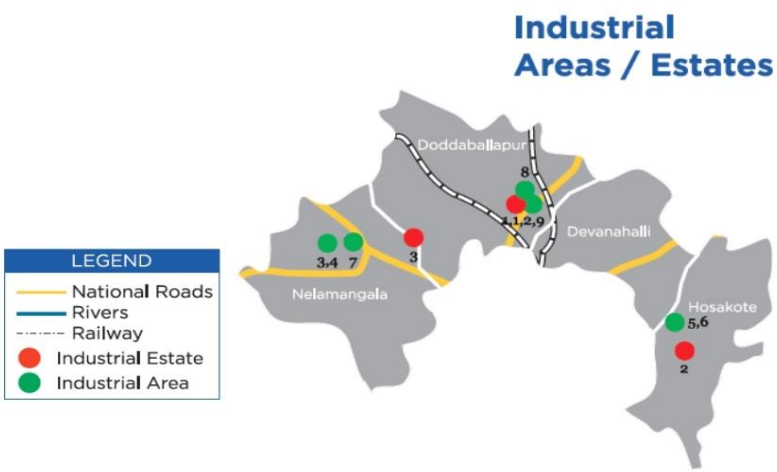


Table 12: Spread of Industrial Areas and Industrial Estates of Bangalore Rural District

Sl. No.	**Industrial Estates**
1.	Doddaballapur
2.	Hoskote
3.	Nelamangala
Sl. No.	**Industrial Estates**
1.	Doddaballapur Apparel Park Phase I
2.	Doddaballapur Apparel Park Phase II
3.	Dabaspet Phase I

4.	DabaspetPhase II	
5.	Sompura I & II Stage	
6.	Sompura I Stage – Sub-layout	
7.	Awarahalli (Dabaspet IV Phase)	
8.	Doddaballapur	
9.	Obhadenahalli (DBP III)	
Sl. No.	**Industrial Parks**	
1.	Bangalore IT Park	
2.	Bangalore Aerospace Park	
3.	Bangalore Aerospace SEZ	
4.	Bangalore Hardware Park	

