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CILLA TECH PARK AND THE CONSTRUCTION OF INNOVATIVE ENVIRONMENTS: STRATEGIES FOR REGIONAL DEVELOPMENT

CILLA TECH PARK E A CONSTRUÇÃO DE AMBIENTES INOVADORES: ESTRATÉGIAS PARA O DESENVOLVIMENTO REGIONAL

PARQUE TECNOLÓGICO DE CILLA Y LA CONSTRUCCIÓN DE ENTORNOS INNOVADORES: ESTRATEGIAS PARA EL DESARROLLO REGIONAL

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ABSTRACT

Recent technological transformations have fueled debate on regional development policies, highlighting innovation as a central element. In this context, technology parks emerge as strategic instruments for fostering innovation ecosystems, fostering economic and social development. This study analyzes the creation of Cilla Tech Park (CTP), located in Guarapuava, Paraná, as an example of a public policy focused on regional innovation. The qualitative, descriptive, and exploratory research was conducted through a case study, based on a literature review, document analysis, and institutional data. The results highlight the articulation between government, universities, and the productive sector—the triple helix model—as a determining factor in the consolidation of the local innovation ecosystem. The CTP stands out as an environment conducive to knowledge generation, entrepreneurship, and technology transfer, contributing significantly to the region's economic dynamism. Guarapuava's experience demonstrates how well-structured public policies, combined with cooperation among local stakeholders, can drive sustainable development and regional competitiveness.

Keywords: Innovation. Regional Development. Technology Parks. Triple Helix.

RESUMO

As transformações tecnológicas recentes têm impulsionado o debate sobre políticas de desenvolvimento regional, destacando a inovação como elemento central. Nesse contexto, os parques tecnológicos emergem como instrumentos estratégicos para fomentar ecossistemas de inovação, promovendo o desenvolvimento econômico e social. Este estudo tem como objetivo analisar o processo de criação do Cilla Tech Park (CTP), localizado em Guarapuava (PR), como exemplo de política pública voltada à inovação regional. A pesquisa, de natureza qualitativa, descritiva e exploratória, foi conduzida por meio de estudo de caso, com base em revisão bibliográfica, análise documental e dados institucionais. Os resultados evidenciam a articulação entre governo, universidades e setor produtivo — modelo da tríplice hélice — como fator determinante para a consolidação do ecossistema de inovação local. O CTP destaca-se como ambiente propício à geração de conhecimento, empreendedorismo e transferência tecnológica, contribuindo significativamente para a dinamização econômica da

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região. A experiência de Guarapuava demonstra como políticas públicas bem estruturadas, aliadas à cooperação entre atores locais, podem impulsionar o desenvolvimento sustentável e a competitividade regional.

Palavras-chave: Inovação. Desenvolvimento Regional. Parques Tecnológicos. Tríplice Hélice.

RESUMEN

Las recientes transformaciones tecnológicas han impulsado el debate sobre las políticas de desarrollo regional, destacando la innovación como un elemento central. En este contexto, los parques tecnológicos emergen como instrumentos estratégicos para impulsar ecosistemas de innovación, impulsando el desarrollo económico y social. Este estudio analiza la creación del Parque Tecnológico Cilla (PCC), ubicado en Guarapuava, Paraná, como ejemplo de una política pública centrada en la innovación regional. La investigación cualitativa, descriptiva y exploratoria se realizó mediante un estudio de caso, basado en una revisión bibliográfica, análisis documental y datos institucionales. Los resultados destacan la articulación entre el gobierno, las universidades y el sector productivo —el modelo de triple hélice— como factor determinante en la consolidación del ecosistema local de innovación. El PCC se destaca como un entorno propicio para la generación de conocimiento, el emprendimiento y la transferencia de tecnología, contribuyendo significativamente al dinamismo económico de la región. La experiencia de Guarapuava demuestra cómo las políticas públicas bien estructuradas, combinadas con la cooperación entre los actores locales, pueden impulsar el desarrollo sostenible y la competitividad regional.

Palabras clave: Innovación. Desarrollo Regional. Parques Tecnológicos. Triple Hélice.

