

# **Role of science and technology parks in the Era of 4th Industrial Revolution: Innovation ecosystem, opportunity and challenges**

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## **Abstract**

Despite the science and technology parks (STPs) notion is for over 50 years, it is persistently evolving and changing, and accordingly new doubts, questions, and needs have come to light. Therefore, it is necessary to consider the impact of the 4<sup>th</sup> Industrial Revolution and STPs innovation to obtain a better understanding of their future. The primary role of STPs in the 4<sup>th</sup> Industrial Revolution can be the increase in the speed of networking as a growth engine of regional development. Next role of STPs in the 4<sup>th</sup> industrial revolution is related to carrying out new education programs or capacity-building projects to cope with hyper-intelligence, which is another key characteristic of the 4<sup>th</sup> Industrial Revolution.

An investigation into new articles of STPs is indicative their goals and findings as well as the guidance on controversial subjects, and detects existing gaps, challenges, and chances for future researches. The results demonstrate that the diverse definitions of STPs create very high expectations about these parks. A great number of these articles indicate the positive contributions for both the region and tenant companies and consequently, it is led to an intense link with universities. Besides, it is important that how technological knowledge obtained from universities can cause to increase the innovation by firms placed in the STPs. Science and technology parks and innovation strategies followed a major mission in driving innovative assets

and supporting emerging industries, whereas the government-academia-industry cooperation and the formation of an ecosystem are essentials. The structure perception of an innovation ecosystem is vital for policy implementers and participants in the determination of growth strategies and lucrative implementation. For the sustainable development of STPs and innovation-driven economies, it is essential to recognize potential feedback structures that exist in the ecosystems from a systems perspective. Hence, policymakers can recognize the suitable policies having a positive impact on the technological innovation, development of business, economic performance, and market competitiveness through an ecosystem of feedback loops. Efficient policy assessment and execution will further modify the promotion of STPs and high-tech industries, containing science and innovation policies, financial policies, and export development policies.

**Keywords: Science and technology parks, 4<sup>th</sup> Industrial Revolution, Innovation ecosystem**