Source: Ministry of MSME, Government of India

Bangalore Rural District – Year-wise trend of Industrial Units Registered

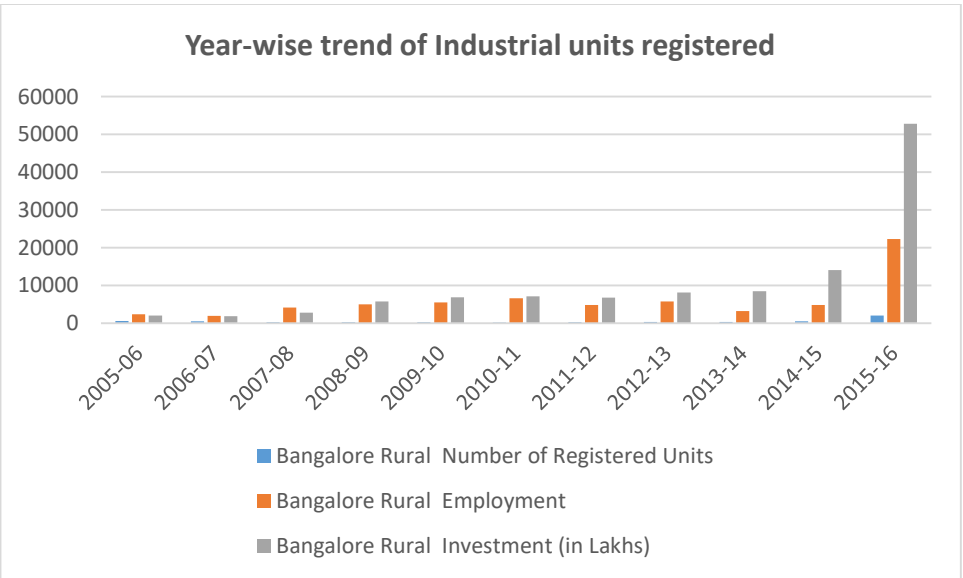


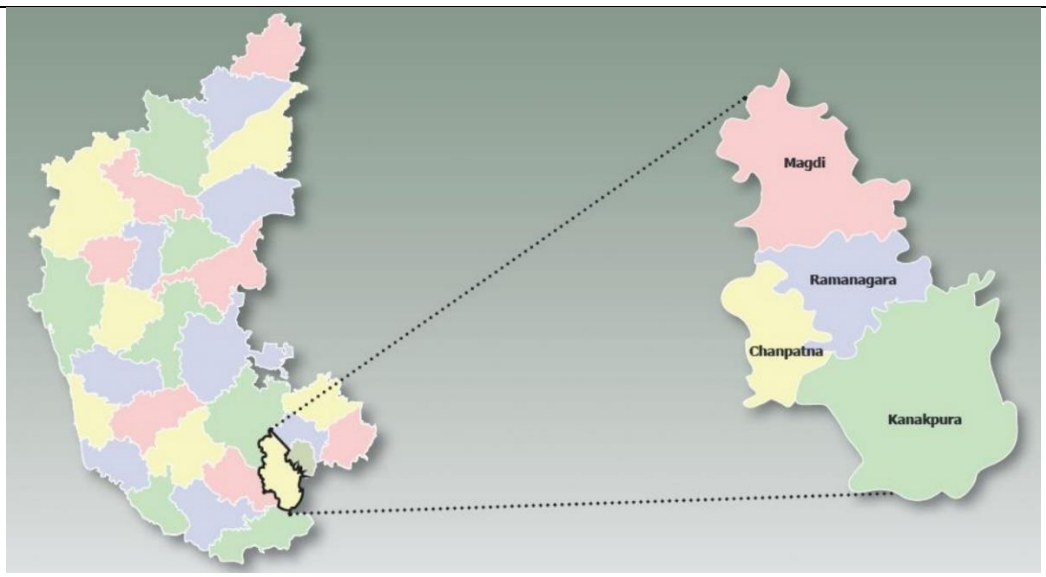
Figure 3: Trends of Industrial Units registered in Bangalore Rural district
Source: District Industrial Profile - MSME
(Note: Data considered only up to 31.03.2016)

Spread of Industrial Estates across Bangalore Rural District

Bangalore Rural district hosts several key industrial estates and areas that drive its diverse economic activities. Doddaballapur is notable for its textile park, established in 1998, and now housing around 85 units engaged in weaving and related activities. Nelamangala-Dabaspet, Hoskote-Narsapura and Attibele-Bommasandra regions are prominent warehousing clusters due to their connectivity to National Highways, supporting nearby Tier-II and Tier-III towns. Table 12 outlines these industrial estates and

areas, while Figure 3 illustrates the growth of MSMEs and large industries in the district from 2005-06 to 2015-16, with 5,480 registered units, providing employment to 66,626 people and investments totalling1,16,816 lakh. These industrial zones contribute significantly to Bangalore Rural's economic development by generating employment and attracting investments across various sectors.

Ramanagara District – Taluks, Industrial Estate and Industrial Areas



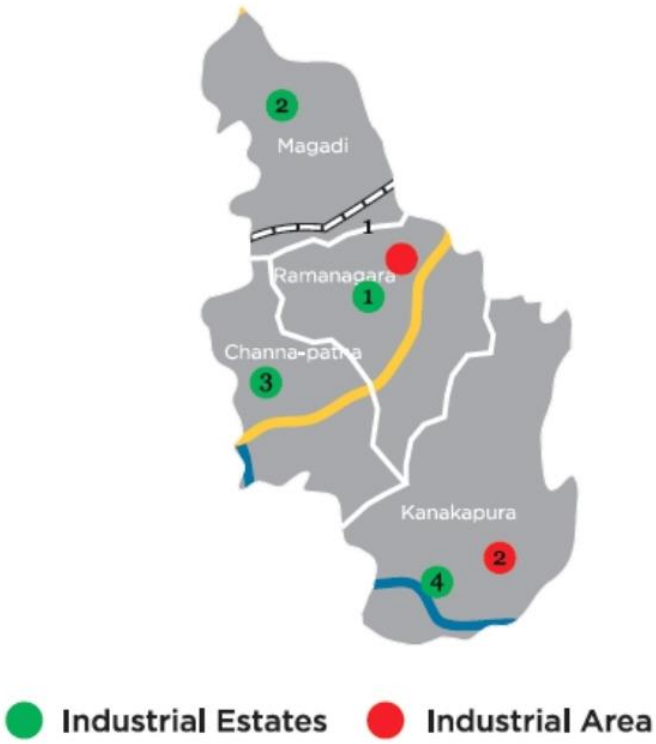


Table 13: Industrial Areas and Industrial Estates of Ramanagara District

Sl. No.	**Industrial Area**
1.	Bidadi
2.	Harohalli I, II & III
Sl. No.	**Industrial Estate**
1.	Ramanagara
2.	Magadi
3.	Channapatna
4.	Kanakapura

