UNIVERSITY OF BRASÍLIA - UNB

FACULTY OF ECONOMICS, MANAGEMENT, ACCOUNTING AND PUBLIC

POLICY ADMINISTRATION (FACE)

MANAGEMENT GRADUATE PROGRAM (PPGA)

LEONARDO FERREIRA DE OLIVEIRA

ESSAYS ON INNOVATION CAPACITY IN COURTS

(ENSAIOS SOBRE CAPACIDADE DE INOVAÇÃO NO JUDICÁRIO)

Brasília - DF

2023

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Doctoral dissertation submitted to the Management Graduate Program at the University of Brasilia in partial fulfilment of the requirements for the degree of Ph.D. in Management.

Advisor: Prof. Ph.D. Tomás Aquino Guimarães

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Approval date: 29th September 2023

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I dedicate this doctoral work to my beloved family,

who have always been there for me.

To my wife, Maisa.

To my son, Rafael.

To my parents, Regina and Vanderlei.

To my sister, Daniela.

To the memory of my grandparents Eugênia e Célio.

We cannot solve our problems with the same thinking we used when we created them.

Albert Einstein

ACKNOWLEDGEMENTS

ABSTRACT

This research aims to identify and measure the main factors associated with innovation capacity in courts. Innovation is a topic that has grown a lot within the public sector, including the Judiciary branch, with the interest of academics and public managers for its potential to respond to the several challenges of today's society. The quest for increasing efficiency and effectiveness has driven the development and adoption of innovations in courts, which, given their influence on the social and economic development of countries, constitute a subject of great relevance. However, there is a lack of studies that address the innovation capacity in courts. Aiming to contribute to a better understanding of the theme and to fill in this research gap, the studies of this dissertation were developed. Thus, Chapters 2, 3 and 4 respond to specific objectives of the dissertation, while chapters 1 and 5 deals, respectively, with the introduction and conclusions and recommendations of the research. Chapter 2 brings the systematization of recent scientific literature, an explanatory theoretical framework was proposed regarding the main factors associated with the innovation capacity in courts, namely: Leadership, Team Behavior, Collaboration, Organizational Resources, Knowledge Management, and Information Technology. Supported by the discussion of the theoretical and practical implications of the framework, six propositions are stated to be tested with empirical research. Chapter 3 makes use of qualitative methods, including in-depth interviews with 17 judges and 13 court clerks of the Brazilian Judiciary. Using content analysis, the collected data were investigated, corroborating the study carried out in Chapter 2 and revealing a protagonism of some of the factors in enable innovation capacity in courts, namely: Leadership and Team Behavior. The findings of Chapter 3 reinforce that it is critical to innovation capacity in courts to have people skilled in innovation techniques, with the availability of time, engagement, and participating both in the team and in the leadership positions. It also emerges as critical to reconcile these factors with the collaboration of key actors, having support in other factors that can be seen as secondary: Organizational Resources, Knowledge Management, and Information Technology. Chapter 4 uses qualitative and quantitative methods to build and validate the innovation capacity measurement scale in courts. The initial scale items were validated with the assistance of 11 judges and court clerks, experts in the subject, who fulfilled the role of evaluators regarding the clarity of language, the practical pertinence, and the theoretical relevance of those items. Data analysis relied on the use of the Content Validity Coefficient. Then, data collection was made resulting in 354 questionnaires answered by the research participants, being 62 judges and 292 court clerks of the Brazilian Judiciary. Data analysis procedures were performed using Exploratory Factor Analysis, Confirmatory Factor Analysis, and Structural Equation Modeling. The study finds that the main factors that push innovation in courts can be summarized in three factors with high interdependence between them: Leadership, Team Behavior, and Information Technology. The factors Leadership and Team Behavior emerged as of greater influence on the innovation capacity in courts regarding, respectively, the working team and the organization as a whole. Thus, considering the set of studies, seen here as synergistic and complementary essays on innovation capacity in courts, it was possible to deepen the research gap within the current context of Brazilian Judiciary. It is hoped that this work can assist in filling in the gap in the scientific field and that its findings can contribute to future studies and improvements in court management policies and practices.

Keywords: Innovation Capacity; Justice Innovations; Judiciary; Courts; Public Sector

RESUMO

Esta pesquisa tem como objetivo identificar e medir os principais fatores associados com a capacidade de inovação em tribunais. A inovação é um tema que tem crescido no âmbito do setor público, incluindo o Poder Judiciário, despertando interesse de acadêmicos e de gestores públicos por seu potencial de resposta aos inúmeros desafios da sociedade na atualidade. A busca pelo incremento da eficiência e da eficácia tem impulsionado o desenvolvimento e a adoção de inovações em tribunais, os quais, dada sua influência no desenvolvimento social e econômico dos países, se constituem em assunto de grande relevância. Todavia, carecem estudos que abordem a capacidade de inovação nos tribunais. Visando contribuir para melhor compreensão do tema e para preencher essa lacuna de pesquisa, foram desenvolvidos os estudos dessa tese. Dessa forma, os Capítulos 2, 3 e 4 respondem a objetivos específicos da tese, enquanto os capítulos 1 e 5 tratam, respectivamente, da introdução e das conclusões e recomendações da pesquisa. O Capítulo 2 traz a sistematização da literatura científica recente, propondo um referencial teórico explicativo sobre os principais fatores associados à capacidade de inovação nos tribunais, a saber: Liderança, Comportamento de Equipe, Colaboração, Recursos Organizacionais, Gestão do Conhecimento e Tecnologia da Informação. Apoiadas na discussão das implicações teóricas e práticas do referencial, são apresentadas seis proposições a serem testadas com pesquisas empíricas. O Capítulo 3 faz uso de métodos qualitativos, compreendendo entrevistas em profundidade com 17 juízes e 13 servidores do Poder Judiciário brasileiro. Recorrendo à análise de conteúdo, foram investigados os dados recolhidos, corroborando o estudo realizado no Capítulo 2 e revelando o protagonismo de alguns dos fatores que permitem a capacidade de inovação nos tribunais: Liderança e Comportamento de Equipe. As conclusões do Capítulo 3 reforçam que é fundamental para a capacidade de inovação nos tribunais ter pessoas habilitadas em técnicas de inovação, com disponibilidade de tempo, engajamento e participação tanto na equipe quanto nas posições de liderança. Surge também como fundamental conciliar estes fatores com a Colaboração dos atores-chave, tendo apoio em outros fatores que podem ser vistos como secundários: Recursos Organizacionais, Gestão do Conhecimento e Tecnologia da Informação. O Capítulo 4 utiliza métodos qualitativos e quantitativos para construir e validar a Escala de medição da capacidade de inovação nos tribunais. Os itens da escala inicial foram validados com o auxílio de 11 juízes e servidores, especialistas no assunto, que cumpriram o papel de avaliadores quanto à clareza da linguagem, à pertinência prática e à relevância teórica das assertivas da escala. A análise dos dados contou com a utilização do Coeficiente de Validade de Conteúdo. Em seguida, foi feita a coleta de dados resultando em 354 questionários respondidos pelos participantes da pesquisa, sendo 62 juízes e 292 servidores do judiciário brasileiro. Os procedimentos de análise dos dados foram realizados por meio de Análise Fatorial Exploratória, Análise Fatorial Confirmatória e Modelagem de Equações Estruturais. O estudo constata que os principais fatores que impulsionam a inovação nos tribunais podem ser resumidos em três fatores com alta interdependência entre eles: Liderança, Comportamento da Equipe e Tecnologia da Informação. Os fatores Liderança e Comportamento da Equipe surgiram como de maior influência na capacidade de inovação nos tribunais no que diz respeito, respectivamente, à unidade da equipe e à organização como um todo. Assim, considerando o conjunto de estudos, vistos aqui como ensaios sinérgicos e complementares sobre a capacidade de inovação nos tribunais, foi possível aprofundar a lacuna de pesquisa no contexto atual do Judiciário brasileiro. Espera-se que este trabalho possa auxiliar no preenchimento de lacunas no campo científico e que seus achados possam contribuir para futuros estudos e melhorias nas políticas e práticas de gestão dos tribunais.

Palavras-chave: Capacidade de Inovação; Inovação judicial; Judiciário; Tribunais; Setor Público.

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Summary

1. INTRODUCTION

The field of public administration research has made efforts to understand the influences of nowadays increasing of social demands. Economic, cultural, and technological changes bring challenges to the public sector, which must seek new solutions to complex and fragmented problems. This context has fostered the emergence of the issue of public sector innovation, understood as a possible way for governments to deliver greater value to the services available to citizens in general (De Vries et al., 2016).

Innovation is considered a multifaceted and dynamic construct, which can be approached from several perspectives (Oliveira & Santos, 2019). Understanding the influence of innovation capacity in public sector organizations is an important aspect that lacks research (Timeus & Gascó, 2018). Additionally, there is a research gap on capabilities that influence innovation and how this occurs in courts (Castro & Guimarães, 2019; Castro & Guimaraes, 2020). It is noteworthy that the study of innovation capacity in courts is relevant to the emerging field of administration of justice, in which themes, concepts, and paradigms are still under development, requiring further research, given its relevance for society (Guimaraes et al., 2018).

The courts are the cornerstone of the legal system, acting as the bodies responsible for rendering judgments in accordance with legal statutes and established traditions. These organizations operate within a hierarchical framework, often consisting of multiple levels, contributing to the intricacy of judicial systems. Courts, owing to their jurisdiction, bear the duty of examining, deliberating upon, and evaluating matters considering legal provisions, taking into account the arguments presented by the involved parties.

It's important to highlight that the operation of the courts also serves the purpose of upholding the principles of legal due process of law and impartiality, ensuring that all involved parties can fairly present their arguments and evidence. The rationales behind court rulings significantly contribute to transparency by establishing a legal precedent that serves as a guide for future cases. To sum it up, courts foster legal consistency and ensure the safeguarding of both individual and collective rights.

The operational procedure within the courts is initiated by the filing of lawsuits or appeals carried out by the parties. The decision-making process is based on legal arguments, after a probative instruction phase. In this context, judges, guided by evidence, legal precedents, and the arguments presented by the parties, render their decisions, aiming to ensure the fair and consistent application of law. To facilitate the judges' decision-making, an organizational

structure is in place, tasked with assisting the parties, managing the judicial process's information, and enhancing the transparency and efficiency of judicial decisions. In this regard, courts function akin to public sector organizations, engaging in planning, organizing, allocating resources, directing, and controlling of their activities and outcomes, aligning with their objectives (Guimaraes et al., 2018, 2020).

Innovations in courts have been driven by the search for efficiency and accessibility. Courts have embraced technological advances and fresh modes of collaboration both within and between organizations, deploying methodologies like design thinking to address judicial challenges. There have also been shifts in organizational culture toward fostering innovation in courts. Notable progress has been seen in the integration of electronic systems for legal proceedings and case flow management, and in the utilization of data analysis to aid judicial decision-making.

There has been a proliferation of novel online platforms designed to facilitate the submission of legal claims, enable online dispute resolution, track procedural developments, and support electronic document submissions, especially from 2010s. The digital transformation of court services has streamlined administrative processes and improved access to justice, notably during the Covid-19 pandemic.

The application of new technologies like artificial intelligence has exhibited significant potential in discerning patterns within large datasets, leading to accelerated processing times and enhanced prognostication of judicial outcomes. However, there are ethical and legal challenges confronting the judicial system, particularly concerning protecting the privacy of involved parties, adhering to legal principles, and the preservation of impartiality in decision-making.

In summary, innovations within courts have been instrumental in enhancing the delivery of judicial services, amplifying the efficiency of the court system, and broadening the scope of access to justice. The context of innovation in the Brazilian judiciary can be employed as a conducive environment for the investigation proposed in this research, and therefore, it will be detailed next.

1.1 Context of Innovation in the Brazilian Judiciary

It is possible to identify a movement towards the development and adoption of innovations in the Brazilian courts, covering various initiatives such as the use of new forms of conflict resolution, methods focused on data science, automation, and artificial intelligence, in addition to the institution of Intelligence Centers and Innovation Laboratories - iLabs (Lunardi

& Clementino, 2022). Since the inauguration of the first innovation laboratory in Brazilian justice, named iJuspLab, at the Judiciary Section of São Paulo of the Federal Regional Court of the 3rd Region, in 2017, it has been revealed that the topic of innovation in the public sector, especially in the Judiciary branch, attracts great attention from society in Brazil (Coelho et al., 2019).

The Brazilian National Justice Council - CNJ has contributed to innovation in the courts, by issuing regulations that seek to disseminate and replicate successful court initiatives, as well as, given its central position in the justice system, conducting national innovation projects in the judiciary. Afterwards, several others innovation laboratories were created in Brazilian justice organizations, a movement captured by the CNJ, which pointed out in 2023 the existence of 107 iLabs in the Brazilian judiciary. That is, in about six years, the judiciary saw significant growth in these structures. The CNJ also established the Laboratory of Innovation, Intelligence, and Sustainable Development Goals - LIODS, aiming at the development of a program for the synergetic union of institutional knowledge, innovation, and efficiency in the judiciary (CNJ, 2021). LIODS has among its competencies to establish connections between the iLabs of the judiciary and seek solutions to complex problems based on innovation methodologies that consider empathy, collaboration, and experimentation.

The CNJ also edited, in June 2021, the Innovation Management Policy of the Judiciary (CNJ, 2021), aiming to improve the activities of judiciary bodies in the dissemination of the culture of innovation and modernization of working methods and techniques, with emphasis on collaboration and protection of Brazilian citizens Fundamental Rights and Guarantees provided for them in the Federal Constitution. This policy has the following principles: the culture of innovation; user focus; participation; collaboration; human development; accessibility; socio-environmental sustainability; sustainable development; debureaucratization; and transparency. The Policy also created the Innovation Network of the Brazilian Judiciary - RenovaJud, which has among its competencies fostering the development of innovative projects using tools for interaction, co-creation, empathy, and exchange of knowledge (CNJ, 2021).

Additionally, the CNJ states that the Judiciary bodies should implement the innovation management policy through innovation laboratories, or similar structures, physical or virtual. In addition, there are other initiatives led by the Council, focused on the information technology environment, such as the following initiatives: Juízo 100% Digital, Virtual Counter, Digital Platform of the Judiciary, and the Justice 4.0 Program. These actions corroborate the CNJ's definition of a national annual goal so that all courts, in the year 2023, should implement a

project from the iLab, with an assessment of benefits to society related to the Unite Nations 2030 Agenda. However, little is known about how these actions have pushed the innovation capacity in courts.

Therefore, studies that address how innovation capacity is developed or implemented in courts are relevant to improving judicial service delivery. They allow us to understand whether the courts of justice have what it takes to innovate, as well as which aspects can influence the best use of their resources and the adequacy of their management decisions. Thus, the research question guiding this work is the following: What are the main factors associated with innovation capacity in courts?

1.2 Objectives

1.2.1 General Objective

Identify and measure the main factors associated with innovation capacity in courts.

1.2.2 Specific Objectives

i.   Identify in the scientific literature the main factors that can influence the innovation capacity in courts and suggest theoretical propositions to be tested empirically.

ii.   Investigate the perception of judges and court clerks of Brazilian Judiciary regarding the main factors that can influences the innovation capacity in courts.

iii.   Build and validate an innovation capacity measurement scale in courts.

1.3 Overview of Research Methods and Techniques

To clarify the structure of the dissertation, Table 1 was created, outlining the key points related to the different essays that constitute this work. Thus, considering the set of studies, seen here as synergistic and complementary essays on innovation capacity in courts, it was possible to deepen the research gap within the current context of Brazilian Justice.

Table 1

Summary of the dissertation essays

Chapter	Two	Three	Four
Title	Innovation Capacity in Courts: A Theoretical Framework and Research Agenda	Factors Associated with Innovation Capacity in Courts	Innovation Capacity in Courts: Building and Validating a Measurement Scale
Method (main focus)	Qualitative	Qualitative	Qualitative and quantitative
Approach	Systematization of recent scientific literature	Content analysis of in-depth interviews	Content Validity Coefficient, Exploratory Factor Analysis, Confirmatory Factor Analysis, and Structural Equation Modeling
Objective	Identify in the scientific literature the main factors that can influence the innovation capacity in courts and suggest theoretical propositions to be tested empirically	Investigate the perception of judges and court clerks of Brazilian Judiciary regarding the main factors that can influences the innovation capacity in courts	Build and validate an innovation capacity measurement scale in courts
Result	Theoretical framework	Empirical evidence	Empirical evidence

Taking as a starting point, Chapter 2 brings the systematization of recent scientific literature and proposes an explanatory theoretical framework regarding the main factors associated with the innovation capacity in courts, namely: Leadership, Team Behavior, Collaboration, Organizational Resources, Knowledge Management, and Information Technology. Supported by the discussion of the theoretical and practical implications of the framework, six propositions are stated to be tested with empirical research.

