

## Industrial parks and regional economic development: Select literature review

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### Abstract

The development of industrial parks as a constructive channel of industrial infrastructure has attracted the attention of policymakers in recent years as they can develop certain synergies and a typical entrepreneurial culture in the industrial economy of any country. At their best, industrial parks align infrastructure provision and agglomeration economies to jolt industrial growth. Local communities embracing the concept of industrial parks are looking for some additional benefits such as higher economic efficiency, higher competitiveness, generation of additional revenues through positive relations at the community level, creation of jobs, solving the conflict between economy and environment, diminishing the demand on the country infrastructure, decreasing the effects of pollution, and using energy from regenerating sources and replacement materials. It is in the context, the paper attempts to explore the economic imperative of industrial parks with particular reference to its impact on regional economic development.

**Keywords:** industrial parks, economic development

### 1. Introduction

#### Industrial Parks and Regional Economic Development

Industrial parks can have a positive influence on the revitalisation of business environment, transfer of modern technologies, and the restructuring and modernisation of industry in any economy. They are one of the most important factors supporting positive and progressive economy development. They strengthen the industrial base of small and medium-size towns, increase the efficiency of urban land use, and reduce rural-urban migration. Firms located in industrial parks often use the services of local companies, creating not only backward and forward linkages, but also diffusing economic learning to the wider business community. The concentration of firms can provide significant spillover effects both inside and outside the park – that is, information spillovers, including knowledge and technology; the specialisation and division of labour among enterprises; the development of skilled labour markets; and the development of markets around the parks <sup>[1]</sup>. Well planned and equipped parks stimulate the relocation of industries to semi-urban or rural areas and help to relieve congestion and pollution in metropolitan areas. Further, industrial parks represent an opportunity for an influx of foreign investment and decrease of unemployment by means of creation of new jobs and other benefits of regional industrial development of the economy.

Industrial parks have undoubtedly a positive impact on business in a country where they are located. They are beneficial in the fact that they apply modern technologies and innovations, bring economic and innovative potential or internationally well-proven know-how, and thus support the process of reconstruction and modernisation of the industry. They create conditions for the development of small and medium size companies and their cooperation with other world-class entities, and therefore, have a positive effect on

cooperativeness ability, labour productivity, increase of employment, and the research capabilities of a particular industrial region. The job opportunities created or transfer of technologies among companies will bring about certain synergic effects on the regional industrial economy, and will ultimately have a progressive impact on the overall economic development of the country. The development of industrial parks promotes the exclusive growth and development of the core industrial sectors identified by the Industrial Policy of the Government.

Within the context of an overall development strategy of the country, industrial parks can be valuable instruments to increase the regional and national industrial competitiveness. They offer the benefits of high quality infrastructure in build-to-suit sites, strategically located in key industrial areas. Industrial parks generally provide an excellent institutional framework, support services and physical infrastructure in a more specified and customised manner. They are the policy drivers to foster sufficing investments, employment, competitiveness, sustainable business strategies, and regional economic development. They can provide fertile grounds for leveraging new technologies, learning and innovations, jobs and markets, and ultimately value added links between academic research and industry and thereby creating an environment for the existing industries to consolidate and new industries to come up on a more viable and sustainable basis.

### 2. An Overview of Select Literature

Successful industrial parks can become the growth and innovation hubs in the economy directing interactive learning and national economic development. Leveraging industrial parks as a policy instrument fosters competitiveness of the agglomeration economies. They attempt to run-over the market and institutional imperfections, facilitate economic learning and catch-up, leverage new technologies and knowledge, and accelerate rapid industrial and economic development in transition economies. When successfully managed, industrial

<sup>1</sup> Sonobe, Tetushi and Otsuka, K. (2006). *Cluster-Based Industrial Development: An East Asian Model*. New York: Palgrave Macmillan.

parks can provide an environment for enterprise and innovation to flourish and significantly influence the regional industrial economy of any country. An overview of select literature on the nexus between industrial parks and regional economic development is presented below:

