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WORK ORGANIZATION IN THE DYNAMICS OF INNOVATION: EVIDENCE IN PUBLIC ADMINISTRATION

Organização do trabalho nas dinâmicas de inovação: Evidências na Administração Pública

Organización del trabajo en la dinámica de la innovación: Evidencia en la Administración Pública

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ABSTRACT

The article aims to analyze the perceptions of civil servants regarding the structuring factors of work organization for innovation in the public sector. Theoretical support indicates that work organization practices are linked to aspects underlying innovation. Although there is an expectation for greater autonomy and flexibility that contribute to innovation, the formalization of work persists in public organizations. Qualitative and descriptive research was carried out by studying multiple cases in sectors that work directly with innovation and in people management units responsible for rethinking how to structure work at federal and state levels. Work organization was broken down into structuring factors, selected after a literature review, a documentary analysis, and content analysis. The perceptions of these factors were captured in semi-structured interviews with open-ended and close-ended questions, the latter linked to the numerical representations of these factors for 14 interviewees. The findings indicated that factors such as interdisciplinary teams and networks reflected as good practices for innovation, while autonomy, flexibility, and telework were emerging. The organizational mobility factor faces legal and managerial restrictions. It was also found that the lack of resources encourages the search for viable and creative alternatives. This research theoretically contributes to portraying work organization structuring factors linked to strategic people management actions as an incentive for innovation in the public sector. Empirically, it reveals the adjustments in the organization of work aimed at innovation as an adaptation to the context. Work organization becomes an imperative demand in the dynamics of innovation in public administration.

Keywords: public sector innovation, work organization, people management, new management technologies, good practices in the public sector.

ABSTRACT

O artigo objetiva analisar as percepções dos servidores públicos federais e estaduais quanto aos fatores estruturantes de organização do trabalho para inovação no setor público. O suporte teórico indica que práticas de organização do trabalho vinculam-se aos aspectos subjacentes às inovações. Embora haja expectativa por maior autonomia e flexibilidade que contribuem para inovações, a formalização do trabalho persiste em organizações públicas. Realizou-se pesquisa qualitativa e descritiva, via estudo de múltiplos casos em setores que atuam diretamente com inovações e em unidades de gestão de pessoas, responsáveis por repensar modos de estruturar o trabalho na esfera federal e estadual. A organização do trabalho foi decomposta em fatores estruturantes, selecionados após revisão bibliográfica, levantamento documental e análise de conteúdo. As percepções desses fatores foram capturadas em entrevistas semiestruturadas com questões abertas e fechadas, essas últimas atreladas às representações numéricas desses fatores para 14 entrevistados. Os achados indicaram que fatores como equipes interdisciplinares e redes repercutiram como boas práticas à inovação, enquanto autonomia, flexibilidade e teletrabalho revelaram-se emergentes. O fator mobilidade organizacional defronta com restrições legais e das chefias. Constatou-se igualmente que a ausência de recursos estimula buscar alternativas viáveis e criativas. Esta pesquisa contribui teoricamente ao retratar fatores estruturantes da organização do trabalho ligados a ações estratégicas de gestão de pessoas como incentivos a inovações no setor público. Empiricamente desvenda os ajustes na organização do trabalho voltados para a inovação como adaptação ao contexto. A organização do trabalho torna-se uma demanda imperativa nas dinâmicas de inovação na administração pública.

Palavras-Chave: *inovação no setor público, organização do trabalho, gestão de pessoas, novas tecnologias gerenciais, boas práticas no setor público.*

RESUMEN

El artículo tiene como objetivo analizar las percepciones de los empleados públicos sobre los factores estructurantes de la organización del trabajo para innovar en el sector público. La teoría indica que las prácticas de organización del trabajo están vinculadas a los aspectos subyacentes a las innovaciones. Aunque existe una expectativa de mayor autonomía y flexibilidad que contribuyan a las innovaciones, la formalización del trabajo persiste en los organismos públicos. Se realizó una investigación cualitativa y descriptiva, con el estudio de múltiples casos en sectores que trabajan con innovaciones y en unidades de gestión de personas, responsables de repensar la estructuración del trabajo. La organización del trabajo se descompuso en factores estructurantes, seleccionados luego de revisión bibliográfica, relevamiento documental y análisis de contenido. Las percepciones se capturaron en entrevistas semiestructuradas con preguntas abiertas y cerradas, estas como representaciones numéricas de estos factores para 14 encuestados. Los hallazgos indicaron que equipos interdisciplinarios y redes resonaron como buenas prácticas para la innovación, mientras que emergerían la autonomía, la flexibilidad y el teletrabajo. La movilidad organizacional enfrenta restricciones legales y gerenciales. La falta de recursos incentiva la búsqueda de alternativas viables y creativas. Esta investigación contribuye teóricamente a retratar los factores de la organización del trabajo vinculados a las acciones estratégicas de gestión de personas como incentivos para las innovaciones. Empíricamente revela ajustes en la organización del trabajo para la innovación como adaptación al contexto. La organización del trabajo se convierte en un imperativo en la dinámica de la innovación en la administración pública.