In a second study, Chapter 3, using qualitative methods, in-depth interviews were conducted with 30 judges and court clerks of the Brazilian Judiciary. Using content analysis, the collected data were investigated, confronting the study carried out in Chapter 2 and revealing a protagonism of some of the factors in enable innovation capacity in courts, namely: Leadership and Team Behavior. The findings reinforce that it is critical to innovation capacity in courts to have people trained in innovation methods and techniques, with the availability of time, engagement, and participating both in the team and in the leadership positions. It also emerges as critical to reconcile these factors with the collaboration of key actors, having support in other factors that can be seen as secondary.

The third study, Chapter 4, uses qualitative and quantitative methods to build and validate the innovation capacity measurement scale in courts. Initially, the procedures related to the building of the instrument are described, based on Chapters 2 and 3. The initial scale items were validated with the assistance of 11 judges and court clerks, experts in the subject,

who fulfilled the role of evaluators regarding the clarity of language, the practical pertinence, and the theoretical relevance of those items. Data analysis relied on the use of the Content Validity Coefficient. Then, data collection was carried out resulting in 354 questionnaires answered by the research participants, being 62 judges and 292 court clerks of the Brazilian Judiciary, with no missing data. Data analysis procedures were performed using Exploratory Factor Analysis, Confirmatory Factor Analysis, and Structural Equation Modeling.

The study finds that the main factors that push innovation in courts can be summarized in three factors with high interdependence between them: Leadership, Team Behavior, and Information Technology. The factors Leadership and Team Behavior emerged as of greater influence on the perception of the innovation capacity in courts regarding, respectively, the work unit and the organization as a whole. It is hoped that this work can assist in filling in the gap in the scientific field and that its findings can contribute to future studies and improvements in court management policies and practices.

2. INNOVATION CAPACITY IN COURTS: A THEORETICAL FRAMEWORK AND RESEARCH AGENDA[1]

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.

2.1 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,

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[1] This chapter was presented at the Justice Administration Meeting - Enajus 2022, receiving an honorable mention for best article in its category, and was published in Business and Management Studies, 9(2), 1. https://doi.org/10.11114/bms.v9i2.6251

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.

2.2 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).

2.3 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 capa*" 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.

2.3.1 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.

2.3.2 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).

2.3.3 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

Factors	References
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.	Azamela et al. (2022); Boly et al. (2022); Gullmark (2021); Kajamaa et al. (2022); Lewis et al. (2018); Meijer (2019); Meričková & Muthová (2021); Nik Hashim (2022); Palmi et al. (2021).
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.	Alnuaimi & 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 & Gascó (2018).
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.	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 & Muthová (2021); Nik Hashim (2022); Palmi et al. (2021); Timeus & Gascó (2018); Trivellato et al. (2021).
Organizational Resources – availability of financial, material, human, and technological resources needed to support the development and the adoption of innovations.	Clausen et al. (2020); Lewis et al. (2018); Timeus & Gascó (2018).
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 court clerks, and the use of tools	Boly et al. (2022); Favoreu et al. (2019); Gullmark (2021); Meričková & Muthová (2021); Nik Hashim (2022); Timeus & Gascó (2018); Trivellato et al. (2021).

to obtain and use new ideas, information, and knowledge to support the development and the adoption of innovations.	
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.	Magnusson et al. (2021); Nik Hashim (2022); Timeus & Gascó (2018)

2.4 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, Sousa 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 (Sousa & 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
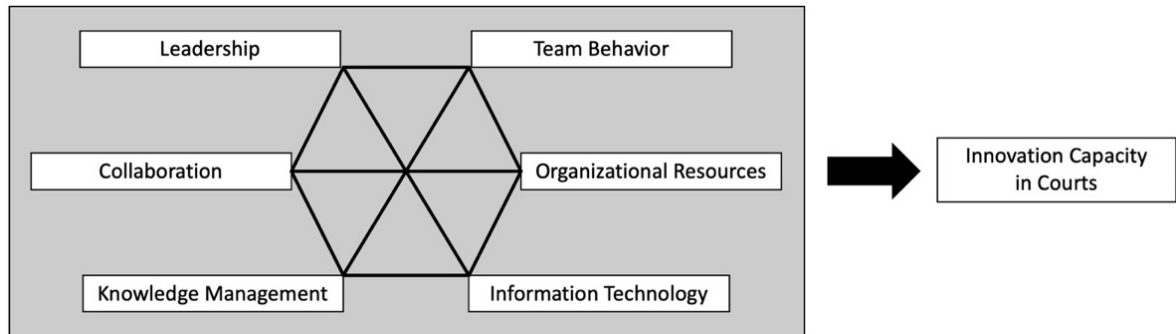
Leadership. One of the most important themes in the literature on innovation capacity concerns the role of leadership in innovation (Mendoza-Silva, 2021). Timeus and Gascó (2018) consider leadership to be essential as a support factor for the development of innovations. Yuming and Zhuoxin (2022) investigated 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). Elsafty 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 (Trivellato 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 & Maçada, 2021).

Other application of information technology in courts 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 & Guimarães, 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.

2.5 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, court clerks 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.

3. FACTORS ASSOCIATED WITH INNOVATION CAPACITY IN COURTS[2]

ABSTRACT

OBJECTIVE: This study aims to contribute to build relevant knowledge in the field of justice administration by identifying the main factors associated with innovation capacity in courts. METHOD: The research methodology involves an investigation based on in-depth interviews with 30 judges and court clerks of the Brazilian Judiciary. Data analysis was conducted using content analysis, with the qualitative approach being deemed suitable given the exploratory nature of the research. RESULTS: The study corroborates previous research on innovation capacity in the public sector and demonstrates the pivotal role of specific factors in enabling innovation capacity in courts, namely: leadership, team behavior, collaboration, organizational resources, knowledge management, and information technology. CONCLUSIONS: The findings highlight the critical importance of having individuals in the courts who are skilled in innovation methods and techniques, with the availability of time and engagement, both as team members and in leadership roles, in conjunction with the collaboration of key stakeholders. Understanding the optimal alignment of these factors can aid in the improvement of judicial services.

Keywords: innovation capacity; courts; judicial innovation; administration of justice; public administration.

3.1 Introduction

Economic, social, and technological changes have modified the administration of the courts in different countries, promoting actions that seek new ways of solving problems and providing a higher quality judicial service. Although innovation in public services has attracted increasing interest from public managers, policy makers and scholars, there is a lack of studies that address questions about factors that influence the innovation capacity of these organizations (De Vries et al., 2016; Gullmark & Clausen, 2023; Timeus & Gascó, 2018).

Studies on factors that influence innovation in courts and how it occurs are rare (Castro & Guimarães, 2019; Castro & Guimaraes, 2020). The relevance of research in this domain is underscored, owing to the pivotal role these institutions play in the overall functioning of

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[2] This chapter is under evaluation for publication at the Brazilian Administration Review – BAR, having gone through the desk review step.

society. Furthermore, it is noteworthy that within the realm of justice administration, there persists a demand for investigations pertaining to its fundamental subjects, concepts, and paradigms (Guimaraes et al., 2018).

Studies that address the subject of innovation capacity in courts are important to allow understanding of the necessary conditions for innovation and, also, on the main aspects that can affect resources and organizational priorities linked to judicial services. Ultimately, studies on this topic are relevant to help improve the services provided by the courts. In this line, this article aims to answer the following research question: What are the main factors associated with the innovation capacity in courts? Hence, the significance of this research lies in its potential to generate knowledge within a socially important field that is lacking in scientific studies. Additionally, it can serve as a basis for informing enhancements in public policies related to judicial administration.

3.2 Theoretical Framework

Innovation capacity and innovation are two strongly interconnected constructs and can be analyzed according to the principles of the Resource Based View – RBV (Barney, 1991). According to the RBV, organizations constitute a set of resources that represent valuable and strategic assets. These resources can ensure a sustainable competitive advantage, since the innovative use of a resource can trigger a lasting benefit related to the learning and growth of the organization in relation to its experiences, allowing it to advance to a better market position (Barney, 1991).

The dynamic capabilities approach complements the RBV, suggesting that the processes of perception, adjustment and transformation of internal resources, in interaction with the external environment, can generate competitive advantage, reconfiguring the organization and its environment (Teece, et al. 1997). Dynamic capabilities concern how an organization coordinates its tasks and uses its tangible and intangible resources to achieve a specific positive result (Helfat & Peteraf, 2003).

From this perspective, the innovation capacity allows the organization to develop new services, products, or markets by adjusting strategic guidelines and innovative processes (Wang & Ahmed, 2007). The innovation capacity can be understood, therefore, as the integration between resources and the assimilation of new knowledge for the continuous transformation of ideas into new services, products and processes for the benefit of the organization and its stakeholders (Lawson & Samson, 2001; Weber & Heidenreich, 2017).

Although a significant part of the literature on innovation capacity focuses on private sector organizations (Mendoza-Silva, 2021), its assumptions can be applied to public sector organizations (Pablo et al., 2007; Piening, 2013; Chen et al., 2020). In this context, the capacity for innovation in the public sector refers to the set of circumstances that support innovation, including factors that allow it to occur or even actively encourage it (Lewis et al., 2018; Gullmark, 2021).

Leadership is a relevant factor for the development and adoption of innovations. Different types of leadership can overcome barriers to innovation, whether by emphasizing charisma, team motivation and inspiration about future visions, or by focusing on strategic choices that modify previous routines of organizational behavior (Lewis et al., 2018; Azamela et al., 2022). It is up to the leader to ethically consider the different interests and values involved in the innovation process (Le & Nguyen, 2023), including the identification of risks and choosing the option that most contributes to the desired results for society (Meijer, 2019; Palmi et al., 2021). It falls upon leadership to establish an organizational environment favorable to innovation, with a constant emphasis on fostering innovative (Gullmark, 2021; Lei et al., 2020; Nguyen et al., 2021).

Additionally, there is the direction and coordination of activities regarding to management of the innovation process. The leadership position is associated with making connections and representation in different interfaces in the different stages of innovation (Meijer, 2019; Nik Hashim et al., 2022). In addition, leadership allows permission for innovations developed in certain organizational units, such as innovation laboratories - iLabs, to be disseminated throughout the organization, progressing in terms of its institutionality (Timeus & Gascó, 2018).

Regarding leadership in courts, part of the literature highlights the relevant role of judges as agents of judicial administration (Gomes et al., 2016; Pereira et al., n.d.) Judiciary organizations are seen as highly institutionalized, and their composition can become resistant to change due to the existence of political and institutional subsystems that can last for long periods (Castro & Guimarães, 2019). In fact, given the various levels of institutionalization of the judiciary, some courts may advance faster than others due to the environment and culture that influences it (Castro & Guimaraes, 2020).

The team's behavior is also fundamental for the development and adoption of innovations. There needs to be an organizational commitment to change, related to the successful induction and maintenance of various innovation-oriented behaviors in each

organizational context (Alnuaimi & Khan, 2019; Callens & Verhoest, 2023). The empowerment of employees (Iliashenko et al., 2023), with an organizational environment characterized by incentives to innovate, with tolerance for failure, and recognition of the effort undertaken is another factor that drives innovation (Clausen et al., 2020; Gullmark, 2021; Palmi et al., 2021). Some environments like the Intelligence Centers and the Innovation Labs can contribute in this way in courts (Lunardi & Clementino, 2022; Moraes et al., 2023).

Innovation-oriented teams have skills to generate new ideas taking into account the available resources, the organization's internal structure and collaboration with external actors (Torfing et al., 2019; Callens & Verhoest, 2023). Innovative teams have flexibility in their organizational environment to allow for experimentation, implying the creation of conditions for successful cases to obtain the necessary resources for their viability (Meijer, 2019; Sakalauskas et al., 2023). They also incorporate techniques for verifying solution results with their users (Nik Hashim et al., 2022; Torvinen & Haukipuro, 2018). The mobilization for employees with pro-innovation attitudes can be stimulated, throughout constant training, encouraging calculated risk-taking and learning from failures, or even by hiring new employees who increase the heterogeneity of the team with participants of different profiles and training areas (Timeus & Gascó, 2018; Torvinen & Jansson, 2022).

Another factor associated with the innovation capacity is collaboration, understood as the sharing of knowledge and experiences, both internal and external. In internal relations, collaboration comprises the development of innovations in teams made up of employees from different organizational units or with different professional backgrounds. They emphasize the sharing of experiences and knowledge throughout the organization, including multiple digital tools, periodic meetings, and central coordination of the innovation processes (Gullmark, 2021). Externally, collaboration for innovation encompasses leveraging multiple sources of knowledge (Trivellato et al., 2021; Zyzak & Jacobsen, 2020). It involves professional organizations, conferences, suppliers, customers, users, and citizens (Clausen et al., 2020; Palmi et al., 2021). It also encompasses participation in local and national networks, with the systematic search for ideas from the external environment (Meričková & Muthová, 2021).

Collaboration contributes to the identification and consultation of end users for the development of products and solutions (Nik Hashim et al., 2022). The development of informal social networks makes collaboration viable or strengthens relationships of trust and social capital resulting from frequent interactions, repeated transactions, and the density of the network of a certain community (Ma, 2017). Communication with diverse audiences is also

presented as relevant in the construction of meaning of innovation management (Magnusson et al., 2021). These aspects constitute a stimulus for stakeholders to engage in innovation processes in a collaborative way (Meijer, 2019).

Courts have sought collaboration in innovations with citizens and voluntary organizations, public and private, local and national. There are several innovation models related to judicial services (Machado et al., 2018). Some legal services are provided without intermediation, as in the case of the Special Courts (Gomes & Moura, 2018). The co-production of judicial services presents benefits because of its use (Rêgo et al., 2019; Teixeira et al., 2020). Participatory design models can lead to higher innovations and a deeper involvement of the community with the courts (Hagan, 2019).

Organizational resources represent another notable factor in the literature on innovation capacity, encompassing organization, flexible structure and other material resources. Modifications related to the increase or reduction of budget can increase or decrease the financial resources available for innovation (Lewis et al., 2018; Clausen et al., 2020). Flattened and flexible organizational structures allow interactions conducive to innovations in teams (Lewis et al., 2018; Gullmark, 2021). The availability of means for the generation of new ideas, including the strategic use of human resources (Kim & Kim, 2022), together with the internal structure of the organization, can affect the innovation capacity (Timeus & Gascó, 2018; Pulkkinen et al., 2023). It is known that investment in information technology can have a direct effect on the productivity of courts (Gomes et al., 2018) and that the same implication can be seen in relation to investment in training (Sousa & Guimaraes, 2018).

Knowledge management, understood as the search, organization and dissemination of experiences, values, information, and knowledge, constitutes another factor that influences the development and the adoption of innovations. In this sense, the development and maintenance of practices aimed at innovation stand out, influenced by tacit and explicit knowledge (Boly et al., 2022). Associations between collaborators allow the sharing of knowledge by practice or by interaction (Cassol et al., 2016; Kucharska & Erickson, 2023). The knowledge management system is also important to acquire and use new information existing in documents, routines, processes, and practices of the organization, in addition to norms that shape the action and understanding between two or more partners (Timeus & Gascó, 2018; Gullmark, 2021).

The accumulation of knowledge resulting from previous innovations is also relevant to innovation capacity (Favoreu et al., 2019; Meričková & Muthová, 2021). The sharing of knowledge and the engagement in interorganizational learning are relevant for the development

and adoption of innovations (Le & Lei, 2019; Trivellato et al., 2021). Studies focused on courts have shown that knowledge management can affect the speed of the decision-making process (Paudel, 2020), and the promotion of innovation (Mendonca et al., 2022).

Information technology can impact innovation capacity by enabling advanced data-driven analyses and facilitating the development of new digital communication platforms and channels. In this regard, there is the potential for performance gains and the exploitation of opportunities arising from digitization (Nik Hashim et al., 2020). Information technology allows organizations to access, store and analyze large amounts of data and information and, furthermore, to create platforms where new services can be generated and delivered (Timeus & Gascó, 2018).

Information technology also presents itself as a set of potentialities and restrictions for both courts and users of judicial services (Barysė, 2022), resulting in diverse outcomes depending on their numerous contexts (Magnusson et al., 2021). Studies with an emphasis on digitizing the judicial process point to its viability in increasing the efficiency of courts (Hodson, 2019; Mahibha & Balasubramanian, 2020) and the quality of services provided (Arias & Maçada, 2021). Additionally, there are the increasing advances in artificial intelligence (Sousa et al., 2019), which can also be seen in the field of justice (Oliveira et al., 2022; Barysė & Sarel, 2023). Information technology also stands out in enabling alternatives to access to justice, as seen through new platforms used during the Covid pandemic (Baldwin et al., 2020; Wallace & Laster, 2021).

Oliveira and Guimaraes (2022) identified, through a review of the literature, six main factors related to innovation capacity in courts: Leadership, Team Behavior, Collaboration, Organizational Resources, Knowledge Management, and Information Technology. This research uses these factors as an analysis parameter.

3.3 Method

The innovation capacity within the Brazilian judiciary was assessed from the perspective of judges and court clerks engaged in innovation. Data collection took place from November 2022 to January 2023, involving a total of 30 interviews. Participants were accessed through convenience and snowball sampling methods, including members of the Innovation Policy Management Committee of the National Council of Justice (CNJ) and participants in innovation laboratories and innovation centers within the judiciary, distributed across the five geographical regions of Brazil: North, South, Northeast, Central-West, and Southeast. The

selection of these respondents by convenience is justified because relevant individuals are dispersed across a vast geographic area and are primarily associated with the mentioned organizational units (Committee and iLabs). Additionally, snowball recommendations facilitated the identification of the most prominent subjects for the research.