1 INTRODUCTION

Technological innovations in recent years have directly impacted economic activities. For this reason, the debate around regional development policies has emphasized innovation as the main driver of this process. It is from this perspective that the creation of innovative environments focused on innovation and technology can contribute to boosting productivity, generating jobs, and improving living standards, making regions more competitive in promoting socioeconomic development (SERRA et al., 2021).

Therefore, there is a growing understanding that regions can create economic development trajectories and pathways from policies and strategies to foster an innovation environment (NIETH et al., 2018). In this way, the regions seek to develop their innovation ecosystem, based on various strategies.

The constitution of an innovation ecosystem, according to Cario et all (2017), can be composed of a network of institutions from the public and private sectors, whose activities are focused on interaction, creation, alteration, importation and dissemination of new technologies. This network includes: universities, research institutes and research and development (R&D) centers, government development and financing agencies, public and private companies, business associations, non-governmental organizations, users and customers in the market, among others.

As a result of this context, the emergence of various types of innovation environments, among which the technology park stands out, which have been perceived as valuable instruments, especially for the promotion of regional economic development.

As Faria et all (2021) point out, despite different typologies, legal models, and governance mechanisms, there is a consensus that the main function of a technology park is to induce economic and social development, through technological innovation, achieved by the interaction between companies, universities, and governments. In this way, technology parks are used as instruments by the governments of several countries to promote the development of their innovation systems.

In this sense, the Technological Parks have as their main objective the regional technological development, that is, the "dynamization of business activity characterized by the generation and transfer, use and intensive application of technologies aimed at the development of municipalities and regions" (ANPROTEC, 2002, p. 44).

According to the analysis of Audy and Piqué (2016), technology parks represent a new model of wealth generation environment, integrating the scientific and technological knowledge produced by universities with entrepreneurs and a new government perspective on development.

Based on these premises, this study seeks to show that this new paradigm of innovation represented by technology parks is already under development and has contributed to the resumption of the capacity to stimulate regional development. In Brazil, recent data from 2021 were identified and registered in the MCTI- InovaData-Br, 93 technology park initiatives, 58 of which are in the operation stage, 13 in the implementation stage and 22 in the planning stage
(FARIA ET ALL, 2021).

In Paraná, in the latest surveys, 18 technology park initiatives were identified, at various stages of maturity, including the Cilla Tech Park (CTP), a Technology Park located in Cidade dos Lagos in Guarapuava in Paraná, (SETI, 2023).

It is known that the planning, implementation and operation of a technology park is complex and involves several actors, interests and different objectives. With the purpose of showing how the construction of an innovation ecosystem, especially a technology park, takes place as an instrument of public policies for local and regional development, this study aims to investigate the process of creation of Cilla Park Tech, based on the innovation ecosystem of Guarapuava as a mechanism to boost local and regional development.

2 METHODOLOGY

This research is characterized as qualitative, descriptive and exploratory, being developed through a case study. The proposal of this research is based on the collection of diverse information that is related to innovative environments as a factor of regional development, innovation ecosystems and more precisely the Technology Parks as an inducer of local and regional development. Based on this framework, it is intended to structure the exploratory analysis.

The investigation of data and elements for the textual construction through the bibliographic review was using books, theses and articles, seeking to conceptualize the ecosystem of

innovation and its relations with regional development and technology parks. Other documentary sources were used, such as: publications and studies on the website of the National Association of Entities Promoting Innovative Enterprises, ANPROTEC. In order to analyze the existing literature on current discussions, theoretical and empirical and how the authors analyze the approach of regional innovation ecosystems, to serve as a basis for regions to develop their ecosystems.

The methodological procedures that characterize this work as a case study of the Cilla Tech Park (CTP), a Technological Park located in the Cidade dos Lagos neighborhood in Guarapuava in the state of PR, was based on the documentary survey based on the analysis of documents and other texts regarding information on the socioeconomic profile of Guarapuava disseminated through the material Caderno dos Municípios do IPARDES and data from IBGE.

To show the conception and structuring of the Guarapuava Science, Technology and Innovation Forum and the Innovation Ecosystem as a strategy to strengthen the network of actors and build a city guided by innovation, sustainability and quality of life, based on the pillars of science and technology and innovation as inducers of local and regional development, the study published in the book on the Guarapuava 2035 Conference was used: a journey to the future of Guarapuava organized by the authors Labiak Jr and Krysa.

