Innovation Capacity in Courts: A Theoretical Framework and Research Agenda

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Received: July 20, 2023 Accepted: August 14, 2023 Online Published: xx, 2023

doi:10.11114/bms.v9i2.6251 URL: https://doi.org/10.1111/bms.v9i2.6251

Abstract

Innovation in the public sector is a subject that has attracted increasing interest of public managers, policymakers, and scholars, encompassing a possible response to the complex and uncertain context experienced by governments worldwide. In the same way, the search for efficiency and effectiveness has driven the development and adoption of innovations in courts given the influence that these institutions have on the social and economic development of countries. In this sense, understanding what influences the innovation capacity in courts is an important topic for investigation. This paper contributes to this matter, using the Resource-Based View and Dynamic Capabilities approach, by analyzing the recent scientific literature on innovation capacity in the public sector, which allowed the identification of six main factors: Leadership, Team Behavior, Collaboration, Organizational Resources, Knowledge Management, and Information Technology. This leads to the proposal of a theoretical framework of the main factors associated with innovation capacity in courts. The theoretical and practical implications of the framework are discussed, and six propositions to drive a research agenda are presented.

Keywords: Innovation capacity; Courts; Justice innovation; Administration of justice; Public administration

1. Introduction

Public administration of different countries has been faced with increasing social demands, many of them complex, ambiguous, and surrounded by uncertainty, in an environment of fast economic, social, and technological change. This condition has exerted pressure on governments to find new ways to solve problems and deliver quality services. Consequently, innovation has attracted increasing interest from public managers, policymakers, and scholars, as a possible response to the pressure experienced by government organizations (De Vries et al., 2016).

In this scenario, an important goal of research is to understand which practices influence the innovation capacity of public sector organizations (Timeus & Gascó, 2018). The use of management practices, involving techniques, methodologies, and technologies for the public administration to develop its innovation capacity can be decisive in helping governmental organizations to find new solutions to the challenges posed (Gullmark & Clausen, 2023).

The literature on innovation capacity in courts, institutions that are part of public administration, is still at an early stage, and there is a lack of studies that address questions about practices that influence innovation and how it occurs (Castro & Guimarães, 2019; Castro & Guimaraes, 2020; Timeus & Gascó, 2018). This essay seeks to identify the main factors associated with innovation capacity in courts, based on the literature on innovation capacity in the public sector. The study of this phenomenon in courts is important for the emerging field of administration of justice, in which objectives, themes, concepts, and paradigms are still under development and need further research (Guimaraes et al., 2018).

Studies that address the development of innovation capacity in courts are important, as they allow us to understand whether courts have the conditions to innovate, as well as which aspects can influence the best use of their resources and the management of priorities that can support the delivery of judicial services. This article proposes a theoretical framework that answers the following research question: What are the main factors associated with innovation capacity in courts? To answer this question, six theoretical propositions are stated, which may guide future research on the capacity innovation in courts.
2. Innovation capacity

Innovation capacity and innovation are two closely intertwined constructs. In his seminal work, Schumpeter (1934) defines innovation as the creation of new products or services, unprecedented for the market, with a change in the existing economic pattern, which may refer to the introduction of a new product, a new production method, the opening of a new market, access to raw materials or semi-manufactured goods, or even the establishment of a new organization.

The concept of innovation was systematized by the Organisation for Economic Co-operation and Development – OECD (2018). The OECD defines innovation as a new product or process (or a combination of both) that differs significantly from the unit's previous products or processes and that is available to potential users (product) or to put to use by the unit (process). It is noteworthy that the product or process must have been implemented and the term unit describes the actor responsible for the innovations and may refer to any institutional unit in any sector, including individuals.

The academic literature emphasizes that innovation is a complex, multifaceted, dynamic, and multilevel construct, and can be studied from different perspectives and with different perceptions of stakeholders about the phenomenon (Oliveira & Santos, 2019). Some distinctions include segments between technical and administrative innovation; product and process innovation; and radical and incremental innovation (Mendoza-Silva, 2021).

Innovations can be analyzed according to the assumptions of the Resource-Based View – RBV (Barney, 1991), which understands organizations as a set of resources and capabilities (Penrose, 2009). According to the RBV, organizations have internal resources that constitute valuable and strategic assets, which, depending on their use, can guarantee a sustainable competitive advantage for the organization (Barney, 1991). The innovative use of a resource can trigger a lasting benefit as the organization grows and learns from its experiences and improves its market position.

