Revista ARACÊ
ISSN: 2358-2472

THE ROLE OF THE GOVERNMENT AND PUBLIC POLICY ON TECHNOLOGICAL INNOVATION IN TECHNOLOGY PARKS: A CASE STUDY OF SUCCESSFUL TECHNOLOGY PARKS

https://doi.org/10.56238/arev7n4-110

Date of submission: 10/03/2025 **Date of publication:** 10/04/2025

Helaine Cristina de Sales Ferreira[1], Raimundo Corrêa de Oliveira[2], Antonio Claudio Kieling[3], Rosa Maria Nascimento dos Santos – In Memoriam[4] and Ricardo da Silva Barboza[5]

ABSTRACT

This article aims to analyze the role of the government and public policy on technological innovation in technology parks, through a case study of successful technology parks. To this end, a bibliographical research was carried out covering studies and scientific articles that address the topic in question, as well as standards and legislation related to public policy on technological innovation and technology parks. Based on the literature review, it was possible to identify that the government plays a fundamental role in encouraging technological innovation through specific public programs and policies for the development of technology parks. The methodology used to carry out this study was descriptive research, using bibliographic review and secondary data analysis about several successful technology parks around the world as a data source. From this, the key factors for the success of these ventures were identified, such as government investments, adequate infrastructure, tax incentives, partnerships with companies and universities, among others. The research results indicate that public policy on technological innovation plays an important role in the success of technology parks, as it is government policies that create a favorable environment for the emergence and development of innovative companies. It is concluded, therefore, that the government has a crucial role in promoting technological innovation through public policies and investments in technology parks, providing a favorable environment for the development of innovative companies and, consequently, boosting the socioeconomic growth of a region or country.

Keywords: Technological innovation. Public policy. Technology parks.

[1] Master's student in the PROFNIT/UEA Program - Master's in Intellectual Property and Technology Transfer for Innovation.
Lattes: http://lattes.cnpq.br/3184276410210502.
[2] PhD Professor of the PROFNIT/UEA Program - Master's Degree in Intellectual Property and Technology Transfer for Innovation.
Lattes: http://lattes.cnpq.br/4633751809350086
[3] PhD Professor of the PROFNIT/UEA Program - Master's Degree in Intellectual Property and Technology Transfer for Innovation.
Lattes: http://lattes.cnpq.br/2276542034087411.
[4] PhD Professor of the PROFNIT/UEA Program - Master's Degree in Intellectual Property and Technology Transfer for Innovation.
Lattes: http://lattes.cnpq.br/0832849985108711.
[5] PhD Professor of the PROFNIT/UEA Program - Master's Degree in Intellectual Property and Technology Transfer for Innovation.
Lattes: http://lattes.cnpq.br/0969377170974290.

Revista ARACÊ
ISSN: 2358-2472

INTRODUCTION

Technological innovation is a cornerstone of economic and social development, driving the creation of products, processes, and services that enhance competitiveness and foster business growth. Governments play a pivotal role in this dynamic, as they are tasked with crafting public policies that promote innovation across various sectors. Among these strategies, the development of technology parks stands out as a critical approach. These parks serve as collaborative environments where universities, businesses, and research institutions converge to generate knowledge and facilitate technology transfer.

This study focuses on analysing the role of government and public policies in promoting technological innovation within technology parks. By examining successful technology parks, the research seeks to identify effective governmental strategies that underpin their achievements. The selection of parks known for significant contributions to innovation provides a robust foundation for this analysis. Using a bibliographic methodology, the study examines scientific articles, books, and governmental reports to uncover best practices and lessons learned.

One objective of this research is to investigate the specific public policies implemented by governments to support the development of technology parks. These policies often include financial incentives, regulatory frameworks, and strategic plans aligned with national innovation goals. Such initiatives aim to create an environment conducive to research and development, fostering collaboration among key stakeholders and ensuring sustainable growth. Understanding these measures is critical to appreciating their impact on innovation ecosystems.