Palabras Clave: *innovación del sector público, organización del trabajo, gestión de personas, nuevas tecnologías de gestión, buenas prácticas en el sector público.*

INTRODUCTION

The article analyzes the perceptions of federal and state civil servants regarding the structuring factors of work organization for innovation in the public sector. Some of these professionals work directly with innovation as their core activity, and others work in people management (PM), responsible for strategic actions relevant to the work organization. The work organization dimension explored in this article results from expanded research on policies and practices of PM and innovation.

Work organization is the practice of performing tasks in organizations considering the different types of work performance described by Anttila, Oinas, and Mustosmäki (2019). These types of work performance vary from high-degree formalization, with formal rules and greater control, to flexible work that allows employee autonomy, involvement, and learning – which favors the development of innovation.

In this sense, the configuration of work activity may be either a facilitator or a barrier to innovation (De Vries, Bekkers, & Tummers, 2016; Castro, Isidro-Filho, Menelau, & Fernandes, 2017; Isidro, 2018; Moussa, McMurray, & Muenjohn, 2018; Cinar, Trott, & Simms, 2019). Regardless of the stage of the innovation process – ideation, prototyping, implementation, diffusion, adoption/acceptance (De Vries, Tummers, & Bekkers, 2018; Isidro, 2018) – some specific antecedents and determinants can stimulate or hinder innovation, especially given the particularities of the public sector.

In the innovation literature, Cinar et al. (2019) mention that innovation in the public sector faces barriers of different natures: i) organizational barriers linked to the institutions' internal context; ii) specific barriers to interactions due to the involvement of different actors representing different organizations and sectors; iii) barriers linked to the perceived characteristics of the innovation, for example, when the innovation is incompatible with existing values; and iv) contextual barriers, such as legislation or lack of standardization. Some of these barriers are interrelated, such as the risk aversion culture linked to the income-seeking culture. It is important to strengthen innovation drivers in the public sector – which in this study are the structuring factors in work organization – to eliminate these barriers.

The trend toward improving work organization (Lorenz & Valeyre, 2005; Anttila et al., 2019) can be verified in the public sector based on two premises – the expectation for greater autonomy and flexibility and the resumption of formal work arising from the pressures for effectiveness and cost reduction arising from the New Public Management (NPM) movement. According to Anttila et al. (2019), the degree of work formalization indicates organizational control over the individual in terms of greater managerial control in the face of work linked to specific knowledge. This is far from the trend toward greater discretion in work organization in relation to higher levels of learning and problem-solving by professionals in the so-called post-bureaucracy.

For innovation to take place in the public sector, there must be an enabling environment (Organization for Economic Co-operation and Development [OECD], 2017). If there is an intention to innovate in public administration, it is necessary to distance from the pitfalls of

formalization (Anttila et al., 2019) and reinforce aspects that facilitate and induce innovation (Isidro, 2018).

This article was prepared from a qualitative and descriptive study. Factors linked to work organization were analyzed through multiple case studies, systematized from the perceptions of civil servants linked to innovation at the state and federal levels.

The research findings showed factors evaluated as positive for innovation, such as teamwork and operating through networks, and factors with negative impressions, such as organizational mobility and lack of organizational support influencing the innovation strategy.

This article's theoretical contribution is its ability to unveil little-studied dimensions that encourage innovation processes in the public sector. Its empirical contribution refers to the context experienced since 2020. Organizations have faced an unexpected situation. The COVID-19 pandemic forced society to rethink the lifestyle and form of work, considering social distancing measures to avoid contamination (Schaefer, Resende, Epitácio, & Aleixo, 2020). Therefore, rethinking work organization in the public sector in this context is fruitful, especially when considering that experiences such as teleworking have become essential in this public health crisis (Belzunegui-Eraso & Erro-Garcés, 2020; Brant & Mourão, 2020).

INNOVATION IN THE PUBLIC SECTOR

There are several concepts of innovation in the literature. The most commonly used reference is the OECD Oslo Manual (OECD, 2018), which provides some essential criteria – the innovation must be: It has to be something implemented, not just an idea; it must be new – entirely new or a significant improvement, a novelty in its context of application; and achieve better results, whether in terms of effectiveness and efficiency or to obtain greater user satisfaction. Also, it has to enhance the public value perceived by citizens.

For Crossan and Apaydin (2010), different definitions of innovation focus on different characteristics. Each type of innovation is not affected similarly by environmental/organizational factors. For example, in NPM, government agencies adopted new practices in their strategy, structure, and services to comply with the operational and political pressures of the external environment (Damanpour, Walker, & Avellaneda, 2009). This study refers to organizational and process innovations. The first is related to developing new organizational formats or management practices, and the second refers to changes in production and distribution methods that may occur through introducing new equipment, techniques, and procedures. Both incorporate entirely new methods or significant improvements.