In addition to the RBV, Teece et al. (1997) proposed the Dynamic Capabilities approach, emphasizing the resources and skills of the organization, together with the processes of perception, adjustment, and transformation of internal resources in contact with the external environment, can generate competitive advantage, re-configuring the organization and its environment. Dynamic Capabilities can be understood as the way in which an organization coordinates its tasks, using its tangible and intangible organizational resources, to achieve a specific result, with benefits for the organization (Helfat & Peteraf, 2003).

Dynamic Capabilities represent a set of three capabilities that act in an interdependent and systemic way: adaptive capacity, absorptive capacity, and innovation capacity (Wang & Ahmed, 2007). Adaptive capacity deals with identifying and taking advantage of emerging market opportunities. Absorptive capacity refers to external knowledge, where organizations can learn more quickly from partners by integrating external information and transforming it into knowledge. Innovation capacity allows the organization to develop new products, services, or markets, through the alignment of innovative strategic guidelines with new processes and behaviors. From this theoretical perspective, innovation capacity can be defined as the integration of resources and knowledge to continuously transform ideas into new products, processes, and systems for the benefit of the organization and its stakeholders (Lawson & Samson, 2001).

It is therefore the ability of an organization to acquire and assimilate new knowledge, transferring it to innovative products or services (Weber & Heidenreich, 2017).

3. Innovation Capacity in the Public Sector

Although much of the literature on innovation capacity refers to private sector organizations, its foundations apply to public sector organizations (Chen et al., 2020). The theoretical lens of dynamic capabilities is especially useful in this field because it focuses on internal resources rather than market competition, a perspective that concentrates on the strategy of maximizing organizational performance using the available resources (Pablo et al., 2007). Innovation capacity in the public sector can be defined as a set of conditions that support innovation, encompassing factors that allow innovation to occur or actively encourage it (Lewis et al., 2018).

To understand the state of the art regarding to the concept and use of innovation capacity in public sector organizations, searches were conducted, in January 2023, in the Web of Science and Scopus databases, which catalog a vast proportion of the world's scientific literature. While the former provides articles with a high impact factor in academic fields, the latter adds a large number of journals. The following search terms were sought in the title, keywords, and abstract of articles: (“innovation capacity” OR “capacity to innovate” OR “innovativeness”) AND (“public administration” OR “public sector” OR “government” OR “public policy” OR “public service” OR “public management”). The selection of terms was based on related studies, such as those by Mendoza-silva (2021), Souza et al. (2019), and Zuiderwijk et al. (2021). Only articles written in English were considered, given the predominance of this language in the academic community (Knight, 2014). The search covered the period from 2017 to 2022, to ensure the most relevant and recent articles.

After applying the inclusion and exclusion criteria on both databases, as proposed by Cronin et al. (2008), 1,104 articles
were found, 497 in the Web of Science and 607 in the Scopus database. Of the total, 375 duplicated records were excluded, leaving 729 articles to be analyzed. The next phase aimed to ensure the quality of the literature used in the review (Cronin et al., 2008). The original search identified some papers not directly relevant to this study, such as innovation capacity in small and medium-sized private companies. Therefore, the title and abstract fields of the 495 articles were read, articles that could not relate to the public sector were excluded and 72 texts selected for a full reading. Of these, 47 articles were discarded because they did not contribute to the research topic, such as articles focusing on national innovation systems. In the end, 25 articles were selected to compose the final corpus for analysis.

The last step of the review comprised the analysis and synthesis of the results (Cronin et al., 2008). Therefore, the 25 selected texts were initially analyzed regarding the type of scientific article, approach and research methods used, data collection techniques, type of data source, data analysis techniques, units of analysis, countries, and continents where studies and year of publication took place. Then, the analysis of the theoretical field was performed. The synthesis of the review findings was handled using the Microsoft Power BI tool.

3.1 Scientific publication profile

Of the 25 articles selected, three are theoretical (12%) and twenty-two are theoretical-empirical (88%), and no review articles were found. The predominance of theoretical-empirical articles may indicate the maturity of the field of study of innovation capacity in the public sector. As for the approach, of the nineteen theoretical-empirical articles, ten are qualitative (45.45%), ten are quantitative (45.45%) and two have a mixed approach (9.09%). Thirteen studies used only primary data (59.09%), six contained primary and secondary data (27.27%) and three articles used only secondary data (13.64%).