Andreas M. Hein, Marija Jankovic, Romain Farel and Bernard Yannou (2015) <sup>[2]</sup> observe that the implementation of eco-industrial parks significantly contribute to the creation of a sustainable economy. They are a set of businesses within a specific geographic area which share resources and thereby increase profitability, reduce environmental impact, and improve social performance. Its impact stretches over three different levels: the firm, across firms, and regional and global, and creates certain economic, environmental, and societal value for the stakeholders. Dana Kiselakova and Alexander Kiselak (2014) <sup>[3]</sup> attempt to identify the key macroeconomic factors affecting the establishment of industrial parks with positive effects on sustainable regional development. Industrial parks contribute significantly to regional development and revitalise the overall economic situation of the country. It promotes job creation in regional labour market, creates favourable conditions for entrepreneurship, and increases the support for innovative businesses to enhance competitiveness and support for export growth. The major localisation factors relevant to the support, establishment, and management of industrial parks are mainly the status of foreign direct investments, employment of persons, governmental financial support and investment incentives, the overall readiness and availability of the industrial area with focus on the positive effects of regional development.

Jason G. Jolley and Sharon R. Paynter (2013) <sup>[4]</sup> attempt to scout the application of Growth Pole Theory as the intellectual underpinnings of joint industrial parks, its innovative financing and revenue sharing arrangements, and the lessons learned from its implementation that can be applied to other locales. They highlighted the concept of 'Mini Hubs' as an innovative model for the rural communities to share the cost and revenues and thus leverage the economic benefits for the poorest locales. Joint parks and mini hubs may be perceived as a growth pole with the presence of many dexterous industries whose activities directly and indirectly lead to broader regional economic growth and employment. Yannick Saleman and Luke Simon Jordan (2013) <sup>[5]</sup> examine how industrial parks are built and how they fail. At their best, industrial parks align infrastructure provision and agglomeration economies to jolt industrial growth. They classified the implementation failures of industrial parks into four performance categories, namely:

(i) the parks do not get built, (ii) the parks are built but there is little demand from the firms to locate and invest in them, (iii) the parks are built and generate demand, but with few 'cluster effects', and (iv) the parks are successful but have a neutral or negative side effects such as 'negative spillovers' and 'crowding out' on investment climate outside the parks. The categories (i) and (ii) relate to the performance failures in terms of outputs, while (iii) and (iv) relate more to outcomes.

Suzanne Schwab (2012) <sup>[6]</sup> explores the opportunities to improve the image and competitiveness of the industrial parks by capitalising three contemporary concepts, namely: sustainable development with 'green' principles as well as economic stability, the 'creative class' work force, and the popularity of mixed use development. Lack of amenities is a common problem among industrial parks and hence, recommendations should address issues in certain areas including beautification, mobility and connectivity, land use, economic growth, and regional community development. Celestin Monga (2011) <sup>[7]</sup> contemplates that the success of Special Economic Zones (SEZ) in general, and that of industrial parks in particular, in many countries has motivated several other countries to launch similar initiatives. He suggests cluster-based industrial parks as the most effective tool for developing competitive industries and to generate employment. The rationale is to provide special policy incentives and infrastructure in a circumscribed geographic location to the firms that can serve as 'experimental laboratories' for new initiatives, strategies, and policies. The spillovers will eventually translate into sectoral development, sustained growth, productivity increases, and other financial and economic benefits for the entire economy.

D. Sakr, L. Baas, S. El-Haggag and D. Huisingsh (2011) <sup>[8]</sup> behold that the trend of clustering industries into regional estates is continuing in both developed and developing countries, especially when there is rapid industrialisation. The study examined the major success and failure factors of many of the currently operated eco-industrial parks. To them, industrial parks should be integrated into national development planning processes to link it to the national plans, budgets, sector strategies, and local level implementation within the wider stakeholder community for its success and continuity. K.N. Srikumar (2011) <sup>[9]</sup> sifts that the development of industrial parks by KINFRA with ready-to-use infrastructure facilities provides a strong industrial environment in the State. It covers up the inadequacy of industrial infrastructure in the backward areas and thus finds a solution to the problems of low levels of industrialisation and unemployment in Kerala. The development of such parks will encourage the pace of modernisation so that the industrial units will become much more competitive and investor friendly. KINFRA has specialised in infrastructure development with core competency in setting up splendid industrial parks in Public-

<sup>2</sup> Hein, Andreas M., Marija Jankovic, Romain Farel and Bernard Yannou (2015). 'A Conceptual Framework for Eco-Industrial Parks' in the Proceedings of International Conference on Design Engineering, Computers and Information. Massachusetts, USA: The American Society of Mechanical Engineers.