According to Cavalcante (2019), the development of incremental improvements also represents significant advances in policy formulation and service provision. Therefore, the search for less bureaucracy, modernization, and simplification does not have to result from large administrative reforms. Incremental innovations are more viable than disruptive innovations in public service, notably in a scenario of budgetary constraints.

Public administration innovations have particularities that reflect a specific context. Isidro (2018) elaborated the framework of innovation in the public sector, organized by: (i) innovation antecedents, i.e., elements influencing the creation of innovation (inductors, motivation, drivers), (ii) determinants that permeate the entire model, related to facilitators and barriers to innovation, innovation co-creation, and innovation capabilities, (iii) the innovation process, which involves the activities that characterize the innovation cycle, from ideation/generation to diffusion, and, finally, (iv) the results of innovation, determined by society's perception of public service improvement, considering the perceived public value. The dimension of work organization is situated in this framework as one of the antecedents or determinants that facilitate or hinder innovations, which are aspects underlying innovations (De Vries et al., 2016; Castro et al., 2017).

The ability, motivation, and opportunity (AMO) model is an example of the best practice approach in people management (PM). It is an option to promote an environment prone to innovation in the public sector based on HR policies and practices, including work organization. The AMO model can be a useful heuristic device in understanding the influence of PM on innovation and reflects the idea that an organization will see performance improvements if it implements best practices (De Leede & Looise, 2005).

Each dimension of the AMO model collaborates differently but complementarily to innovation. The "abilities" necessary to achieve the innovations' results (OECD, 2017) are related to a particular area and encompass specific technical skills and knowledge, thinking and creativity to find innovative solutions, and behavioral and social skills, such as teamwork, negotiations and partnerships, collaborative networks, and leadership. The dimension of "motivation" can compensate for the lack of ability, i.e., if people are motivated, they can acquire the needed abilities. Finally, autonomy is an essential factor in the dimension of "opportunity," especially when exercising creativity and having the freedom to plan tasks (Seeck & Diehl, 2017).

The next section describes the dimension of work organization.

WORK ORGANIZATION IN INNOVATION DYNAMICS

The work organization dimension involves factors that affect organizations' daily life and strategic PM practices that are decisive for innovations. These factors are (i) autonomy at work regarding the presence or absence of time and resources, (ii) flexibility as to the workplace and working hours, (iii) task rotation, (iv) work teams and interdisciplinary work groups, (v) organizational mobility, (vi) networks, and (vii) delegation of responsibility or decision (Laursen & Foss, 2003, 2014; Shalley & Gilson, 2004; Beugelsdijk, 2008; Jiang, Wang, & Zhao, 2012; Tidd & Bessant, 2015; OECD, 2017; De Vries et al. al., 2018; Isidro, 2018; Moussa et al., 2018).

Work autonomy is related to freedom, defined by Tidd and Bessant (2015) as "the independence of behavior exerted by the people in an organization" (p. 149). Having the discretion to carry out their daily tasks can be positive because individuals do not waste time and energy requesting authorization. However, too much freedom can have the opposite effect – people assume particular interests to the detriment of the group's or organization's interests.

Beugelsdijk (2008) pointed out task autonomy as important for incremental and radical innovation.

According to OECD (2017), autonomy at work allows the employee to exercise creativity and freedom to plan their tasks, linked to the availability of resources and time. As one of the antecedents that can explain the success of the diffusion and adoption of innovations, De Vries et al. (2018) mention the notion of "slack resources" (p.12) as the availability of organizational resources to ensure the success of the implementation of an innovation, such as availability of budget, personnel, information technology tools. In the same way that greater freedom can negatively impact, too many available resources can inhibit innovation (Shalley & Gilson, 2004). Flexibility refers to the existence of flexible working hours. Beugelsdijk (2008) found the importance of task autonomy and flexible schedules to develop radical innovations. In the context of innovation in the Brazilian public sector, flexible working hours or teleworking seemed to be unfeasible, given the legal guidelines – especially regarding radical innovations.

Laursen and Foss (2003) stated that job rotation could complement impacts on innovative activity, but Beugelsdijk (2008) did not identify any effect of task rotation on incremental or radical innovations. The benefit of staff turnover was highlighted in OECD case studies. Austria's Mobility Management Programme also found benefits to staff turnover where several public service managers showed an appreciation of the so-called brain exchange (OECD, 2017, p. 101), given the knowledge and know-how employees bring from other sectors and apply it in their daily lives.

Another practice linked to job rotation is organizational mobility, both internally and externally. Mobility programs enable employees to exchange experiences, skills, and ideas about problem-solving. This broadens the public servant's perspective when working outside their industry or home institution. These programs contribute to innovation due to the exchange of experiences.

