

The Making of Industrial Coimbatore: G.D. Naidu's Contributions to Industrialization and Economic Transformation

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The composite Coimbatore district, historically part of the "Kongu" region, presents a unique case of agrarian-to-industrial transition in South India. This article examines the contributions of Gopalaswamy Doraiswamy Naidu a self-taught polymath, to the region's economic transformation. By analyzing his role in the transportation, electrical engineering, and agricultural sectors, the study argues that Naidu acted as an "anchor entrepreneur" who broke colonial technological monopolies. His methodology of reverse engineering and practical education provided the institutional framework for the region's resilient small and medium enterprise (SME) ecosystem.

Keywords: G.D. Naidu - Coimbatore - Economic Transformation - Universal Motor Service (UMS) - Indigenous Manufacturing - Electric Motors - Kongunad - Peelamedu Cluster

Introduction

Coimbatore, popularly known as the Manchester of South India, occupies a significant place in the industrial and economic history of Tamil Nadu. Its transformation from an agriculture-based regional economy into a major centre of textile production, engineering, manufacturing, and technological innovation was a remarkable development during the twentieth century. This industrial growth was influenced by several pioneering entrepreneurs, among whom G.D. Naidu (1893–1974) played a prominent role. G.D. Naidu, widely recognised as a pioneering

inventor, industrialist, and entrepreneur, made significant contributions to the industrial development of Coimbatore through his innovations in engineering, transport, manufacturing, and technical education. His entrepreneurial initiatives encouraged indigenous technological development, generated employment opportunities, and promoted industrial skills among the local population. His vision of combining scientific knowledge with practical industrial applications contributed to the region's emerging industrial culture. Beyond individual inventions and enterprises, G.D.

Naidu's contributions reflected the broader process of industrialization and economic modernization in Coimbatore. His development of motor transport services, engineering enterprises, and technical training initiatives helped strengthen the region's industrial infrastructure and entrepreneurial environment. His activities also demonstrated the importance of technological self-reliance and skilled labour in regional economic development. This study examines the historical role of G.D. Naidu in shaping the industrial and economic transformation of Coimbatore district. It focuses on his entrepreneurial achievements, technological innovations, contributions to transport and manufacturing, and promotion of technical education. The study also seeks to understand how his initiatives contributed to the emergence of Coimbatore as an important industrial centre in Tamil Nadu, while recognising the contributions of other entrepreneurs and wider economic developments.

Agrarian-Industrial Nexus

The economic history of the Madras Presidency during the late nineteenth and early twentieth centuries is frequently analyzed through the lens of colonial extraction and the stagnation inherent in the Ryotwari settlement. However, the composite Coimbatore district deviates from this narrative. The region's economic foundation rested upon its black cotton soil, which provided the necessary agrarian surplus for industrial diversification.¹ Unlike the coastal regions dominated by mercantile castes like the Nattukottai Chettiars, Coimbatore witnessed the rise of "new capitalists"—agrarian communities such as the Kmmas and Gounders who successfully navigated the transition from "farm to factory."² G.D. Naidu emerged during a period of transition where traditional handicraft and ginning sectors were being subsumed by modern industrial processes. The early industrialization of the district was characterized by a symbiotic relationship between cotton cultivation and mechanical engineering.³ This challenge to the colonial economic order was necessary because the permanent poverty of the Indian population

was often an outcome of trade policies that favored British manufactured goods over indigenous development.⁴ Naidu's career represented a shift from mere entrepreneurship to "industrial science," creating a self-sustaining technological ecosystem in a region lacking formal technical infrastructure.⁵

