

New Organizational Forms in the Public Sector: An Analysis of Government Innovation Laboratories from the Perspective of Neo-Schumpeterian Theory

Novas Formas Organizacionais no Setor Público: os Laboratórios de Inovação de Governo sob a Ótica da Teoria Neoschumpeteriana

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ABSTRACT

This essay aimed to present, from the perspective of neo-Schumpeterian or evolutionary theory, government innovation laboratories as new organizational forms that seek to modify the dynamics of public organizations through the absorption of knowledge and learning, the development of skills and abilities, and the dissemination of innovations and new technologies to the public sector. Therefore, the aspects of neo-Schumpeterian theory were presented related to the performance and competitiveness of organizations in an increasingly dynamic environment, needing to change their organizational routines through the absorption of knowledge, learning, and innovation. The characteristics and objectives of government innovation laboratories were also presented, justifying them as new organizational forms within the public sector, which through dynamism, co-creation, and experimentation seek to disseminate innovative solutions and new technologies to public organizations. At the end, as contributions, we sought to highlight the development of government efforts to make public organizations more efficient in the provision of services, with innovation as an important mechanism for systemic modifications, as well as presenting issues related to the potential for theoretical/empirical analysis of the neo-Schumpeterian theory and government innovation laboratories.

Keywords: Government Innovation Laboratories. Neo-Schumpeterian Theory. Public Sector.

RESUMO

Este ensaio teve por objetivo apresentar, sob a ótica da teoria neoschumpeteriana ou evolucionária, os laboratórios de inovação de governo como novas formas organizacionais que procuram modificar a dinâmica das organizações públicas através da absorção de conhecimento e da aprendizagem, do desenvolvimento de competências e capacidades, e da disseminação de inovações e novas tecnologias para o setor público. Diante disso, foram apresentados os aspectos da teoria neoschumpeteriana relacionados à atuação e competitividade das organizações em um ambiente cada vez mais dinâmico, necessitando alterar as suas rotinas organizacionais por meio da absorção de conhecimento, da aprendizagem e da inovação. Também foram apresentados as características e objetivos dos laboratórios de inovação de governo, justificando-os como novas formas organizacionais dentro do setor público que através do dinamismo, cocriação e experimentação procuram disseminar soluções inovadoras e novas tecnologias para as organizações públicas. Por fim, como contribuições, procurou-se destacar o desenvolvimento de esforços governamentais para tornar as organizações públicas mais eficiente na prestação de serviços, tendo a inovação como importante mecanismo para modificações sistêmicas, bem como apresentar questões relacionadas ao potencial de análise teórico/empírico da teoria neoschumpeteriana e dos laboratórios de inovação de governos.

Palavras-chave: Laboratórios de Inovação de Governo. Teoria Neoschumpeteriana. Setor Público.

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1 INTRODUCTION

The reforms resulting from the New Public Administration (NPA) model have stimulated public organizations to appropriate and adopt instruments, techniques, and management alternatives used by the private sector, highlighting entrepreneurship and innovation (RESENDE *et al.*, 2017; VALADARES *et al.*, 2017). This has happened in response to the economic, political, social, and technological changes brought about by the globalized scenario, which have resulted in higher citizen expectations, complex problems, and smaller public budgets (CAVALCANTE; CUNHA, 2017).

With the post-managerialist ideas of public governance, new alternatives are being used in order to foster open, collaborative, and experimental innovation in the public sector, oriented to citizens (EMMENDOERFER, 2019). Within this idea, Innovation Labs in the Public Sector stand out, especially Government Labs (ISIDRO, 2018; EMMENDOERFER, 2019). The laboratories emerge, among alternatives, as an innovation and an environment that develops innovative solutions (ISIDRO-FILHO, 2017; EMMENDOERFER, OLAVO, CARVALHO JÚNIOR, 2019; WERNECK *et al.*, 2020). These places are new organizational forms that develop alternatives to supply the state system and its employees with tools and knowledge capable of confronting complex issues of public administration, with the incorporation and better use of information technology in management and systemic approaches that contribute to cost reduction and more satisfactory performance while addressing solutions to citizens' needs (GALHARDO, 2019; WERNECK *et al.*, 2020).

