



The changing face of manufacturing in Uttar Pradesh: A comparative growth analysis of traditional and modern industrial sectors (2016–2021)

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Abstract

The manufacturing landscape of Uttar Pradesh has been undergoing a gradual yet meaningful transformation, reflecting the state's shift from traditional, labor-intensive industries toward more modern and technology-driven sectors. This study explores these changes through an analysis of industrial data spanning from 2016–17 to 2020–21. By categorizing industries into traditional sectors such as food processing, textiles, and leather, and modern sectors such as electronics, pharmaceuticals, and machinery, the research seeks to understand how different segments of the manufacturing economy have evolved over time. Using trend analysis, compound annual growth rate, and index construction, the study traces patterns of growth, decline, and adaptation within the state's industrial framework. The findings indicate a steady, though uneven, movement toward modernization, shaped by government policy, technological progress, and changing market forces. At the same time, traditional industries continue to demonstrate resilience and social significance, sustaining employment and local enterprise. Overall, the study provides a nuanced understanding of how Uttar Pradesh's manufacturing sector is balancing its industrial heritage with the demands of a modern economy.

Keywords: Industrial transformation, Manufacturing growth, Traditional and modern sectors

Introduction

Manufacturing plays a vital role in driving economic growth, generating employment, and fostering technological progress. In India, this sector comprises a diverse blend of long-established traditional industries alongside rapidly growing modern, technology-driven enterprises. Uttar Pradesh, one of India's largest and most industrially varied states, exemplifies this blend. Traditionally, the state's industrial landscape has been dominated by sectors such as textiles, leather products, and food processing, which have been central to its economy and cultural heritage. However, recent years have seen a noticeable shift with the emergence and expansion of modern manufacturing sectors like electronics, pharmaceuticals, chemicals, and machinery.

This shift signifies more than just a change in production; it reflects broader economic and technological transformations influencing Uttar Pradesh's industrial development. Government policies, notably the Uttar Pradesh Industrial Investment and Employment Promotion Policy of 2017, have played a key role in encouraging industrial modernization, investment, and competitiveness. Alongside policy measures, global market trends, changing consumer preferences, and technological advancements have also shaped the industrial trajectory of the state. A clear understanding of these evolving dynamics is crucial to assessing Uttar Pradesh's capacity to integrate into larger national and global manufacturing networks.

This study aims to explore the transformation of Uttar Pradesh's manufacturing sector by comparing the growth and development of traditional and modern industrial segments over the period from 2016 to 2021. Using official industrial data, the research will quantify growth trends, highlight emerging patterns, and assess the continued relevance of traditional industries amid ongoing modernization. Employing methods such as trend analysis, compound annual growth rate calculations, and index

construction, this study will provide a comprehensive picture of the sectoral changes shaping the state's industrial economy. The insights derived from this research are intended to support policymakers, industry leaders, and development planners in fostering a balanced, inclusive, and sustainable industrial future for Uttar Pradesh.

Study Area

Uttar Pradesh, located in northern India between approximately 23.5°N to 31.5°N latitude and 77°E to 84°E longitude, is the country's most populous state. Covering an area of 243,286 square kilometers, it is characterized by a diverse geographical landscape that includes fertile plains, river systems, and urban industrial centers. It hosts a diverse manufacturing base, ranging from traditional sectors like textiles, leather, and food processing to modern industries such as electronics, pharmaceuticals, and machinery. Major industrial hubs include Kanpur, Noida, Lucknow, and Agra. The state benefits from strategic location advantages and government policies aimed at promoting industrial growth.

Data Used and Methodology

This study relies on secondary data detailing industrial units in Uttar Pradesh from 2016–17 to 2020–21, encompassing a range of manufacturing sectors, both traditional and modern. The dataset includes annual counts of operational units across these sectors. The primary source is the Uttar Pradesh Industrial Survey Report 2020-21, accessible through the official website of the Uttar Pradesh Directorate of Economics and Statistics. The methodology includes quantitative analysis through trend analysis to examine growth patterns over time, alongside the use of GIS and cartographic techniques for generating spatial maps.

