

A study on the impact of industrial clusters on economic development: Punjab

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Abstract- An industrial cluster refers to a geographical network of interlinked companies, suppliers, and related organisations in a specific sector that are bound together by shared labour requirements. Beginning with a description of an industrial cluster and considering its various roles, it went on to discuss how Punjab state's industrial cluster has grown and what impact it has had on the local economy. Industrial clusters may strengthen Punjab state's overall competitiveness.

Keywords- Industry cluster, innovation, economic development

I. INTRODUCTION

In the pursuit of fostering economic growth, nations and regions have long sought strategies to stimulate innovation, job creation, and overall prosperity. Among these strategies, the formation and sustenance of industrial clusters have emerged as a compelling approach. Industrial clusters, characterized by the geographic concentration of interconnected businesses and organizations within a specific industry or sector, have garnered increasing attention for their role in driving economic development. This theoretical research article delves into a particularly intriguing case study: the impact of industrial clusters on the economic development of Punjab, a historically rich and culturally vibrant region in northern India. Punjab, with its diverse economic landscape and a legacy of agricultural prowess, provides an ideal canvas for the exploration of how industrial clusters can shape the economic trajectory of a region.

As the global economic landscape evolves, regions must adapt to remain competitive. Industrial clusters, often described as geographic engines of innovation and economic activity, offer a nuanced perspective on the dynamics of regional development. This study aims to examine the multifaceted relationship between industrial clusters and economic development within the context of Punjab, a region known for its agricultural dominance but increasingly diversifying its economic portfolio. By conducting a comprehensive theoretical analysis, we seek to shed light on the intricate mechanisms through which industrial clusters can influence the economic growth, job creation, and overall prosperity of a region, with Punjab as our focal point.

Punjab, often referred to as the "Land of Five Rivers," is a state in northern India with a rich history and cultural heritage. Traditionally known for its agricultural prowess, Punjab has been a major contributor to India's food security. However, in recent years, the state has witnessed a growing interest in industrialization and diversification of its economy. The government of Punjab has actively promoted the development of industrial clusters in various sectors, including manufacturing, information technology, and agribusiness. This shift towards industrial clusters represents a strategic response to the changing global economic landscape and the need for regional economic development.

The rationale behind this study is rooted in the belief that the presence of industrial clusters can have a transformative impact on regional economies. Industrial clusters are dynamic ecosystems where firms, suppliers, service providers, research institutions, and government agencies coexist and collaborate, creating a synergy that fosters innovation, productivity, and competitiveness. Understanding the dynamics of these clusters and their implications for economic development is crucial, not only for academic curiosity but also for policymakers and business leaders seeking evidence-based strategies to drive regional growth.

II. RESEARCH METHODOLOGY

In this theoretical paper, our methodology revolves around a comprehensive analysis of the relationship between industrial clusters and economic development in the region of Punjab. To achieve this, we rely on an array of secondary data sources, carefully curated from various government repositories and other trusted platforms renowned for their credibility. The data encompass a wide spectrum of variables, including cluster formation indicators, economic growth metrics, employment statistics, innovation indices, and regional development data.

III. INDUSTRIAL DEVELOPMENT IN PUNJAB

Upon analysing the various sources, it is clearly in recent trend manufacturing sector working significantly in mushrooming in India landscape in Punjab and the major portion of the industrial sector comes through it. After the manufacturing sector the term comes of construction sector, electricity, gas, and water supply, while mining sector hold relatively minor portion. It has been notably that shares of various sectors are continually changes with the changing scenario as 1980-81 Punjab's construction sector shows at 28.5 per cent and 2021-2022 is slightly lessor to 27.5 per cent. In contrast, the share of manufacturing increased significantly from 58.2 percent to 65.1 percent during the same period, while the portion of electricity, gas, and water supply turn down from approx.14 per cent to 8 per cent.

In terms of the sub-sectors within manufacturing, it's worth mentioning that manufacturing is further divided into registered and unregistered sectors. Surprisingly, manufacturing accounts for around 57 percent of Punjab's industrial output from 1980-81 to 2014-15 and over 70 percent in Haryana during the same period.

To further understand the comparative growth of the industry and sub-sectors in these states, ratios were calculated were on market at prices. It's observed that during 1980-81 and 1992-93, Punjab had a higher Portion of Gross domestic product industry, but later on Haryana again the favoured portion. The only sector where Punjab was able to maintain its position was electricity and water supply, up until 2010-11. In contrast, Punjab's electricity, gas, and water supply sector lost its contribution to industrial gross value added.

Punjab is a leading state who is the main contribution in construction and manufacturing sector in India but duo of the sector lacked behind in terms of quantity. As if it is compared with Haryana can be seen that Haryana is about 40% forwarded in construction sector and 20% in higher in manufacturing sector as compared to Punjab.

When examining the growth rates of Gross domestic product in sub-sectors of the industry during different phases of development, it's evident that Punjab experienced a significant growth rate of 10.75 percent during the period from 2002-03 to 2010-11. However Punjab was not able to maintain its growth and saw a decline to 2.13 percent during 2010-11 to 2014-15.