For the evolutionary or neo-Schumpeterian economy, innovation is the main factor responsible for the change and evolution of organizations (TOREZANI, 2014). Thus, it can be considered as a determining mechanism for the dynamic process of the economy and technical progress, and they are dependent on the sector in which they are developed and the institutional aspects that legitimize their development (VIEIRA, 2010). In addition, they come from organizational learning processes, as a mechanism for absorbing and transmitting knowledge, which develops individual and organizational capabilities and competencies in the search for solutions to complex problems (DATHEIN, 2003). In this way, government laboratories are pointed out as a locus of learning and knowledge exchange from the experimentation of a solution for a certain public problem (CAVALCANTE; CUNHA, 2017, FERRAREZI; LEMOS; BRANDALISE, 2018; GALHARDO, 2019; CAVALCANTE; MENDONÇA; BRANDALISE, 2019; WERNECK *et al.* 2020).

Understanding government innovation laboratories as new organizational forms that act dynamically, absorbing knowledge and learning for the development of innovative solutions and new technologies that aim to change the environment in which they operate, the following question arises: what are the contributions of evolutionary theory to characterize the government innovation laboratories as organizational forms that through dynamism, learning, cooperation, and innovation can change the dynamics of the public sector?

2 RESEARCH METHOD

This paper aims to present from a neo-Schumpeterian (evolutionary) theory perspective, government innovation laboratories as new organizational forms that seek to change the dynamics of public organizations through the absorption of knowledge and learning, the development of skills and capabilities, and the dissemination of innovations and new technologies to the public sector. This work is justified by the important role that laboratories play in the innovation process in the public sector, as they are spaces for experimentation and testing of alternatives, co-creation, and generation and exchange of knowledge that will enable innovative proposals that are more promising, assertive, and with greater potential for replicability and usability for other organizations in the public sector (FERNANDES, 2019).

It is noteworthy that the elaboration of this theoretical essay started from the perceptions of Burgoon (2001) and Bertero (2011), where they indicate the need for clarification regarding the procedures adopted in this type of study. Thus, for this study, a bibliographical survey was performed on the neo-Schumpeterian theory (evolutionary) and the innovation laboratories in the public sector.

The theory was chosen for this analysis because it allows an understanding of the contributions of innovations beyond the construction of an artifact or a service, demonstrating that knowledge and learning are fundamental to organizational and economic development, especially from the formation of individual and organizational competencies and capabilities, which can contribute to systemic changes in the public sector. Thus, we sought to present the government innovation laboratories as a locus for the development and dissemination of innovations and new technologies for the public sector. In this study, the artifact is understood as the construction of a good or a service that will facilitate the daily life of citizens by providing higher quality services and improving organizational efficiency.

In this way, this essay is structured in three topics besides the introduction, which present the contributions of the evolutionary or neo-Schumpeterian theory and the understanding of government innovation laboratories as new organizational forms in the public sector, from a theoretical-conceptual model of the laboratories from the perspective of the analyzed theory. Lastly, reflections and considerations on evolutionary or neo-Schumpeterian theory and innovation laboratories in government are presented, as well as the potential for analysis of the discussed theory and suggestions for the development of future studies.

3 THE CONTRIBUTIONS OF EVOLUTIONARY OR NEO-SCHUMPETERIAN THEORY

The neo-Schumpeterian (evolutionary) theory seeks to revisit the ideas proposed by Schumpeter concerning innovation and economic competitiveness. In the authors' view, the firm consists of an organization that absorbs knowledge, learns, and is innovative. The different flows and external links of knowledge and information of companies explain why organizations are so heterogeneous today and add more realism and plausibility to Schumpeter's economic theory, which was developed in the early twentieth century, minimizing the risks of losing touch with contemporary reality (RISSARDI JÚNIOR, 2005).