Analysis

This study examines the transformation of the manufacturing sector in Uttar Pradesh between 2016 and

2021, focusing on comparative growth trends in traditional and modern industries. The analysis reveals important sectoral shifts that underscore the ongoing industrial transition in the state, highlighting both continuity in established sectors and the emergence of new industries

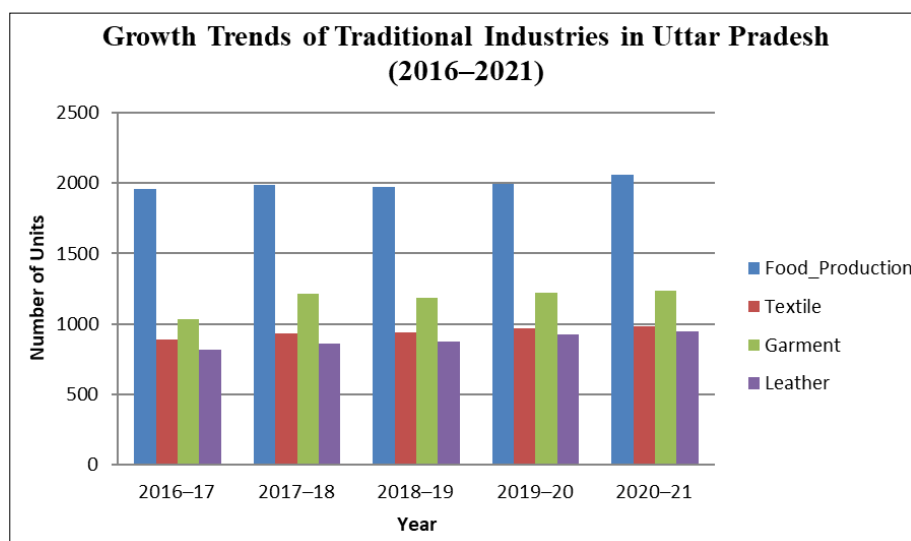
driven by technological advancements and policy incentives.

Industrial Sector Data (2016–17 to 2020–21)

S.No	Description	2016–17	2017–18	2018–19	2019–20	2020–21
1	Food Production Units	1957	1984	1972	1993	2058
2	Beverage Production Units	134	133	130	127	126
3	Tobacco Product Manufacturing	204	198	197	197	198
4	Textile Manufacturing	885	929	942	969	984
5	Garment Manufacturing	1032	1216	1181	1218	1234
6	Leather and Leather Product Manufacturing	819	857	874	922	946
7	Wood and Wood Product Manufacturing (Excl. Furniture)	269	287	291	294	304
8	Paper and Paper Product Manufacturing	570	581	590	609	620
9	Printing and Media Reproduction	406	417	411	413	411
10	Chemical & Pharmaceutical Product Manufacturing	66	73	89	92	114
11	Rubber and Plastic Product Manufacturing	664	677	712	733	742
12	Pharmaceuticals, Ayurvedic & Healthcare Product Manufacturing	225	227	222	224	217
13	Fabricated Metal and Plastic Products	935	961	961	997	998
14	Other Non-Metallic and Mineral Product Manufacturing	1247	1300	1257	1233	1220
15	Basic Metal Products	642	596	586	566	560
16	Fabricated Metal Products (Excl. Machinery & Equipment)	1359	1422	1370	1277	1264
17	Computer, Electronics & Optical Product Manufacturing	208	249	248	254	272
18	Electrical Equipment Manufacturing	603	621	625	667	709
19	Other Machinery and Equipment Manufacturing	708	722	759	798	824
20	Motor Vehicle and Trailer Manufacturing	264	277	282	279	294
21	Other Transport Equipment Manufacturing	167	163	162	154	156
22	Furniture Manufacturing	111	119	124	138	150
23	Other Manufacturing	328	349	398	540	574
24	Establishment & Closure of Machinery/Equipment Units	51	50	46	45	49
25	Electricity, Gas, and Air Conditioning Supply	59	63	67	69	86
26	Water Collection, Treatment, and Supply	0	1	2	2	2
27	Wastewater Management	0	0	1	0	0
28	Waste Management & Material Recovery	6	5	10	9	15
29	Sale and Repair of Motor Vehicles and Motorcycles	573	585	607	612	625
30	Warehousing and Support for Transportation	814	815	815	822	838
31	Publishing Activities	8	13	11	11	16
32	Other Business, Scientific & Technical Activities	3	3	3	3	3
33	Administrative Office & Other Business Support Activities	14	12	12	13	14
34	Computer and Freelance/Gig-Based Enterprises	12	7	6	6	6
35	Other Freelance/Related Activities	14	13	13	11	12