Regarding research methods, the use of surveys appears in 11 articles, while case study and multiple case study were found in five and three articles, respectively. This distribution, with a certain balance between qualitative and quantitative approaches, together with the various research methods used, reinforces the idea that the subject is mature, and multiple ways of deepening knowledge are used in the development of this field of research. As for data collection techniques, 11 of the 25 studies retrieved used questionnaires, while interviews were used in nine articles. Other data collection techniques found were document analysis, access to databases, participant observation, and focus groups. Regarding data analysis techniques, content analysis was the most widely used, with nine articles, followed by structural equation modeling, in six articles. Other multivariate data analysis techniques were also found.

As units of analysis used in the studies, the main ones were municipalities, with nine articles (sometimes together with another kind of analysis, such as individuals and innovation labs), followed by individuals and public organizations, with six and five articles, respectively. Also, studies covering states, countries, innovation labs, and innovation projects were found. Thirteen of the 25 studies focused on Europe, four in North America, four in Asia, one in Africa, and one carried out a comparative study between Europe and USA. The United States is the country with the highest number of occurrences, with three articles. France, Italy, Spain, and the Netherlands appear with two articles each. The United Arab Emirates, Slovakia, Denmark, Finland, Ghana, Indonesia, Korea, Malaysia, Mexico, Norway, Romania, and Sweden appear in one study each. Of the selected articles 48% were published in the last years (2021-2022), showing a growing interest in the topic.

3.2 The theoretical field

Some theories stand out in studies on innovation capacity in the public sector, especially the Dynamic Capabilities and the Resource-Based View, which have been the main theories applied, sometimes together with other theoretical lenses. Ten of the 25 selected articles do not mention theories. Of the 15 articles that expressly state some theory, the most frequently cited is Dynamic Capabilities, followed by the Resource-Based View, with eight and seven articles each, respectively. These two approaches were used together in six of the retrieved studies. Other theories used to support the literature retrieved which appeared only once are Institutional Theory, Innovation Systems Theory, Public Innovation Theory, Theory of Planned Behavior, Decision Theory, Contingency Theory, Competitive Values Framework, Market Failure Theory, State Failure Theory, Public Choice Theory, and Bureaucracy Theory.

Dynamic Capabilities, as expected, stands out as the main theoretical approach in studies on innovation capacity for addressing, as suggested by Helfat & Peteraf (2003), the form of organization, task coordination, and the use of organizational resources to obtain specific results. The Resource-Based View, the second most widely used approach in the selected articles, supports the role of innovations in creating a lasting benefit from the perspective of taking advantage of the resources that the organization has (Barney, 1991). The other articles focus on innovation capacity, considered the component responsible for the integration of resources and knowledge for the continuous transformation of ideas into new products and processes, as emphasized by Lawson and Samson (2001).

3.3 Main factors associated with innovation capacity in the public sector
Based on the analysis of the 25 selected texts of the literature retrieved, it was possible to identify six main factors associated with innovation capacity in the public sector: Leadership, Team Behavior, Collaboration, Organizational Resources, Knowledge Management, and Information Technology (Table 1).