The neo-Schumpeterian analysis presents technology as a dynamic principle that leads to the evolution of the entire economic system, promoting revolutions that modify production and consumption patterns. This happens through technological and organizational innovations that require institutional changes as a way to enable the best use of the generated modifications. The changes in the external environment directly influence the dynamics of organizations, which need to modify their routines and capabilities through innovations to remain competitive in the market (CERLEIAL, 2011).

According to Tigre (1998), three basic principles help to understand evolutionary theories. The first is that economic dynamics is based on innovations in products, processes, and organizational forms. The second is that organizations are made up of distinct individuals with their own cognitive characteristics who act based on a procedural rationality that results from the learning process during the interactions among individuals, with the market, and with new technologies. And the third is related to the firm's capacity for self-organization as a result of the fluctuations of the environment and the fluctuations of individual agents with distinct routines and capabilities.

In general, evolutionary individuals recognize that organizations are inserted in a dynamic environment and are composed of knowledge flows, the main input for the development of innovative processes (ORSI; NEUBERGER; CARIO, 2019). In this sense, organizations must also be dynamic and provide the necessary tools for knowledge, incorporated into the experiences of individuals, to be converted into competencies. The way they will be used within each organization is important to explain the innovations developed and their efficient use (DATHEIN, 2003; ORSI; NEUBERGER; CARIO, 2019).

Competencies are defined as the individual and/or collective knowledge, attitudes, and skills, but also as the ability to combine, mix, and integrate resources into products and services, so that the combination of an organization's various competencies will enable it to design, produce, and distribute products and services (FLEURY; FLEURY, 2001). The stock of knowledge and competencies of an organization are absorbed and developed through the learning process, which occurs from the interactions between individuals and groups internal to the organizations, but also between organizations, institutions, and economic agents (DATHEIN, 2003; CERLEIAL, 2011).

In the economic literature, learning "[...] is associated with a cumulative process through which firms expand their knowledge, refine their search procedures, and refine their skills in developing, producing, and marketing goods and services." (RISSARDI JÚNIOR; SHIKIDA; DAHMER, 2009, p. 121). These mechanisms, as presented by Bittencourt (2004), would be a response to the changes faced by organizations, in which continuous learning, through organizational experiences and the translation of knowledge into practice, will contribute to develop innovative solutions and, consequently, improve performance and make organizations more competitive.

Organizational learning combines the reading and absorption of knowledge of the environment in which the organizations are inserted, their internal resources, and the possibilities offered by the networks formed in the systems in which the organizations are immersed (AMORIM; FISCHER, 2013). An organization's stock of knowledge is a function of its absorptive capacity, which is a type of learning that is related to the routines and processes of the organizations, with which it obtains knowledge from the environment and applies it according to the organizational goals (ZAHRA; GEORGE, 2002).

For Zahra and George (2002), absorptive capacity develops from four processes: knowledge acquisition, assimilation, transformation, and exploitation. Acquisition consists of an organization's ability to identify and acquire external knowledge that is important for organizational objectives; assimilation refers to the routines and processes of analysis, understanding, and incorporation of the acquired knowledge; transformation is the assimilation stage between the acquired knowledge and the knowledge already existing in the organization; and exploitation relates to the efficient and effective use of this knowledge for the objectives and for innovation.

Organizational learning is cumulative and collective and results from the organization's internal and external relationships. For Figueiredo (2004), this process divides into two subprocesses: knowledge acquisition (individual level) and knowledge conversion (organizational level). The knowledge acquisition process can be internal, in which knowledge is developed from activities and routines within the organization, and external, in which knowledge is acquired outside the organization. The knowledge conversion process, in turn, develops by means of socialization and codification. Socialization occurs from the sharing of the tacit knowledge of individuals, and codification occurs when tacit knowledge is converted into explicit knowledge, facilitating the process of replication and understanding (FIGUEIREDO, 2004).