Source- https://updes.up.nic.in/updes/data/asi_reports/asi_2020_21.pdf

Traditional Industrial Sectors



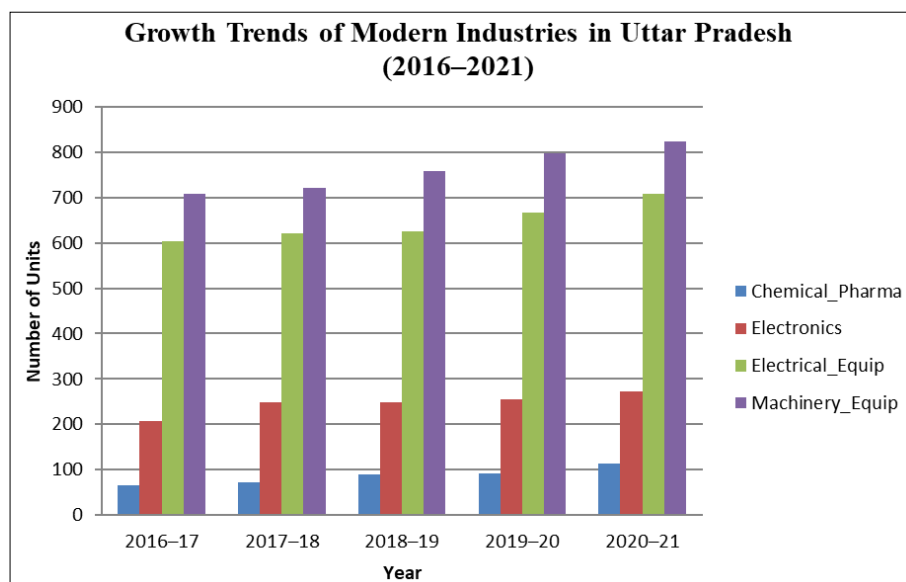
The data indicates that traditional manufacturing industries, such as Food Production, Textile Manufacturing, Garment

Manufacturing, and Leather Product Manufacturing, have maintained a steady upward trajectory during the study

period. Food Production units, for instance, increased from 1,957 units in 2016–17 to 2,058 units in 2020–21, reflecting a resilient sector supported by strong domestic demand and agricultural linkages. Similarly, Textile Manufacturing grew from 885 to 984 units, while Garment Manufacturing experienced notable expansion from 1,032 to 1,234 units, signaling sustained employment opportunities and economic relevance. Leather and Leather Product Manufacturing also registered consistent growth, from 819 to 946 units, highlighting the sector's enduring significance in Uttar Pradesh's industrial landscape.

These trends suggest that, despite the rise of modern industries, traditional sectors continue to play a critical role in the state's economy, supported by established supply chains, skilled labor, and cultural factors. However, slight stagnation in sectors like Beverage Production and Tobacco Manufacturing indicates challenges posed by changing consumer preferences and regulatory frameworks, which may be limiting growth in these areas.

Growth of Modern and Emerging Industries



In contrast to the steady but modest growth of traditional sectors, modern manufacturing industries exhibit more pronounced expansion, underscoring a gradual but clear shift toward technology-driven production. Chemical and Pharmaceutical Product Manufacturing nearly doubled, growing from 66 units in 2016–17 to 114 units in 2020–21. This reflects increased investment and government focus on pharmaceuticals, a sector of strategic importance both nationally and globally.

Similarly, Computer, Electronics, and Optical Product Manufacturing units rose from 208 to 272, indicating the emergence of high-tech manufacturing hubs within the state. Electrical Equipment Manufacturing units increased steadily from 603 to 709, and Other Machinery and Equipment Manufacturing grew from 708 to 824 units, further illustrating a diversification of Uttar Pradesh's industrial base into more sophisticated and capital-intensive sectors.