It was sought in the legislation, the laws and decrees related to scientific, technological, innovation activities, and installation of technological parks in the Municipality of Guarapuava. Official public documents available on the Cilla Tech Park website, including Minutes, Statutes, Internal Regulations, CTP Reports. To finally analyze how the set of strategies and actions of the CTP can impact the local and regional development of Guarapuava.

To examine the collected data, according to qualitative, systematic and descriptive procedures, the content analysis technique was used.

3 THEORETICAL FOUNDATION

3.1 INNOVATIVE ENVIRONMENTS

Regions are committed to developing their innovation ecosystems through a variety of strategies, including programs, actions, policies, and legislation that drive and direct the development of innovative environments. These strategies value knowledge, culture, technologies, and creativity, among other aspects, and have a

direct impact on the sustainability of the innovation ecosystem (MATOS AND TEIXEIRA, 2022).

3.1.1 Regional Development through Innovation Ecosystems

In recent decades, the debate on regional development policies has increasingly focused on the incorporation of innovation as the main driver of regional progress.

Schumpeter (1997) recognized the importance of innovation, highlighting that it breaks cycles, generates new technologies, which causes development, causing several other benefits to the population. All this led by what he called an innovative entrepreneur who drives technological progress and economic development, in addition to boosting the economy by constantly renewing the productive sectors.

The literature shows a consensus that knowledge and innovation are crucial factors to ensure dynamic economic growth, greater competitiveness and, consequently, the prosperity of regional economies. Several strands of economic geography share the idea that innovation is essential for development, highlighting its importance for the competitiveness of regions (Garcia et al., 2022).

According to Souza (2016), innovations are a fundamental engine for economic growth, directly impacting the development of regions. This is manifested in the increase in jobs, in the increase in the wage bill and in the improvement of income distribution. Such transformations have the potential to foster new ventures and open up new markets.

According to Serra et al., 2021, to boost economic growth and overcome inequalities, it is essential to promote innovation in different regions. Thus, the growing interest in regional innovation policies has captured the attention of government leaders and public policy makers, considered essential to debate issues related to innovation and growth at the regional level.

In view of this, the regions are considered fundamental places for the production and innovation of knowledge, where the regional competitive advantage is based on the ability to attract development opportunities and attract high-tech companies and talents, ensuring greater wealth creation and employability (LOPES; FARINHA, 2018).

In this way, regions seek to strengthen their innovation ecosystems through various strategies. These ecosystems are made up of an interconnected set of actors, communities, organizations, material resources, norms, and policies. They involve

universities, governments, research institutes, laboratories, small and large companies, as well as the financial market, all working collaboratively in a given region. The objective is to promote the flow of knowledge, support technological development and generate innovations that meet market demands (WESSNER, 2007, Apud TEIXEIRA Et All, 2017).

Innovation ecosystem is understood by Wang (2010) Apud Teixeira et all (2017) as the dynamic system, composed of interconnected people and institutions, which are essential to stimulate technological and economic development, and comprises a set of actors from industry, academia, associations, economic, scientific and government bodies at all levels. Etzkowitz, Solé and Piqué (2007) apud Teixeira et all (2017) point out that the ecosystem also includes investors, entrepreneurs and academic researchers, as well as offices that work in technology transfer, as sources for technological development and investment opportunities.

In order to encourage the emergence and strengthening of innovation ecosystems and mechanisms for the creation of innovative enterprises in Brazil, which are essential for the generation, attraction, acceleration and development of these enterprises throughout the national territory, Ordinance No. 6,762 was instituted on December 17, 2019, establishing the National Program to Support Innovative Environments (PNI) (FARIA ET AL., 2021).

Thus, several types of innovation environments emerge, especially technology parks, which are recognized as valuable instruments for the promotion of regional economic development.

3.1.2 Technology Parks

Faria et al. (2021) point out that, despite the various typologies, legal models, and governance mechanisms, there is a consensus that the main function of a technology park is to boost economic and social development through technological innovation, promoted by the interaction between companies, universities, and governments. In this way, technology parks are used as instruments by the governments of several countries to foster the development of their innovation systems.