Considering that the organizational learning processes develop from individual knowledge, which will help build a stock of competencies for the organizations, it is also important to understand what the types of learning are and how they occur. According to Orsi, Neuberger, and Cario (2019), there are three main types of organizational learning: learning by doing, learning by using, and learning by interacting. The first, is related to the internal knowledge of organizations and occurs in practical situations, being discovered during the production of a good or a service. The second occurs in the process of using the good or service, taking place through users' feedbacks. Finally, the third is a combination of the first two, in which learning arises from the exchange of qualitative information between users and internal and external stakeholders, who are immersed in the organizations' networks (ORSI; NEUBERGER; CARIO, 2019).

The forms of learning are related to the notion of dynamic capabilities of organizations. These capabilities are defined by Teece, Pisano, and Shuen (1997) as the ability of an organization to integrate, build, and reconfigure internal and external organizational competencies to respond to rapid environmental change. Dynamic capability refers to the notion of routines, which from the neo-Schumpeterian perspective are considered the rules (regular and predictable behavior patterns of organizations), which define the basic characteristics and ways organizations operate and are built from experience (NELSON; WINTER, 2005). For the authors, the firms that have their routines more adaptable to the contingencies of the external environment will be the ones most prone to growth and development. In this way, innovation arises from the moment it is necessary to modify routines in response to new technological paradigms that emerge and to environmental changes.

Given the above, the aim was to understand, from aspects of the Neo-Schumpeterian theory, that organizations need to be able to learn and self-organize in response to environmental changes and the increasingly complex demands of individuals, in order to remain competitive in the market. New knowledge

and dynamic capability are important for organizations to innovate and develop new technologies to become more efficient.

Thus, in the following, we will try to reflect on the implementation of innovation laboratories within the public sector as new organizational forms that resemble the organizations described by evolutionary persons for having the ability to learn and self-organize in response to environmental changes and the complexity of individual demands. In addition, the role of laboratories as proposers of innovative solutions and developers of new technologies is highlighted, based on organizational learning alternatives and on the network relationship with different actors and organizations that are considered drivers for the dissemination of an innovative culture within the public sector and changing the way governments act.

4 NEW ORGANIZATIONAL FORMS IN THE PUBLIC SECTOR: GOVERNMENT INNOVATION LABS

The challenge of innovation in public administration occurs in two main ways. On the one hand, the State needs to be the inducer of this process, creating conditions for the advancement of the knowledge economy, focused on innovation. On the other hand, for innovative economies to thrive, the state also needs to be able to develop its own innovative drive, in order to deal with the numerous challenges that emerge from the relationship with society and other stakeholders (CAVALCANTE; CUNHA, 2017). On another hand, innovating in the public sector is not so simple, because innovation must be the result of a balance between maintaining the stability of regulations, acting in accordance with norms, and maintaining a certain degree of predictability for private actors, by using taxpayer resources, or developing new ways to solve society's increasingly complex and changing problems (ACEVEDO; DASSEN, 2016).

Governments and public organizations have sought to develop new capabilities, mainly external to classic State-owned structures through collaborative and networked forms, with citizen participation, and to get closer to citizens' needs. Thus, a new conception of public innovation emerges based on three pillars: open innovation, co-creation, and collective intelligence (RODRÍGUEZ; GRANDINETTI, 2018). For the author, an ideal space to combine these three characteristics would be innovation laboratories in the public sector.

Although the dissemination of laboratories is associated with the contemporary context, there is evidence that they emerged in school environments in the 19th century (MULGAN, 2014). However, Williamson (2015) points out that the movements of innovation labs stem from the Think Tank culture that is used in Anglo-American politics. Thus, Tönurist, Kattel, and Lember (2017) point out that the main difference of current laboratories to the old ones is the citizen-oriented logic, which according to Cavalcante and Cunha (2017), encourages the idea of experimental government.

The implementation of these experimentation spaces is a response from the public sector to foster its own innovative process and as an alternative for the change process in public organizations, influencing the system as a whole, promoting structural and systemic changes (SCHUURMAN; TÖNURIST, 2016; SANO, 2020). Implementing laboratories in government units is also a reaction to technological, economic, and social transformations. Besides, there are internal and external pressures for the State to serve the population in a more efficient way, given a certain insufficiency of the traditional ways of management in solving complex problems. Thus, laboratories seek to propose assertive solutions, through a collaborative process that involves other public organizations, citizens, social organizations, and companies (CAVALCANTE; CUNHA, 2017; FERRAREZI; LEMOS; BRANDALISE, 2018; EMMENDOERFER, OLAVO, CARVALHO JÚNIOR, 2019).