Attitude for Industrial Mechanism

G.D. Naidu's attitude toward industrial mechanism was defined by a radical spirit of inquiry and a commitment to technical deconstruction. He famously utilized a 1912 model Rudge motorcycle as his "University," dismantling it repeatedly to master internal combustion principles. This hands-on methodology of "reverse engineering" became the cornerstone of his industrial philosophy throughout his life. He rejected the theoretical colonial education system in favor of a "learning by doing" approach intended to demystify complex machinery. His primary objective was to transform sophisticated Western technologies into practical and affordable solutions for the Indian public. He viewed industrialization not as a means for simple capital accumulation but as the creation of a self-sustaining technological ecosystem. This unique technical philosophy catalyzed the production of India's first indigenous electric motor at Peelamedu in 1937.⁶ Naidu frequently prioritized the growth of indigenous manufacturing and local job creation over the lucrative sale of his personal patent rights. He maintained a rigorous commitment to operational discipline, reportedly being able to diagnose engine malfunctions simply by observing their sound. His mechanical vision aimed at national self-reliance by grounding regional industrial growth in native technical agency and innovation.

The Formative Years and Mechanical Deconstruction

Born into an agrarian Kamma Naidu family in 1893, G.D. Naidu's early life was marked by a rejection of the colonial education system. His formal schooling ended at the third standard, not due to incapacity but because of a desire for knowledge that could not be found in

conventional classroom settings.⁷ After various odd jobs, including serving as a waiter in a Coimbatore hotel, he used his savings to purchase a 1912 model Rudge motorcycle.⁸ In the social context of 1913 Coimbatore, a motorcycle was a symbol of colonial technical superiority. Naidu did not merely ride the vehicle; he dismantled and reassembled it countless times to understand the principles of internal combustion.⁹ This methodology of "reverse engineering" became the cornerstone of his industrial philosophy, proving that the primary barrier to Indian industrialization was a lack of familiarity with modern technology rather than a lack of capital.¹⁰ His early failures, such as a collapsed cotton business in Mumbai, provided insights into the necessity of localized industrial control.¹¹

Universal Motor Service and Regional Integration

In 1920, Naidu launched the Universal Motor Service (UMS), operating initially between Pollachi and Palani. This route was strategic, as Pollachi was a critical hub for agricultural trade and Palani a major commercial center.¹² Within a decade, the UMS fleet expanded to over 200 buses, making it one of the most efficient transport systems in South India. This logistics network introduced dynamism to the regional economy, allowing for the rapid movement of labor and commodities like cotton.¹³ Naidu's management of the UMS was characterized by a commitment to operational efficiency and labor welfare. He founded the "United Motors" cooperative society, which institutionalized best practices across the transport sector.¹⁴ This professionalization of the native transport industry was a significant shift in economic power dynamics, as Naidu eventually reached a position where he employed European mechanics and staff.¹⁵ The success of the UMS provided the organizational experience that allowed Naidu to later pivot into heavy industry and indigenous manufacturing.

The 1937 Watershed: Indigenous Motors and Heavy Engineering

The defining moment of Coimbatore's

transformation occurred in 1937, when G.D. Naidu, along with D. Balasundaram Naidu, manufactured India's first indigenous electric motor.¹⁶ This achievement was centered at the National Electric Works (NEW) in Peelamedu. Prior to this, the textile industry was entirely dependent on imported motors from Britain and Germany. The NEW motor broke the colonial technological monopoly and established Coimbatore as a center for light engineering.¹⁷

This industrial proliferation led to the founding of major entities like Textool in 1946 and Lakshmi Machine Works (LMW) in 1962, which specialized in textile machinery exported worldwide.¹⁸ Naidu acted as a catalyst, encouraging other local businessmen to enter the engineering sector. The resulting "Peelamedu cluster" became a model for indigenous manufacturing where technical knowledge was shared and improved through iteration, establishing the district as the "Manchester of South India."¹⁹

Agrarian Transformation and Botanical Innovation

Naidu's contribution to the regional economy extended deep into the soil. He applied scientific research to agriculture at his farm in Podhanur, where he conducted hybrid cultivation experiments.²⁰ He succeeded in growing cotton plants that reached ten feet in height and yielded high volumes of long-staple cotton, essential for local textile mills. His "botanical marvels," which included oversized vegetables and high-yield millets, aimed to strengthen the agrarian surplus that fueled the district's industries.²¹