Table 1. Main factors associated with innovation capacity in the public sector

<table>
<thead>
<tr>
<th>Factors</th>
<th>References</th>
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<tr>
<td>Leadership – technical and behavioral skills of public managers aiming to influence an organizational culture which focuses on commitment and motivation of teams to innovation, agile decision-making, systemic vision, weighing the interests of stakeholders, commitment to good public ethics, and the coordination of actions and strategies that contribute to the development and the adoption of innovations.</td>
<td>Azamela et al. (2022); Boly et al. (2022); Gullmark (2021); Kajamaa et al. (2022); Lewis et al. (2018); Meijer (2019); Meričková &amp; Muthová (2021); Nik Hashim (2022); Palmi et al. (2021).</td>
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<td>Team behavior – set of individual and collective behaviors relevant to the development and the adoption of innovations, encompassing the commitment to change, openness to bottom-up initiatives, flexibility of the structure and work arrangements, management of risks, employee empowerment, customer solution orientation, generation of new ideas, experimentation, and the mobilization of pro-innovation attitudes.</td>
<td>Alnuaimi &amp; Khan (2019); Azamela et al. (2022); Boly et al. (2022); Clausen et al. (2020); Gullmark (2021); Kim et al. (2022); Lewis et al. (2018); Meijer (2019); Nik Hashim (2022); Palmi et al. (2021); Timeus &amp; Gascó (2018).</td>
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<td>Collaboration – sharing of formal and informal experiences and knowledge, internal and external to the organization, comprising the development of connections, participation in networks, the socio-cognitive process of meaning, increased trust, interdisciplinarity, and the mobilization that support the development and the adoption of innovations.</td>
<td>Azamela et al. (2022); Clausen et al. (2020); Gullmark (2021); Kajamaa et al. (2022); Lewis et al. (2018); Ma (2017); Magnusson et al. (2021); Meijer (2019); Meričková &amp; Muthová (2021); Nik Hashim (2022); Palmi et al. (2021); Timeus &amp; Gascó (2018); Trivellato et al. (2021).</td>
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<td>Organizational Resources – availability of financial, material, human, and technological resources needed to support the development and the adoption of innovations.</td>
<td>Clausen et al. (2020); Lewis et al. (2018); Timeus &amp; Gascó (2018).</td>
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<td>Knowledge Management – management of experiences, values, information, and knowledge (tacit and explicit), covering the development and maintenance of routines, processes, and practices of the organization, the training of employees, and the use of tools to obtain and use new ideas, information, and knowledge to support the development and the adoption of innovations.</td>
<td>Boly et al. (2022); Favoreu et al. (2019); Gullmark (2021); Meričková &amp; Muthová (2021); Nik Hashim (2022); Timeus &amp; Gascó (2018); Trivellato et al. (2021).</td>
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<td>Information Technology – use of information and communication technologies to support the management process based on data and information, including new platforms and communication channels for the development and the adoption of innovations.</td>
<td>Magnusson et al. (2021); Nik Hashim (2022); Timeus &amp; Gascó (2018).</td>
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</table>
4. Theoretical Framework of Innovation Capacity in Courts

The courts constitute the pillar of the judicial system, functioning as the entities that issue decisions on conflicts according to rules defined by law and customs. These institutions work hierarchically structured in multiple instances, which can make judicial systems very complex. Given their jurisdiction, courts have the responsibility to analyze, deliberate, and review issues based on laws considering the arguments brought by the disputing parties. It should be noted that the functioning of the courts also aims to guarantee the principles of due process of law and impartiality, ensuring that the parties involved can present their arguments and evidence fairly. The grounds for decisions handed down by the courts play a substantial role in transparency by establishing a legal framework that guides future cases. In summary, courts promote normative stability and guarantee the protection of individual and collective rights.

The operational process of the courts is initiated by the filing of lawsuits or appeals carried out by the parties. After a probative instruction phase, the decision-making process is based on legal arguments. In this context, judges, based on the analysis of evidence, jurisprudential precedents, and arguments of the parties, make their decisions, which are expected to ensure the application of laws with equity and coherence. So that the judges can issue their decisions, there is an organizational structure responsible for providing assistance to the parties, managing the information of the judicial process, and providing transparency and effectiveness to the judicial decision. In this sense, the courts function as public sector organizations in general, with planning, organization and allocation of resources, direction, and control of outputs and outcomes related to their objectives (Guimaraes et al., 2018, 2020).

An additional search was carried out in the same databases mentioned in the previous section, now focusing on courts, replacing (“public administration” OR “public sector” OR “government” OR “public policy” OR “public service” OR “public management”) with (“judicia*” OR "court" OR "justice"). However, no articles on innovation capacity in courts were found. Therefore, the mapping of the literature on innovation capacity in the public sector was used as the basis, by analogy, for the proposition of a theoretical framework that explains the main factors associated with the innovation capacity in courts. Although judicial organizations have different characteristics from other private and public organizations (Guimaraes et al., 2020), the concept of innovation capacity in the public sector can also be applied to courts of justice, which, like other public organizations, are under pressure to show outcomes and to work efficiently and effectively. Indeed, Castro and Guimaraes (2019; 2020) argue that the innovation process in justice organizations can be promoted or restricted according to five main dimensions: institutional environment, leadership, organizational resources, cooperative relationships, and innovative behavior.