For example, the OECD (2017) mentions the Interchange Canada mobility program, which allows the employee to exchange between sectors and between public and private organizations at the local or central level, domestically or internationally. However, De Vries et al. (2018) point out that a high staff turnover can be harmful if it interrupts the implementation of the innovation process due to the constant flow of employees and is an organizational barrier to innovations in the public sector. Work teams are considered as variables in studies mentioned by Seeck and Diehl (2017) for improvements in technological innovations (Laursen & Foss, 2003; Beugelsdijk, 2008) and developments in administrative/organizational innovations (Jiang et al., 2012). In recent years, there has been a growth in the number of teams, units, laboratories, and institutions in the public sector focused on innovation, whose first experiences date back to the 1990s (Isidro, 2018).

Innovation units can help overcome barriers in the public sector and rigidities in reward and incentive systems that are detrimental to innovative performance. They also provide safe environments for venturing into risk and experimentation (OECD, 2017). This conjuncture of team building and collaboration favors the emergence of networks.

The establishment of innovation networks in the public sector was intended to allow communication and collaboration across organizational boundaries in a structured, free and

informal way, fostering learning that is fundamental to innovation. There are networks established by the government within ministries/secretariats/organs, as is the case in Germany in the Junior Staff Orientation Programme, its Brazilian version InovaGov (Isidro, 2018), and other informal networks such as the Spanish Social and Knowledge Ecosystem (OECD, 2017).

As for delegating responsibility or decision, according to Laursen and Foss (2014), this practice is not conventionally seen as PM but was classified by the authors as contemporary PM practices. The delegation of responsibilities is linked to production by teams. The greater this delegation, the greater the possibilities of discovery and use of knowledge within organizations, especially when linked to rewards. Moussa et al. (2018) highlight an insufficient reward and recognition system as a barrier. Delegating is an imperfect measure of liberation from work, and in the first study by Laursen and Foss (2003), it was related to work design.

For Tidd and Bessant (2015), delegating is an innovation strategy in which decision-making is transferred from higher to lower hierarchical levels. Therefore, employees could organize their activities related to innovation. In addition, the authors relate the delegation of decisions to the risks of innovation. In the context of innovation management, risk involves the interaction between experience, authority, and context. Managers adopt strategies to deal with risk in different situations, such as "delaying or delegating decisions, or sharing risks and responsibilities" (p. 363).

METHODOLOGICAL PROCEDURES

This study used qualitative, descriptive research to investigate the perceptions of public administration professionals regarding the dimension of work organization for innovation.

Multiple case studies of experiences of innovation and people management (PM) in the public sector were selected, considering the sectors in which innovation is the end-activity, included in the Ministry of Planning at the federal level, the Secretary of Planning at the state level, and other agencies that innovate their areas and are in charge of the PM departments. Case studies were used because they "are the appropriate strategy to follow when examining contemporary events, when the relevant behaviors cannot be manipulated" (Yin, 2001, p.18).

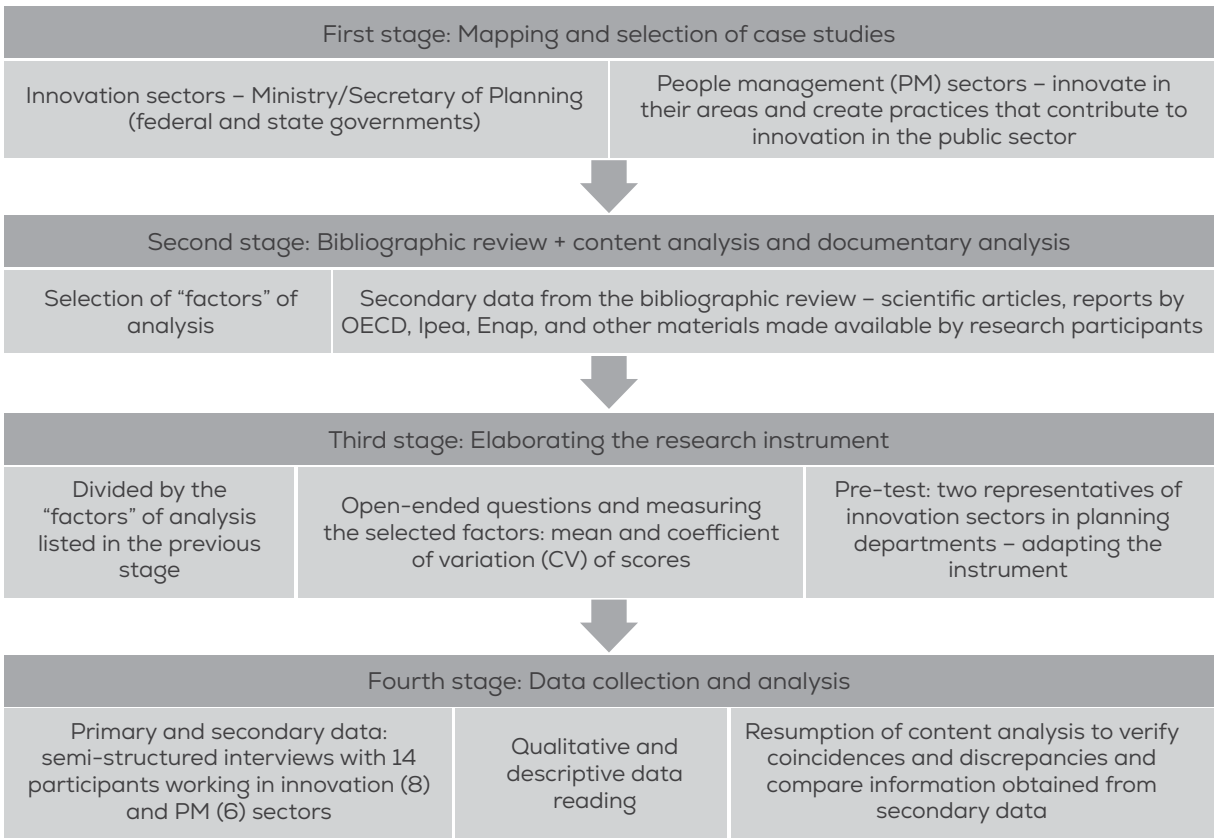
A bibliographic survey was carried out to identify the factors of the work organization dimension for innovation. This material corresponds to scientific articles; reports produced by institutions such as the OECD, Ipea, and Enap (Faria, Itaborahy, Palvarini, Endo, & Roncaratti, 2017; Cavalcante, 2019); and government materials made available by the research participants. Subsequently, there was a pre-test of the research instrument with two representatives of the innovation sectors, one at the federal and the other at the state level.