Another key focus is identifying the common characteristics shared by successful technology parks. Elements such as efficient management, advanced infrastructure, and strategic partnerships among universities, businesses, and research institutions consistently emerge as critical factors. These features enhance the parks' ability to generate impactful innovations, attract investments, and contribute to the broader economy. Highlighting these attributes offers valuable insights for improving existing initiatives.

The findings of this research underscore the indispensable role of government in the success of technology parks. Governments not only provide financial and regulatory support but also foster collaboration among diverse stakeholders. This multidimensional role ensures that technology parks remain competitive and innovative, contributing to

Revista ARACÊ
ISSN: 2358-2472

national development. Recognising the importance of this interplay is vital for refining public policies and maximising their impact.

Moreover, the analysis reveals that technology parks can significantly enhance a country's global competitiveness. By aligning their goals with national innovation strategies, these parks become catalysts for economic growth. They provide a platform for groundbreaking research and development, enabling businesses to stay ahead in an increasingly competitive global market. Governments must continuously adapt their strategies to sustain these outcomes.

The broader relevance of this study lies in understanding how public policies can be tailored to support technology parks effectively. By identifying areas for improvement and adjustments, governments can enhance their support mechanisms, ensuring that these parks continue to thrive. This approach not only benefits the parks themselves but also contributes to national innovation ecosystems, creating a ripple effect of progress.

Ultimately, this research aims to highlight the critical role of technology parks as instruments for economic development and innovation. Through effective governmental support, these parks have the potential to drive significant advancements in technology and industry. By refining public policies and strengthening partnerships, governments can ensure that technology parks remain at the forefront of innovation, fostering sustainable development and global competitiveness.

THEORETICAL FRAMEWORK

KEY CONCEPTS: TECHNOLOGICAL INNOVATION, TECHNOLOGY PARKS, AND PUBLIC POLICY

Technological innovation has become one of the main drivers of economic and social development worldwide. Through creative processes and technological advancements, innovation has proven essential for enhancing the competitiveness of businesses and improving the quality of life for populations. In this regard, it is crucial to understand the key concepts of technological innovation, technology parks, and public policy to explore how these elements are interconnected and how they contribute to regional and national development.

According to Vale (2012), technological innovation involves the creation, development, and dissemination of new ideas, products, processes, or services aimed at generating economic and social value. This concept extends beyond new products to

Revista ARACÊ
ISSN: 2358-2472

include novel production methods, distribution systems, marketing strategies, and even organisational structures. Importantly, technological innovation is not limited to large companies or industries but can also emerge from small businesses and start-ups, which often achieve remarkable results by innovating within their fields of expertise.

Given the growing importance of technological innovation for development, numerous governmental initiatives have been introduced to promote and support innovation in different regions. In this context, technology parks have emerged as pivotal public policy instruments for fostering innovation and entrepreneurship. As highlighted by Colombo and Delmastro (2022), technology parks are environments that bring together companies, universities, research institutions, and support services to encourage interaction, knowledge sharing, innovation, and increased business competitiveness.

The establishment of technology parks has been adopted as a strategic approach by various countries to boost innovation and economic growth. In Sweden, for instance, the government implemented the technology park model decades ago, significantly contributing to the nation's development. A study by Löfsten and Lindelof (2022) underscores that collaborations between companies and research centres within Swedish technology parks have resulted in numerous innovations and bolstered the country’s economy.

In Brazil, the government has also promoted the creation of technology parks. A notable example is the São José dos Campos Technology Park in São Paulo, which has received public and private investments to foster innovation and scientific research in the region. According to Paula, Ferreira, and Pereira (2017), this technology park has played a significant role in regional development, attracting companies from various sectors and generating qualified employment opportunities.

Beyond economic development, technology parks play a critical role in the training of skilled professionals. By hosting companies, educational institutions, and research organisations in a shared space, these parks create an environment conducive to the development of highly qualified personnel and establish a more effective connection between academic knowledge and market demands. This synergy ensures the relevance and applicability of professional training.