As for the number of interviewees, it was defined by theoretical saturation, that is, the interviews ceased when the contributions of the interviewees no longer indicated elements that could facilitate the deepening of the field (Thiry-Cherques, 2009). It is noteworthy that the search for interviewees with a relevant profile, covering the requirements of belonging to different specialties of justice, as well as including occupants of positions of judges and court clerks, men and women, in addition to geographic distribution between Brazilian regions, implied the search for theoretical saturation not before the 17th interview. It is believed that the joint use of theoretical saturation and snowball allowed a good deepening of knowledge regarding the object of study.

Out of the 30 interviewees, fifteen (50%) are female, and fifteen (50%) are male. Among them, seventeen (56.67%) are judges, and thirteen (43.33%) are court clerks. All interviews were conducted using the Microsoft Teams platform and were recorded with the participants' consent. There were eight (26.67%) interviewees from the Central-West region, eight (26.67%) from the Southeast, seven (23.33%) from the Northeast, four (13.33%) from the South, and three (10%) from the North. Concerning the different branches of the judiciary, eleven interviewees (37.93%) are from the State Courts, seven (24.14%) from the Electoral Courts, six (20.69%) from the Federal Courts, and five (17.24%) from the Labor Courts. There were no participants from the Military Courts. The interviews had an average duration of 52 minutes, totaling 26 hours and 5 minutes of recorded material. The names are omitted, and participants are referenced as E1 to E30.

Prior to the interview, the interviewees agreed with the content of the Free and Informed Consent Form (Appendix A). The semi-structured interview script (Appendix B) had questions about the development and adoption of innovations in courts, encompassing: 1) the interviewee's experience in innovation work in courts; 2) cases in which the participants were able to recall about innovations in courts that they had participated with a description of the main points for success or failure; 3) views on how leadership in courts organizations can create an enabling environment for the development and adoption of innovations; 4) team behaviors, both individual and collective; 5) forms of internal and external collaboration; 6) organizational resources; 7) management practices involving the transfer of knowledge between people, teams

and between organizational units; 8) information technology; and 9) participation in innovation laboratory activities.

Data analysis was undertaken using content analysis, following the method outlined by Bardin (2011), which included the following steps: 1) pre-analysis; 2) exploration of the material; and 3) treatment of the obtained results and interpretation. Carrying out the first two stages resulted in 60 documents, 30 video recordings and 30 transcripts, of which 859 citations distributed in 166 codes stood out. Finally, the treatment of the obtained results and the interpretation brought meaning to the data through the synthesis and analysis of the material found. To assist the content analysis, the Atlas.ti software was used.

3.4 Results and discussion

The analysis of the collected data brings evidence of the main factors associated with the innovation capacity in courts pointed out a priori: Leadership, Team Behavior, Collaboration, Organizational Resources, Knowledge Management, and Information Technology. These factors, which act interdependently and recursively, can be seen in Figure 1, with the aid of a strength sizing graph. The leadership factor (221 quotes) stands out, followed by Team Behavior (196 quotes) and Collaboration (150 quotes), with a strong association between them. A little further away are the factors Organizational Resources (107 quotes), Knowledge Management (107 quotes) and Information Technology (99 quotes), and the interviewees' testimonies showed connections between all six factors studied.

Figure 1

Strength sizing of the main factors associated with innovation capacity in courts
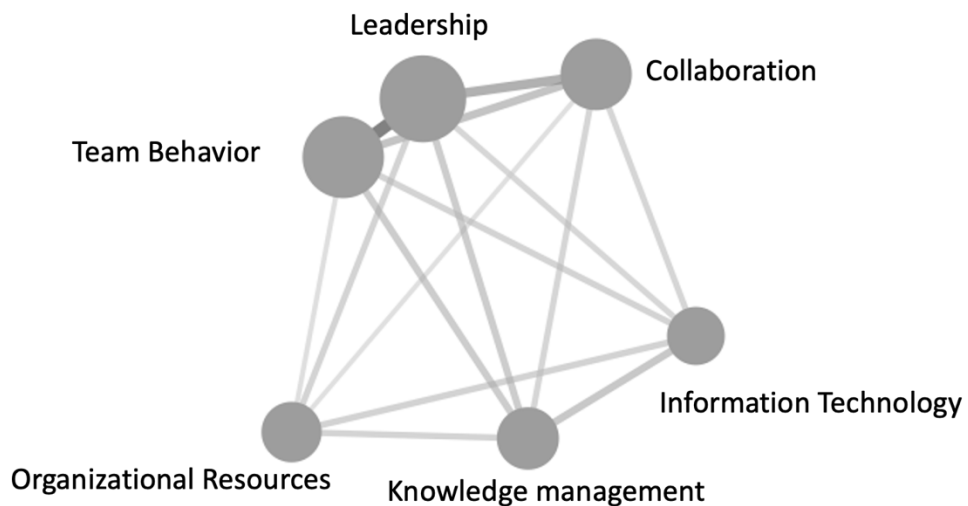
As a result of the analyses, it was possible to describe the constitutive definitions of the main factors associated with the innovation capacity in courts, whose summary is presented in Table 1.

Table 1

Main factors associated with innovation capacity in courts

Factors	Definition
Leadership	Technical and behavioral skills of judges and managers of the judiciary who act in the creation of an organizational culture that favors team motivation, commitment and coordination of actions and strategies that contribute to the development and adoption of innovations.
Team Behavior	Technical and behavioral skills of judges and court clerks relevant to the development and adoption of innovations, encompassing commitment to organizational change, bottom-up initiative, user/citizen solution orientation, new ideas and experimentation.
Collaboration	Sharing experiences and knowledge, formal and informal, internal and external to the court, including the development of connections, the socio-cognitive process of meaning arising from communication, interdisciplinarity and optimization of resources for the development and adoption of innovations.
Organizational Resources	Human, financial, and technological resources required for the development and implementation of innovations.
Knowledge Management	Management of experiences, values, information and knowledge (tacit and explicit), covering the search, development and maintenance of routines, processes and practices of the organization, the training of court clerks, the use of tools necessary to obtain and use of new ideas, information and knowledge in order to support the development and adoption of innovations.
Information Technology	Use of information and communication technologies to support the decision-making process supported by data and information and for the advent of new platforms and communication channels, aiming at the development and adoption of innovations.

Note: Elaborated by the authors based on Oliveira and Guimaraes (2023).

3.4.1 Leadership

Leadership was identified as one of the primary factors related to innovation capacity in courts. It particularly stood out for its influence on organizational culture, team commitment and motivation towards innovation, and the coordination of actions and strategies. These aspects were highlighted by 25, 23, and 21 out of the 30 interviewees, respectively.

Regarding organizational culture, there appears to be divergent perspectives, encompassing the perception of a traditional and less innovative culture within the courts, while also recognizing the emergence of groups accustomed to and driving these innovative themes. This contrast is evident in the words of a former court president (E28) when discussing the discontinuation of an innovation in which his court had been a pioneer and the resistance encountered among judges and court clerks: "The court was not prepared to receive [the innovation]. It's very challenging because it entails a cultural change. [...] The judiciary is conservative. [...] The culture in the court and in all courts is very averse to innovation." Another judge (E29) reinforces the conservative nature of the judiciary by stressing symbolic aspects present in the courts: "In the judiciary, pomp and circumstance, marble, robes, everything was done to create distance, to make it more rigid, austere, and distant, so perhaps this cultural change is the most challenging."

Contrary to these statements, other judges and court clerks interviewed pointed out that innovation initiatives and spaces such as Intelligence Centers and Innovation Labs have been modifying the functioning of the judiciary in various ways, advancing the theme of innovation in the courts. These accounts reinforce the importance of different types of leadership, including middle and top managers, in fostering a culture towards innovation (Lei et al., 2020; Nguyen et al., 2021). In general, the interviews align with the literature on the significance of leadership in overcoming barriers to innovation by influencing organizational behavior (Lewis et al., 2018; Azamela et al., 2022), suggesting that raising awareness among key actors in the courts will have a significant impact on innovation capacity.

The involvement of court authorities, such as the president and vice-president emerge as highly significant in influencing organizational culture. It was evident that there is a very personal component in these cases, as these authorities have a substantial influence in either enabling or restricting an innovative environment. This finding aligns with Gullmark's (2021) recommendations that leadership plays a crucial role in facilitating an organizational environment conducive to innovation. Two statements from court clerks interviewed illustrate this situation. Interviewee E25 reports: "The president is present at events. [...] He speaks when there is a workshop, talks to the staff, and genuinely supports the implementation of solutions. This has provided validation for the movement, enabling innovation to happen." Similarly, interviewee E19 shows: "This happened at the launch event [of the innovation laboratory] and in other projects. [...] It's the president and the vice-president who speak. [...] They have truly taken on this challenge. [...] This way, you can raise awareness effectively."

Regarding the commitment and motivation of teams towards innovation, the interviewees emphasized aspects involving the consideration of various team viewpoints and values inherent in the innovation process. It was highlighted that it is crucial for a manager to have a position that allows for the evaluation of situations from a comprehensive and ethical perspective, assisting teams in innovating with as little risk as possible, aligning with aspects found in the literature (Meijer, 2019; Palmi et al., 2021; Le & Nguyen, 2023).

Other leadership strategies identified were to assess the commitment of team members during recruitment and to lead by example. These strategies can help overcome challenges inherent in the public sector, such as obstacles in offering incentives to public servants resulting from potential improvements stemming from the implementation of innovations. These characteristics found in the statements reinforce the role of leadership in defining public value options through the evaluation of the organizational context (Meijer, 2019; Palmi et al., 2021).

As for the coordination of actions and strategies, part of the interviewees highlighted the imperative role of sponsorship, while other testimonies brought up items such as planning, workflows, priority setting, budget allocation, political representation, and the standardization of institutional policies. Such evidence is coherent with the fundamental condition of leadership in sustaining innovations (Nik Hashim et al., 2022; Timeus & Gascó, 2018).

The research findings also reaffirm specific conditions within the judicial environment. Firstly, the participation of judges in higher hierarchical positions in the administration of courts, which sometimes lack training in management or innovation topics (Gomes et al., 2016; Pereira et al., 2022). Secondly, the high institutionalization of the judiciary, as described by Castro and Guimaraes (2019; 2020), particularly concerning judicial procedures. These procedures provide stability under the principle of legal certainty but also extend to administrative activities, in this case, serving as obstacles to the development of innovation capacity in the courts.

3.4.2 Team Behavior

Team behavior emerged as a central factor in driving innovation within the courts, according to the interviewees. The most prominent topics within this factor are related to commitment to change, bottom-up initiatives, and a focus on citizen demand solutions, stated by 21, 20, and 19 of the interviewees, respectively. Additionally, the generation of new ideas and experimentation garnered 17 mentions each, indicating their significance in the context of innovation capacity in courts.

There are various behaviors related to team commitment to change. Some of the interviewees emphasized behaviors that appear to have a more individual origin, such as restlessness, engagement, resilience, and courage. Interviewee E01 comments: "The people I've met who have a more innovative profile are restless; they don't settle for what they're experiencing [...]. They know they can do better." According to interviewee E02: "These are the main [characteristics]: resilience and courage."

Organizational commitment to change, as advocated by Alnuaimi e Khan (2019) and Callens e Verhoest (2023), was evident in the interviews, particularly in shaping an organizational context conducive to engagement and reducing resistance to innovation in the courts. Some statements from the interviewees show this situation: "It's no use for the president to order things to be done, saying he's giving support, without committed and engaged court clerks" (E11); "we needed to go through an initial phase of engagement. [...] A cultural change is necessary to allow innovation to reach the institution in an environment of psychological safety" (E13); "there is some resistance in the reality of the courts to the adoption of tools and thoughts associated with management, to a more modernized view of the judicial function" (E05).

Bottom-up initiatives were highlighted in the interviews as of great importance. Employee empowerment emerged as a condition for advancing innovation capacity, aligning with the findings of Iliashenko et al. (2023). Relevant examples of innovations that originated from the grassroots and later became judicial policies, such as the creation of intelligence centers and innovation laboratories in courts (Lunardi & Clementino, 2022; Moraes et al., 2023), confirm the literature's emphasis on the importance of having action spaces with little hierarchy and support from superiors (Clausen et al., 2020; Gullmark, 2021; Palmi et al., 2021). Some points brought up by interviewees, judges who were involved in the creation of Intelligence Centers, demonstrate fundamental aspects of this development: "It was a grassroots initiative. It started and continued based on inspiration from each other. [...] There was a group of judges and court clerks who simply kept working on this. They held meetings, wrote technical notes, and worked on convincing others" (E12); and "About 2 years later, we managed to convince them. [...] The intelligence centers became a national public policy and are now present in every court" (E13).

The citizen's problem-solving orientation was evidenced in the interviews. First, from the point of view of centrality in the jurisdiction. Regarding this aspect, interviewee E13 comments that: "it has a very strong power to redefine its purpose [in courts]". Second, due to

the use of active methodologies, especially Design Thinking. The empathy phase, in which there is a focus on putting yourself in the other's shoes and trying to see the world from the other person's point of view, corroborates what has been raised in the literature (Torvinen & Haukipuro, 2018; Nik Hashim et al., 2022). Interviewee E11 points out that the main thing "is the focus on the citizen user [...] who receives any type of service developed by the courts".

As for the generation of ideas and experimentation, iLabs have contributed to the maturity of the ideation and prototyping phases of innovations, in line with the flexibility pointed out by Timeus and Gascó (2018) and Meijer (2019). In this perspective, the research data showed the importance of innovation laboratories established in courts. They function as mechanisms that drive the development, prototyping, and dissemination of innovations. Therefore, they represent spaces for team creation. The statements below confirm this finding.

> [The innovation laboratory] brings comfort, tranquility, it's a safe space for people to bring their problems, their ideas. [...] The employee or judge has an idea, a problem, but often doesn't know where to direct it, [...] doesn't know who to involve. This structure helps a lot to catalyze the innovation process (E25).

> It's a physical or virtual space, supported by methodologies, created by people. [...] It's a space where we can experiment, make trial and error. The laboratory also has to have that vision, bringing together innovation facilitators who have this multidisciplinary view of the problem. [...] It participates in idea generation, problem prospecting, incubation of pilot projects (E11).

3.4.3 Collaboration

Collaboration appeared in the third position of centrality in the dimensioning of the strength of the factors associated with the innovation capacity in courts. Its main topics deal with optimization to support innovations, the development of connections and interdisciplinarity indicated, respectively, by 23, 21 and 20 of the interviewees.

Optimization involves using collaboration to maximize the work of individuals and the use of resources distributed across different working teams. As noted by interviewee E03: "internal collaboration helps solve [problems] within the [court's] culture," illustrating this with an example of the time saved in development when comparing two teams, one starting from scratch and another leveraging previous work through collaboration. Indeed, this collaboration between different working teams, through the sharing of experiences and knowledge to better manage organizational resources, was highlighted by several interviewees, aligning with the studies of Clausen et al. (2020) and Gullmark (2021).

The development of connections was mentioned for its role in facilitating the utilization of lessons learned for better resource utilization. Additionally, participation in informal networks and diverse groups was brought up by interviewees, aligning with the work of Ma

(2017) and Magnusson (2021). In the words of interviewee E01: "This network is fundamental for innovation to happen, for us to see mistakes and avoid them, for us to see models and be able to copy what is suitable for our reality." Other testimonies suggest that collaboration serves as a bridge to access collective knowledge, as advocated by Palmi et al. (2021) and Meričková & Muthová (2021). As interviewee E01 pointed out, the courts are composed of "different areas, different regions, not just internal collaboration among its members but also with people from the executive branch, other areas, other agencies."

Reports from the interviewees demonstrate openings for collaboration between different organizations within the justice system, with measures and initiatives designed to optimize both judicial and administrative activities of the court. It's worth noting that this collaboration is sometimes voluntary and depends on actions from other stakeholders to become significant. As mentioned by interviewee E05, a judge: "I worked with prosecutors, with public defenders who were extremely collaborative, but I also worked with people who got in the way" (E05).

Interviewee E06, a civil servant, noted that the justice system is changing significantly: "I see a change in the sense of looking outside first. [...] I see that the collaboration tends to be somewhat greater, and I even think it's because of the innovation labs" (E06). These findings align with the literature, as highlighted by Gullmark (2021), teams composed of partners from different operational units and with diverse professional backgrounds potentially have a superior execution capacity, and collaboration enables the utilization of multiple sources of knowledge for innovation (Trivellato et al., 2021; Zyzak & Jacobsen, 2020).

From the perspective of interdisciplinarity, it's worth noting that a judge's education in the field of law needs to be complemented with other perspectives. As mentioned by interviewee E22, a judge: "you need an information technology professional, you need certain thinkers, more focused on other areas of knowledge than law." Statements reinforced that innovation capacity requires multidisciplinary and interdisciplinary action, and it's important to have simplified language to ensure that jargons doesn't hinder the understanding of individuals from different backgrounds involved in innovation activities.