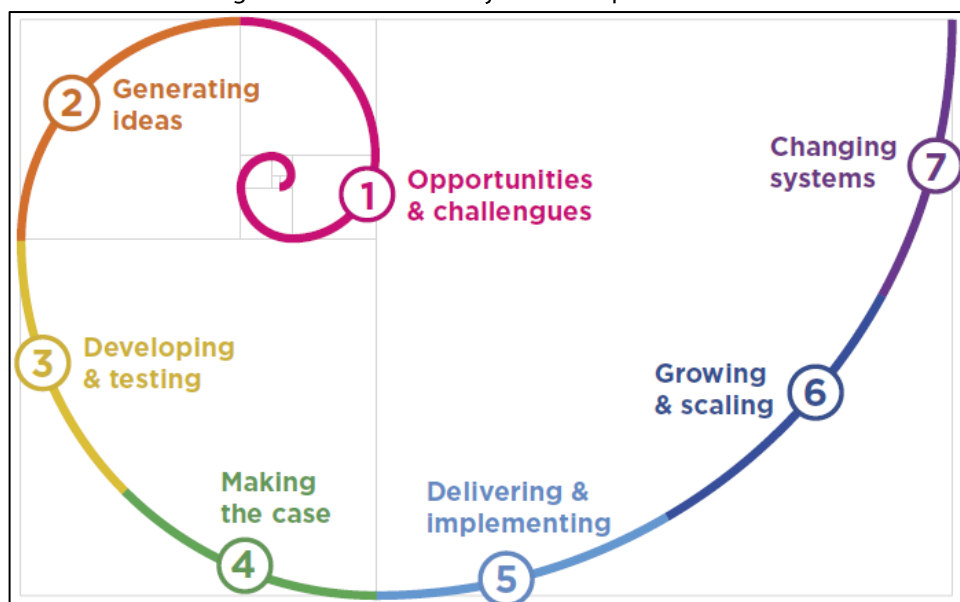
As the risks of innovating in the public sector are high and the consequences of potential failure must be considered, government innovation labs have positioned themselves as units capable of internalizing the inherent risk of innovations and promoting new practices in public management (ACEVEDO; DASSEN, 2016). Innovation occurs through a creative and collaborative environment, in which new knowledge and ideas can be shared and executed, being called creative collaboration, and aims to bring government spaces closer to end users such as businesses and citizens, with receptivity of new ideas by the State-owned entity (GALHARDO, 2019; SILVA JUNIOR, 2019).

In general, labs can be defined as "[...] collaborative environments that seek to foster creativity, experimentation, and innovation through the adoption of active methodologies and co-creation in problem

solving" (SANO, 2020, p. 18). The main objectives of the laboratories are: 1) foster an innovative environment in public administration; 2) develop specific innovations; 3) introduce new technologies in public administration; 4) act in the modernization of public administration processes; 5) elaborate new mechanisms of citizen participation; 6) introduce new communication methods in public administration; 7) open up public administration data (ACEVEDO; DASSEN, 2016). Based on the objectives, it is possible to observe aspects of these organizations that resemble the organizations described by the neo-Schumpeterian theory, as receptacles of knowledge and developers of new alternatives (innovations and technologies) for the public organizations on which they depend, as well as for the entire public sector, changing the environment in which they operate.

The development of innovation projects within the framework of government laboratories, according to Mulgan (2014), takes place from seven phases, which are evidenced in the figure below:

Figure 1 - Innovation Project Development Phases



Source: Mulgan (2014, p. 4)

According to Sano (2020), in the first stage, public organizations are concerned with understanding the challenges of the sector in which they operate and understand what the demands are to identify opportunities for action. In the second stage, innovative ideas are generated to solve the problems identified based on the understanding of the environment in which it operates. In the third stage, called prototyping, alternatives are developed and tested as to their applicability in public organizations, as well as on their reach of results, in order to identify the prototype's potential.