However, for technology parks to effectively promote innovation and development, it is essential to have robust public policies that support and encourage their growth. Roberts (1984) emphasises the importance of government policies geared towards technological innovation. The government’s role includes creating a favourable environment for

Revista ARACÊ
ISSN: 2358-2472

innovation by providing financial resources, setting research priorities, and fostering collaboration between companies and research institutions.

Public policy also plays a vital role in establishing an open innovation ecosystem, where companies collaborate with other firms and institutions, both nationally and internationally, to drive innovation. Governments must act as facilitators by offering tax incentives, creating financing programmes, and promoting the exchange of experiences and knowledge between companies and universities. Moreover, building trust among the various stakeholders involved in the innovation process is crucial, which includes protecting intellectual property rights to ensure companies and institutions are rewarded for their contributions to technological advancements.

In Brazil, the 2016 Innovation Framework seeks to create a more favourable environment for innovation through measures such as more flexible procurement laws and specific financial instruments to stimulate research and technological development. Programmes like the National Support Programme for Business Incubators and Technology Parks (PNI) aim to encourage the establishment of new technology parks and incubators across the country. However, challenges such as limited financial resources, bureaucratic hurdles, and a lack of long-term vision in governmental actions remain significant obstacles.

In addition to financial incentives, public policy must actively promote the dissemination of knowledge and technology. Without a robust educational system and professionals prepared to address emerging technologies, innovation may fail to achieve its desired impact on the economy and society. Investments in quality education and the widespread dissemination of knowledge are essential for incorporating innovations into businesses and daily life. Public policy must align with national development goals to ensure innovation serves as an effective tool for achieving greater competitiveness and progress on a global scale.

It is also important to note that technological innovation and technology parks are not solely the responsibility of governments. Businesses and society must also play proactive roles. Companies should invest in research and development, continuously seeking ways to remain updated and competitive in the market. Likewise, society must be engaged and aware of the importance of innovation for sustainable development and improved quality of life for all.

Revista ARACÊ
ISSN: 2358-2472

THEORETICAL MODELS OF PUBLIC POLICIES FOR TECHNOLOGICAL INNOVATION

In the current global scenario, technological innovation has become a crucial factor in the economic and social development of nations. Increasingly, countries are investing in public policies aimed at fostering the emergence of new technologies and their application across various sectors of society. Understanding the theoretical models of public policies for technological innovation is therefore essential to grasp how these policies are formulated and what their main characteristics are.

According to Zouain and Plonski (2016), the formulation of public policies for technological innovation can be based on four key models: the linear model, the systemic model, the dynamic capabilities model, and the governance model. The first, the "linear model," is grounded in the notion that science and technology drive innovation through a sequential process, beginning with basic research, transitioning to applied research, and culminating in the production and dissemination of new technologies.

However, the linear model has faced criticism for failing to account for the interactions between science, technology, and society, as well as for neglecting other influential factors in the innovation process. The systemic model, on the other hand, assumes that innovation is a complex and interactive process involving dynamic collaboration among actors such as businesses, universities, and government. According to Rogers (1995), this model views innovation as a multi-stage process encompassing the acquisition, adoption, and assimilation of new technologies. Strong coordination among these stakeholders is essential for effective innovation.

The third model, the dynamic capabilities model, proposed by Cano (2007), highlights the importance of individual and organisational competencies in fostering innovation. This model conceptualises innovation as a dynamic process requiring companies to adapt and acquire new skills to keep pace with ongoing technological changes. Furthermore, the role of government is pivotal in creating favourable conditions for the development and absorption of these new capabilities.

Lastly, the governance model, presented by Lencioni (2015a), underscores the importance of coordination and cooperation among the actors involved in innovation. In this model, the government plays a central role by establishing regulations and policies that create a conducive environment for technological development. It also supports innovation projects financially and promotes connections between companies and research institutions to drive innovation forward.