Some assumptions must be made when dealing with dynamic capabilities, in general, and the innovation capacity in courts in particular. First, academic studies assume that every organization has a set of ordinary and dynamic resources varying in degree, the former being responsible for achieving high levels of efficiency, but easy replication, while the latter is related to obtaining a long-term competitive advantage (Gullmark, 2021; Teece, 2014, 2016). Similarly, it is possible to conclude that courts have some level of capacity to innovate, in the same way as other organizations in general. Second, dynamic capabilities are path-dependent, have a certain degree of routinization, and are important for organizational survival and growth (Gullmark, 2021; Wilden et al., 2016). In courts, the environmental and institutional context, comprised of the history, values, and worldview of judges and officials, together with organizational specificities and the established work processes, shape the innovation capacity. Third, dynamic capabilities are premised on decision makers having bounded rationality (Schilke et al., 2018). Such an assumption implies that the decisions of individuals in courts occur under cognitive limitations, and the decision-making process may facilitate or hinder the advancement of innovations.

The innovation capacity in courts takes into account characteristics related to the functioning of these organizations and their guiding role in political and social behavior, of both individuals and groups. In this sense, three aspects can be highlighted. First, is the existence of judicial innovations of a political-legal nature (Souza & Guimarães, 2014). Second, is the presence of actors and specific roles in the justice system (Guimaraes et al., 2018). And third, is the high level of institutionalization of the courts (Castro & Guimaraes, 2020), which have presumed legitimacy.

In a study that investigated innovations and performance in judicial administration, Souza and Guimarães (2014) found the predominance of organizational and managerial innovations – related to the adoption and improvement of planning, monitoring, and management control techniques; followed by technological innovations – commonly associated with the use of new information and communication technologies; and judicial innovations – made up of changes in legal regulations or judicial procedures. While organizational, managerial, and technological innovations can be found in the public sector in general, judicial innovations are specific to the courts. Judicial innovation focuses on the judicial decision-making process, encompassing political and ideological issues, as well as aspects of broader reforms of courts which can make the justice service more efficient and effective (Souza & Guimarães, 2014).

Another issue concerns the roles played by different actors in the judicial process. The justice system involves different
stakeholders, such as judges, lawyers, prosecutors, court officials, and in some cases, police chiefs, notary clerks, and jurors (Guimaraes et al., 2018). Judges use individual analyses to respond to social demands and the independence of these professionals sometimes end up having an impact on fragmentation of work and a lack of integration between the different parties. In addition, different agents in the same role can have diverse motivations according to their understanding of the role they play. For example, judges in a similar position may understand that they must act as social activists or, conversely, as defenders of the status quo (Gomes et al., 2016). Different profiles of judges, when they have management positions in courts, can reverberate throughout the organizational structure, affecting their ability to innovate (Guimarães et al., 2011). Additionally, courts are highly institutionalized and the nature of the work they carry out leads to stability rather than change, making institutional arrangements an important level of analysis to understand the innovation capacity of these organizations (Castro & Guimaraes, 2020). There are several levels of institutionalization, and some courts can advance more quickly than others depending on the environment and culture that surround them (Castro & Guimarães, 2019).

Figure 1 shows the proposed framework for investigating the main factors associated with the innovation capacity in courts. This framework mainly considers the literature on innovation capacity in public sector organizations and its application in courts. It is important to emphasize that it presents a broad perspective, so that it can be used in judicial administration in different countries, respecting the differences that these organizations may have regardless of size and types of justice, whether they adopt Common Law or Civil Law. Six theoretical propositions arising from this framework are stated.

**Figure 1. Theoretical Framework of Innovation Capacity in Courts**

**Leadership.** One of the most important themes in the literature on innovation capacity concerns the role of leadership in innovation (Mendoza-Silva, 2021). Timeus and Gascó (2018) consider leadership to be essential as a support factor for the development of innovations. Yuming and Zhuoxin (2022) investigated inclusive leadership and its relationship with employee well-being and organizational trust. Lewis et al. (2018) investigate different types of leadership and suggest it as a fundamental aspect of innovation capacity. Schilke (2018), in turn, highlights the limited rationality of leaders as decision makers. Some characteristics of courts, as well as the role of judges (Gomes et al., 2016), reinforce leadership as a factor that influences the innovation capacity in courts (Castro & Guimarães, 2019; Castro & Guimaraes, 2020).

In a study that compared data from Germany, Italy, the Czech Republic, and Slovakia, Šipulová et al. (2022) evaluated the share of power held by judges in judicial governance, finding a concentration of power in these professionals regardless of the governance model adopted by the country. This means that the creation of an organizational environment that promotes innovation in courts will, to a certain extent, depend on judges' decisions, especially when they hold management positions in the courts.