Once again, the Intelligence Centers and the Innovation Labs stood out for facilitating the development of connections and interdisciplinarity. Such spaces end up enabling the identification and consultation of end users to, in collaboration, format new products, processes and services, corroborating with the notes of Nik Hashim et al. (2020). Interviewee E12, a judge, comments that the Intelligence Center, in its essence, refers to a space of collective intelligence, emphasizing how this space functions as a basis for cooperation and

interinstitutional dialogue within the justice system: "It's the work of resolving conflicts, trying to prevent them, managing precedents based on collective intelligence that is much greater than individual intelligence. [...] It's the work of cooperation among judges, among courts, among various instances."

It was also notable that some statements emphasized the horizontal nature of the Intelligence Centers and the Innovation Labs, promoting discussions involving members of Supreme Court and Superior Court of Justice, judges, and court staff. These spaces serve as catalysts for innovation. According to interviewee E13, a judge, Intelligence Centers help in understanding the relevance and role of everyone in the institution and that "when innovating, there can be no hierarchy in the exchange of ideas." Interviewee E04 states that: "the lab can be that environment where different cultures connect." Interviewee E19 comments that the cross-disciplinary nature of the innovation lab in her court is one of the fundamental aspects of its operation.

3.4.4 Organizational Resources

The main topics pointed out in this factor refer to human, technological and financial resources, indicated by 28, 18 and 16 of the interviewees, respectively. It is noteworthy that regarding the positioning in Figure 1, organizational resources make up a lower group together with knowledge management and information technology and less centrality than leadership, team behavior and collaboration factors.

Regarding human resources, the findings demonstrate the importance of having people with expertise in methods, techniques, and tools and with available time to dedicate to innovation activities. In summary, the respondents' comments align with the studies of Kim and Kim (2022) on the strategic use of human resources in innovation capacity. As interviewee E01 comments: "The greatest resource we need is people. They need to be better qualified and skilled." Interviewee E02 corroborates: "Human resources are one of the main, if not the most important, because it's people who think, collaborate, and propose." In the activities of innovation labs, human resources are also seen as crucial: "You can't make an innovation lab work without people. The most important thing is the talent. The team of people who collaborate with the lab." (E18).

The testimonies depict that many innovation projects occur with the voluntary participation of judges and staff. This situation contains a paradox because, while human resources are seen as central to innovation activities and require specific training, their

utilization is sometimes limited. Interviewee E06 reinforces this point: "Sometimes, the institution wants innovation to happen, but the person is there working as a volunteer. [...] First, they will take care of their daily activities, and then, if there is time left, they will engage in innovation" (E06).

The time component, in terms of availability to carry out activities related to innovation, was pointed out by interviewees as relevant for obtaining positive results, together with human resources. Such findings are consistent with the literature (Gullmark, 2021; Lewis et al., 2018). As courts deal eminently with intellectual activities, time is seen as a resource that can ensure quality. As suggested by interviewee E11, it is about "having more people with more time available" (E11).

Furthermore, interviewee E21, a judge, speaks about the reality of high judicial demand: "[Lawsuits] come in all the time, and you have a deadline to meet. There's a deficit, a delay. Every judge has this delay; they can't process today a case that came in yesterday morning" (E21). Additionally, more mature innovation projects require more intensive human resources, which is why a lack of availability becomes a hindrance. Interviewee E25 notes about her situation that: "The teams are overloaded [...] and they end up not being able to contribute much [to innovation]. If they had more time available to participate, more mature solutions would emerge."

About technological resources, the interviewees emphasized that most judicial activities in the courts are digitalized, and thus, technology underpins the very performance of their work. Moreover, the pandemic of COVID-19 altered work processes, strengthening initiatives for the virtualization of court work. The dynamics of innovation labs were also changed, with the virtualization of design thinking actions through virtual collaboration tools. Emerging technologies involving data analysis and automation, big data, and artificial intelligence feature prominently in efforts to improve work processes and the delivery of justice. These findings reinforce previous studies regarding information technologies investments (Gomes et al., 2018).

From the perspective of organizational resources, information technology requires technological infrastructure for the functioning of these solutions. Additionally, technological resources have been increasingly used in the core area of the courts, as highlighted by interviewee E20, a judge, who stated that "a robust information technology infrastructure is indispensable for us to adequately deliver justice." However, the use of technological resources must take into account the specificities of certain judicial units, which require both bottom-up and top-down interactions related to innovations within the teams, as advocated by Lewis et al.

(2018). There is evidence that such interaction sometimes does not occur, as mentioned by interviewee E15, a judge: "the information technology department develops something based on what was suggested to them as interesting, but perhaps the people who provided that information did not have a comprehensive understanding of the entire judicial process."

Regarding financial resources, similar to human resources, they are viewed as fundamental or supportive to the innovation process. In summary, financial resources do not enable innovation per se, but they can restrict it if they are not available when needed. As interviewee E22 noted: "having people with excellent innovation ideas won't matter if there are no economic and financial conditions for investment at the same time." These findings align with some authors who had already highlighted the importance of financial resources in relation to innovation capacity (Lewis et al., 2018; Clausen et al., 2020; Pulkkinen et al., 2023). However, the analysis of interview responses also suggests that the role of this resource is often secondary. Some relevant quotes on this matter include: "financial resources are not always necessary" (E11); "the issue of financial resources has not been a major obstacle at this time" (E16); and "financial resources are not the primary concern" (E04).

At the same time, the restriction of financial resources was also mentioned as a motivator for innovation capacity. As interviewee E09 commented, "innovation happens in difficulty, in budget constraints." Legal restrictions related to the implementation of a new fiscal regime in Brazil were cited as a driving force for innovations in courts. Some interviewees discussed the consequences of mandatory budget cuts and the search for innovation. Interviewees E27 and E28, judges, commented on fiscal constraints: "There was a very significant containment of expenses [...] a change in the way contracts are managed as well" (E27); "We have budget difficulties. We won't be replenishing our staff anytime soon [...]. So now it's innovate or die" (E28). In summary, the findings resulting from the interview analyses align with the literature that suggests both an increase or a reduction in financial resources can, on one hand, inhibit innovation, and on the other hand, foster its development and adoption (Lewis et al., 2018; Clausen et al., 2020).

3.4.5 Knowledge Management

Knowledge Management is also part of the group located at the bottom of Figure 1, relating to the main factors associated with the innovation capacity in courts. Its core topics refer to the training of court clerks, development and maintenance of routines, processes and

practices of the organization and the use of tools necessary to obtain and use new ideas, information and knowledge indicated, respectively, by 27, 21 and 20 of the interviewed.

Regarding employee training, the interviewees mentioned that knowledge and experiences shared during the implementation of innovations can be leveraged both before, during, and after new initiatives. As suggested by Favoreu et al. (2019), there is a process of organizational learning that persists even when actors change, contributing to innovation capacity. Interviewee E03's account supports this notion when discussing training in innovation methodologies: "We can see that there is a whole methodology behind it; you don't innovate just for the sake of innovation. [...] You have to innovate with a concrete objective, expecting that the innovation will address that problem." The interviews also highlight the importance of formalized knowledge in documents and standards. As interviewee E06 emphasizes: "You learn a lot from mistakes and successes. Knowledge management is closely linked to innovation."

Regarding the development and maintenance of organizational routines, processes, and practices, the interviewees' responses suggest that knowledge exchange often occurs in an unstructured manner, not in line with the ideal outlined by Timeus and Gascó (2018). Testimonies like that of interviewee E05, a judge, regarding how she learned certain work practices from colleagues in the same profession, highlight this issue: "It was nothing institutionalized [...]. Many things could be mapped and passed on in an easier way." Another judge mentions that: "Often [the judge], they are not trained, they are not capacitated, they do not have the skills to deal with these innovation techniques" (E10).

Lastly, the use of tools necessary for obtaining and utilizing new ideas, information, and knowledge permeate work processes, documenting the process, and actions derived from it. In this regard, Gullmark (2021) emphasizes the use of tools that, alongside routine tasks, allow for note-taking, storing, and retrieving information to learn from the innovation process. In this sense, some interviewees' responses suggest the use of sharing tools and the dissemination of these tools and spaces for information retrieval. They also mentioned workflow mapping, as well as its redesign and widespread availability within the court.

The use of checklists and task management tools emerged as relevant for knowledge management in the judicial and administrative activities of the courts. As some of the interviewees reported: "sharing information tools and encouraging their use [...] would be important for fostering innovation" (E08); "the understanding was that to innovate, you need to understand [...] We mapped workflow already with innovation values" (E30); "process management is carried out using checklists, with workflow reviews [...] these innovations are

constant" (E26). Such actions, which involve knowledge management, whether tacit or explicit, through practice or interaction, align with studies found in the literature review (Cassol et al., 2016; Le & Lei, 2019; Trivellato et al., 2021; Boly et al., 2022; Kucharska & Erickson, 2023).

3.4.6 Information Technology

Information Technology is the final component among the factors associated with innovation capacity in courts, situated within the lower-ranked group in the strength assessment shown in Figure 1. Its topics relate to the advent of new platforms and communication channels and support for decision-making processes based on data and information, with mentions by 26 and 21 of the interviewees, respectively.

The omnipresence of information technology in the activities of the courts was emphasized as an irreversible trend. In fact, judicial services are based on legal actions that are currently carried out through digital processes. In this context, improvements in information technology can directly impact the judiciary's core service. Some emerging themes include the use of platforms that facilitate communication and collaboration between teams, as well as applications of Business Intelligence (BI) and Artificial Intelligence (AI). Interviewees emphasize that the difference in innovation capacity will depend on the intensity of Information Technology use and how courts utilize it to address their specific problems, aligned with the assertions of Timeus and Gascó (2018).

With the advent of new platforms and communication channels, some Information Technology solutions support collaboration, while others foster discussions, allowing for greater flexibility and speed in communications, both internally and externally within the courts. Interviewees reported that the use of apps like WhatsApp and Telegram enabled quick communication on emerging topics, such as best practices or predatory and mass demands, as well as communication with the judiciary. As mentioned by interviewee E25: "Several service centers were created [...] so that parties could be assisted via WhatsApp [...] so by video, they just narrate and then file it."

The pandemic amplified the efforts of digitization across the judiciary as a whole, changing numerous work processes toward a digital transformation of judicial services. Initially, the aim was to adapt to the restrictive measures imposed on society by the pandemic context. Subsequently, some of the solutions developed opened possibilities for improvements in service and, consequently, in the provision of justice. Such evidence can be seen in the statements of interviewees: "The judiciary flipped the switch [after the pandemic]. The process

was already electronic, but the hearings and court sessions were in-person" (E09); "During the pandemic [...] we dealt with hearings, addressing procedural issues related to notification, and how to meet the needs and procedural requirements in a digital context" (E30); "During the pandemic, we practically digitized the court. [...] It has enabled us today [...] to truly think about innovation" (E20).

There are also criticisms of platforms used in the courts, such as the Electronic Judicial Process (PJE). Some disapprovals are directed at the lack of integration between databases from different court instances and specialties, which hinders the implementation of new technological solutions and innovations. Furthermore, the importance of having an open channel or a committee that allows judges and staff, especially in the first instance, to make contributions that enable the court to improve its management was emphasized.

It's important to understand that, although there has been a digital transformation of the courts, the advancements haven't met the initial expectations. The interviews demonstrate that with the implementation of the Electronic Judicial Process (PJE), the processing times have been reduced, with judicial cases reaching the judge's office more quickly. However, the time saved in processing the cases often didn't result in quicker decisions because it concealed other bottlenecks in the workflow, especially in the core activities such as drafting orders and sentences.

The situation is leading to a change in the working system with the current search for tools that directly assist the work of judges and court clerks in the core areas. In this context, support for the decision-making process based on data and information is seen as an ally for innovations that enhance the performance of the courts. These findings align with the suggestions made by Nik Hashim et al. (2020) regarding the use of Information Technology to leverage opportunities resulting from digitalization.

The interviewees responses suggest a scaling in data handling, with an initial effort to obtain data followed by a deeper understanding of judicial and administrative workflow, with the possibility of automating manual tasks. In this context, initiatives involving Business Intelligence (BI) were stated. BIs aim to monitor complex situations through graphs and visuals and aid in decision-making. For example, Interviewee E26, a judge, commented on the possibility of integrating BIs with the Electronic Judicial Process (PJE) so that a Judge's work could be facilitated by an information aggregator that includes, in addition to pending legal actions, new email communications, upcoming hearings, and other customizable information.

BIs panels can also function as an auxiliary instrument for analysis by crossing data. BI applications appear as instruments of great relevance, which, combined with human and material resources, enable superior decision-making. The expansion of BIs seems to be the result of increased maturity in data handling. As interviewee E30 explains: "When I left the court's directorate, we had more than 50 BI reports. We no longer had data issues like we did at the beginning" (E30).

Finally, artificial intelligence (AI) applications in courts have gained more prominence in recent years. There are major initiatives in the Brazilian judiciary on this topic. Interviewee E23 explains the Codex, which represents an effort to implement a data extractor in courts that transforms case documents "into purely text format, which is what will effectively serve as the data mass for the AI models." The interviewee mentions that there are already over two million cases extracted from courts of various sizes, and there is a platform called Sinapses, "to effectively host AI models for use by any system from any court within the digital platform of the judiciary."

The interviewees highlighted some potential benefits and precautions regarding the use of AI. The possibility of decisions being 100% generated by artificial intelligence is seen as feasible, depending on the branch of justice. At the same time, it is important to emphasize the concern that AI should be auditable and free from biases that could compromise its algorithms and replicate discriminatory behaviors, which would harm the functioning of justice. The importance of respecting fundamental rights and legal security was also emphasized. Finally, given the current state of AI development and its future prospects, its use in the courts appears to be paradigmatic in terms of modifying the handling of routine and repetitive tasks and assisting in decision-making, including judicial decisions. As interviewee E23, a judge, states: "some activities that we would ordinarily consider involving intelligence analysis and decision-making will receive formidable support from various AI models."

Nevertheless, it became evident that some of the major problems in courts will not be solved solely with the help of information technology or AI. These are issues that require legal changes and institutional reforms, thus having a high level of complexity. As interviewee E23, a judge, points out: "to look at the global scenario of the Brazilian legal system [...] The fact is that the main problems faced by the court clerks, by the judge, and especially by the parties and their representatives or lawyers are not problems that are solved by computer science."

3.5 Conclusions and Recommendations

The findings of this research contribute valuable insights into the innovation capacity in courts. This study underscores the crucial role of specific factors in enabling innovation capacity, presenting an opportunity to assist in improvements for the judicial administration and the delivery of judicial services. The actions of leadership received significant attention from the interviewees and, together with team behavior, appear to be the two most central factors in the analysis of innovation capacity in courts. Collaboration emerges as a third highly representative factor, adding elements to the initial two factors, highlighting the importance of both internal and external cooperation within judicial systems for innovation. Organizational resources are shown to be necessary to enable innovation, while knowledge management and information technology provide a data-driven perspective on innovation capacity.

The findings demonstrate the complexity of innovation capacity in courts. They highlight the need for individuals who are well-trained in innovation techniques, available, engaged, and who can participate both as team members and in leadership roles. Additionally, it's essential to have organizational resources in place to enable innovation, along with the necessary collaboration for the development and adoption of innovations. From a managerial perspective, the study reveals that it may be beneficial for the court to prioritize actions that strengthen the staff regarding behavioral issues of the leadership and the team, working people towards having a critical mass that is qualified and has time available to dedicate to the innovation.

The study presented limitations related to its respondents. Despite the specified parameters to achieve a comprehensive perspective of opinions, it represents the perceptions of individuals who participated in the interviews. It's also essential to highlight the influence of the National Council of Justice in various innovation initiatives, which in a way facilitates the rise of the topic in the courts. This Council has implemented national policies focused on innovation management, sharing best practices, and collaboration among courts. Additionally, there are strategic goals to stimulate innovation and promote digital transformation. From the information technology perspective, national programs contain initiatives for the virtualization of judicial services, integration of databases, standardization of data, and statistical information from different courts, as well as enabling new data analysis using artificial intelligence.

As a suggestion for future work, it is recommended to delve deeper into the findings of this research from a quantitative perspective. This could involve developing a scale to be applied to sets of respondents, capable of identifying the innovation capacity in courts, as well as validating the factors found in this research or identifying new ones. This approach would

enable the use of quantitative analysis on the collected data, furthering the analyses conducted so far and providing a diagnostic tool that could potentially contribute to the improvement of judicial administration and the provision of services by the courts.