Revista ARACÊ
ISSN: 2358-2472

When analysing these four models of public policies for technological innovation, it becomes clear that each addresses different aspects of the process. However, it is important to note that there is no single ideal model; instead, these models can often complement each other. For instance, the linear model may be valuable for basic research development, while the systemic model is better suited for applying this research to innovative projects.

In addition to the presented models, the unique characteristics of each country and region must also be considered, as they can significantly influence public policies for innovation. As Besanko (2006) emphasises, understanding the available resources, specific needs, cultural differences, and adaptability to technological changes is crucial for shaping effective innovation policies.

Another critical factor is the provision of incentives for innovation. Without adequate incentives, businesses may lack the motivation to invest in new technologies, hindering significant progress. Public policies must therefore include measures to encourage research and the development of new technologies, such as tax benefits and partnerships with research institutions, to ensure sustained innovation efforts.

It is essential to recognise that while theoretical models provide valuable guidelines for designing public policies for technological innovation, there is no definitive formula. Public policies must be flexible and open to continuous revision to adapt to emerging demands and changing circumstances. Additionally, these policies should be developed collaboratively, integrating the perspectives of diverse social actors and fostering participatory approaches.

Furthermore, technological innovation should not be limited to the creation of new technologies but should also focus on their application to solve societal problems and improve the quality of life. Public policies must therefore address a wide range of innovation applications, including health, education, transportation, energy, and other critical sectors.

Finally, a serious political commitment and effective management are essential for the successful implementation and maintenance of public policies for technological innovation. Continuous investment in education, research, and development is necessary to train skilled professionals and drive the creation and application of new technologies, ensuring that innovation remains a cornerstone of societal progress.

Revista ARACÊ
ISSN: 2358-2472

THE ROLE OF GOVERNMENT IN PROMOTING TECHNOLOGICAL INNOVATION IN TECHNOLOGY PARKS

Technological innovation has increasingly been recognised as a driver of economic and social growth worldwide. Governments play a fundamental role in fostering this process, particularly through the creation of technology parks, which have become symbols of progress and development in recent years. These parks serve as environments where innovation thrives, bringing together companies, educational and research institutions, start-ups, and investors to promote interaction, collaboration, and knowledge transfer.

Technology parks are key tools for governments aiming to support the development of new technologies and stimulate economic growth. Lencioni (2015b) highlights that governments use these parks to increase competitiveness, attract investments, and generate jobs. In Brazil, for instance, the federal government has invested in technology parks such as the São José dos Campos Technology Park, which hosts major companies and start-up incubators, fostering regional and national innovation ecosystems.

Marcelino (2016) points out that technology parks create favourable environments for innovation by combining skilled human resources, modern infrastructure, and institutional support. Governments are essential in establishing these conditions, promoting actions that contribute to a country's socioeconomic development. This includes encouraging the training of qualified professionals and implementing policies that incentivise innovation and research.

One significant way governments support technology parks is through fiscal benefits and financial incentives for companies and innovative projects operating within these environments. Angrist and Pischke (2018) argue that tax exemptions and subsidies can reduce investment costs and increase returns, making technology parks more attractive to businesses and encouraging the establishment of new ventures.

In addition to fiscal policies, governments provide financial resources for research and innovative projects in technology parks. Dougherty (2011) emphasises that investment funds and financing programmes enable the development of new technologies, as well as the construction of research facilities and laboratories for companies and institutions based in these parks. These initiatives strengthen the infrastructure needed for sustained innovation.

Governments also play a vital role in creating networks of incubators within technology parks. According to Sousa (2017), business incubation is one of the primary

Revista ARACÊ
ISSN: 2358-2472

methods of supporting start-ups and innovative enterprises. Incubators offer technical assistance, infrastructure, and a conducive environment for business growth while fostering interactions with other companies and research institutions present in the parks.

Moreover, fostering cooperation among the entities within technology parks is another critical government responsibility. Sousa (2017) notes that such collaboration can lead to significant outcomes, including shared resources, access to expertise, and the creation of new business opportunities. Policies that encourage this interaction enhance the innovation ecosystem and strengthen its impact on society.