<sup>3</sup> Kiselakova, Dana and Alexander Kiselak (2014). 'Analysis of Macroeconomic Factors for the Establishment of Industrial Parks and their Effects on Regional Development—Empirical Study from Slovakia' in *Asian Economic and Financial Review*. Pakistan: Asian Economic and Social Society. 4(9): 1220-1236.

<sup>4</sup> Jolley, Jason G. And Sharon R. Paynter (2013). 'Multi-Jurisdictional Industrial Parks and Revenue Sharing: An Application of Growth Pole Theory' in *Journal of Public Administration and Governance*. Las Vegas, USA: Macrothink Institute. 3(2): 78-89.

<sup>5</sup> Saleman, Yannick and Luke Simon Jordan (2013). *The Implementation of Industrial Parks—Some Lessons Learned in India*. Washington, DC: World Bank.

<sup>6</sup> Schwab, Suzanne (2012). *A New Class for Industrial Parks*. Irvine: Department of Planning, Policy and Design, University of California.

<sup>7</sup> Monga, Celestin (2011). 'Cluster-based Industrial Parks—A Practical Framework for Action.' Policy Research Working Paper. No. 5900. World Bank: Africa Region Structural Transformation Unit & Development Economics Vice Presidency.

<sup>8</sup> Sakr, D., L. Baas, S. El-Haggag and D. Huisingsh (2011). 'Critical Success and Limiting Factors for Eco-Industrial Parks: Global Trends' in *Journal of Cleaner Production*. Netherlands: Elsevier. 19(2011): 1158-1169.

<sup>9</sup> Srikumar, K.N. (2011). 'KINFRA—A Saga of Success' in *Kerala Calling*. Thiruvananthapuram: Government of Kerala. August, 2011. pp 16-19.

Private-Partnership (PPP) mode and explores how the State is equipped to usher into the new avenues of entrepreneurship.

Jarmila Vidova (2010) <sup>[10]</sup> opines that industrial parks are one of the most important factors supporting positive economy development. They represent an opportunity for an influx of foreign investment and decrease of unemployment rate by the means of creation of new jobs. The job opportunities created or transfer of technologies among companies will definitely bring certain synergic effects in the domestic industrial economy. If an industrial park is linked with a clearly defined goal and intention, it must have a positive influence on revitalising the business environment, transfer of modern technologies, creation of new working places, and modernisation of the industry. Hung-Suck Park, Eldon R. Rene, Soo-Mi Choi and Anthony S.F. Chiu (2008) <sup>[11]</sup> examine the feasibility of shifting conventional industrial parks to eco-industrial parks by spontaneous industrial symbiosis and sustainable development policies. They describe how national policies and the developmental activities drive the global trend of innovation for converting the existing parks to eco-industrial parks through inter-industry waste, energy, and material exchange in industrial complexes. Propped by the existing symbiosis network and the gradually evolving sustainable development concept, there must be a rapid shift in the economic growth strategy – from a capital and external growth driven strategy to innovation and qualitative growth driven strategy – to enable industrial parks better materialise future opportunities.

Lubica Lesakova (2008) <sup>[12]</sup> discloses that industrial parks play a significant role in the economic development of every country. They enhance business and create a definite space for building economic relationships. Besides the direct effects on inflow of foreign capital and decrease in unemployment, the indirect effect of industrial parks comes in the form of an increased level of social and cultural life in the region. The economy is well connected to global networks and the domestic companies can participate with global players in all stages of production and distribution all around the world. Justin Tan (2006) <sup>[13]</sup> divulges that industrial parks are increasingly being promoted to facilitate regional development. Within the clusters, the firms have easy access to specialised inputs, employees, information, institutions, and public goods, and they also benefit from the presence of complementarities. As a result, productivity and innovation are enhanced and the linkages between confer certain competitive advantage. Qualified suppliers, skilled workers, and informed investors become available which lowers the cost of entry for subsequent firms and making the area relatively more attractive. Such ‘agglomeration economies’ encourage growth which are created from the spin-offs in the region. Thus, as a

new spatial organisational form, industrial clusters offer more flexibility in the ever changing industrial environments.