4. INNOVATION CAPACITY IN COURTS: BUILDING AND VALIDATING A MEASUREMENT SCALE

ABSTRACT

Courts play an important role in social and economic development of societies and the efficiency and effectiveness of these institutions are closely related to their ability to develop and adopt innovations. However, there is a lack of studies focused on better understanding the innovation capacity of courts. This article seeks to fill in this research gap and aims to build and validate a scale aiming to measure this capacity. A questionnaire containing an initial list of 37 items was built and evaluated by a group of four judges and seven court clerks of the Judiciary, experts in innovation, using Content Validity Coefficient. Next, data collection was carried out with a questionnaire containing 30 items and answered by 354 respondents, being 62 judges and 292 court clerks of the Brazilian Judiciary. Data analysis was performed by Exploratory Factor Analysis, Confirmatory Factor Analysis and Structural Equation Modeling. The results show validation evidence of an Innovation Capacity Measurement Scale in Courts with 17 items and three factors: Leadership, Team Behavior, and Information Technology, with Leadership and Team Behavior proving to be the most relevant factors. The results also show that the working team and the organization as a whole are seen as distinct spaces for the innovation in courts, the first being more strongly influenced by Team Behavior and the second by Leadership.

Keywords: innovation capacity; courts; judiciary; judicial administration; public administration.

4.1 Introduction

Court management in different countries has been influenced by several contemporary technological, social, and economic changes. This context aligns with the emergence of the theme of innovation in public services, bringing to judicial organizations the imperative to seek new ways to solve problems and enhance the quality of judicial services. However, there is a lack of studies addressing issues related to the factors that influence the innovation capacity of these organizations (De Vries et al., 2016; Timeus & Gascó, 2018; Gullmark & Clausen, 2023), with studies focusing on courts being rare (Castro & Guimarães, 2019; 2020).

Innovation capacity in courts is a relevant subject as it allows for a clarification of the necessary conditions for better resource allocation and organizational priorities related to

judicial services. There is a lack of methods and techniques for measuring the innovation capacity in courts, a situation that constitutes an academic gap and, at the same time prevents courts from evolving in a planned way on relevant aspects that will allow them to modernize their actions. Studies in this field are important to help improve the services provided by the courts and contribute to the consolidation of the field of research in Judicial Administration, where there are still gaps in the investigation of objects, concepts, and paradigms concerned to judicial institutions (Guimaraes et al., 2018).

Furthermore, it is worth emphasizing that the innovation capacity in courts does not have appropriate diagnostic instruments. While there are increasing expectations for the modernization of these institutions, initiatives for the development and adoption of innovations suffer from a lack of solid scientific foundations. In this context, this article aims to build and validate an innovation capacity measurement scale in courts, contributing to the identification and measurement of the main factors associated with innovation capacity in this context.

This study builds upon the previous work of Oliveira and Guimaraes (2023; Chapter 3), providing both qualitative and quantitative methods and techniques to complement their earlier research efforts. The authors proposed six main factors related to the innovation capacity in courts: leadership, team behavior, collaboration, organizational resources, knowledge management, and information technology. This study empirically tests the propositions that these factors, in an interdependent manner, are associated with innovation capacity in these organizations.

Therefore, this research is relevant insofar as its results have the potential to contribute to expanding knowledge on how to measure innovation capacity in courts and allow the elaboration of diagnoses about innovative courts. In addition, the results may also be useful to generate evidence for improvements in public policies and best management practices related to the Judiciary.

4.2 Building and validating the innovation capacity measurement scale in courts

The initial items to build the scale were derived from various studies, such as Lewis et al. (2018), AlNuaimi and Khan (2019), Castro and Guimaraes (2019; 2020), and Clausen et al. (2020). Studies focused on the construction of scales and their evidence of validity were also consulted (Gaspar et al., 2021; Mourão et al., 2023). It is noteworthy that no studies were found with scales that could be used in their entirety through cross-cultural adaptation. Therefore, the aforementioned articles sought to find items that could serve as inspiration or be adjusted to the objectives of this research. In this sense, the items were translated into Portuguese by the

authors, to then be validated in successive processes described next. The initial set comprised 95 items (Appendix C), consisting of 23 items related to Leadership, 22 to Team Behavior, 19 to Collaboration, four to Organizational Resources, 10 to Knowledge Management, and seven to Information Technology.

The list of 95 items was refined based on the research findings from interviews with 17 judges and 13 court clerks of the Brazilian Judiciary (Chapter 3). This refinement process resulted in a more concise proposal, consisting of 37 items, being seven items related to Leadership, six to Team Behavior, seven to Collaboration, six to Organizational Resources, five to Knowledge Management, and six to Information Technology (Appendix D).

This set of 37 items underwent a validation procedure with 11 participants who acted as evaluators (Almanasreh et al., 2019), being four judges and seven court clerks of the Brazilian judiciary. They were experts in the innovation field and members of the Administration of Justice Research Group at the University of Brasilia. In June 2023, the evaluators completed a specific electronic form (Appendix D) containing the factors suggested by Oliveira and Guimaraes (Chapter 3), their constitutive definitions, and each of the 37 items. For each item, the evaluators were asked to judge: 1) language clarity; 2) practical pertinence; and 3) theoretical relevance. These evaluators assigned values from 1 to 5 (1-Low and 5-High), which were used to calculate an acceptable Content Validity Coefficient - CVC (Hernández-Nieto, 2002; Balbinotti et al., 2007). The form sent out to this group also provided space to suggestions for changes related to the items.

Following Hernández-Nieto (2002), CVC is calculated as follows:

$$CVC = \left(\frac{\left(\left(\sum_{i=1}^{J} x_i \right) \div J \right)}{V_{max}} \right) - \left(\frac{1}{J} \right)^J$$

where $\left(\sum_{i=1}^{J} x_i \right)$ is the sum of the evaluators' scores for an item, J is the number of evaluators, V_{max} is the maximum score the item can achieve, and $\left(\frac{1}{J} \right)^J$ represents an error measure. The author also recommends that the items whose CVC exceeds 0.8 are acceptable, which was the case of all proposed items, as the final scores can be seen at Table 1 (and in the native language Portuguese at Appendix E).

Table 1

Content Validity Coefficient of the initial list of items related to innovation capacity in courts

Factor	Id	Item	Language Clarity	Practical Pertinence	Theoretical Relevance
Leadership	PL1	Leaders encourage the team to develop new skills.	0,891	1,000	1,000
	PL2	Leaders are tolerant with errors generated during the development of innovations.	0,909	0,982	0,982
	PL3	Leaders constantly encourage the development of new ideas.	0,891	1,000	1,000
	PL4	Leaders make courageous strategic choices that positively change the organization's routines.	0,836	1,000	1,000
	PL5	Leaders consider the different interests of parties involved in the development of innovations.	0,836	0,982	0,982
	PL6	Leaders sponsor innovation.	0,855	1,000	1,000
	PL7	Leaders are trained on innovation topics.	0,855	1,000	1,000
Team Behavior	PCE1	There is organizational commitment to change in my team.	0,818	0,945	1,000
	PCE2	There is openness for initiatives to emerge from the bottom up in my organization.	0,891	1,000	1,000
	PCE3	There is support from leaders for the team to act autonomously.	0,891	1,000	1,000
	PCE4	The team verifies solutions developed together with end users.	0,891	1,000	1,000
	PCE5	There is flexibility regarding formal procedures to allow for experimentation.	0,800	0,982	0,982
	PCE6	There are spaces that allow the generation of new ideas through horizontal relationships independent of the command and control hierarchy.	0,855	0,982	0,964
Collaboration	PCo1	A collaborative vision and mutual help predominate in my organization.	0,891	1,000	1,000
	PCo2	There is openness to involving different actors (internal and external) in innovation projects.	0,873	1,000	1,000
	PCo3	Teams made up of court clerks from different organizational units are created to develop innovations.	0,873	1,000	1,000
	PCo4	There is an emphasis on sharing experiences and knowledge across the organization.	0,855	1,000	1,000
	PCo5	There are spaces where judges and court clerks discuss problems and solutions together.	0,873	1,000	1,000
	PCo6	Users of judicial services are consulted in search of collaboration for the development of products, services and solutions.	0,818	1,000	1,000
	PCo7	Collaboration is used to maximize team work and resource use.	0,855	1,000	1,000
Organizational Resources	PRO1	There are technological resources to support innovative projects in my organization.	0,873	1,000	1,000
	PRO2	Financial resources are available for innovation projects.	0,927	1,000	1,000
	PRO3	My team is trained in innovation methods, techniques and tools.	0,818	1,000	1,000
	PRO4	My team has time to dedicate to innovation projects.	0,836	0,927	0,927
	PRO5	My team is engaged in innovation activities.	0,873	1,000	1,000

Knowledge Management	PRO6	Financial constraints drive the search for innovations.	0,927	0,982	0,982
	PGC1	Formal documents and standards support the development and adoption of innovations in my organization.	0,891	1,000	1,000
	PGC2	Periodic meetings are held to share experiences and knowledge about the innovation process.	0,855	1,000	1,000
	PGC3	The team receives specific training provided by the innovation unit.	0,818	1,000	1,000
	PGC4	The organization's documents, routines, processes and practices are managed in a way that takes advantage of existing knowledge.	0,855	1,000	1,000
	PGC5	There are tools for obtaining new ideas, information and knowledge.	0,836	1,000	1,000
Information Technology	PTI1	Information Technology is used in challenges that involve combining problem-solution.	0,909	1,000	1,000
	PTI2	Information Technology is used to create platforms on which new services can be generated and delivered.	0,891	1,000	1,000
	PTI3	Procedural systems that depend on Information Technology function properly.	0,909	1,000	1,000
	PTI4	The data I need is available when I need it.	0,927	1,000	1,000
	PTI5	Information Technology helps in automating work processes.	0,927	1,000	1,000
	PTI6	Information Technology supports data analysis, allowing for better decision-making.	0,927	1,000	1,000

In a new refinement, the items that met the CVC criteria and the comments of the participants in the validation process inserted in the form, the first version of the Innovation Capacity Measurement Scale in Courts was built. This version contained 30 items, five items for each of the following six factors: leadership, team behavior, collaboration, organizational resources, knowledge management, and information technology, and nine questions relating to the respondents' biographical and functional data (Appendix F and G).

4.2.1 Collecting data for scale validation

Following the evaluation stage with the experts, data collection was carried out. The questionnaire was sent out through Google Forms to judges and court clerks belonging to various branches of the Brazilian judiciary, including state, federal, electoral, military, and labor courts. The sample for this research phase can be characterized as non-probabilistic convenience sampling. The target population comprises 18,117 judges and 272,060 court clerks, totaling 290,177 potential respondents, according to Justice in Numbers report by the National Council of Justice (CNJ, 2023).

The questionnaire was sent to a contact list built during the research, with a request for assistance in sharing the survey with the target audience. It was also distributed to research groups in Judicial Administration, WhatsApp groups focused on innovation in the judiciary,

through the professional platform LinkedIn, and during events aimed at the judiciary audience. Data collection took place between June and July 2023, resulting in 354 valid responses without missing items. The number of responses was considered satisfactory as it aligns with Hair et al (2009) who suggest that samples for estimating a model should exceed 50 observations and be above 100 cases to ensure more robust results, or even above 5 to 10 respondents per item.

Regarding to the profile of the respondents, 70 (19.77%) were between 27 and 39 years old, 137 (38.70%) between 40 and 49 years old, 119 (33.62%) between 50 and 59 years old and 28 (7.91%) over 60 years old. As for gender, 188 (53.1%) said they identified as male, 162 (45.7%) as female, 1 (0.28%) transsexual, 1 (0.28%) non-binary and 2 (0.28%) 56%) preferred not to inform. As for the level of education, 209 (59.04%) respondents have completed postgraduate studies, 89 (25.14%) master's degrees, 23 (6.5%) graduate degrees, 22 (6.21%) doctorates, 8 (2 .26%) high school and 3 (0.85%) preferred not to inform. As for professional performance, the sample consisted of 62 (17.51%) participants occupying the position of judge and 292 (82.49%) court clerks. Regarding length of service in the judiciary, 77 (21.75%) of the participants had between 1 and 10 years, 131 (37.01%) between 11 and 20 years, 117 (33.05%) between 21 and 30 years and 29 (8.19%) over 30 years old. As for the branches of the Judiciary, 136 (38.42%) belonged to the Electoral Justice, 115 (32.49%) to the State, 42 (11.86%) to the Federal, 38 (10.73%) to the Labor, 4 (1 .13%) to the Military and 19 (5.37%) to the Superior Courts.

Responses were collected from 75 different courts, with the highest number of responses being the Superior Electoral Court, with 40 (11.30%), followed by the Pernambuco State Court of Justice, with 30 (8.47%), the Electoral Regional Court of Rio Grande do Norte, with 22 (6.21%), the Federal Regional Court of the 1st Region, with 17 (4.80%) and the State Court of Justice of Minas Gerais, with 14 (3.95%). There were respondents from 26 Brazilian states, the most representative being the Federal District with 85 (24.01%) participants, followed by Rio Grande do Norte with 34 (9.60%), Pernambuco with 33 (9.32%), Minas Gerais with 29 (8.19%), Maranhão with 17 (4.80%), Paraná with 16 (4.52%), São Paulo with 16 (4.52%) and the other states with 124 (35.03%).

The research participants were asked to fill in the 30-item form, to be rated on a five-point Likert scale, ranging from: 1 - Strongly Disagree; 2 - Disagree Partially; 3 - Neither Agree nor Disagree; 4 - Agree Partially; and 5 - Strongly Agree. It's worth noting that during data collection, the sequential order of the questionnaire items was randomized by the Google Forms platform, avoiding a sequence of items per factor. Table 2 presents the items, duly associated with the respective factors.

Table 2

Initial proposal for Innovation capacity measurement scale in courts

Factor	Id	Code	Item
Leadership - Technical and behavioral competencies of judges and judicial managers who work in creating an organizational culture that emphasizes team motivation, commitment, and coordination of actions and strategies that contribute to the development and adoption of innovations.	1	L1	The leadership in my organization deals appropriately with errors that occur during the development of innovations.
	2	L2	The leadership constantly encourages the development of new ideas in my organization.
	3	L3	The leadership makes decisions that positively change the organization's routines.
	4	L4	In my organization, the leadership assesses the different interests of the parties involved in innovation development.
	5	L5	The leadership is trained in innovation topics in my organization.
Team Behavior - Technical and behavioral skills of judges and court clerks relevant to the development and adoption of innovations, encompassing commitment to change, bottom-up initiative, user/citizen solution orientation, new ideas and experimentation.	6	CE1	The team I work with is committed to innovation.
	7	CE2	There is openness for initiatives to emerge from the bottom up in my organization.
	8	CE3	Innovative solutions developed in the unit where I work are verified jointly with end users.
	9	CE4	There is flexibility to allow experimentation in the activities I perform.
	10	CE5	In my organization there are opportunities for generating new ideas through horizontal relationships independent of hierarchy.
Collaboration - Sharing experiences and knowledge, both formal and informal, internal and external to the court, encompassing the development of connections, the sociocognitive process of meaning resulting from communication, interdisciplinarity, and the optimization of resources for the development and adoption of innovations.	11	C1	In my organization, there is openness to involve different external actors in innovation projects.
	12	C2	Teams composed of court clerks from different organizational units are usually created for the development of innovations.
	13	C3	In my organization there are spaces where judges and court clerks discuss problems and solutions together.
	14	C4	In my organization, citizens are consulted in search of collaboration for the development of new products, services, and solutions.
	15	C5	Collaboration is used to maximize the results of my working team.
Organizational Resources - Human, financial and technological resources necessary for the development and adoption of innovations.	16	RO1	There are technological resources to support innovative projects in my organization.
	17	RO2	In my organization, financial resources are available for innovation projects.
	18	RO3	The people in my working team have time to dedicate to innovation projects.

		19	**RO4**	The people in my working team are engaged in innovation activities.
		20	**RO5**	Financial constraints drive the search for innovations in my organization.
**Knowledge Management - ** Management of experiences, values, information and knowledge (tacit and explicit), covering the search, development and maintenance of routines, processes and practices of the organization, training of court clerks, the use of tools necessary to obtain and use of new ideas, information and knowledge in order to support the development and adoption of innovations.		21	**GC1**	Formal documents and standards underpin the development and adoption of innovations in my organization.
		22	**GC2**	Periodic meetings are held to share experiences and knowledge about the innovation process in my organization.
		23	**GC3**	My working team receives training on topics related to innovation.
		24	**GC4**	Documents, routines, processes, and practices of the organization are managed to take advantage of existing knowledge.
		25	**GC5**	There are tools in my organization for obtaining new ideas, information, and knowledge.
Information Technology - Use of information and communication technologies to support the decision-making process based on data and information and for the advent of new platforms and communication channels, aiming at the development and adoption of innovations.		26	**TI1**	In my organization, information technology is used in challenges that involve the combination of problem-solution.
		27	**TI2**	In my organization information technology is used to create platforms on which new services can be generated and delivered.
		28	**TI3**	The data I need is available when I require it.
		29	**TI4**	Information technology assists in the automation of work processes.
		30	**TI5**	Information technology is used to improve decision-making in my organization.