Considering that management practices in courts that seek innovative solutions will necessarily have links with judges and other managerial leaders, as well as depend on these actors to promote changes, it is proposed that:

**P1 – Leadership influences the innovation capacity in courts.**

**Team Behavior.** Academic literature points out that certain types of behaviors influence the organization's ability to innovate (Mendoza-Silva, 2021). Values, skills, and attitudes are important for innovative behavior (Wilden et al., 2016). At the same time, cognitive limitations impact the decision-making process, which may facilitate or hinder the advancement of innovations according to the principle of bounded rationality (Schilke et al., 2018). The mobilization of human resources to address innovative behavior is also identified as a favorable factor for innovation capacity (Timeus & Gascó, 2018). Innovative behavior is a relevant factor for the innovation process in courts (Castro & Guimarães, 2019; Castro & Guimaraes, 2020).

The importance of design for the implementation of innovations in the legal system is highlighted by Hagan (2019) and
Misca et al. (2019). Methodologies such as Design Thinking - with steps such as empathy, problem definition, idea generation, prototyping, and testing - allow judicial officials to express behaviors aimed at innovation, such as experimentation, taking calculated risks, and even allowing the occurrence of inherent failures to the development of innovations and openness to bottom-up initiatives. Human-centered design, by prioritizing the subject's needs, enables meaningful interactions throughout the legal services journey, supporting changes in the legal system (Karpen & Senova, 2021).

Considering practices of courts aimed at the development and adoption of innovations, which involve a set of team behaviors for the development and testing of new ideas, generally involving cooperation and interaction between members and users, the following proposition is stated:

**P2 – Team behavior influences the innovation capacity in courts.**

*Collaboration.* An organization is not an isolated entity that has all the necessary resources to achieve its goals and, therefore, it must develop external relationships (Mendoza-Silva, 2021). External actors can contribute to generate new ideas and allow the sharing of information and knowledge (Timeus & Gascó, 2018; Trivellato et al., 2021). Cooperation networks, based on interpersonal communication, can improve relationships of trust and social capital (Lewis et al., 2018). In courtrooms, cooperative relationships are seen as one of the main dimensions related to the innovation process (Castro & Guimarães, 2019; Castro & Guimaraes, 2020).

The Stanford Legal Design Lab, in the United States, advocates the use of participatory design, in which end users and other stakeholders help to decide what and how certain problems should be solved, resulting in new ways of innovating and achieving greater community engagement with the courts and the legal system (Hagan, 2019). The value of such an approach is also discussed by Misca et al. (2019), in England, regarding the implementation of innovations in family justice taking into account the opinions of family members, including children, as users of the service and balancing the challenges and opportunities arising from the involvement of those who live the experience. A study carried out in Ireland, regarding barriers to people with intellectual disabilities in forensic formalities, indicates that collaboration between courts and other actors, such as legal professionals, prison service officials, and the parole board is fundamental to the commitment of access to justice (Gulati et al., 2021).

Studies focused on the co-production of judicial services in Brazil provide other examples. Gomes and Moura (2018) report that an important innovation was the creation of Small Claims Special Courts in the country, which allowed the direct participation of the user in the production and provision of judicial services without the need for intermediation. Rêgo et al. (2019) confirmed that co-production increases the probability of the disputing parties having a positive perception of the image of the courts.

Considering practices of courts that support the development and the adoption of innovations with the sharing of experiences and knowledge between internal and external, formal and informal organizations, it is proposed that:

**P3 – Collaboration influences the innovation capacity in courts.**

*Organizational Resources.* The theoretical lens of RBV and Dynamic Capabilities emphasizes the use of resources in ensuring that organizations play an important role in their environment (Barney, 1991; Teece et al., 1997). Ways of integrating resources and knowledge can generate valuable innovations for stakeholders (Lawson & Samson, 2001). Combining tangible and intangible resources, controlled by effective management, increases the probability that an organization is innovative (Lewis et al., 2018; Mendoza-Silva, 2021). Elsafy and Yehia (2023) confirmed the relationship between financial capabilities and the implementation of digital transformation in the Egyptian public sector. Organizational resources are important for the innovation process in the courts (Castro & Guimarães, 2019; Castro & Guimaraes, 2020).