K. Lakshminarayana Rao (2006) <sup>[14]</sup> explicates the role of industrial parks in the development of agro-processing industries in India. A well designed agro-industrial park with all the requisite facilities has considerable potential for commercial success. The advantages of shared investment, access to technical information and incentives, scale of operation and the provision of services such as power, water, and waste disposal are obvious, particularly when seen in retrospect. A number of agro-industrial parks have been established in India which provides networks of contacts between producers, markets and processors and the physical infrastructure required for transforming industries. A.J.D. Lambert and F.A. Boons (2002) <sup>[15]</sup> highlight the concept of ‘industrial ecology’ with the challenge for sustainable development, focusing on the problems of mixed industrial parks. They argue that the case of mixed industrial parks is poorly investigated although they have a major environmental and spatial impact. The challenges there are indeed far more diverse and thus, the study describes the societal and environmental problems of mixed industrial parks and proposes certain solutions. They stressed that appropriate planning and management of mixed industrial parks will become an urgent problem in the near future.

Caj O. Falcke (2002) <sup>[16]</sup> considers industrial parks as an instrument of local industrial development under the impulse of globalisation and world trade liberalisation. By clustering into industrial parks, the small, medium, and even large enterprises can take advantage of public infrastructures, economise on construction and common facilities, and gain access to nearby skilled labour markets and other critical inputs. It is now quite possible for the enterprises to decentralise their production and distribution activities on a global basis. He has identified economies due to outsourcing, productivity gains, and the economies of scale as the main factors causing improvements in the economic and financial fortunes of industrial parks. Raymond P. Cote and E. Cohen Rosenthal (2002) <sup>[17]</sup> elucidate that industrial parks are large tracts of land, sub-divided and developed for the use of several business entities simultaneously, distinguished by its shareable infrastructure and close proximity of firms. They represent the ultimate integration of economic, ecological, and social dimensions of sustainable industrial development. As self designing systems, they exhibit immense possibility and if they are seeded with sufficient diversity, they can design their own solutions to their problems. At present, industrial parks have begun to address the issue of sustainability as well as ecological integrity and efficiency.

<sup>10</sup> Vidova, Jarmila (2010). ‘Industrial Parks—History, Their Present and Influence on Employment’ in *Review of Economic Perspectives*. Czech Republic: Masaryk University. 10(1): 41-58.

<sup>11</sup> Park, Hung-Suck, Eldon R. Rene, Soo-Mi Choi and Anthony S.F. Chiu (2008). ‘Strategies for Sustainable Development of Industrial Parks—From Spontaneous Evolution to Systematic Expansion of Industrial Symbiosis’ in *Journal of Environmental Management*. Netherlands: Elsevier. 87(2008): 1-13.

<sup>12</sup> Lesakova, Lubica (2008). ‘Establishing Industrial Parks for the Development of Slovak Economy’ in the Proceedings of 6<sup>th</sup> International Conference on Management, Enterprise and Benchmarking. Budapest, Hungary: MEB-2008 Proceedings. pp 23-30.

<sup>13</sup> Tan, Justin (2006). ‘Growth of Industry Clusters and Innovations: Lessons from the Beijing Zhonguancun Science Park’ in *Journal of Business Venturing*. Netherlands: Elsevier. 21(2006): 827-850.

<sup>14</sup> Rao, Lakshminarayana K. (2006). *Agro-Industrial Parks: Experience from India*. Rome: Food and Agriculture Organisation (FAO), United Nations.

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<sup>17</sup> Cote, Raymond P. and E. Cohen Rosenthal (1998). ‘Designing Eco-Industrial Parks: A Synthesis of Some Experiences’ in *Journal of Cleaner Production*. Netherlands: Elsevier. 6(1998): 181-188.

### 3. Major observations and Conclusion

Inadequate infrastructure is a major factor hindering the industrial development of the backward regions of any economy. The development of industrial parks with ready-to-use infrastructure facilities provides a strong industrial environment, covers up the inadequacy of industrial infrastructure in the backward areas and thus finds a solution to the problems of low levels of industrialisation and unemployment. The development of such parks will encourage the pace of modernisation so that the industrial units will become more competitive and investor-friendly in the backward regions of any country. With a clear and pragmatic approach, the Governments of developing countries are adopting various policy measures for the development of industrial parks in their strategic sectors so as to utilise fully their immense industrial as well as agglomeration potentials for making the country a vibrant industrialised economy with faster, inclusive, and sustainable economic growth.

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