Source: Ministry of MSME, Government of India

Ramanagara District – Year-wise trend of Industrial Units Registered

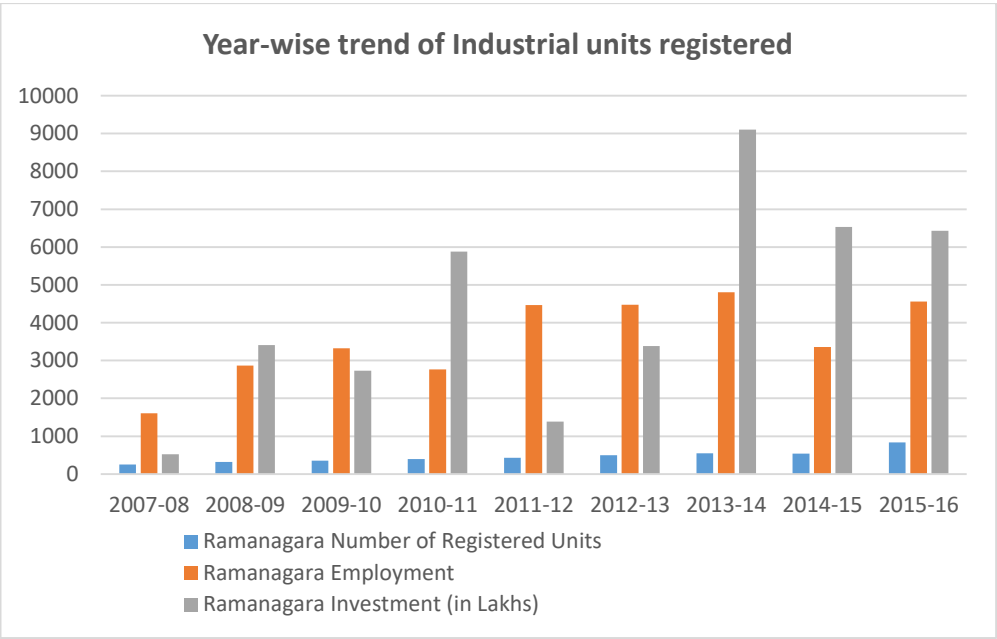


Figure 4: Trends of Industrial Units registered in Ramanagara district
Source: District Industrial Profile - MSME
(Note: Data considered only up to 31.03.2016)

Spread of Industrial Estates across RamanagaraDistrict

Ramanagara district features key industrial areas and estates contributing to its economic growth. Bidadi, established with 1,500 acres of land acquired since 1995, hosts 165 manufacturing units, including major companies like Coca-Cola and Bosch, employing about 60,000 people. Harohalli's industrial area, approved in phases since 2005, spans 101.18 hectares and is expanding with ongoing projects like Phase-III. Table 13 details these estates and areas, while Figure 4 illustrates the growth of MSMEs and large industries from 2007-08 to 2015-16, with 4,181 registered units providing employment to 32,220 people and investments totalling 39,385 lakh. These industrial zones are playing a significant role in Ramanagara's economic development by fostering employment and attracting investments across various sectors.

Kolar District – Taluks, Industrial Estate and Industrial Areas

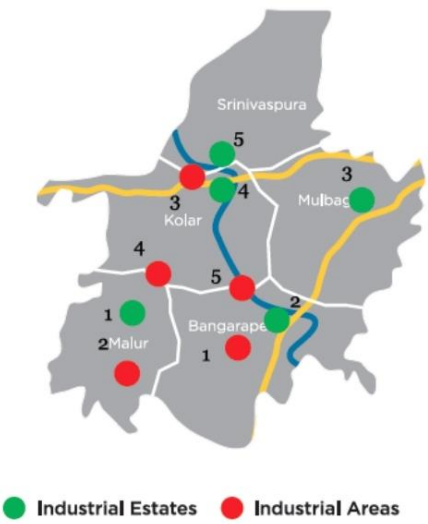


Table 14: Industrial Areas and Industrial Estates of Kolar District

Sl. No.	Industrial Estates
1.	Malur
2.	KGF Andersonpet
3.	Mulbagal

4.	Kolar – Tamaka	
5.	Kolar - Kyalanur	
Sl. No.	**Industrial Areas**	
1.	Bangarpet	
2.	Malur Phase I, II, III & IV	
3.	Kolar – Tamaka	
4.	Narsapura	
5.	Vemagal	