The interaction with the research participants allowed new insights. Thus the instrument was adapted, and the final version consisted of a closed question and an open question for each structuring factor of the work organization.

After selecting the cases, content analysis was performed to determine the factors that influence the relationship between PM and innovation, considering that work organization practices derive from the strategic actions of PM sectors. According to Bardin (2016), content

analysis is carried out to systematically study the latent or manifest content of communication in its quantitative dimension, in the calculation of recurring elements, and qualitative dimension by the presence or not of certain themes, meanings, attributes, etc. Figure 1 demonstrates the study's methodological path.

Figure 1. Research methodological path



Data collection focused on conducting semi-structured interviews composed of open-ended questions to identify the interviewees' profile (gender, age, education, area of work, position, connection in the public service, and length of time in the organization) and closed and open-ended questions to capture the perceptions of each structuring factor necessary for innovations in the public sector.

Thus, the factors had a closed-ended question, with a score from 1 to 10, and an open-ended question in which respondents could justify perceptions. This measurement of factors via a continuous subjective scale (Fowler Jr, 2011) is the numerical representation of feelings and perceptions expressed negatively or positively and does not correspond to quantitative data. Subsequently, respondents could justify their scores in open-ended questions after evaluating each factor to understand the perceptions from the perspective of the subjects and participants involved.

As the study seeks to identify perceptions, using scales to measure variables is inadequate to meet its qualitative nature. Despite choosing a qualitative reading of the findings instead of a mixed approach, the descriptive statistical data were maintained to reinforce the perceptions with averages and the coefficient of variation of the assigned scores. Thus, the term structuring factors was used to avoid epistemological mistakes. The structuring factor "networks" was not numerically dimensioned because, during data collection, such innovation networks were in the consolidation process, except for InovaGov, formally established at that time.

The secondary and primary sources collected through different tools (documentary analysis and semi-structured interviews measuring factors) allowed for the identification of combinations of information (Figure 1). In addition, the perceptions about the factors obtained from different perspectives – from civil servants working at the federal and state levels and professionals in sectors of innovation and PM – can be close to a triangulation when considering both similar and distinct perceptions.

Vogl, Schmidt, and Zartler (2019) studied the triangulation of perceptions by adopting multiple perspective interviews (MPIs) to expand the individual level. In this technique, members of certain social groups are interviewed separately, and later the findings are contrasted, identifying points of convergence and dissonance based on descriptive and interpretive levels of analysis. This article was limited to demonstrating the interviewees' perceptions descriptively. Therefore, a future study could compare the data obtained in this research more explicitly.

Data collection occurred by selecting civil servants at the federal and state levels who worked in the area of innovation for the public sector or in the area of PM. The target audience was diverse, encompassing civil servants who worked in a federal ministry, two state secretariats, and two federal entities of indirect administration.

In total, 14 people were interviewed between late 2018 and early 2019. Nine interviews were conducted face-to-face with state civil servants, and five interviews were conducted online with federal employees, following the recommendations of Fielding, Lee, and Blank (2016). Of these 14 participants, eight civil servants worked directly with innovations in end activities, and six belonged to the people management sector that innovated in their sectoral areas.

The delimitation of the research subjects took place by sector, i.e., the selection of interviewees indicates their relevance within the area researched. They are professionals responsible for carrying out innovation actions in the public service, working in the innovation sectors within the ministry or state secretary of planning. The other participants work with PM and innovate in their respective units, whose actions are strategic to structure the work to adhere to innovation. Managers and members of both areas were interviewed.