According to Audy and Piqué (2016), the most widely used concept to understand technology parks is the Triple Helix, developed by Henry Etzkowitz. This concept provides for the ideal articulation between three actors: industry, government and university. Through this model, the relationships between these three actors are

identified. The first helix focuses on the relationships and interactions between the university and scientific environments, the second is composed of the business sector and the third represents the different levels of government. The central idea of the triple helix model is that the interaction between university, business and government is key to stimulating innovation in a knowledge-based society.

In this context, the relevance of the role played by technology parks as an environment to promote innovation, knowledge transfer, entrepreneurship and collaboration between different actors are considered fundamental to induce regional development

Consequently, the growing interest in regional innovation policies has attracted the attention of government leaders and public policy makers, aimed at encouraging and supporting the constitution of innovative environments, particularly technology parks, to boost economic growth and overcome inequalities, it is essential to promote innovation in different regions (SERRA et al., 2021).

With this perspective, the Government of the State of Paraná instituted the Legal Framework for Science, Technology and Innovation of Paraná, which represents a significant effort by the state government to strengthen the innovation ecosystem and foster a more robust entrepreneurial culture in the state, with the objective of establishing measures to encourage innovation and scientific and technological research in the productive sectors, academic and business. (PARANÁ, 2024)

As a result, State Decree 5,145 in 2016 established the State Council of Technology Parks as the body responsible for the preparation of guidelines and regulations for the formulation, implementation and monitoring of the Paraná Complex of Technology Parks, as a public policy to encourage the development of innovation in the State of Paraná, which, in its justification, brings the importance for innovation in the state (PARANÁ, 2016)

By State Decree No. 9,194/2018, the State System of Technology Parks (SEPARTEC) was established with the purpose of being an articulating instrument of technology parks in Paraná in the context of innovation systems (PARANÁ, 2018) To implement the Legal Framework for Science, Technology and Innovation and align the state's regional development strategies, the State Science Policy was established, Technology and Innovation – PECTI 2024-2030, developed through the Secretariat of Science, Technology and Higher Education and the Secretariat of

Innovation, Modernization and Digital Transformation and built by the people of Paraná, who were able to contribute, to
from a public consultation (PARANÁ, 2024)

The objectives, principles, and actions of PECTI 2024-2030 were outlined to promote innovation and sustainable development in the state. The implementation of these actions will be conducted by Paraná society in conjunction with representatives of the triple helix, state and municipal government, higher education institutions and the business sector.

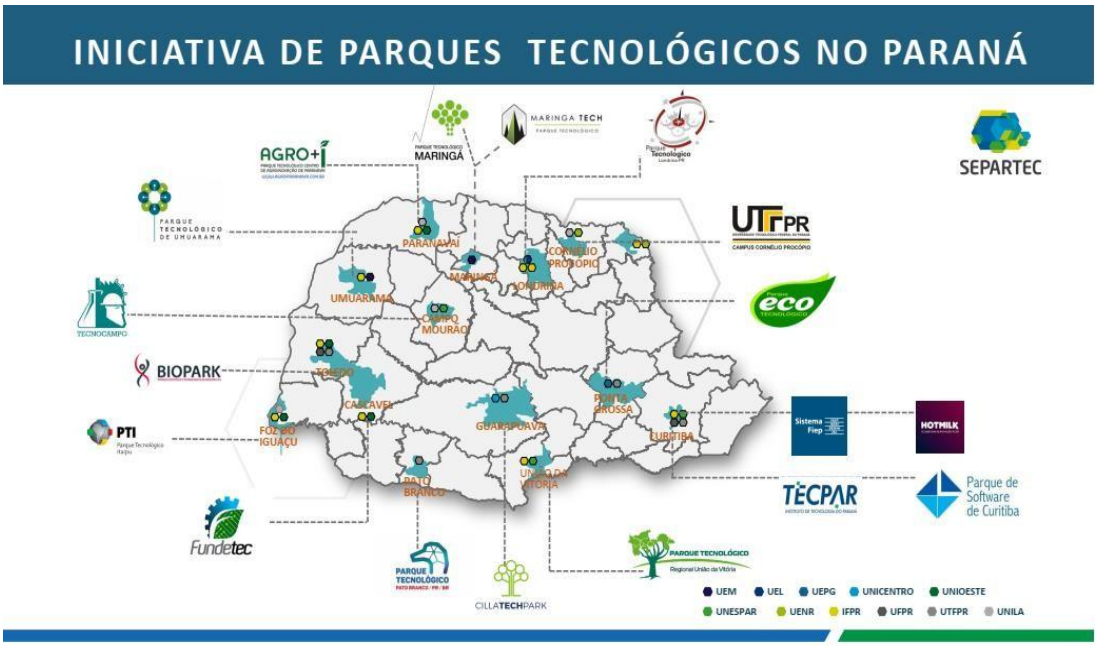
By proposing policies and creating a favorable environment for the development of innovation in the State, in the context of innovation systems and promoting the culture of innovative entrepreneurship, the government encouraged the creation of technology parks by the State (PARANÁ, 2024).