4.2.2 Data analysis procedures

The data analysis was carried out using Exploratory Factor Analysis (EFA), followed by Confirmatory Factor Analysis (CFA), and Structural Equation Modeling (SEM). EFA was used to examine the conditions under which sets of items are grouped to confirm or refute the factorial structure of the Innovation capacity measurement scale in courts. CFA was employed to confirm the developed factorial structure. As Damásio (2012) suggests, both techniques can be used complementarily to assess the plausibility of a factorial structure. SEM was performed to test the validity of the theoretical model, combining factor analysis and regression techniques.

For undertaking the EFA, the collected data were analyzed using the R software (version 4.3.1 for macOS), in conjunction with RStudio (Version 2023.06.1+524), and Unrestricted

Factor Analysis (version 12.04.01, x64bits). The EFA implementation was performed using a polychoric correlation matrix and the Weighted Least Squares Means and Variance Adjusted (RDWLS) extraction method, with Oblimin rotation, given that the data are ordinal and do not follow a multivariate normal distribution, and the factors are non-orthogonal (Beauducel & Yorck Herzberg, 2006). To determine the number of factors to be retained, analyses were carried out using the Square-Root Scree Plot (Del Giudice, 2022) and the Parallel Analysis technique with random permutation of observed data using Robust Promin rotation (Timmerman & Lorenzo-Seva, 2011).

For model adequacy assessment, the Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), and Tucker-Lewis Index (TLI) were evaluated. As presented by Hair et al. (2009), RMSEA values should be less than 0.08, preferably less than 0.06, with a confidence interval not exceeding 0.10. Additionally, CFI and TLI values should be above 0.90, preferably exceeding 0.95. The stability of the factors was assessed using the composite reliability measure to show internal consistency, with values above 0.70 considered acceptable and values above 0.80 desirable (Raykov, 1997).

Regarding CFA and SEM, the collected data were analyzed using the R software (version 4.3.1 for macOS) in conjunction with RStudio (Version 2023.06.1+524). Initially, CFA was done to assess the plausibility of a unidimensional structure for each of the six factors proposed. The Robust Diagonally Weighted Least Squares (RDWLS) estimation method, suitable for categorical data (Li, 2016), was used for the CFA implementation.

The fit indices used included: Chi-square ($\chi 2$), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Standardized Root Mean Residual (SRMR), and Root Mean Square Error of Approximation (RMSEA). Acceptable criteria for these indices are as follows: CFI and TLI values should be ≥ 0.90 and preferably above 0.95; RMSEA values should be ≤ 0.08 or preferably ≤ 0.06, with a confidence interval (upper limit) ≤ 0.10 (Hair, 2009). One more time, the composite reliability measure was used to test the internal consistency, with values above 0.70 considered acceptable and above 0.80 desirable (Raykov, 1997). Lastly, the model was tested using SEM, including correlation tests between constructs and regression to investigate a self-reported measure of innovation capacity.

4.4 Results and Discussion

The data analysis brought evidence about the confirmation of three of the six factors initially proposed (Leadership, Team Behavior, and Information Technology), indicating the need to reformulate the others three factors (Collaboration, Organizational Resources, and

Knowledge Management), to regroup the initial items initially in just three factors. Indeed, the EFA resulted in a new configuration of the factors, considering their statistical and theoretical representation. This new structure was confirmed through AFC and MEE, as described next.

4.4.1 Exploratory Factor Analysis - EFA

Considering the initial structure of six factors, the Bartlett's sphericity test (69.551, df = 29, p < 0.001) and KMO (0.96) suggested the interpretability of the item correlation matrix, providing evidence that the scale's structure was suitable for treatment through EFA. Regarding factor retention, two parallel analysis tests were conducted, the first using the Square-Root Scree Plot, which suggested five factors as the most representative for the data (Figure 1), and the second using the Factor software, which suggested 2 factors. Table 2 was built with the statistics of the models concerning the fit indices, corroborating the plausibility of the models. The rotated factor loading matrix of the 2, 3, 4, 5, and 6-factor models was evaluated, as they presented satisfactory statistical indices. Afterwards, the 3-factor model was chosen due to its relevance in improving the scale and its alignment with the theoretical framework.

Figure 1

Parallel analysis scree plot of the innovation capacity measurement scale in courts
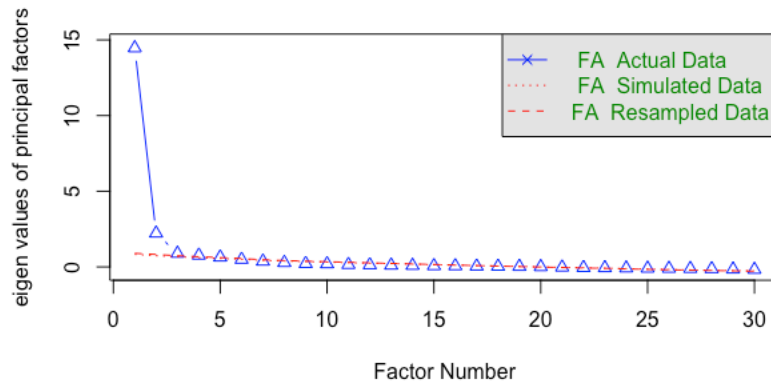
Table 3

Statistics of exploratory factor analysis models

MODEL	χ^2	df	NC	RMSR	RMSEA	CFI	TLI
2 Factors	993.577	376	2.642	0.045	0.068 (0.063-0.073)	0.956	0.950
3 Factors	**788.824**	**348**	**2.267**	**0.038**	**0.060 (0.054-0.065)**	**0.969**	**0.961**
4 Factors	601.618	321	1.874	0.032	0.050 (0.044-0.056)	0.980	0.973
5 Factors	467.702	295	1.585	0.026	0.041 (0.034-0.048)	0.988	0.982

| 6 Factors | 395.926 | 270 | 1.466 | 0.022 | 0.036 (0.028-0.044) | 0.991 | 0.986 |

Source: Survey data.

Note: χ^2 = Chi Square; df = degrees of freedom; NC = χ^2 / df; RMSR = Root Mean Square of Residuals; RMSEA = Root Mean Square Error of Approximation (90% confidence interval lower & upper); CFI = Comparative Fit Index; TLI = Tucker & Lewis Index.

After defining three factors as the most adequate framework to represent the sample, research was carried out on the items evaluated in the Rotated factor loading matrix (Table 3), using the following criteria: 1) discarding statistically negligible items, that is, with a factorial load of less than 0.3 (Comrey & Lee, 2013), eliminating item 20 (RO5); 2) disregard of items with complex factor loading, that is, those with non-negligible factor loading in more than one factor (Howard, 2016), eliminating items 24 (GC4), 28 (TI3), and 29 (TI4); 3) observation of the modification indices, with the elimination of items to improve the fit of the model, with the removal of items 3 (L3), 4 (L4), 10 (CE5), 13 (C3), 17 (RO2), 21 (GC1), 22 (GC2), 23 (GC3), and 25 (GC5) (Hair et al., 2009). After multiple iterations regarding the assessments arising from these criteria, a better structure was reached for the Innovation Capacity Measurement Scale in Courts, as shown in Table 4. The reliability indices obtained were Factor 1 (0.90), Factor 2 (0.91), and Factor 3 (0.86), all above 0.70 and therefore considered acceptable values of internal consistency of the factors (Raykov, 1997).

Table 4

Rotated factor loading matrix of innovation capacity measurement scale in courts

Variable	Code	Factor 1	Factor 2	Factor 3
1	L1	**0,601**	-0,023	0,231
2	L2	**0,726**	0,031	0,067
3	L3	**0,557**	0,016	0,287
4	L4	**0,713**	0,031	0,133
5	L5	**0,542**	0,127	0,184
6	CE1	0,024	**0,874**	-0,056
7	CE2	**0,907**	-0,005	-0,094
8	CE3	0,000	**0,772**	-0,026
9	CE4	0,087	**0,707**	0,008
10	CE5	**0,934**	0,080	-0,189
11	C1	**0,718**	-0,048	0,101
12	C2	**0,599**	0,103	0,135
13	C3	**0,629**	0,012	0,092
14	C4	**0,571**	0,095	0,141
15	C5	-0,071	**0,752**	0,157
16	RO1	0,193	0,050	**0,534**
17	RO2	0,148	0,159	**0,377**

18	RO3	0,047	**0,714**	0,041
19	RO4	-0,038	**0,912**	-0,035
20	RO5	0,229	0,095	0,207
21	GC1	0,248	0,162	**0,365**
22	GC2	**0,482**	0,171	0,225
23	GC3	0,249	**0,634**	-0,044
24	GC4	**0,423**	0,031	**0,383**
25	GC5	**0,608**	0,070	0,236
26	TI1	0,173	-0,028	**0,711**
27	TI2	0,220	-0,029	**0,624**
28	TI3	0,111	**0,340**	**0,358**
29	TI4	-0,132	**0,323**	**0,633**
30	TI5	0,229	0,072	**0,583**

Table 5

Statistics of pre and post exploratory factor analysis models

MODELO	χ^2	df	NC	RMSR	RMSEA	CFI	TLI
3 Factors – Preanalysis	788.824	348	2.266	0.038	0.060 (0.054-0.065)	0.969	0.961
3 Factors – Postanalysis	197.172	88	2.240	0.028	0.059 (0.048-0.070)	0.985	0.977

Source: Survey data.

Note: χ^2 = Chi Square; df = degrees of freedom; NC = χ^2 / df; RMSR = Root Mean Square of Residuals; RMSEA = Root Mean Square Error of Approximation (90% confidence interval lower & upper); CFI = Comparative Fit Index; TLI = Tucker & Lewis.

4.4.2 Confirmatory Factor Analysis - CFA

Confirmatory Factor Analysis was conducted to verify the model and optimize its fit. The choice to use three factors instead of six, as initially proposed, stems from the analysis that some of the factors exhibited high multicollinearity values, which hindered the analyses with Heywood cases-like issues. Therefore, some of the items was removed to obtain higher-quality factors, as it is generally required to have four or more items for each factor, and for the sake of instrument parsimony.

The EFA provided evidence that some shifts of observable items could be made in a new three-factor structure that aligns with the theory. Thus, the Collaboration, Organizational Resources and Knowledge Management factors were removed, and some of their items were adjusted in the factors Leadership, Team Behavior, and Information Technology. The results found are discussed next.

4.4.2.1 Leadership

Three of the items initially built for the Leadership factor were maintained: L1, L2, and L5, with items L3 and L4 having been removed during the EFA due to improvements in the modification indices. It is understood that the maintenance of the Leadership factor was expected given its relevant role stressed in the literature (Lei et al., 2020; Gullmark, 2021; Nguyen et al., 2021). The items kept on the scale after the CFA address aspects that corroborate other studies, such as tolerance for errors generated in the development of innovations (Meijer, 2019; Palmi et al., 2021), the encouragement to the development of new ideas in the organization (Lewis et al., 2018; Azamela et al., 2022), and training on topics related to innovation given its influence on the environment and culture of courts (Castro & Guimaraes, 2020).

Regarding the Collaboration factor, three out of the five items were retained in the Leadership factor: C1, C2, and C4. These items emphasize the importance of openness to involve different external actors in innovation projects and spaces between the core and support fields where different organizational units can collaboratively seek solutions (Trivellato et al., 2021; Zyzak & Jacobsen, 2020). It also underscores collaboration in the development of products, services, and solutions in conjunction with users (Nik Hashim et al., 2022).

In addition to these items, one more was added: CE2 - "There is openness for initiatives to emerge from the bottom up in my organization." Initially, this item was allocated to the Team Behavior factor, but EFA showed that it was more appropriate in the Leadership factor. It was realized that the item addresses collaboration across different areas and hierarchical levels, fostering employee empowerment (Iliashenko et al., 2023) and therefore suitable to compose the factor.

All standardized factor loadings for the Leadership latent factor had values above 0.7, respectively L1 (0.76), L2 (0.79), L5 (0.76), CE2 (0.80), C1 (0.75), C2 (0.76), C4 (0.72) and the explained variance of items L1 (0.57), L2 (0.62), L5 (0.57), CE2 (0.64), C1 (0.57), C2 (0.57), C4 (0.63) presented plausible values for the model. Thresholds were observed and there were no unexpected behaviors.

4.4.2.2 Team Behavior

Three of the items initially built for the Team Behavior were maintained: CE1, CE3, and CE4, with items CE2 changed to the Leadership factor and CE5 having been removed during the EFA due to improvements in the modification indices. Also, the factor received items from the Organizational Resources (RO3 and RO4) and Collaboration (C5) factors, which were removed from the model.

Regarding the items related to team behavior (CE1, CE3, and CE4), the investigation of the factor provided evidence that corroborates the literature, especially the importance of the team's commitment to innovation activities (Alnuaimi & Khan, 2019; Callens & Verhoest, 2023), solutions developed in collaboration with end-users (Torvinen & Haukipuro, 2018; Nik Hashim et al., 2022), and the presence of flexibility for experimentation in job activities (Timeus & Gascó, 2018; Torvinen & Jansson, 2022).

It was understood that item RO3 "The people in my working team have time to dedicate to innovation projects" is also suitable for the Team Behavior factor. First, the item tried to capture the availability of time as an organizational resource, but it also serves as a premise for the team's engagement with innovation. As for item RO4 "The people in my working team are engaged in innovation activities", the reflection was that the item captures the dimensional aspect of the working team in a closer evaluation of the respondent regarding their work unit. Also, C5 "Collaboration is used to maximize the results of my working team" found a better fit linked to the Team Behavior factor. The cases refer to the sense of assigning a strategic use to human resources (Kim & Kim, 2022).

The values obtained for the Team Behavior latent factor had all standardized factor loadings values above 0.7, respectively, CE1 (0.84), CE3 (0.75), CE4 (0.77), C5 (0.79), RO3 (0.75), and RO4 (0.87) and the explained variance of items CE1 (0.71), CE3 (0.57), CE4 (0.59), C5 (0.62), RO3 (0.56), RO4 (0.77), present plausible values for the model. Thresholds were observed and there were no unexpected behaviors.

4.4.2.3 Information Technology

Three of the items initially built for the Information Technology were maintained: TI1, TI2, and TI5, with items TI3 and TI4 having been removed during the EFA due to complex factor loading. Also, the factor received an item from the Organizational Resources (RO1), which was removed from the model. The item RO1 "There are technological resources to support innovative projects in my organization" was understood to be related to information management, in the sense of emphasizing investments in information technology, given its potential impact on the productivity of the courts (Gomes et al., 2018).

Thus, the Information Technology factor, in addition to the mentioned item about technological resources, statements about the use of information technology in problem-solving situations and the creation of service platforms, consistent with other studies highlighting the potential of data analysis and new applications to serve users of judicial services (Barbosa et al., 2022; Barysė, 2022; Timeus & Gascó, 2018).

All standardized factor loadings for the Information Technology latent factor had values above 0.7, respectively RO1 (0.73), TI1 (0.81), TI2 (0.78), and TI5 (0.79) and the explained variance of items RO1 (0.54), TI1 (0.66), TI2 (0.61), and TI5 (0.63) presented plausible values for the model. Thresholds were observed and there were no unexpected behaviors.

4.4.3 Structural Equations Modeling

Structural Equation Modeling (SEM) allows us to work with latent variables that cannot be directly observed through the items of a rating scale, as is the case with the latent variables Leadership, Team Behavior and Information Technology used in this study. The difference from CFA is that while this technique is concerned with confirming and refining the measurement model of latent variables (constructs) and observed variables (items), SEM is used to test correlations between constructs and dependency relationships. In this study, with the assistance of SEM, we aimed to show the existence of correlation relationships between the mentioned latent variables, given the conception that these collectively influence the innovation capacity in courts. We also sought to investigate, through self-report measures, the dependency relationships between the latent variables and the perception of innovation capacity in courts concerning the working team and the organization as a whole.

The structural equation model can be observed in Figure 2, where the latent variables represented within elliptical circles are interconnected by arrows with values ranging from -1 to 1. These values represent correlation coefficients and allow for an analysis of the relationship between the constructs. Values between 0.10 and 0.29 indicate low correlation, between 0.30 and 0.49 indicate medium correlation, and above 0.50 indicate high correlation (Cohen, 2013). The composite reliability indices obtained were Leadership (0.90), Team Behavior (0.91) and Information Technology (0.86), all above 0.80 and therefore considered acceptable values of internal consistency of the factors (Raykov, 1997).