The interviewees' profile consisted of an average of 37 years old; the youngest was 24 years old, and the oldest was 51 years old; 100% had a graduate degree; they worked with innovations recently due to the emergence of specific structures from 2016. The research subjects were chosen based on accessibility, within the possibilities of identified interlocutors, and intentionally due to the specificity of the profile – professionals who work with innovation and people management in the public sector.

The interviews were recorded with consent – the interviewees signed the Free and Informed Consent Term, both for face-to-face and online interviews. The interviewees were identified using codes (I1 to I14) to maintain the ethical anonymity of the research.

The research limitations include the difficulty of expanding the data collection to more states in Brazil due to the operational restrictions of time and resources. Also, identifying more structuring factors and exploring public institutions in different locations would have expanded the research due to the dynamism of innovation. Data were collected between 2018-2019, and the research findings are relevant as they demonstrate the evolution of innovation processes.

PRESENTATION AND DISCUSSION OF RESULTS

As described in the methodology, the interviewees were asked to describe their perceptions through open-ended questions and attribute scores to the factors. The interviewees offered various information and scores, reflecting their individual experiences and subjective perspective.

Nevertheless, some dimensions presented approximate evaluations, indicating convergence. Table 1 presents an analytical synthesis of the main results, with scores and coefficient of variation (CV). The scores are not quantitative data but a numerical representation of the compiled perceptions (Fowler Jr., 2011).

Table 1. Synthesis of results for work organization

FACTORS	RESULTS: PERCEPTIONS	SCORES (AVERAGE AND CV)
Work autonomy – time and resources	Impact of the budget constraint scenario. Search for new alternatives: forming partnerships and free tools and training. Time constraints linked to staff limitation: selection of priority projects	(time) 7.64 23% (resources) 6.71 26%
Flexibility – workplace and working hours	In public administration, the workplace and working hours are set by law. There is a clear distinction between positions filled via competitive hiring processes and appointed positions. The work environment is limited to the public agency's facilities. Freedom to attend meetings and events and to carry out activities. Negotiation between employees and managers. Teleworking is a rare practice.	(workplace) 4.21 85% (working hours) 6.57 42%
Task rotation (rigidity)	The practice reduces activity rigidity. However, "You cannot change what is stated in the legislation" (I11).	4.21 53%

FACTORS	RESULTS: PERCEPTIONS	SCORES (AVERAGE AND CV)
Organizational mobility	Low mobility. Rare exchange of professionals between the federal, state, and local levels of government. There is a dependency on the organizational hierarchy.	5.86 42%
Interdisciplinary working teams/groups	Teamwork is present, organized differently, and considering the different work experiences. Teamwork is a source of learning. Innovation units and laboratories (spaces for ideas and experimentation)	9.07 8%
Networks	Network activities are more about sharing ideas than acting together. Main networks: Rede InovaGov (InovaGov Network); Comunidade de Simplicação (simplification community). Other networks: Agentes da Transformação (Changemakers) and Rede Gov.br	N/A
Delegation of responsibility or decision-making	The team makes the decisions, sharing risks and responsibilities	7.57 22%

Table 1 shows that the factor interdisciplinary working groups obtained the highest score (average of 9.07) and the lowest CV (8%), which indicates higher consonance of perceptions. The interviewees mentioned that most of their work refers to projects carried out in teams, which means that this factor demonstrated strong convergence among participants, corroborating the findings by Seeck and Diehl (2017). Within the work organization dimension, task rotation showed a low average, as the interviewees claimed no rigidity in structuring their tasks. There is also the possibility of alternating these tasks within the scope of their activities.

Each factor linked to the work organization dimension was analyzed subsequently. The following paragraphs present a synthesis of the main findings, with a brief outline of the main opinions expressed by the interviewees.

The analysis begins with the factor "work autonomy." The government's budgetary restrictions and the lack of resources – particularly financial – affected the dynamics of innovation in the public sector, making the interviewees turn to alternatives. To overcome the difficulties arising from the lack of resources, state employees had to be creative and rethink their work by forming partnerships and using free tools and training options.

De Vries et al. (2018) identified that the presence of "slack resources" (p.12), such as money, personnel, and information and communication technologies (ICTs), is essential to implement innovations. OECD (2017) also mentions resources and time as indispensable for innovation, although Shalley and Gilson (2004) claimed that the high availability of resources could inhibit innovations. The study observed that the lack of resources made it possible for professionals to exercise their creativity and seek new ways to perform their work activities and achieve innovation.

> Financial resources are very scarce... Everything we have done has been with partnerships, so many things with resources that are not ours... that do not necessarily belong to our team. And, as much as possible, for free, without using any resources at all (Interviewee I1).

In addition, less time and resources affect the performance of the researched activities due to the limited number of team members. The shortage of personnel was verified both at the state and federal levels.