The share of the industrial sector in Punjab's Gross domestic product expanded from 20 percent in 1980-81 to 23.6 percent in 2021-22. It is on the shoulder of Public and private sector to join their hands and to make more investment in the industry sector to create employment opportunity and to increase employability skills in order to make deduction in depended upon agriculture.

In terms of employment, Punjab's industrial sector absorbed approx. 8 per cent more labour force during the last 10 years but it is a paradox that its contribution to gross domestic product increased only by 0.3 percentage points.

IV. INDUSTRIAL DEVELOPMENT AND ECONOMIC CONTRIBUTION

Role of Manufacturing Sector:

The manufacturing sector emerged as a pivotal driver of Punjab's industrial landscape and economic growth. Its consistent growth from 58.2 percent to 65.1 percent from 1980-81 to 2021-2022 suggests that Punjab has gradually transitioned towards a more industrialized economy. This growth can be attributed to factors such as policy initiatives, technological advancements, and increasing demand for manufactured goods.

Construction Sector:

Although the construction sector experienced a slight decrease in its share from 28.5 percent to 27.5 percent, it remains a crucial contributor. This sector's stability suggests a consistent demand for infrastructure development, which could be linked to urbanization, population growth, and infrastructure modernization. While not expanding significantly, it continues to provide employment opportunities and contribute to economic growth.

Electricity, Gas, and Water Supply:

The decline in the share of electricity, gas, and water supply from 13.2 percent to 7.4 percent indicates a shift in energy and utility dynamics. This could be due to changes in energy sources, improvements in efficiency, or altered consumption patterns. Despite the decline, these utilities remain essential for sustaining industrial and domestic activities.

Sub-Sectors within Manufacturing:

Manufacturing, further divided into registered and unregistered sectors, plays a dominant role in Punjab's industrial output. The fact that manufacturing accounts for over 70 percent of Haryana's industrial output during the same period highlights the potential for Punjab to further expand its manufacturing base. This expansion could lead to higher production capacities, increased exports, and job creation.

Comparative Growth with Haryana:

The comparison of growth ratios with Haryana indicates areas where Punjab needs to focus for further growth. While Punjab maintained its position in electricity and water supply until 2010-11, other sectors saw Haryana outperforming. To remain competitive, Punjab should explore strategies to revitalize its construction and manufacturing sectors.

Growth Phases:

The observed growth phases in Punjab's industrial sector are noteworthy. The period from 2002-03 to 2010-11, with a growth rate of 10.75 percent, signifies a successful policy shift. However, the subsequent decline from 2010-11 to 2014-15 raises concerns about sustaining this growth momentum. Punjab should investigate the factors behind this decline and implement corrective measures.

Share in GSDP:

Although the portion of the industrial sector in Punjab's gross domestic product increased from Appox.19 in 1980-81 to 23.6 percent in 2021-22, the growth has not been substantial. To boost economic growth and per capita income, Punjab must prioritize the

expansion of its industrial sector. Increased investments, infrastructure development, and policy reforms could help achieve this goal.

Employment vs. GSDP Contribution:

The disparity between employment growth and GSDP contribution in Punjab's industrial sector highlights a potential inefficiency. While the sector absorbed more workers, it failed to proportionately increase its contribution to the state's economic output. This suggests a need for enhancing productivity and value addition in industrial activities to optimize the benefits of increased employment.

V. CONCLUSION

In conclusion, this analysis of Punjab's economic growth from 1980 to 2022 sheds light on the pivotal role played by the industrial sector, particularly manufacturing, in shaping the state's economy. Manufacturing has emerged as the primary driver of economic expansion, with its share steadily increasing to 65.1 percent, signifying the sector's resilience and growth potential. Conversely, the construction sector, while witnessing a slight decline in its share from 28.5 percent to 27.5 percent, continues to be a vital contributor to Punjab's development. The utility sector, comprising electricity, gas, and water supply, experienced a significant decrease in its share from 13.2 percent to 7.4 percent, highlighting the need for renewed focus and investment in this area. Notably, the mining and quarrying sector held a minor share throughout this period, suggesting room for exploration and development. The comparison with Haryana reveals that while Punjab led in certain phases, it faced challenges in sustaining its growth momentum, particularly in construction and manufacturing. Haryana's consistently higher ratios in these sectors underscore its competitive advantage. Furthermore, the analysis emphasized the importance of accelerating industrial growth to increase the industry sector's contribution to Punjab's Gross State Domestic Product (GSDP). The share of industry in gross state domestic product expended modestly from 20 percent to 23.6 percent during this period, indicating a need for more substantial investments and policy support. Regarding employment, Punjab's industrial sector absorbed a higher workforce share during the last decade, reflecting its potential for job creation. However, translating this into a more significant contribution to GSDP remains a challenge, warranting strategies to enhance productivity and efficiency.

VI. REFERENCES

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