Kolar District – Year-wise trend of Industrial Units Registered

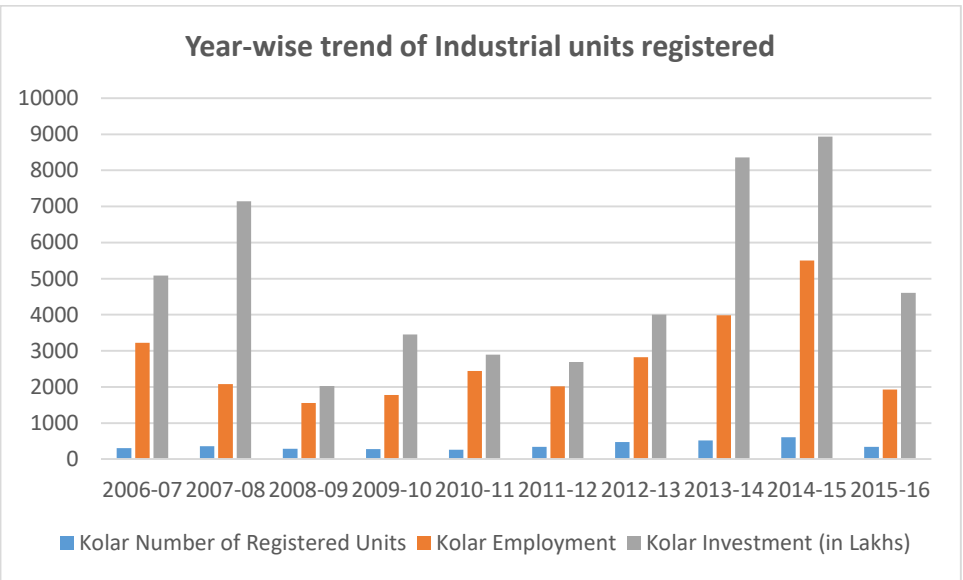


Figure 5: Trends of Industrial Units registered in the Kolar district
Source: District Industrial Profile - MSME
(Note: Data considered only up to 31.03.2016)

Spread of Industrial Estates across Kolar District

In Kolar district, there are several industrial estates and areas contributing to its economic growth. Malur, once known for supplying vegetables to Bangalore, has evolved into a hub of warehouses. Logistics giant Allcargo Logistics has established a 105-acre warehouse here with an investment of Rs. 800 crores (Source: Money Control), alongside production units of major companies like Honda Motor Cycle, Mahindra Aerospace, Medinova, and Scania AB. These investments are driven by Malur's strategic location just 25 km off from Bangalore, with excellent road and rail connectivity. Table 14 details these industrial estates and areas, while Figure 5 shows the growth of MSMEs and large industries from 2006-

07 to 2015-16, with 3,756 registered units providing employment to 27,320 people and investments totalling 49,196 lakh. These industrial zones play a vital role in Kolar's economy by creating jobs and attracting significant investments across various sectors.

New InvestmentPlans in Industrial Areas and IT Parks - Bangalore Metropolitan Region (BMR)

In recent developments, the Karnataka government has announced plans of acquiring 20,000 acres of land on the outskirts of Bangalore for developing new industrial corridors and IT parks (Source: Economic Times, February 3, 2022). This initiative aligns with Karnataka's new IT policy for 2020-25, aimed at generating over 60 lakh direct and indirect jobs in the IT sector (Source: Deccan Herald, September 3, 2020).