However, even with limited time and resources, the interviewees mentioned the autonomy they have to manage their tasks within the limits of legal provisions. The confluence between the autonomy necessary to innovate (Tidd & Bessant, 2015) was observed, with some degree of formalization of work organization – which could paradoxically configure limited autonomy (Anttila et al., 2019). Interviewees I1, I8, and I12 illustrate how personnel, resources, legislation, and time limitations impact the "work autonomy" factor.

> So our portfolio of projects is closed today. We have time for these projects. But if you consider the other projects that were left out... that we refused precisely due to lack of staff, time, and workforce necessary to carry out more projects, perhaps time is also scarce. [...] We have to refuse some projects to be able to work on the projects that we think are the priority (Interviewee I1)

> In terms of resources, there is always the limitation of the team. The team is small, so it does many activities. The resource [...] is insufficient because we have to stay within the budgetary limitations (Interviewee I8)

> [...] everything has a pre-established schedule. Law, decrees, and normative instructions define most of the things we do here, so everything here has a normative instruction, and has to be done in a formal way (Interviewee I12)

The factor "flexibility" showed that the work environment was usually limited to the premises of the public organization, with the workplaces and working hours established by law. Working hours are different for employees hired via competitive processes and appointees, as the working hours of appointees are not controlled.

Within the stipulated time, employees hired via competitive processes can arrive when it is convenient for them, as long as they work 40 hours a week and are within the organization's working hours. It is noted that, despite the legal determinations about the workplace and working hours, flexibility exists due to negotiations with the management. Beugelsdijk (2008) highlighted the importance of autonomy and flexible hours for radical innovations.

As for teleworking, linked to the factor "flexibility" regarding "workplace," the practice was incipient in the public sector during the research, even if the management informally allowed some activities to be performed from home. Although teleworking was not yet foreseen by law at the time of data collection, there were some innovative initiatives, such as the pilot experiences of implementing teleworking by one of the state secretariats and two federal entities of the indirect public administration researched. The measures to increase social distancing

due to the COVID-19 pandemic led to expanding teleworking to other positions and careers, consolidating the practice in public administration. Brant and Mourão (2020) highlighted the challenges of the practice implemented as an emergency measure, in which pressure regarding goals and deadlines compete with the worker's private and domestic activities. This indicates that innovative practices in people management (Ramió & Salvador, 2018) are slowly emerging. Eleven interviewees reported that the activities were not rigidly structured and that they could rotate their tasks within their scope of work. Laursen and Foss (2003) consider that task rotation can have complementary impacts on innovation activities. The transcribed speeches of interviewees I2 and I12 show how it occurs in the organizations studied.

> Look, the task rotation here is much less rigid; we even like to work with [letting the person do] "what the person wants to do." We always have meetings presenting a list of activities to the team and the goals for the period of 15 days. The distribution of these activities is according to people's interests. So we designate the activities they want to do according to their preference (Interviewee I2).

> It depends on the task. Some are very flexible, and others are very rigid. You cannot change what is in the law, you have to follow it. But there are some [tasks] you can address in your own way (Interviewee I12).

For the factor "organizational mobility," the interviewees reported that employees are assigned between public organizations of the same government level (the exchange between the federal, state, and local levels is more complex). As cited by OECD (2017), mobility programs are non-existent in Brazilian public administration. According to the interviewees, even with the possible mobility provided by law, there are barriers, such as permission from managers.

As for interdisciplinary working teams/groups, this was a consensual factor that can be seen both in the empirical reality of public organizations and in the literature. This factor is similar to one of the analysis variables by Laursen and Foss (2003). Teamwork proved essential because of the innovation projects' interdisciplinary and cross-cutting nature.

> Here 100% of the activities are carried out as a team. The projects involve all the people on the two boards. We try as much as possible to mix people from the two boards. Although the two boards are focused on innovation, one is focused on processes and the other on projects (Interviewee I2).

Regarding innovation units or laboratories, one of the secretariats' teams considers itself an innovation laboratory. Although other innovation units were examined in the state, they were still recent initiatives. At the federal level, there were already consolidated laboratories (Isidro, 2018). According to OECD (2017), creating safe spaces for employees to present their ideas and take risks is fundamental, in addition to disseminating a culture of innovation.

> We consider ourselves a laboratory of innovation in the public sector. We implemented the Comunidade de Simplicação [simplification community], a network of innovative agents that was created precisely for this, to disseminate good practices, test ideas. We have our

> innovation cycle that serves as a selection of innovative ideas to be tested and implemented. We still work with the project incubator model. We do small implementations to see the results, and from there, we see if it is worth expanding the policy or not. So we really see ourselves as a laboratory for innovation (Interviewee I2).

The perceptions about networks were not presented in the form of scores. The research asked interviewees to point out the innovation networks in the public sector, how they work, and if they are more focused on sharing ideas and experiences or on acting together. The two innovation networks most cited by interviewees were the Simplification Community at the state level – whose participants are exclusively state employees (it counted 985 members during the research) – and the InovaGov Network, whose creation and coordination was under the responsibility of the Inova department of the Brazilian Ministry of Planning.