In the fourth stage, a case that would be a project that has achieved satisfactory results during the testing process is established from the observations and testing of the prototype. In the fifth stage, this prototype is implemented in an organization, in order to understand its results in practice, since until then it had been tested in a controlled environment. In the sixth stage, after an analysis of the results in the organization, there is a gain in scale, in which it starts to be implemented in other organizations. Finally, in the seventh stage, if there are good results in the organizations, this prototype is disseminated throughout the system, with the aim of generating change (SANO, 2020).

The stages in the development of innovative projects permeate the absorption of knowledge, learning, use of creativity, and above all, the combination of skills in order to develop solutions that can be assertive for governments and public sector organizations, as well as to use these alternatives to promote systemic changes and transform the way public organizations operate.

Government laboratories have the function of taking risks and stimulating dynamism, becoming agents of change in the public sector, operating with great autonomy in the definition of goals and working

methods (ACEVEDO; DASSEN, 2016). The dynamic features of the laboratories are motivating factors for their creation and can incite transformation processes in the public sphere, based on the freedom and autonomy to raise external resources, experimentation, and the insertion of innovative solutions in the public sector (TÖNURIST; KATTEL; LEMBER, 2017; EMMENDOERFER; OLAVO; CARVALHO JÚNIOR, 2019). Thus, they try to modify the routines of public organizations, adapting them to the contingencies of the external environment, which is in constant transformation, through organizational learning and knowledge absorption methodologies, among which co-creation and experimentation stand out.

Co-creation is an important methodology for the construction and success of innovative solutions because it allows the transaction of resources, knowledge, and skills between partners and actors involved in the innovation process (ISIDRO-FILHO, 2017). This process can be characterized as a form of learning by interacting, given that it results from the exchange of information between laboratories and other members immersed in the networks of action of these public organizations (ORSI; NEUBERGER; CARIO, 2019). Moreover, it can also be an important form of knowledge absorption and acquisition, due to the collaborative nature of this action, in which information exchanges can also help in individual and collective empowerment.

Experimentation, on the other hand, basically consists of testing alternatives in reality. This process is predominant in laboratories, as it is an alternative to minimize the risks and costs of failure and to propose more assertive solutions, since innovation processes demand hypothesis testing, verifying in practice if the idea produces results (FERRAREZI; LEMOS; BRANDALISE, 2018). For the authors, the very work of the government laboratory in building the experiment constitutes a form of learning, because the generation of new knowledge on the ways of dealing with each type of challenge, choosing the appropriate methodology and tools, resulted in the development of competencies of the members of GNova (Innovation Laboratory in the Brazilian Federal Government) and of the partner members of the projects. Thus, experimentation is close to learning by using because it stems from the process of using the innovative solution in practice and from feedbacks from users and beneficiaries (ORSI; NEUBERGER; CARIO, 2019).

Regarding innovation lab teams, they are formed from the initiative of political leaders, with the expectation of overcoming the barriers to innovation in the public sector, such as normative rigidity, lack of a culture focused on experimentation and change, inflexible budgets, among others (PUTTICK; BAECK; COLLIGAN, 2014). The team members, as presented by Feitoza (2018), are heterogeneous researchers, designers, and change agents interested in identifying and analyzing the problems involving the public sector from different angles, besides acting in the development, testing, and improvement of solution prototypes, aiming at their insertion and application in public organizations. The heterogeneity of the team shows the junction of different individual and/or collective competencies based on the idea of open innovation in which government innovation laboratories operate, and demonstrates an interrelation between internal and external knowledge, aiming to absorb the necessary knowledge for developing innovations and organizational competencies (SILVA; SILVA, 2015).