Thus, 18 Technology Park initiatives in Paraná were identified, in the most varied stages of maturity, which were registered in the State System of Technology Parks (SEPARTEC) until 2022, the period of the last update of the available data regarding the state's technology parks. These parks were linked to a legal personality that maintained or owned them; they had a strategic plan; they had innovation strategies; and maintained institutional articulations with companies and ICTs at the local, regional, national or international level (SEPARTEC, 2018)

Figure 01 below illustrates the distribution of technology parks in the state.

Figure 1

Mapping of the Technology Parks of Paraná-SEPRTEC 2019



Source: SEPARTEC, 2019.

All regions of the state have technology parks, whose headquarters are among the forty most populous cities in Paraná. A relevant factor in the distribution of these parks is the presence of federal or state university campuses in all municipalities (SOUSA, 2021).

Among these parks, this study focuses on analyzing the creation of Cilla Tech Park (CTP), a Technology Park located in Cidade dos Lagos in Guarapuava in Paraná, (SETI, 2023).

4 FINDINGS

4.1 CILLA TECH PARK (CTP), GUARAPUAVA TECHNOLOGY PARK

Guarapuava is located in the center-south of the state of Paraná and is part of the intermediate geographic region of Guarapuava, which covers nineteen municipalities. This territorial area is 13,851.158 km², representing 7.0% of the territory of Paraná. Most municipalities are small and have agriculture as the main activity in the productive structure (IBGE 2017).

The municipality has the largest population in the region, in 2022 according to IBGE/IPARDES (2024) the population was 182,093, equivalent to 53.39% of the population of the region. Guarapuava stands out as a hub municipality, with a

diversified economy with an emphasis on the agricultural, timber, grain production and agro-industry segments, in addition to offering medium and high complexity health services, it is a hub in education, as there is a concentration of many universities and the generation of the highest rate of employment and income among the municipalities in the region, becoming responsible for providing goods and services to them.

As for the potential of science, technology and innovation of the municipality, which are determined by the existing scientific base. Guarapuava's potential is dimensioned based on undergraduate and graduate courses (master's and doctorate), research groups and lines and by the productivity of researchers. There are five higher education institutions, namely: UNICENTRO, Campo Real College; the Guairacá College; Faculdades Guarapuava and UTFPR. Guarapuava presents as a general overview 85 undergraduate courses with more than 12 thousand students enrolled. Of these, 35 are undergraduate courses in technological areas (INEP, 2022). In addition, the municipality has 29 postgraduate courses, 18 of which are master's courses, with two professional master's courses and 11 doctoral courses (UNICENTRO, 2024).

Labiak Jr and Krysa (2022) highlight the challenge of integrating the interests of the various actors in the municipality, both public and private. In this context, local business leaders, academia, development entities and the municipal government take the lead in creating the Guarapuava Science, Technology and Innovation Forum. The objective is to plan and structure an Innovation Ecosystem in Guarapuava, boosting innovation and socioeconomic development in the municipality and the region.

The planning and development of Guarapuava's innovation ecosystem were the result of the active participation of the aforementioned actors. The structuring of this ecosystem occurred through technical studies, based on advanced methods and a deep knowledge of the economic and social dynamics of the city (LABIAK JR; KRYSA, 2022).

In view of this scenario, with the union of efforts between the actors, in 2018 the formal constitution of the Innovation Ecosystem in Guarapuava was carried out, with a focus on the development of the cooperation environment, meetings and events. In this sense, according to Amaral Filho (2001), endogenous resources were valued, promoting strategies that originate from the convergence between local actors, seeking the best use of such resources, as well as the diversification and strengthening of the base local productive area. With the implementation of the Guarapuava Innovation Ecosystem added to other actions such as the creation of the Innovation Barn.