Table 15: India and Top 5 States – Economic Growth and Composition (2021-22)

State	GSDP (INR Lakh Crore)	Percentage of India's GDP	GSDP growth rate (in percentage)	Per-Capita GSDP (in Rupees)	GSVA Composition*		
					Agriculture (in percentage)	Industry (in percentage)	Services (in percentage)
Maharashtra	31.98	13.5	17.9	2,25,073	13.1	26.8	60.1
Tamil Nadu	21.78	9.2	14.6	2,82,986	12.7	33.0	54.3
Karnataka	20.50	8.7	18.5	3,05,458	14.1	19.8	66.1
Gujarat	19.44	8.2	12.0	2,79,764	20.0	43.0	37.0
Uttar Pradesh	17.49	7.4	- 9.8	81,398	26.1	25.0	48.9
India	**236.64**	**100**	**19.5**	**1,72,913**	**18.6**	**28.7**	**52.7**

*GSVA Composition of Karnataka and India is based on FY 22 data whereas, for the other four states, the latest available data is FY 21
Source: Swarajya - swarajyamag.com

Analysing Table 15, Karnataka stands out with a GSDP of INR 20.50 lakh crore, contributing 8.7per cent of India's GDP. It leads in per-capita GSDP at INR 3,05,458, driven largely by its robust service sector, which constitutes 66.1% of its Gross State Value Added (GSVA). This sector's dominance underscores Karnataka's position as a top leader in IT services and other service-based industries. Maharashtra follows with a GSDP of INR 31.98 lakh crore, showcasing a diverse economy with significant contributions from industry and services. Tamil Nadu ranks thirdand is noted for its industrial prowess

with a GSDP of INR 21.78 lakh crore, while Gujarat and Uttar Pradesh exhibit industrial growth across their economies.

Karnataka's success in the service sector owes much to its proactive industrial policies and extensive educational infrastructure. These have laid the foundation for its global competitiveness and economic resilience. The state's strategic initiatives of acquiring land for new industrial and IT developments are poised to further enhance its economic dynamism and job creation capabilities, aligning with its vision ofachievingsustainable growth and development in the coming years.

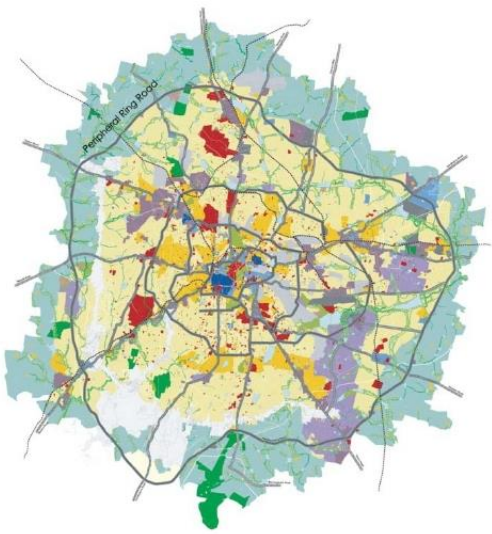
Investments in Roadways and Railways - Bangalore Metropolitan Region (BMR)

The Bangalore Metropolitan Region (BMR) is set for significant infrastructural developments aimed at boosting its economy and improving connectivity to other regions. Over the past decade, the Karnataka State Government, in collaboration with the Central Government of India, has embarked on ambitious projects at an approximate cost of Rs. 81,062 crore. These initiatives include the construction of expressways and high-speed rail networks, which are expected to attract huge investments and create employment opportunities.

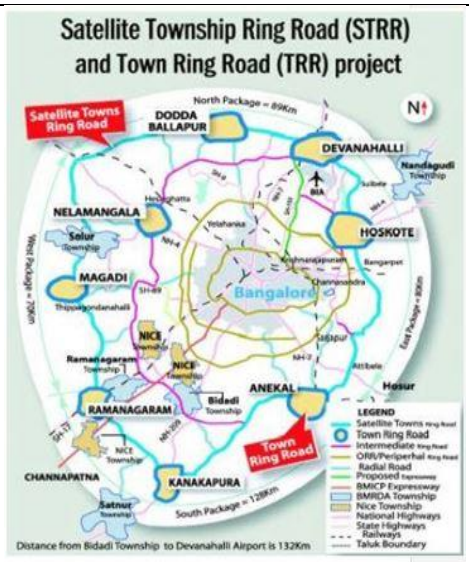
Key projects include the Peripheral Ring Road (PRR) with a budget of Rs. 10,176 crore, designed to ease traffic congestion by diverting traffic around the city. The Satellite Town Ring Road (STRR), costing Rs. 17,000 crore, aims at connecting satellite towns around Bangalore, thus enhancing overall regional connectivity. The Bangalore-Chennai Expressway, with a budget of Rs. 14,870 crore, is expected to facilitate faster travel and trade between these major cities. The Bangalore-Mysore 10-lane Expressway, with an investment of Rs. 8,172 crore, is expected to improve connectivity and travel time to the historic city of Mysore. The Nelamangala-Tumkur 10-lane Expressway, budgeted at Rs. 844 crore, will enhance connectivity between these two important industrial hubs.