According to the neo-Schumpeterian perspective, individual competencies play an important role in the development of innovations, originating from the learning process in organizations or from the experiences and social relations of individuals. Among the competencies focused on innovation, we highlight the entrepreneurial competencies that are the sets of knowledge, skills, characteristics, and attitudes that, in different ways, can contribute to the effective thought or action of the business or organization, allowing an individual to imprint actions, strategies, and his vision in the creation of value for society (ZAMPIER; TAKAHASHI, 2011). For the authors, these are competencies related to personal relationships, the abilities to assess risk situations, efficient resource allocation, strategy implementation, and commitment.

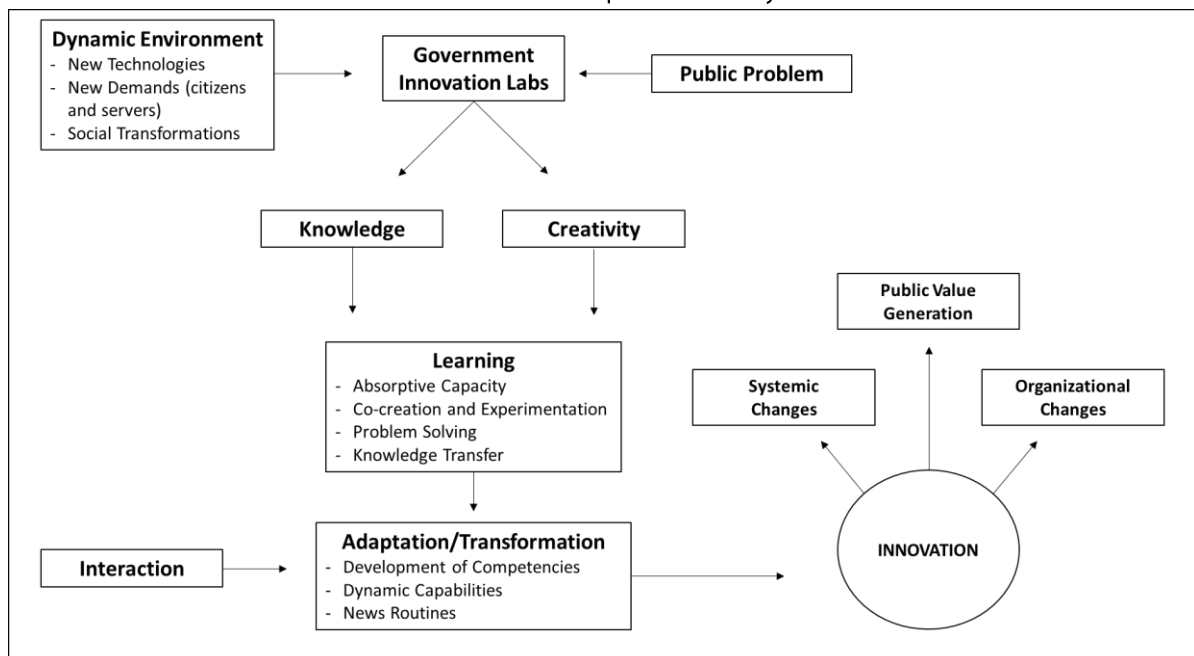
The junction between individual and organizational competencies are considered a competitive advantage for organizations that aim to provide higher quality and more efficient public services, such as governments and other public sector organizations, as well as for private organizations that aim to survive in an increasingly dynamic and changing global market (BASTOS *et al.*, 2019).

In the context of the pandemic, innovation laboratories in the public sector can be seen as a locus of democratic solidarity, through the actions that were carried out after the moment in which the World Health Organization (WHO) declared a state of pandemic (EMMENDOERFER, 2020). The author points out that these

actions aim at serving citizens and professionals in the public sector. Thus, it is assumed that learning and knowledge absorbed in the pandemic context through the processes of co-creation, co-production, and experimentation can help prevent public problems.

In view of the concepts and theoretical aspects discussed in figure 2, a conceptual-analytical scheme is proposed, in which the aspects that characterize the innovation laboratories of governments are presented as new organizational forms in the public sector from the theoretical aspects proposed by the neo-Schumpeterian theory:

Figure 2 - Theoretical and conceptual model of the Innovation Labs in Government from the perspective of the Neo-Schumpeterian theory



Source: Prepared by the authors, based on the theoretical aspects presented (2020).