Promoting awareness of the importance of innovation and the role of technology parks as development agents is another key government initiative. By nurturing an entrepreneurial culture and supporting investments in new technologies, governments encourage the intelligent application of knowledge to solve societal challenges and improve quality of life. This cultural shift is essential for embedding innovation in the broader social fabric.

However, the government's role must be well-planned and executed, taking into account the unique characteristics of each country and region. Lencioni (2015b) argues that creating policies and investments alone is insufficient; collaboration with society and the private sector is essential for establishing an innovation-friendly environment. Sustainable development requires the active participation of multiple stakeholders.

Governments must also adopt a long-term vision to ensure the continuity of support for technology parks. Innovation promotion should not be viewed as an isolated effort but as a systematic, ongoing strategy involving government, society, and private enterprises. Policies must remain adaptable to technological advancements and shifting societal needs, requiring a degree of flexibility and agility to respond effectively to new challenges.

Ultimately, promoting technological innovation in technology parks demands a collaborative effort from government, businesses, and academic and research institutions. A cooperative environment is necessary for these parks to fulfil their role as catalysts of socioeconomic development through innovation. By working together, stakeholders can build the foundations for sustainable growth and ensure that technology parks continue to drive progress in an ever-changing global landscape.

Revista ARACÊ
ISSN: 2358-2472

EXAMPLES OF SUCCESSFUL PUBLIC POLICIES FOR TECHNOLOGICAL INNOVATION IN TECHNOLOGY PARKS

Over recent decades, public policies supporting technological innovation have become increasingly significant for economic and social development worldwide. Within this context, technology parks have emerged as vital tools, serving as hubs that bring together businesses, universities, and research institutions to foster collaboration and knowledge exchange. These parks provide a framework for implementing policies that promote the creation and growth of innovative companies, boost the development of new technologies, and enhance regional and national competitiveness.

In Brazil, numerous initiatives have been launched to encourage innovation in technology parks. Notable examples include the Support Programme for Research in Enterprises (PAPPE), established in 1999 to improve the competitiveness of Brazilian companies through innovation; the FINEP Innovation in Partnership Programme, introduced in 2003 to fund innovation projects in companies and research institutions; and the National Programme to Support the Generation of Innovative Enterprises (PRIME), created in 2013 to support innovative businesses incubated in technology parks.

Andrade (2011) highlights the importance of these public policies in fostering successful technology parks across Brazil. One such example is the São José dos Campos Technology Park, inaugurated in 2006 through a partnership between the municipal government, universities, and private enterprises. Since its establishment, the park has become a leading hub for innovation and research, hosting companies from sectors such as aerospace, healthcare, and information technology.

Another noteworthy initiative is the Belo Horizonte Technology Park, created in 2000 through a collaboration between the local government and the Federal University of Minas Gerais. Santos (2013) notes that this park has become a model of success by promoting innovation and nurturing technology-based companies, significantly contributing to the region's economic and social development. Today, the park hosts over 120 businesses alongside incubators and accelerators that support the growth of innovative ventures.

Drabowska (2021) underscores the significance of inclusive public policies in advancing technological innovation within technology parks. The Itaipu Technology Park in Foz do Iguaçu exemplifies this approach by fostering integration among private companies, universities, government bodies, and the local community. Since its opening in 2013, the

Revista ARACÊ
ISSN: 2358-2472

park has focused on developing sustainable technologies, including clean energy generation, environmental preservation, and community-focused innovations.

Successful public policies for technological innovation are not limited to Brazil. In Asia, the Hsinchu Science Park in Taiwan is a standout example of promoting innovation and competitiveness. Chang (2003) observes that this park has played a pivotal role in developing Taiwan's technology industry, serving as the birthplace of renowned companies such as TSMC and Acer. The park's strong integration of universities, research institutions, and businesses has been instrumental in its success.