Figure 2

Structural equations model of the innovation capacity measurement scale in courts
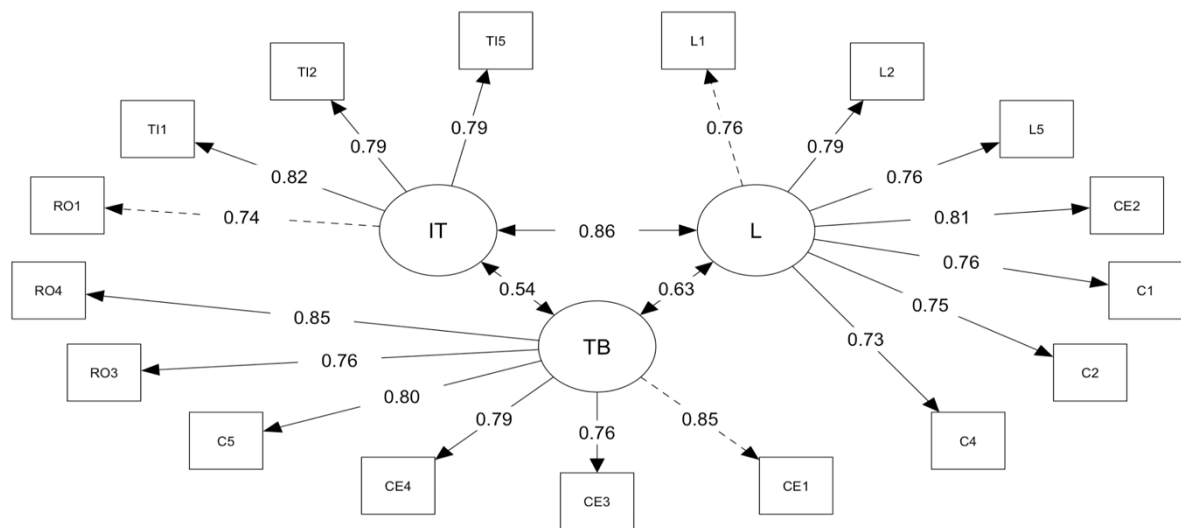
Note: L = Leadership, TB = Team Behavior, IT = Information Technology.

The SEM of the scale shows a high correlation between Leadership and Information Technology (0.86), as well as between Leadership and Team Behavior (0.63). Although it has a lower value, the correlation between Team Behavior and Information Technology (0.54) is also above 0.50 and, therefore, considered a high correlation. These findings reinforce the concepts of Oliveira and Guimaraes (2023) regarding the interdependence of these factors on the innovation capacity in courts and suggest that initiatives focusing on one of the factors should contribute to the improvement of the others.

Finally, the perception of innovation capacity in courts was investigated through self-report. To do so, all the 354 respondents provided responses to two items, namely: "The organization I work for can actually innovate" (IC1) and "The working team I work for develops innovations significantly" (IC2). These items were used to form a measure of Self-Reported Innovation Capacity, similar to Lewis et al. (2018) research. Through SEM, the influence of the latent variables on these indicators was investigated, and the Figure 3 show the results.

Figure 3

Influence of the main factors associated with innovation capacity in courts – self-rated innovation capacity
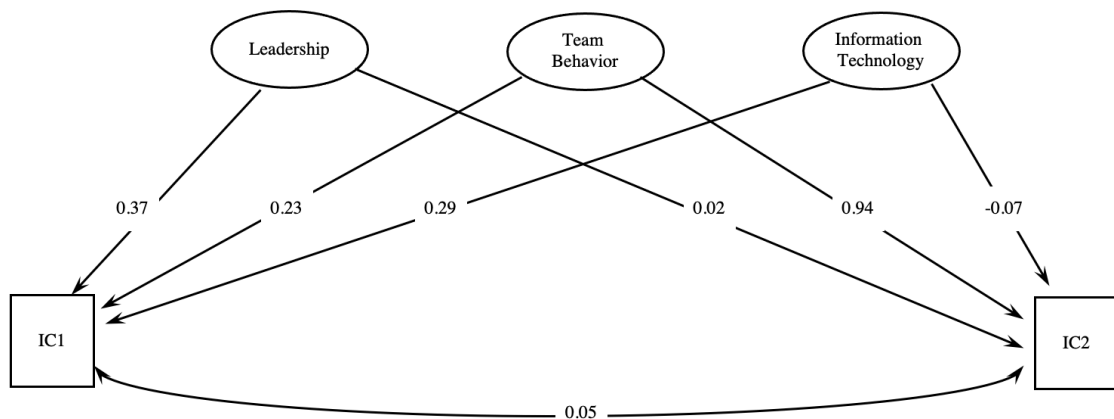
The analysis of the main factors associated with innovation capacity in courts points to a prominent role of the Team Behavior factor, followed by the Leadership factor and Information Technology. These findings corroborate Oliveira and Guimaraes (Chapter 3) which state factors associated with innovation capacity in courts composed of a primary group consisting of leadership, teamwork, and collaboration, and a secondary set of factors such as information technology, knowledge management, and organizational resources.

The findings of the study push some reflections. Firstly, the interdependence of the factors and their potential influence on the improvement of other factors are more likely to succeed if focused on the Leadership and Team Behavior factors. It argues for prioritizing actions related to these factors, as they are more likely to advance with less effort. Such deliveries are likely to contribute benefits to the innovative capacity of courts more broadly.

Figure 4 shows that the innovation capacity of the working team is more strongly influenced by the Team Behavior factor (0.94), while the perception of the innovation capacity of the organization as a whole is more influenced by the Leadership factor (0.37). These findings contribute to the understanding of innovation capacity as a multidimensional concept, composed of the organization as a whole and the specific working team. Promoters of innovation in courts can create strategies for sharing practices from teams engaged, involving leaders. In this way, there is a chance to develop the two most prominent factors together.

The findings also show the prominence of the Leadership (for IC1) and Team Behavior (for IC2) factors, which concentrate the explanatory power, leaving less to be explained by other factors. A similar line of reasoning can be applied to Information Technology, as for this factor, its strength lies in explaining the perception of organizational innovation and less in that of the working team. In this sense, this study reinforces the findings of Oliveira and Guimaraes (Chapter 3) regarding the role of Information Technology as a support for other factors. In summary, it can be inferred that tools and technologies alone do not push the innovation

capacity in courts, as they need to be accompanied by other factors, especially Leadership and Team Behavior. In the end, Table 6 was built with the final proposal for the Innovation Capacity Measurement Scale in Courts.

Table 6

Final proposal of the Innovation Capacity Measurement Scale in Courts

Factor	Id	Code	Item
Leadership - Technical and behavioral competencies of judges and judicial managers who work in building an organizational culture that emphasizes team motivation, collaboration, commitment, and coordination of actions and strategies that contribute to the development and adoption of innovations.	1	L1	The leadership in my organization deals appropriately with errors that occur during the development of innovations.
	2	L2	The leadership constantly encourages the development of new ideas in my organization.
	3	L5	The leadership is trained in innovation topics in my organization.
	4	CE2	There is openness for initiatives to emerge from the bottom up in my organization.
	5	C1	In my organization, there is openness to involve different external actors in innovation projects.
	6	C2	Teams composed of court clerks from different organizational units are usually created for the development of innovations.
	7	C4	In my organization, citizens are consulted in search of collaboration for the development of new products, services, and solutions.
Team Behavior – Technical and behavioral attitudes of judges and court clerks with availability, skills on methods and techniques regarding to innovation, collaboration, and commitment to the development and adoption of innovations.	8	CE1	The team I work with is committed to innovation.
	9	CE3	Innovative solutions developed in the unit where I work are verified jointly with end users.
	10	CE4	There is flexibility to allow experimentation in the activities I perform.
	11	C5	Collaboration is used to maximize the results of my working team.
	12	RO3	The people in my working team have time to dedicate to innovation projects.
	13	RO4	The people in my working team are engaged in innovation activities.
Information Technology - Use of information and communication technologies to support the decision-making process based on data and information and for the advent of new platforms and communication	14	RO1	There are technological resources to support innovative projects in my organization.
	15	TI1	In my organization, information technology is used in challenges that involve the combination of problem-solution.
	16	TI2	In my organization information technology is used to create platforms on which new services can be generated and delivered.

channels, aiming at the development and adoption of innovations.	17	TI5	Information technology is used to improve decision-making in my organization.

4.5 Conclusions and Recommendations

The contributions of this study lie in the building and the validation of the Innovation Capacity Measurement Scale in Courts. The development of the scale aimed to identify and better understand the main components of the theoretical model proposed by Oliveira and Guimaraes (2023), which underpins the study. Through EFA, CFA, and SEM, the study contributes to a better understanding of this research gap. The research question about the main factors associated with innovation capacity in courts has been answered, with the method presented in the study indicating the factors: Leadership, Team Behavior, and Information Technology. Thus, the Scale can be used in future studies and as a diagnostic tool with the potential benefit of contributing to the improvement of court services and the administration of justice.

The main results obtained point to the interdependence of the factors with a focus on Leadership and Team Behavior. It is noteworthy that these two factors, encompassing leaders and teams, refer to people and have overshadowed other aspects that could initially be considered relevant to innovation capacity, such as structure and financial investments. The positioning of respondents on the items of the Collaboration factor, where it was not possible to have evidence about the plausibility of it as a single factor, also caught attention. Finally, in times when Business Intelligence and Artificial Intelligence are becoming increasingly prevalent in courts, leading to data-driven innovation practices, the study provides insights to ensure that the people-driven innovation perspective is not overlooked. This perspective will be necessary to better enable data-focused initiatives to succeed in the organization.

Despite the precautions taken in the study's development, it had some limitations. Firstly, regarding the number of respondents, although it met the research criteria for the research, the number of judges was lower than that of court clerks. High levels of education among respondents were also noted, possibly due to assistance obtained from research groups and judicial schools in disseminating the survey. Various channels were attempted to collect responses, but it seems that there is a better understanding of the importance of participating in research surveys within academic circles in courts. Additionally, it is important to emphasize

that the study found evidence of the scale's validity, however, this does not guarantee that studies with this scale applied to other samples will present the same results.

Regarding future studies, further data collection and new sampling methods could be employed for the purpose of comparison with this study. Other samples could also allow for comparisons between different courts and branches of the judiciary. Additionally, it is expected that the scale developed can be replicated in new studies and refined through additional research. Given the prominence of Leadership and Team Behavior, further research with a focus on these factors is also desirable. Although Information Technology showed lower statistical relevance, additional studies in this field would be beneficial to better understand the transformative potential of applications like artificial intelligence in the innovation capacity of the courts.

5. CONCLUSIONS AND RECOMMENDATIONS OF THE DISSERTATION

The study conducted through the essays presented in chapters two, three, and four aims to contribute to the important field of justice administration with insights that allow a better understanding of the key factors associated with innovation capacity in courts. It is understood that, through methodological approaches that encompass the theoretical development of the subject, along with empirical studies using qualitative and quantitative methods, the dissertation has achieved its goal of identifying and measuring the main factors associated with innovation capacity in courts.

Regarding the specific objectives, the first one was initially achieved by formulating the theoretical propositions about innovation capacity in courts in Chapter 2, which were then further explored through the investigation of the perception of judges and court clerks of the Brazilian judiciary, conducted in Chapter 3, encompassing the second specific objective. The contributions from both chapters were used to build and validate the Innovation Capacity Measurement Scale in Courts, as described in Chapter 4, which fulfills the third specific objective of this doctoral dissertation. Additionally, it returns to the first specific objective to empirically test the theoretical propositions. Taken together, the findings of these studies allow for the systematic analysis of the complex phenomenon of innovation in courts, with the identification of Leadership and Team Behavior as the primary drivers of innovation in this context.

The main contribution of Chapter 2 lies in the systematic review of the relevant literature and the establishment of a theoretical framework based on the Resource-Based View (Barney, 1991) and Dynamic Capabilities (Teece et al., 1997) approaches. This chapter provides insights into the influence of key factors associated with innovation capacity in courts. Building on this theoretical foundation, the study identifies interdependent factors, namely Leadership, Team Behavior, Collaboration, Organizational Resources, Knowledge Management, and Information Technology, as the primary drivers of innovation capacity in courts.

Regarding Chapter 3, its main contribution lies in identifying the pivotal role of certain factors in enabling innovation capacity in courts. Through a mixed-method approach, including content analysis of thirty interviews with judges and court clerks of the Brazilian judiciary, the study provides evidence that Leadership, Team Behavior, and Collaboration play central roles and can be considered primary or fundamental factors influencing innovation capacity. On the other hand, Organizational Resources, Knowledge Management, and Information Technology factors are seen as supportive or secondary. This perspective highlights the importance of

having people with innovation skills, availability, and engagement in leadership positions and as part of the team for enhancing innovation capacity in courts. In summary, the findings from Chapter 3 suggest that prioritizing actions to strengthen leadership and team behavior within the workforce can yield benefits for the court system from a managerial perspective.

Lastly, Chapter 4 builds upon its predecessors, advancing in the construction, validation, and analysis of the Innovation Capacity Measurement Scale in Courts. This scale allowed for the identification and a better understanding of the main components of the theoretical framework previously explored through interviews, progressing toward predominantly quantitative results. With the assistance of statistical techniques such as Exploratory Factor Analysis, Confirmatory Factor Analysis, and Structural Equation Modeling, the scale was tested. As a result, a new specification of the main factors associated with innovation capacity in courts could be outlined, with the method used in the study indicating Leadership, Team Behavior, and Information Technology as the primary factors. The developed scale can be used in future studies and as a managerial diagnostic tool to identify areas for improvement to enhance innovation capacity in courts.

In summary, the theoretical contributions of the study reinforce the role of certain factors as more relevant for enhancing innovation capacity in courts, especially Leadership and Team Behavior. The work suggests that the interaction and proper combination of these factors can create an environment conducive to the development and adoption of innovations in courts. These theoretical contributions can be used to improve organizational best practices and serve as guiding principles for management and training initiatives within court personnel, ultimately aiming to enhance judicial administration and the delivery of judicial services. Ultimately, given the fundamental role of courts in conflict resolution, the study can represent a social contribution by assisting in the organizational improvement of these institutions.

The studies carried out, based on the justifications provided, rely on certain theoretical concepts and research methods, and despite taking all possible measures to ensure scientific rigor and mitigate issues and biases, some limitations of the research should be acknowledged. The first limitation pertains to the theoretical approaches adopted, which were based on the Resource-Based View (Barney, 1991) and Dynamic Capabilities (Teece et al., 1997). These theories guided the study's development according to the premises of these approaches. The study also had limitations related to the research participants. Regarding the thirty interviews conducted for the second study (Chapter 3), although efforts were made to include a significant number of respondents of different courts and regions, it represents the perceptions of

individuals who participated in the interviews, and some perspectives may have been excluded from the collected sample. A similar condition exists in the data collection of the scale's questionnaire (Chapter 4), despite significant efforts to promote it through various channels. Another limitation concerns the complexity of the innovation capacity construct and the difficulty in measuring it accurately.

Future studies can explore different theoretical lenses, especially Institutional Theory, Systems Theory, Contingency Theory, among others. New samples for surveys, both through interviews and the use of the Scale proposed, are recommended and could further contribute to the field of justice administration. Future studies could involve comparisons between one or more factors in relation to their different contexts or comparisons between different branches of justice and regional and court size aspects. Given the prominence of Leadership and Team Behavior, further research emphasising on these factors is desirable. Information Technology also require further exploration, given the emergence of new potentially transformative applications. Comparisons of innovation capacity in courts in different countries would also advance research in the field. Indications regarding metrics related to innovation capacity in courts could constitute another avenue of study.

References

Almanasreh, E., Moles, R., & Chen, T. F. (2019). Evaluation of methods used for estimating content validity. *Research in Social and Administrative Pharmacy*, *15*(2), 214–221. https://doi.org/10.1016/j.sapharm.2018.03.066

Alnuaimi, B. K., & Khan, M. (2019). Public-sector green procurement in the United Arab Emirates : Innovation capability and commitment to change. *Journal of Cleaner Production*, *233*, 482–489. https://doi.org/10.1016/j.jclepro.2019.06.090

Arias, M. I., & Maçada, A. C. G. (2021). Judiciaries' modernisation through electronic lawsuits: Employees' perceptions from the Brazil and Argentina federal justice services. *Information Development*, *37*(2), 258–273. https://doi.org/10.1177/0266666920910489

Azamela, J. C., Tang, Z., Owusu, A., Egala, S. B., & Bruce, E. (2022). The Impact of Institutional Creativity and Innovation Capability on Innovation Performance of Public Sector Organizations in Ghana. *Sustainability (Switzerland)*, *14*(3). https://doi.org/10.3390/su14031378

Balbinotti, M. A. A., Benetti, C., & Terra, P. R. S. (2007). Translation and validation of the Graham-Harvey survey for the Brazilian context. *International Journal of Managerial Finance*, *3*(1), 26–48. https://doi.org/10.1108/17439130710721644

Baldwin, J. M., Eassey, J. M., & Brooke, E. J. (2020). Court Operations during the COVID-19 Pandemic. *American Journal of Criminal Justice*, *45*(4), 743–758. https://doi.org/10.1007/s12103-020-09553-1

Barbosa, K. de A., Sousa, M. de M., Nacife, J. M., & Novak, S. S. (2022). Innovations in courts: Validation of a scale of technological innovation. *Revista de Gestão e Secretariado*, *13*(4), 2314–2336. https://doi.org/10.7769/gesec.v13i4.1474

Bardin, L. (2011). *Análise de conteúdo*. Lisboa: Edições, 70.

Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, *17*(1), 99–120. https://doi.org/10.1177/014920639101700108

Barysė, D. (2022). People's Attitudes towards Technologies in Courts. *Laws*, *11*(5). https://doi.org/10.3390/laws11050071

Barysė, D., & Sarel, R. (2023). Algorithms in the court: does it matter which part of the judicial decision-making is automated? *Artificial Intelligence and Law*. https://doi.org/10.1007/s10506-022-09343-6

Beauducel, A., & Yorck Herzberg, P. (2006). *On the Performance of Maximum Likelihood Versus Means and Variance Adjusted Weighted Least Squares Estimation in CFA. STRUCTURAL EQUATION MODELING* (Vol. 13).