A flagship project is the Bangalore to Hyderabad High-Speed Rail, estimated at Rs. 30,000 crore, aimed at reducing travel time significantly between these two IT hubs. These infrastructural investments are expected to not only improve transportation but also catalyse industrial growth, attract more investments and create aninvestor friendly environment for business expansion in the Bangalore Metropolitan Region. This comprehensive development strategy underscores Karnataka's commitment to enhancing regional connectivity and fostering sustainable economic development in the years to come.

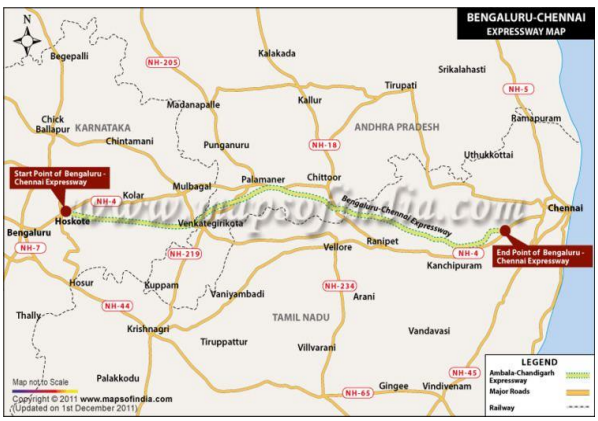
Bangalore Metropolitan Region’s Future Industrial and infrastructural development



Peripheral Ring Road (PRR)
Project cost Rs. 10,176 crores



Satellite Town Ring Road (STRR)
Project cost Rs. 17,000 crores



Bangalore-Chennai Expressway
Project cost Rs. 14,870 crore

Note: Pic for representation purposes only
Bangalore to Hyderabad High-Speed Rail
The project cost Rs. 30,000 crore

Note: Pic for representation purposes only
Bangalore Mysore 10-lane Expressway
Project cost Rs. 8,172 crore

Note: Pic for representation purposes only
Nelamangala Tumkur 10 lane Expressway
Project cost Rs. 844 crore

Source: Ministry of Road Transport and Highways and Ministry of Railways

Issues to address

This article discusses the growth of Bangalore Metropolitan Region and its impact on employment and the economy. The region's ongoing developmentalactivities suggest that Bangalore could become the largest city not just in India, but in all of Asia. However, it's also important for Karnataka government to focus on developing smaller towns in both the Bangalore area and other parts of the state, especially North Karnataka. However, a rapidly growing Bangalore metropolitan region or mega city has thrown up several daunting challenges such as resource shortages, pollution, increasing cost of living, poor solid waste management, traffic jamsand uneven development and poorly planned urban residential layouts. Addressing these issues on a priority basis will be crucial for ensuring sustainable growth and improving the quality of life in the region.

Conclusion

Today, Bangalore is known as the Silicon Valley of India, a diverse cosmopolitan city and a global hub renowned for its economic and social inclusivity. Its growth can be attributed to significant investments in education and various industries across different periods, from the then Mysore rulers to the contemporary economic reformsthathaveopened up markets to the global markets and private players. The term "Bangalored" originated from the outsourcing of jobs to Bangalore, particularly the IT sector. However, Bangalore's influence extends beyond IT to education, automotive, SMEs and aerospace industries, providing employment to millions. The city's success has attracted multinational companies, which have established their production units, research centers and offices here. Continued investments

in infrastructure, industrial estates and IT parks are expected to elevate Bangalore to one of the largest metropolitan regions globally. Bangalore's reputation of being a global tech hub over the last century has aptly earned it the title of being "BANGALORED".

References:

Allcargo opens Rs. 800 crore warehouse in Karnataka, Retrieved from Money Control, October 4, 2022.