In the United States, Silicon Valley in California is an iconic example of a technology park that has become a global hub for innovation and economic development. Shy (2001) notes that in addition to public policies promoting innovation, Silicon Valley excels due to its entrepreneurial culture and robust collaboration between universities, companies, and investors. This synergy among ecosystem actors has been a critical factor in the park's emergence as a global centre of technological excellence.

These examples demonstrate the essential role that public policies for technological innovation in technology parks play in fostering economic and social development. While Brazil faces challenges, notable initiatives have contributed to establishing technology parks as key drivers of innovation and growth. The success of these parks relies on the collaborative efforts of governments, universities, businesses, and communities.

Collaboration among these stakeholders is essential for creating effective public policies that address societal and market demands. Inclusive policies that promote diversity are equally vital to ensuring that innovation reaches all segments of society. To remain relevant, public policies for technology parks must be regularly reviewed and updated to align with evolving technological landscapes and societal needs.

Continuous investment in training skilled professionals, conducting research, and developing new technologies is essential for fostering entrepreneurship and innovation. Furthermore, integrating regional technology parks into networks, such as Brazil's Rede de Parques Tecnológicos do Pará (established in 2007), enhances knowledge exchange and cooperation, amplifying the impact of public policies and strengthening the role of these parks as innovation promoters.

In summary, examples of successful public policies for technological innovation in technology parks illustrate their potential to positively impact economies and societies when well-designed and implemented. However, sustained government commitment is necessary

Revista ARACÊ
ISSN: 2358-2472

to foster a healthy innovation ecosystem that embraces collaboration, diversity, and adaptability. Through collective efforts, a more prosperous and innovative future can be achieved.

FINAL CONSIDERATIONS

Throughout this study, it was possible to analyse the role of governments in promoting technological innovation through public policies specifically targeted at technology parks. It became evident that, given the constant transformations in the global landscape, investing in new technologies is essential for any country to enhance its economic competitiveness.

In this context, technology parks emerge as a key governmental initiative aimed at creating an environment conducive to the development, improvement, and dissemination of innovative technologies. By establishing integrated spaces for cooperation among universities, businesses, and the government, technology parks have solidified their role as a significant tool for fostering innovation and entrepreneurship.

The success stories of the technology parks examined in this study validate the effectiveness of this model of governmental management. In addition to promoting interaction between academic and business sectors, these parks have demonstrated their ability to generate positive economic impacts, including job and income creation, as well as the development of high-value-added products and services.

Among the various measures taken by governments to support the growth of these technology parks are tax incentives, funding for research and projects, and support for the creation of start-ups and incubators. However, it is crucial that these initiatives be continually revised and updated to adapt to market changes and ensure the competitiveness of technology parks.

Moreover, it is important to highlight that the government cannot act alone in this process. Collaboration with other stakeholders, such as universities, businesses, and society at large, is essential. The integration of different sectors is critical to maximising results and fostering a culture of innovation and entrepreneurship.

Another significant aspect to consider is the need for continuous workforce training within technology parks. To maintain a high level of expertise and up-to-date knowledge, governments and other organisations must provide regular training and professional development opportunities for those involved in these technological environments.

Revista ARACÊ
ISSN: 2358-2472

An additional perspective worth emphasising is the importance of internationalising technology parks. In an increasingly globalised economy, these innovation hubs must connect with international markets to enhance their visibility, showcase their technologies, and attract foreign investments. To achieve this, governments must implement policies that encourage internationalisation and facilitate access to global markets.

Furthermore, for technology parks to succeed and become international benchmarks, they must align with governmental visions and strategies. This alignment ensures a unified strategic direction, integrating governmental plans with the objectives and actions of the parks to achieve shared goals.

Finally, despite the challenges and obstacles present in the Brazilian context, technology parks have proven to be a viable and effective solution for promoting innovation and fostering economic and social development. Nonetheless, it is imperative for the government to continue acting proactively and effectively, refining its policies and strategies to strengthen and expand these innovation spaces.