The academic literature presents cases that reinforce this perspective in courts. For example, Gomes et al. (2018) suggest that investment in information and communication technologies has a direct and positive effect on court productivity. Sousa and Guimaraes (2018) also examined the relationships between resources, innovation, and performance in Brazilian labor courts, finding evidence that court size and investment in staff training are key factors in explaining the variation in court efficiency.

Thus, considering the management practices of courts, enabled by different means (financial, material, human and technological), which provide support for the development and the adoption of innovations, it is possible to suggest that:

**P4 – Organizational resources influences the innovation capacity in courts.**

*Knowledge management.* Knowledge management is an administrative practice that involves planning, monitoring, and
controlling the knowledge necessary to achieve organizational objectives, involving the transfer of knowledge between its participants both within and between units (Mendoza-Silva, 2021). It takes into account the action on the knowledge of established and sometimes historical routines, applied to processes developed today (Trivelatto et al., 2021; Wilden et al., 2016). It is also important to act on the management of experiences, values, information, and knowledge (tacit and explicit), encompassing norms, routines, and processes that shape the action and understanding of employees on how they acquire and use new ideas (Timeus & Gascó, 2018).

A study of Nepalese Judiciary demonstrated the potential for faster decision-making as a result of the application of knowledge management by judges and Supreme Court officials in the case hearing process, decision making, and execution process (Paudel, 2020). Research carried out by Mendonça et. al. (2022) in institutions of the Brazilian justice system shows that there is an effort to use knowledge management practices to promote innovation. The study, supported by 15 peer-reviewed articles, found that the most prominent knowledge management practices and routines in the studies were related to People Management and Process Management and Control, followed by Information and Communication Technology.

Considering the practices of courts that seek, as a result of the management of experiences, values, information, and knowledge (tacit and explicit), to direct the development and the adoption of innovations, it is proposed that:

**P5 - Knowledge management influences the innovation capacity in courts.**

*Information Technology.* The use of information technology in courts can facilitate innovative behavior, sustain collaboration, and manage knowledge sharing better, in addition to allowing participation in virtual networks (Fox & Yamagata, 2022; Mendoza-Silva, 2021). Its intensive use allows organizations to analyze data and information and also create new platforms on which new services can be mounted (Timeus & Gascó, 2018). Studies emphasize the digitization of judicial processes, as well as electronic systems, to boost court efficiency. For example, Hodson (2019) addresses the benefits of digitization in family courts in England, while Mahibha and Balasubramanian (2020) highlight the impact of implementing electronic systems in Indian courts. A comparative study between Brazil and Argentina also demonstrates that electronic processes positively impact individual performance and the quality of public service (Arias & Maça, 2021).

Another aspect concerns online dispute resolution systems - ODRs. Such systems are composed of digital platforms that seek to help the parties involved in certain conflicts to find a satisfactory solution. In England and Wales, the Online Solutions Court uses ODR for low-value civil claims (Quek Anderson, 2019). In China, there are Internet Courts responsible for the online resolution of e-commerce disputes and copyright violations (Sung, 2020). In the Netherlands, the tool Uitelkaar.nl helps separated partners to dialogue in a structured way about their divorce and paternity agreements, and then formalize these agreements in court, dissolving the marriage (Kistemaker, 2021).

More recently, great attention has been given to data-driven applications and artificial intelligence in courts (Oliveira et al., 2022). Frankenreiter and Livermore (2020) draw attention to the role computational methods, using causal inference, prediction, and classification, in addition to data interpretation and description, have in understanding the law content and the courts process of decision-making. Statistical models can be used to assist judges and court servants in the organization and treatment of cases, with a possible reduction in the time taken to process lawsuits. For example, the work of Demura and Klepka (2021), which explores the introduction of artificial intelligence algorithms in criminal cases in the Ukraine, concludes that the technology can help significantly reduce the burden of the pre-trial investigation of the prosecution and also the country’s judicial system.

Information technology has been used extensively in response to the effects of the Covid pandemic, as it has pushed courts around the world to respond to the challenges related to the social distancing restrictions adopted in various locations. For example, the responses adopted in relation to Covid by the courts of the State of Victoria, the second largest jurisdiction in Australia, have driven digital innovation in these courts (Wallace & Laster, 2021). Another example can be seen in the United States, where, as a reaction to the pandemic, that country’s courts at all levels began to use technology to reinstate their cases virtually, including the United States Supreme Court, which did this for the first time in history (Baldwin et al., 2020).