Unlike the Simplification Community, the InovaGov Network was formalized in 2017, and its members are not restricted to actors of the federal public administration. The network is composed of government actors from different agencies of the three branches of the three government levels (federal, state, and municipal); members from the business and nonprofit sectors, and the academic community (Faria et al., 2017). For both networks, the interviewees' indicated that activities were oriented toward sharing, although there were few initiatives of collective actions. These two networks were built by the federal and state planning departments, indicating a strategic trend toward innovation. Other networks that appeared in the interviews were the Changemakers at the state level and Rede Gov.br, at the federal level.

According to Laursen and Foss (2014), the delegation of responsibility or decisions is a contemporary practice in people management, which was noticeable in the research. In general, there is consensus that the factors "teamwork" and innovation-oriented "networks" decisively contribute to innovations in the public sector.

To a certain degree, teamwork and networks can indirectly contribute to greater professionalization of the public service in terms of innovation since the exchange of experiences, information, ideas, and the agile flow of communication enable a new way of obtaining the necessary knowledge to carry out innovative activities and actions, such as learning new practices, new tools, and a new way of thinking. This is detectable in the interviewees' speeches when addressing the design thinking methodology, agile process management, and how teamwork has changed the view of some employees regarding the modus operandi of the public sector.

When observing the findings of this research through the AMO model (OECD, 2017), behavioral abilities are more valued than techniques, which can be learned afterward. The data emphasize the factors "teamwork" and forming collaboration and partnership "networks." However, there was an interviewee who externalized dissatisfaction with the management regarding the recognition of his actions in the innovation sector in the state public administration. In this situation, obtaining the employee's engagement is not easy.

Opportunity is related to the dimension of analysis "work organization" and also involves the creation of an innovation-friendly environment. Autonomy at work and the freedom to plan and perform tasks are important factors to innovate in the public sector (Seeck & Diehl, 2017),

so much so that respondents were categorical in claiming that they have some autonomy, but with some degree of hierarchical control and legal boundaries. Such limited autonomy goes back to the prevalence of work formalization, with incipient forms of discretion in the work organization (Anttila et al., 2019).

In terms of opportunity, a space that allows errors and encourages risky decision-making is a safe environment for learning by doing, even if the public sector is traditionally risk-averse (OECD, 2017). Working groups, networks, and laboratories can create this space, but an environment that is totally conducive to innovation, for the time being, is difficult in Brazilian public management, which does not accept errors and faces barriers to innovation (De Vries et al. ., 2018) such as organizational barriers linked to additional workload, resistance to change, risk aversion, lack of resources (funding, personnel), specific interaction barriers (as it involves actors from different organizations and sectors), and contextual barriers related to legislation. Some of these barriers make a culture of innovation unfeasible because of bureaucratic requirements that still persist in the public sector, such as control, order, and unilateral communication (Moussa et al., 2018; Anttila et al., 2019). Such barriers were detected in the interviewees' perceptions.

Other factors considered best practices by the OECD (2017) do not find a parallel with the cases in the Brazilian public administration during this research. Organizational mobility through exchanging professionals from different government levels, even for a limited time, is restricted to contextual factors such as the manager's willingness to release a team member and the legal provision of career mobility. Therefore, mobility is distant from the practices observed in OECD (2017) countries, such as Canada, where there are exchanges between public and private organizations.

FINAL CONSIDERATIONS

The perceptions of federal and state civil servants about the structuring actions of work organization that culminate in innovation indicated positive aspects of teamwork and innovation networks. Some teleworking experiences lead to greater possibilities for autonomy and flexibility.

Despite teleworking being more widespread in the private sector, it was still considered a novelty in the Brazilian public sector until the COVID-19 pandemic. In 2020, teleworking was disseminated and consolidated, indicating an innovation in work organization driven by measures to increase social distance due to the pandemic.

In summary, the results revealed determinants for innovation presented in Isidro's framework (2018). Some barriers to innovation observed are the resistance detected in the public sector due to risk aversion, limitations in people management, and the reduced number of team members that resulted in the restriction of the number of projects that could be carried out simultaneously, in addition to financial restrictions and tight deadlines. These organizational barriers are interrelated (Cinar et al., 2019).

As facilitators, most interviewees pointed out teamwork as a positive practice for innovation in the public sector. Although the availability of resources is in the innovation framework as a

facilitator, the state innovation team showed that it is possible to innovate in the public sector even in a scenario of limited resources.

Future studies may overcome the limitations faced by this research by expanding the scope of investigated public organizations, extending to other government levels and the three government branches. It would be interesting to verify the continuation of the actions analyzed in this research, such as the institutionalization of networks and the adoption of teleworking and other practices. A more in-depth comparative analysis of interviewees' perceptions from different governmental levels and innovation and people management sectors would be fruitful.

NOTE

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