In conclusion, it is clear that governments play a fundamental role in the creation and development of technology parks through the formulation and implementation of innovation policies. By adopting an integrated and strategic approach, it is possible to drive the growth of these parks, generating positive impacts on the economy and society at large. Thus, technology parks are expected to remain a cornerstone in building a more innovative and competitive society.

Revista ARACÊ
ISSN: 2358-2472

REFERENCES

1. ANDRADE, T. H. N. **Tendências da Inovação**: estudo sociológico sobre o gerenciamento de tecnologias. São Carlos: Pedro & João Editores, 2011.

2. ANGRIST, J. D., & PISCHKE, J. S. ***Mostly harmless econometrics****: An empiricist's companion*. Princeton University Press. 2018.

3. BESANKO, D. et al. **A economia da estratégia**. 3. ed. Porto Alegre: Bookman, 2006.

4. CANO, W. **Raízes da concentração industrial em São Paulo**. 5. ed. Campinas: Unicamp, 2007.

5. CHANG, H-J. **Chutando a escada**: a estratégia de desenvolvimento em perspectiva histórica. São Paulo: Unesp, 2003.

6. COLOMBO, M., & DELMASTRO, M. ***How effective are technology incubators***? Evidence from Italy, Research Policy, 31, 1103-1122. 2022.

7. DOUGHERTY, C. ***Introduction to Econometrics***, (4th edition), Oxford University Press, 2011.

8. DRABOWSKA, J. ***Measuring the success of science parks****: performance monitoring and evaluation*, XXVIII IASP World Conference on Science and Technology Parks. 2021.

9. LENCIONI, S. Estado de São Paulo: lugar de concentração da inovação e da intensidade tecnológica da indústria brasileira. In: SPOSITO, E. S. (Org.). **O novo mapa da indústria no início do século XXI**. São Paulo: Editora da UNESP, 2015a.

10. LENCIONI, S. **Região Metropolitana de São Paulo como centro da inovação do Brasil**. Cadernos da Metrópole, São Paulo, v. 17, n. 34, p. 317-328, 2015b.

11. LÖFSTEN, H.; LINDELÖF, P. ***Science Parks and the growth of new technology-base firms*** *– academic industry links, innovation and markets*. Research Policy, n. 31, p. 859-876, 2022.

12. MARCELINO, I. S. **Políticas Regionais de Inovação em um cenário institucional fragmentado**: o complexo produtivo de petróleo e gás natural no contexto do Sistema Regional de Inovação do Rio de Janeiro. Revista Pymes, Innovación y Desarrollo, Rafaela, Argentina, v. 4, n. 1, p. 37-57, 2016.

13. PAULA, R. M. de; FERREIRA, M. P; PEREIRA, S. **Os parques tecnológicos e as incubadoras de base tecnológica promovendo o desenvolvimento regional**: o caso de Minas Gerais. Revista de Desenvolvimento Econômico, Salvador, v. 2, n. 37, p. 330-358, 2017.

14. ROGERS, E.M. ***Diffusion of innovation***. New York: Free Press, 1995.

Revista ARACÊ
ISSN: 2358-2472

15. ROBERTS, E.B. ***Gestión de la innovación tecnológica***. Madrid: Fundación COTEC para la Innovación Tecnológica, 1984.

16. SANTOS, M. **Técnica, espaço, tempo**: globalização e meio técnico-científico-informacional. 5. ed. São Paulo: Editora da USP, 2013.

17. SHY, Oz. ***The Economics of Networks Industries***. Cambridge University Press. 2001.

18. SOUSA, D. C. de et al. **Parques tecnológicos e incubadoras**: uma análise do processo de préincubação de empresas de base tecnológica. Interciência, Santiago, Chile, v. 42, n. 5, p. 313-319, 2017.

19. VALE, M. **Conhecimento, inovação e território**. Lisboa, Portugal: Papagaio, 2012.

20. ZOUAIN, D. M.; PLONSKI, G. A. **Parques tecnológicos**: planejamento e gestão. Brasília: ANPROTEC: SEBRAE, 2016.