Considering the practices of courts that promote solutions based on information and communication technology with monitoring and adoption of technologies to enable superior decision making based on data and information, as well as to develop platforms and new communication channels, it is proposed that:

**P6 - Information technology influences the innovation capacity in courts.**

In addition, different organizational, environmental, and institutional contexts can influence the innovation capacity in courts. External factors, such as political and cultural context, the market, the emergence of new organizational
structures, and technological uncertainty can influence innovation capacity (Mendoza-Silva, 2021). The institutional environment can provide a better understanding of the development of innovations in justice organizations (Castro & Guimaraes, 2019), as it focuses on how the search for legitimacy can affect the organization's behavior (Guimaraes et al., 2020). Another important point to be emphasized is that the main factors can overlap and be found in multiple compositions, varying in degrees, in different organizational units in courts. The analysis of these factors together allows an integrative and comprehensive perspective of the innovation capacity in courts.

5. Conclusions and Recommendations

The innovation capacity in courts is an important topic in theoretical, social, and economic terms. Based on the Resource-Based View (Barney, 1991) and Dynamic Capabilities (Teece et al., 1997), the objective of this essay was reached with the proposal of a theoretical framework that contributes to the understanding of this field, making it possible to deepen on the main factors associated with the innovation capacity in courts, a branch of public administration.

Innovations in courts have been driven by technological advances and the search for efficiency and accessibility. New forms of intra and inter-organizational collaboration have been used in courts, using approaches to face complex problems, such as design thinking. Changes in organizational culture in favor of a more innovative environment can be observed in several cases in courts. Advances were observed in the adoption of electronic systems for the management of legal proceedings and data analysis to assist in judicial decision-making. New online platforms to assist in the filing of lawsuits, online dispute resolution, procedural tracking, and electronic filings have also emerged in recent years. The digitization of court services has simplified procedures and allowed greater access to justice, as seen during the Covid pandemic. The use of technologies such as artificial intelligence has shown promise in identifying patterns in large volumes of data, bringing gains in speed and in the prediction of judicial results, but remaining ethical and legal challenges in courts regarding the guarantee of the privacy of the parties involved, compliance with legal principles, and impartiality in decisions. In summary, innovations in courts have improved the delivery of judicial services, increasing the effectiveness of the court system, and expanding access to justice.

Future research on the innovation capacity in courts could involve comparative studies of one or more of the described factors related to distinctive contexts, such as different specialties of justice, regional, and size aspects. There might be studies focused on the environment, on how sources focused on technology-push and demand-pull, or institutional isomorphism, modify the innovative capacity in courts. Future studies might adopt other perspectives, such as comparing courts with a high and a low level of each factor or such as the structuring of organizational memory related to innovative experiences. Most previous studies were carried out in Europe and the United States of America, and it would be desirable to have studies in other locations, as well as comparative studies between courts in different countries.

Finally, it is recommended that the theoretical propositions stated in this article be tested empirically. Therefore, quantitative, qualitative, and mixed studies are indicated. One possible qualitative approach would be to deepen understanding the role of different stakeholders related to the courts (judges, civil servants and other collaborators, lawyers, citizens) regarding to each of the propositions stated, allowing comparisons between, or even within, different professional categories. Quantitative research could be carried out using the main factors as independent variables and innovation capacity as a dependent variable and applying a scale to be answered by judges and staff in courts. Structural equation modeling would fit well in this approach. Specific approaches to courts’ innovation lab participants may be another strategy of interest. Other indicators related to the adoption of innovations, for example the number of new solutions examined or implemented, or performance in courts (court disposition time, workload, number of cases judged by judge) could be included in the analysis, as consequences of innovation capacity. Mixed approaches could apply these strategies concurrently.

Acknowledgments

We greatly appreciate the valuable contributions of the Administration of Justice research group (AJUS) from the Management Graduate Program at the University of Brasilia (PPGA-UnB).

Authors contributions

Prof. Oliveira and Prof. Guimaraes were responsible for the study design and revising. Prof. Oliveira was responsible for data collection and drafted the manuscript and Prof. Guimaraes revised it. All authors read and approved the final manuscript. The authors contributed equally to the study.

Funding

Not applicable.
Competing interests
The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Informed consent
Obtained.

Ethics approval
The Publication Ethics Committee of the Redfame Publishing.
The journal’s policies adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

Provenance and peer review
Not commissioned; externally double-blind peer reviewed.

Data availability statement
The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement
No additional data are available.

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