Bala Subrahmanya, M. H. (2017). How did Bangalore emerge as a global hub of tech start-ups in India? Entrepreneurial ecosystem—Evolution, structure and role. Journal of Developmental Entrepreneurship, 22(01), 1750006.

Carlson, H. J. (2018). Model employers and model cities?: Bangalore's public sector and the rise of the neoliberal city. *Urban Geography*, *39*(5), 726-745.

Chatterjee, A., Choudhary, B., Das Gupta, P., & Vaidya, G. (2019). Towards a smart metropolitan region: a roadmap for transforming Bangalore metropolitan region. In *Smart Metropolitan Regional Development* (pp. 359-400). Springer, Singapore.

E-commerce boom sees demand for warehouse spaces rise in Bengaluru – Retrieved from The Hindu – August 22, 2021.

From being Bangalored to being Trumped, Retrieved from The Hindu, January 11, 2018.

Glaeser, E. L. (2010). *Making Sense of Bangalore*. Legatum Institute.

Kumar, R. S., & Subrahmanya, M. B. (2010). Influence of subcontracting on innovation and economic performance of SMEs in Indian automobile industry. *Technovation*, *30*(11-12), 558-569.

IISc is the highest ranked Indian institute in THE World Reputation Rankings 2022 – Retrieved from Education Times - November 16, 2022.

In 2022, researchers at IISc Bangalore filed 2 patents every 3 days – Retrieved from Times of India - January 9, 2023.

Kadekodi, G., Kanbur, R., & Rao, V. (2007). Governance and the'Karnataka Model of Development'. *Economic and Political Weekly*, 649-652.

Karnataka approves new IT policy; to create 60 lakh jobs – Retrieved from Deccan Herald – September 3, 2020.

Karnataka ready to move industries out of Bengaluru – Retrieved from The Hindu – January 19, 2018.

Laturkar, V. N., Bellale, G., &Katalakute, G. B. (2021). Cluster Initiatives in a Transition Economy: The Pot-Pourri of Indian Economy.*Navjyot*, Vol. X, Issue IV.

Mysore and the Making of a Modern Science Institution – Retrieved from https://connect.iisc.ac.in/2019/03/mysore-and-the-making-of-a-modern-science-institution/

Nag, B., & De, D. (2020). The Indian automobile industry: Technology enablers preparing for the future. In *New frontiers of the automobile industry* (pp. 301-321). Palgrave Macmillan, Cham.

Nagendra, H. (2016). *Nature in the city: Bengaluru in the past, present, and future*. Oxford University Press.

Patrons of learning – Retrieved from https://www.deccanherald.com/content/200203/patrons-learning.html

Raj, N. (2015). The Influence of Gandhi and the Establishment of Badanavalu Khadi Centre in Karnataka.

Rajan, S. I. (2021). Migration, education, and employment in India. In *India Higher Education Report 2020* (pp. 51-67). Routledge India.

Sharma, R., & Newman, P. (2018). Does urban rail increase land value in emerging cities? Value uplift from Bangalore Metro. *Transportation Research Part A: Policy and Practice*, *117*, 70-86.

Shekar, G. L., & Raghavendra, N. V. (2015). Aerospace cluster of Bangalore: Can the SMEs take up the challenges?. *Journal of Asian Business Strategy*, *5*(9), 191-199.

Sonderegger, P., &Täube, F. (2010). Cluster life cycle and diaspora effects: Evidence from the Indian IT cluster in Bangalore. *Journal of International Management*, *16*(4), 383-397.

Sudhira, H. S., & Nagendra, H. (2013). Local assessment of Bangalore: Graying and greening in Bangalore–impacts of urbanization on ecosystems, ecosystem services and biodiversity. In *Urbanization, biodiversity and ecosystem services: Challenges and opportunities* (pp. 75-91). Springer, Dordrecht.

Verma, S., Chatterjee, A., & Mandal, N. R. (2017). Analysing urban sprawl and shifting of urban growth centre of Bengaluru city, India using Shannon's entropy method. *Journal of Settlements and Spatial Planning*, *8*(2), 89-98.

20,000-acre industrial estates to come up on Bengaluru outskirts, says Karnataka Industries Minister, Retrieved from Economic Times, February 3, 2022.

9 CFTRI researchers in Stanford database of top scientists – Retrieved from The Hindu – November 9, 2020.