Technological Deconstruction as Industrial Agency

Naidu's global reputation was cemented by his ability to master precision engineering through reverse engineering, a methodology famously honed on a 1912 Rudge motorcycle which he dismantled and reassembled repeatedly to understand internal combustion. This practical epistemology allowed him to innovate across diverse fields. While visiting Belgium, Naidu experimented with fixing a toy car motor to a shaving razor, resulting in the "Rasant" electric

razor, which he patented in Europe and manufactured using motors from Germany and specialized steel from Sweden.²² The razor was so advanced that it sold 7,500 units in its first month in London and was featured in American magazines during the 1940s; Naidu reportedly refused a \$300,000 offer for the patent rights from a U.S. firm, insisting that the product be manufactured only in India. In 1941, Naidu announced the capability to manufacture five-valve radio sets for just ₹70, an attempt to democratize mass communication. He also developed 16mm film projectors and a tamper-proof vote-recording machine, predating modern electronic voting systems by decades. Finally, in 1952, Naidu unveiled a two-seater petrol engine car priced at ₹2,000. Although the vehicle was mechanically sound, production was halted due to colonial-era licensing restrictions that persisted in post-independence bureaucracy, highlighting the structural barriers Naidu faced in his pursuit of national self-reliance.

Institutionalizing Knowledge: Arthur Hope and ILWA

Naidu believed that formal education was too theoretical and failed to produce the "skilled problem-solvers" required for an industrial nation.²³ In 1945, he founded the Arthur Hope Polytechnic and the Arthur Hope College of Engineering (now the Government College of Technology) in Coimbatore, donating the land and initial infrastructure free of rent. He served as the principal for a brief period, implementing a radical "learning by doing" pedagogy that allowed him to admit students who had failed their standard 10th-grade exams, believing their mechanical aptitude was more valuable than test scores. In 1946, he established the Industrial Labour Welfare Association (ILWA), now known as G.D. Naidu Charities. The ILWA was specifically designed to train students from poor backgrounds in specialized technical fields like

tool and die engineering, mechatronics, and precision machining. This focus on vocational excellence provided the skilled labor force that sustained Coimbatore's SME sector through the 20th century. The ILWA library, housing over 50,000 technical books and 110,000 journals, became a critical research repository for local engineers, embodying Naidu's commitment to self-directed scientific inquiry.

Global Impact and Scientific Pluralism

Naidu's influence extended into the biological sciences and traditional medicine, driven by the same quest for optimization. At his research farm in Podanur, he developed hybrid varieties of cotton that reached ten feet in height, high-yield maize, and a variety of papaya as sweet as a mango—an achievement verified by Nobel laureate Sir C.V. Raman. Raman described Naidu as a "man in a million," whose agricultural experiments were "botanical marvels. His oversized vegetables, including coconut-sized brinjals and pumpkin-sized chillies, were developed through rigorous experimentation with plant breeding and injections, attracting visits from eminent engineers like Sir M. Visvesvaraya. In his later years, Naidu championed Siddha medicine as a cost-effective healthcare solution. He established a Siddha Research Laboratory and published *The Pharmacopoeia of Siddha Research Medicines* in 1973, documenting over 450 formulations based on ancient manuscripts.²⁴ He delivered lectures on the scientific efficacy of Siddha in Stuttgart and West Germany in 1958 and 1959, seeking to integrate ancient Indian wisdom with modern medical standards. To sum up, for improving the quality of local cotton and addressing the entire

value chain, Naidu ensured that agriculture and industry were two sides of the same technological coin. His focus on productivity and efficiency, whether in a factory or on a farm, provided the

blueprint for the resilient, self-sustaining industrial economy that defines the composite Coimbatore district today.

Endnotes

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