Complementary Law No. 095/2018, which provides for measures to encourage innovation, scientific and technological research, technological extension and technological development in a productive environment in the Municipality of Guarapuava, establishing among its principles the promotion of scientific and technological activities as strategic for economic and social development, stimulation of innovation activities in Scientific Institutions, Technological and Innovation Centers (ICT) and in companies, including for the attraction, constitution and installation of research, development and innovation centers and technology parks and hubs in the municipality; (GUARAPUAVA, 2018)

Law 108/2019, providing tax incentives for entrepreneurship, scientific, technological, innovation and creative economy activities, in technology parks in the Municipality of Guarapuava (GUARAPUAVA/PR, 2019), and Decree No. 8023/2020 declares the enterprises of the CILLA Group – Cidade dos Lagos as a Technology Park of the Municipality of Guarapuava, with constant limitations on the respective enrollments and with the benefits provided for in the Complementary Law provided that the requirements are met legally established Municipal No. 108/2019 (GUARAPUAVA, 2020) with this set of actions, the process of creating the Guarapuava Technology Park began. According to the CTP's Minutes of Constitution (2020), on July 15, 2020, the Cilla Teck Park Civil Association was established, under private law, non-profit, governed by its Statute, Internal Regulations and the legislation in force. Founded by a group of 14 organizations, including companies, universities and class entities from Guarapuava and the municipal government in order to articulate the regional reality to global agendas. It is located in the planned neighborhood of Cidade dos Lagos.

Among the various provisions of its Internal Regulations (CTP, 2023a), the CTP aims to "be an entrepreneurial environment, promoting prosperity and regional development through technological innovation, valuing human talent and relationships of trust".

As discussed in the literature review, the consolidation of a technology park is directly linked to the existence of strategic and robust partnerships. In this context, Cilla Tech Park has the fundamental support of several institutions, including four technological incubators, the Municipalities of Guarapuava, Turvo and Manoel Ribas, as well as companies, financial institutions, research institutes and the Government of State. Also noteworthy are five Higher Education Institutions in Guarapuava, which play an essential role in offering support, mentoring, training, consulting and access to

incubators for companies linked to the park. Through these collaborations, Cilla Tech Park enables the realization of technological services and drives the development of new technologies (CTP, 2024).

As a member of the triple helix, the municipal power strengthens its support with public policies through laws and decrees that ensure its partnership with CTP, in 2022 the CTP was declared of Public Utility at the Municipal level by LAW No. 3325/2022 (GUARAPUAVA/PR, 2022).

Through Decree No. 10993/2023, the Cilla Tech Park Technology Park was created in the municipality of Guarapuava, within the limits of the Cidade dos Lagos neighborhood, with the objective of promoting research, development, and technological innovation, in addition to stimulating cooperation between research institutions, universities, and companies. Its main goal is to foster the participation of researchers in the development of research in the productive sector (GUARAPUAVA/PR, 2023).

The organization and management of the CTP is established in the Internal Regulations and adopts the following structure: General Assembly; Administrative Council; Advisory Council; Fiscal Council and Executive Board. The General Assembly is the sovereign body of the Association, the highest instance of deliberation and decision-making (CTP, 2023)

To promote an environment that supports innovation, competitiveness, integration and synergy of enterprises, the CTP has the Innovation Barn, which is an educational vector that drives creativity, entrepreneurship and new ideas through inclusive and collaborative journeys and training, strengthening financial education and innovation. The Maker Space, integrated with the Innovation Barn, promotes the culture of innovation and technological diffusion, with a focus on robotics, 3D modeling and prototyping and the Coworking where companies, startups and other initiatives work in a collaborative environment, stimulating networking and new business. (CTP, 2025).