Metal and Fabricated Products Sector

The data shows mixed trends in metal and fabricated products manufacturing. Fabricated Metal Products excluding machinery experienced a slight decline, decreasing from 1,359 to 1,264 units, which may reflect consolidation or increased automation reducing the number of smaller units. However, Fabricated Metal and Plastic Products overall remained stable, suggesting continued demand in construction, infrastructure, and industrial components.

The steady growth in machinery-related manufacturing highlights a transition toward modernization and mechanization within the sector, aligning with broader economic development goals.

Support and Ancillary Services

Supporting activities such as warehousing, transportation, and vehicle repair services demonstrated consistent growth, reflecting the strengthening of the industrial ecosystem necessary for sustainable manufacturing growth. Warehousing units increased modestly from 814 to 838, while Sale and Repair of Motor Vehicles and Motorcycles rose from 573 to 625 units, indicating improved supply chain and logistics capabilities within the state. Such growth in ancillary sectors is critical, as they provide essential services that enhance manufacturing efficiency and competitiveness.

Environmental and Utility Services

Although relatively small in scale, sectors related to environmental management and utilities showed incremental improvements. Units involved in Electricity, Gas, and Air Conditioning Supply increased from 59 to 86, and Waste Management and Material Recovery more than doubled, rising from 6 to 15 units. These increases reflect an emerging focus on sustainability and infrastructure development, which are increasingly important for long-term industrial growth.

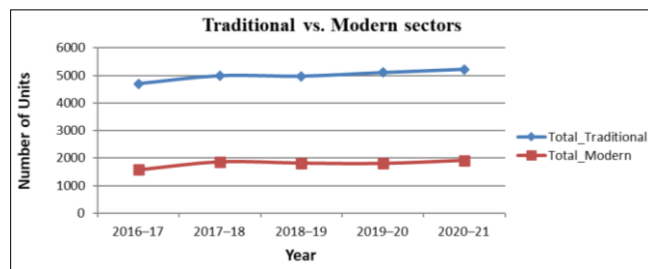
Comparative Analysis

The comparative analysis reveals a dual pattern: traditional industries remain foundational to Uttar Pradesh's manufacturing sector, providing steady employment and economic stability, while modern, technology-oriented industries are rapidly gaining prominence. This shift is likely driven by a combination of government policies encouraging industrial investment, improvements in

infrastructure, and evolving market demands both domestically and internationally.

The growing prominence of pharmaceuticals, electronics, and machinery manufacturing suggests that Uttar Pradesh is gradually integrating into more advanced segments of the industrial value chain. Meanwhile, the sustained relevance of traditional sectors such as textiles and leather underscores the importance of preserving heritage industries while promoting innovation.

Overall, these trends align closely with the research objectives of quantifying sectoral growth and understanding the evolving industrial profile of Uttar Pradesh. The findings highlight the state's ongoing transition from a predominantly traditional industrial economy toward a more diversified and modern manufacturing base, emphasizing the need for balanced policies that support both established and emerging sectors.



Conclusion

The analysis of Uttar Pradesh's industrial sector from 2016 to 2021 highlights a nuanced transformation within the state's manufacturing landscape. Traditional industries such as food production, textiles, garments, and leather manufacturing continue to hold an important place by showing consistent growth and sustaining livelihoods for many communities. At the same time, the emergence and rapid expansion of modern industries including pharmaceuticals, electronics, and machinery manufacturing reflect the state's gradual shift towards a more diversified and technologically advanced industrial base.

This dual pattern of development reveals the complexity of Uttar Pradesh's industrial evolution where longstanding sectors coexist with new growth engines driven by innovation and modernization. Such a landscape calls for thoughtful and balanced policy approaches that not only support the vitality of traditional manufacturing but also foster the growth of emerging industries to ensure inclusive economic progress.

Moreover, the steady advancement in supporting sectors such as warehousing, transportation, and environmental management suggests an increasingly interconnected industrial ecosystem which is vital for sustainable development and competitiveness.

In sum, this study offers a comprehensive understanding of Uttar Pradesh's manufacturing sector dynamics providing valuable insights for policymakers, industry leaders, and scholars aiming to promote balanced and sustainable industrial growth that benefits both established industries and emerging sectors alike.

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