It is believed that the transformations of the dynamic and increasingly complex environment offer new challenges to public and private sector organizations on a daily basis. In this way, government innovation labs present themselves as a space within the public sector that acts to internalize risks and develop innovative solutions for the public sector based on knowledge and creativity to solve a public problem. Permeating these aspects, they use organizational learning tools, especially those related to the absorptive capacity and the co-creation and experimentation of alternatives, in order to develop solutions to problems and transmit internal and external knowledge to the organizations.

The learning processes allow the adaptation and development of new competencies to transform organizational routines and generate innovations, which will contribute to bring about organizational and systemic changes, and above all, generate public value from the improvement of public services and organizational efficiency. Therefore, it is believed that the contributions of the Neo-Schumpeterian theory used to understand the dynamics of the market can also bring contributions to the public sector, especially from new organizational forms that seek to change the way public organizations act, distancing themselves from the bureaucratic and inefficient aspects, recurrently associated with the public sector in general.

5 CONCLUSION

In view of the above, the central idea of this essay is the innovation laboratories as new organizational forms and agents of change within the public sector. Their characteristics and dynamism in the way they act,

and the use of knowledge absorption procedures, learning, and cooperation with society and other organizations allow government laboratories to adapt to environmental changes. In addition, the ability to innovate and develop new technologies that can be used by other organizations and modify the dynamics of the public sector stands out, as proposed by the neo-Schumpeterians when presenting innovation and technology as engines to modify the dynamics of capitalist markets.

Thus, in response to the research question, the Neo-Schumpeterian theory has a basis for understanding innovation laboratories in the public sector, as it seeks to promote a dynamic through the process of experimentation, co-production, and co-creation, which results in learning and knowledge, as well as new products and/or public services. Thus, this study contributes to the understanding of new dynamics in the public sector through the spaces for experimentation that allow us to recognize and disseminate these laboratories as environments for building knowledge and developing individual, collective, and organizational competencies.

As limitations, we highlight the difficulty in understanding certain aspects of the Neo-Schumpeterian theory, considering that it corresponds to a broad theory with several ramifications, which ends up making it complex. It is also noted the scarcity of works in the literature that deal with innovation labs and especially their results in the public sector, considering that it is a recent subject that still needs further theoretical study.

However, the scarcity of studies is an opportunity for new work to be developed, especially work that presents the results of these laboratories, as well as the methods used to absorb knowledge, learn, and develop the innovative projects. Furthermore, identifying the training mechanisms for public servants used in innovation labs for developing entrepreneurial skills can inspire other organizations in the public sector to implement the labs, as well as disseminate a culture focused on innovation, since, as presented by Sano (2020), the number of innovation labs in the public sector in Brazil and worldwide has been growing, proving to be an interesting alternative.

Another limitation is that the model corresponds only to a theoretical study, requiring a theoretical-empirical research for its validation in the field, which becomes an opportunity for researchers seeking to understand the effectiveness of innovation laboratories in the public sector.

Despite this, it should be noted that this work sought to contribute to the field of Public Administration by addressing that efforts have been made in order to make public organizations more innovative, efficient, less bureaucratic in some aspects, and oriented to the needs of citizens through open, participative, and experimental innovation methodologies. In this sense, this essay provoked the emergence of new theoretical and empirical questions for future discussions and studies on the topic: What is the empirical scope of the neo-Schumpeterian (evolutionary) theory? How would the congruences and peculiarities about organizational forms in the context of innovation laboratories in government present themselves in a comparative perspective between municipalities and countries? What are the instruments used for knowledge absorption and competence development within government innovation laboratories? What are the scope and results of organizational and technological innovations for the public sector? What is the potential reach of government innovation labs to transform organizational routines in the public sector?

Finally, innovation laboratories can be considered an important instrument to change the way public organizations act using new methodologies and technologies. Thus, we tried to demonstrate that governmental efforts are being made to transform the routine of public organizations, demonstrating a concern to transform the public sector and make it more efficient in providing public services, in order to generate more value to citizens.

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