According to the CTP's Internal Regulations, the categories of companies, entities and institutions that make up the CTP's membership are: Life Members: those who first conceived, fostered, instituted and were signatories of the CTP's Constitution Act, collaborate with the membership fee to the association, as well as with the monthly fee stipulated in its own provision. Founding Members: those signatories of the CTP's Constitution Act. Founding Maintaining Members: those who, signatories of the CTP

Constitution Act, collaborate with the rate of adhesion to the association, as well as with the monthly fee stipulated in its own device. Maintaining Members: signatories or not of the CTP Constitution Act, collaborates with the membership fee to the association, as well as with the monthly fee stipulated in its own provision. Effective Members: those formally admitted to the CTP at any time, collaborate with the monthly fee stipulated in their own provision. Technical-Scientific Associate: are those considered Universities, Colleges or Institutes of Science and Technology (ICT's), collaborates with a monthly fee stipulated in their own device and/or with the assignment of physical structure, intellectual capital or support for projects and activities of the CTP. Resident: are technology-based companies or startups that use the physical space of the CTP for their own activities, collaborates with a monthly fee according to the conditions stipulated in their own device (CTP, 2023).

In addition to the related companies, Cilla Tech Park houses other categories of enterprises that make use of shared spaces, such as coworking, as described in Chart 01.

Table 1

Categories of companies, companies, entities and institutions of the CTP in 2024

Companies	Founding Associate	Effective member	Maintaining Member	Residents	Linked	Coworking
72	03	09	05	44	11	48

Source: CTP (2024a)

Of the 72 companies and institutions linked to the Technology Park, many operate in various sectors, including agribusiness, wood, food, health, civil construction, education, information technology, digital marketing, digital logistics, finance, business and environmental consulting, trademark registration, research focused on agribusiness and health, as well as training in personal development. Among them, 10 are startups, and 67% make use of the available coworking space (CTP, 2024a).

Universities, pillars of the CTP's triple helix model, play a fundamental role in the generation and dissemination of knowledge. Through research and extension activities, they drive scientific and technological development, promoting innovative entrepreneurship with qualified human capital and technological infrastructure. The CTP has technological incubators from the five universities of Guarapuava: Hotel

Tecnológico UTFPR, INTEG (Unicentro), Guairacá Lab (UNIGUAIRACÁ), FG CONECTA (Faculdades Guarapuava) and EVOLVE (Campo Real) (CTP, 2024b).

As pointed out in the CTP Annual Report (2024c), Cilla Tech Park consolidated, in 2024, as one of the main innovation hubs in Guarapuava, driving initiatives that have significantly strengthened the local ecosystem. This progress was further reinforced with the recent accreditation of the CTuP Accelerator.

The growth of the CTP was evident in the numbers. In 2024, more than 20 thousand services were registered, in addition to a significant increase of 200% in the number of member companies. The recognition of the quality of the work carried out also stood out, with nine CTP projects among the 50 best in Paraná, according to SEPARTEC (CTP, 2024c).

Among the activities carried out in 2024, the agreement with the City of Guarapuava to serve students, teachers and the community stands out, with the themes of entrepreneurship, innovation and technology in the various events and actions carried out during the contract period, resulting in more than 11,500 people impacted (CTP, 2024c).

The Capacita Tech Project, developed in partnership with the Banco do Brasil Foundation, trained 45 students and took technology courses to indigenous communities, expanding their social impact. The Conecta Program, in partnership with Sicredi, fostered innovation and entrepreneurship among young people and companies, addressing topics such as cooperation, sustainability, innovation, digital marketing, public speaking, and project management (CTP, 2024c).

With these results, the CTP seeks to achieve its purpose of fostering regional development through technological innovation, promoting the appreciation of human talent and synergy between the different actors involved.

5 FINAL CONSIDERATIONS

This study analyzed the strategies adopted by the actors of the triple helix to boost the creation of innovative environments in Guarapuava, culminating in the foundation of the Cilla Tech Park (CTP) and the promotion of local and regional development. The results demonstrated the commitment of these actors in the consolidation of the city's innovation ecosystem.

Among the initial actions, the creation of the Guarapuava Science, Technology and Innovation Forum stands out, which brought together business leaders and public

and private institutions, strengthening cooperation and fostering the development of the local ecosystem. The government also played a strategic role in establishing policies to encourage innovation, boosting investments and structuring actions aimed at sustainable economic growth.

Universities have contributed significantly by promoting research, extension projects, mentoring and training, disseminating a culture of innovative entrepreneurship. Companies, in turn, played an essential role in integrating the CTP, establishing strategic partnerships and enabling its implementation and operationalization. The performance of entrepreneurs, in line with Schumpeter's concept of innovative entrepreneurship, was fundamental to lead and seize opportunities, strengthening the ecosystem's capacity for innovation.

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