Boly, V., Enjolras, M., Husson, S., Morel, L., Dupont, L., & Benis, L. (2022). Innovation Capacity of City Administrations: A Best Practices Approach. *Journal of Innovation Economics & Management*, *N° 38*(2), 169–198. https://doi.org/10.3917/jie.pr1.0121

Boukamel, O., & Emery, Y. (2017). Evolution of organizational ambidexterity in the public sector and current challenges of innovation capabilities. *Innovation Journal*, *22*(2).

Boukamel, O., Emery, Y., & Gieske, H. (2019). Towards an integrative framework of innovation capacity. *Innovation Journal*, *24*(3), 1–36.

Callens, C., & Verhoest, K. (2023). Unlocking the process of collaborative innovation - Combining mechanisms of divergence and convergence. *Public Management Review*. https://doi.org/10.1080/14719037.2023.2171096

Castro, M. P., & Guimarães, T. A. (2019). Dimensions of innovation in justice organizations: proposition of a theoretical methodological framework. *Cadernos EBAPE.BR*, *17*(1), 173–184. https://doi.org/10.1590/1679-395167960

Castro, M. P., & Guimaraes, T. A. (2020). Dimensions that influence the innovation process in justice organizations. *Innovation & Management Review*, *17*(2), 215–231. https://doi.org/10.1108/inmr-10-2018-0075

Chen, J., Walker, R. M., & Sawhney, M. (2020). Public service innovation: a typology. *Public Management Review*, *22*(11), 1674–1695. https://doi.org/10.1080/14719037.2019.1645874

Clausen, T. H., Demircioglu, M. A., & Alsos, G. A. (2020). Intensity of innovation in public sector organizations: The role of push and pull factors. *Public Administration*, *98*(1), 159–176. https://doi.org/10.1111/padm.12617

CNJ. (2021). *Resolução do Conselho Nacional de Justiça nº 395, de 07/06/2021. Institui a Política de Gestão da Inovação no âmbito do Poder Judiciário*.

CNJ. (2023). *Justiça em Números 2023*. Brasília.

Coelho, A. Z., Gregório, A., de Lima, C. M., Cestari, E. C., Loverra, E., Dourado, G., … Agune, R. (2019). *Inovação no Judiciário: Conceito, Criação e Práticas do Primeiro Laboratório de Inovação do Poder Judiciário*. São PAulo: Blucher.

Cohen, J. (2013). *Statistical power analysis for the behavioral sciences*. Routledge.

Comrey, A. L., & Lee, H. B. A. (2013). *A first course in factor analysis*. Psychology Press.

Cronin, P., Ryan, F., & Coughlan, M. (2008). Undertaking a literature review: a step-by-step approach. *British Journal of Nursing*, *17*(1), 38–43. https://doi.org/10.12968/bjon.2008.17.1.28059

Damásio, B. F. (2012). *Uso da análise fatorial exploratória em psicologia* (Vol. 11).

De Vries, H., Bekkers, V., & Tummers, L. (2016). Innovation in the public sector: A systematic review and future research agenda. *Public Administration*, *94*(1), 146–166. https://doi.org/10.1111/padm.12209

Del Giudice, M. (2022). The Square-Root Scree Plot: A Simple Improvement to a Classic Display. *OpenPsych*. https://doi.org/10.26775/OP.2022.11.19

Demura, M., & Klepka, D. (2021). Using Artificial Intelligence Algorithms in the Field of Criminal Judiciary: International Experience and Domestic Prospects. *Science and Innovation*, *17*(5), 95–102. https://doi.org/10.15407/scine17.05.095

Elsafty, A., & Yehia, A. (2023). Digital Transformation Challenges for Government Sector. *Business and Management Studies*, *9*(1), 11. https://doi.org/10.11114/bms.v9i1.6160

Favoreu, C., Maurel, C., Carassus, D., & Marin, P. (2019). Influence and Complementarity of Follow-on Managerial Innovations within a Public Organization. *Public Organization Review*, *19*(3), 345–365. https://doi.org/10.1007/s11115-018-0411-0

Fox, D., & Yamagata, H. (2022). Developing Court Capabilities and Insights through Data Conversion. *International Journal for Court Administration*, *13*(1). https://doi.org/10.36745/ijca.437

Frankenreiter, J., & Livermore, M. A. (2020). Computational methods in legal analysis. *Annual Review of Law and Social Science*, *16*, 39–57. https://doi.org/10.1146/annurev-lawsocsci-052720-121843

Gaspar, F. D. R., da Silva Abbad, G., & Rodrigues, C. M. L. (2021). Evidence of validity for a Health Teaching Skills Scale. *Psico-USF*, *26*(3), 403–416. https://doi.org/10.1590/1413-82712021260301

Gomes, A. O., Alves, S. T., & Silva, J. T. (2018). Effects of investment in information and communication technologies on productivity of courts in Brazil. *Government Information Quarterly*, *35*(3), 480–490. https://doi.org/10.1016/j.giq.2018.06.002

Gomes, A. O., Guimaraes, T. A., & de Souza, E. C. L. (2016). Judicial Work and Judges' Motivation: The Perceptions of Brazilian State Judges. *Law & Policy*, *38*(2), 162–176. https://doi.org/10.1111/lapo.12050

Gomes, A. O., & Moura, W. J. F. de. (2018). The concept of service co-production: proposal for application in the Brazilian Judiciary. *Cadernos EBAPE.BR*, *16*(3), 469–785. https://doi.org/10.1590/1679-395162832

Guimaraes, T. A., Gomes, A. O., & Guarido Filho, E. R. (2018). Administration of justice: an emerging research field. *RAUSP Management Journal*, *53*(3), 476–482. https://doi.org/10.1108/RAUSP-04-2018-010

Guimaraes, T. A., Guarido Filho, E. R., & Luz, B. B. de C. (2020). Courts as Organizations: Governance and Legitimacy. *BAR - Brazilian Administration Review*, *17*(4). https://doi.org/10.1590/1807-7692bar2020200032

Guimarães, T. de A., Odelius, C. C., Medeiros, J. J., Santana, J. A. V., de Aquino Guimarães, T., Odelius, C. C., … Santana, J. A. V. (2011). Management Innovation at the Brazilian Superior Tribunal of Justice. *The American Review of Public Administration*, *41*(3), 297–312. https://doi.org/10.1177/0275074010380449

Gulati, G., Cusack, A., Bogue, J., O'Connor, A., Murphy, V., Whelan, D., … Dunne, C. P. (2021). Challenges for people with intellectual disabilities in law enforcement interactions in Ireland; thematic analysis informed by 1537 person-years' experience. *International Journal of Law and Psychiatry*, *75*(January), 101683. https://doi.org/10.1016/j.ijlp.2021.101683

Gullmark, P. (2021). Do All Roads Lead to Innovativeness? A Study of Public Sector Organizations' Innovation Capabilities. *American Review of Public Administration*, (X). https://doi.org/10.1177/02750740211010464

Gullmark, P., & Clausen, T. H. (2023). In search of innovation capability and its sources in local government organizations: a critical interpretative synthesis of the literature. *International Public Management Journal*, 1–23. https://doi.org/10.1080/10967494.2022.2157917

Hagan, M. (2019). Participatory design for innovation in access to justice. *Daedalus*, *148*(1), 120–127. https://doi.org/10.1162/DAED_a_00544

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2009). Multivariate Data Analysis. *Vectors*. https://doi.org/10.1016/j.ijpharm.2011.02.019

Helfat, C. E., & Peteraf, M. A. (2003). The dynamic resource-based view: Capability lifecycles. *Strategic Management Journal*, *24*(10 SPEC ISS.), 997–1010. https://doi.org/10.1002/smj.332

Hernández-Nieto, R. A. (2002). *Contributions to Statistical Analysis*. Universidad de Los Andes, Mérida.

Hodson, D. (2019). The Role, Benefits, and Concerns of Digital Technology in the Family Justice System. *Family Court Review*, *57*(3), 425–433. https://doi.org/10.1111/fcre.12429

Howard, M. C. (2016). A Review of Exploratory Factor Analysis Decisions and Overview of Current Practices: What We Are Doing and How Can We Improve? *International Journal of Human-Computer Interaction*, *32*(1), 51–62. https://doi.org/10.1080/10447318.2015.1087664

Iliashenko, I., Papagiannis, F., Gazzola, P., Cherkas, N., & Grechi, D. (2023). Entrepreneurial Behaviour and Organisational Propensity to Innovate in a Public-Sector Context. *Journal of Entrepreneurship*. https://doi.org/10.1177/09713557231158239

Kajamaa, A., & Hurmelinna-Laukkanen, P. (2022). Organizational arrangements as a key to enhancing innovativeness and efficiency – analysis of a restructuring hospital in Finland. *BMC Health Services Research*, *22*(1). https://doi.org/10.1186/s12913-022-08376-6

Karpen, I. O., & Senova, M. (2021). Designing for Trust: Role and Benefits of Human-Centered Design in the Legal System. *International Journal for Court Administration*, *12*(3), 1–18. https://doi.org/10.36745/IJCA.422

Kim, M. Y., & Kim, S. W. (2022). Deriving Public Innovation Capacity: Evidence From the Korean Public Sector. *Frontiers in Psychology*, *13*. https://doi.org/10.3389/fpsyg.2022.898399

Kistemaker, L. (2021). Rechtwijzer and Uitelkaar.nl. Dutch Experiences with ODR for Divorce. *Family Court Review*, *59*(2), 232–243. https://doi.org/10.1111/fcre.12570

Knight, P. T. (2014). Where Next for EAP? *World Journal of English Language*, *4*(2), 1–6. https://doi.org/10.5430/wjel.v4n2p1

Kucharska, W., & Erickson, G. S. (2023). Tacit knowledge acquisition & sharing, and its influence on innovations: A Polish/US cross-country study. *International Journal of Information Management*, *71*. https://doi.org/10.1016/j.ijinfomgt.2023.102647

Lawson, B., & Samson, D. (2001). Developing Innovation Capability in Organisations: a Dynamic Capabilities Approach. *International Journal of Innovation Management*, *05*(03), 377–400. https://doi.org/10.1142/S1363919601000427

Le, P. B., & Lei, H. (2019). Determinants of innovation capability: the roles of transformational leadership, knowledge sharing and perceived organizational support. *Journal of Knowledge Management*, *23*(3), 527–547. https://doi.org/10.1108/JKM-09-2018-0568

Le, P. B., & Nguyen, D. T. N. (2023). Stimulating knowledge-sharing behaviours through ethical leadership and employee trust in leadership: the moderating role of distributive justice. *Journal of Knowledge Management*, *27*(3), 820–841. https://doi.org/10.1108/JKM-06-2021-0462

Lei, H., Leaungkhamma, L., & Le, P. B. (2020). How transformational leadership facilitates innovation capability: the mediating role of employees' psychological capital. *Leadership and Organization Development Journal*, *41*(4), 481–499. https://doi.org/10.1108/LODJ-06-2019-0245

Lewis, J. M., Ricard, L. M., & Klijn, E. H. (2018). How innovation drivers, networking and leadership shape public sector innovation capacity. *International Review of Administrative Sciences*, *84*(2), 288–307. https://doi.org/10.1177/0020852317694085

Li, C. H. (2016). Confirmatory factor analysis with ordinal data: Comparing robust maximum likelihood and diagonally weighted least squares. *Behavior Research Methods*, *48*(3), 936–949. https://doi.org/10.3758/s13428-015-0619-7

Lorenzo-Seva, U., Timmerman, M. E., & Kiers, H. A. L. (2011). The hull method for selecting the number of common factors. *Multivariate Behavioral Research*, *46*(2), 340–364. https://doi.org/10.1080/00273171.2011.564527

Lunardi, F. C., & Clementino, M. B. M. (2022). *Inovação Judicial: fundamentos e práticas para uma jurisdição de alto impacto*. Escola Nacional de Formação e Aperfeiçoamento de Magistrados - Enfam. https://doi.org/10.54795/isbn.978-65-88022-07-8

Ma, L. (2017). Political ideology, social capital, and government innovativeness: evidence from the US states. *Public Management Review*, *19*(2), 114–133. https://doi.org/10.1080/14719037.2016.1177108

Machado, M., Sousa, M., Rocha, V., & Isidro, A. (2018). Innovation in judicial services: a study of innovation models in labor courts. *Innovation and Management Review*, *15*(2), 155–173. https://doi.org/10.1108/INMR-04-2018-010

Magnusson, J., Päivärinta, T., & Koutsikouri, D. (2021). Digital ambidexterity in the public sector: empirical evidence of a bias in balancing practices. *Transforming Government: People, Process and Policy*, *15*(1), 59–79. https://doi.org/10.1108/TG-02-2020-0028

Mahibha, G., & Balasubramanian, P. (2020). A Critical Analysis of the Significance of the eCourts Information Systems in Indian Courts. *Legal Information Management*, *20*(1), 47–53. https://doi.org/10.1017/s1472669620000092

Meijer, A. (2019). Public Innovation Capacity: Developing and Testing a Self-Assessment Survey Instrument. *International Journal of Public Administration*, *42*(8), 617–627. https://doi.org/10.1080/01900692.2018.1498102

Mendonca, T. C., Dos Santos, N., & Varvakis, G. (2022). Knowledge management practices in the institutions of the Brazilian justice system. *Revista Digital de Biblioteconomia e Ciencia Da Informacao*, *20*. https://doi.org/10.20396/rdbci.v20i00.8668083

Mendoza-Silva, A. (2021). Innovation capability: a systematic literature review, *24*(3), 707–734. https://doi.org/10.1108/EJIM-09-2019-0263

Meričková, B. M., & Muthová, N. J. (2021). Innovative Concept of Providing Local Public Services Based on ICT. *NISPAcee Journal of Public Administration and Policy*, *14*(1), 135–167. https://doi.org/10.2478/nispa-2021-0006

Misca, G., Walker, J., & Kaplan, C. (2019). "Experts by Experience": The Involvement of Service Users and Families in Designing and Implementing Innovations in Family Justice. *Family Court Review*, *57*(3), 414–424. https://doi.org/10.1111/fcre.12430

Moraes, B. F., Lunardi, F. C., & Correia, P. M. A. R. (2023). Os Centros de Inteligência do Poder Judiciário e a Nova Governança Pública: Um Estudo de Caso. *Synesis*, *15*(1).

Mourão, L., Costa, R. B., da Silva Abbad, G., Legentil, J., Martins, L. B., & Sandall, H. (2023). A short scale for managerial support to teleworkers. *Psico-USF*, *28*(1), 165–177. https://doi.org/10.1590/1413-82712023280113

Nguyen, T. N., Shen, C. H., & Le, P. B. (2021). Influence of transformational leadership and knowledge management on radical and incremental innovation: the moderating role of collaborative culture. *Kybernetes*, (502). https://doi.org/10.1108/K-12-2020-0905

Nik Hashim, N. M. H., Hock Ann, Y., Ansary, A., & Xavier, J. A. (2022). Contingent Effects of Decision-making and Customer Centricity on Public-Sector Innovation Success. *Journal of Nonprofit & Public Sector Marketing*, *34*(1), 36–70. https://doi.org/10.1080/10495142.2020.1761000

OECD. (2018). *Oslo Manual 2018: Guidelines for Collecting, Reporting and Using Data on Innovation* (The Measurement of Scientific, Technological and Innovation Activities). OECD. https://doi.org/10.1787/9789264304604-en

Oliveira, L. F. de., & Santos, C. D. dos. (2019). Intended and unintended consequences of innovation adoption: open government data adoption by the Federal District of Brazil. *REAd. Revista Eletrônica de Administração (Porto Alegre)*, *25*(1), 1–25. https://doi.org/10.1590/1413-2311.214.80559

Oliveira, L. F., Silva Gomes, A., Enes, Y., Castelo Branco, T. V., Pires, R. P., Bolzon, A., & Demo, G. (2022). Path and future of artificial intelligence in the field of justice: a systematic literature review and a research agenda. *SN Social Sciences*, *2*(9), 180. https://doi.org/10.1007/s43545-022-00482-w

Pablo, A. L., Reay, T., Dewald, J. R., & Casebeer, A. L. (2007). Identifying, enabling and managing dynamic capabilities in the public sector. *Journal of Management Studies*, *44*(5), 687–708. https://doi.org/10.1111/j.1467-6486.2006.00675.x

Palmi, P., Corallo, A., Prete, M. I., & Harris, P. (2021). Balancing exploration and exploitation in public management: Proposal for an organizational model. *Journal of Public Affairs*, *21*(3). https://doi.org/10.1002/pa.2245

Paudel, K. P. (2020). Knowledge management practices in Nepalese Judiciary: a case of supreme court of Nepal. *International Journal of Law and Management*, *62*(5), 495–505. https://doi.org/10.1108/IJLMA-01-2020-0016

Penrose, E. (2009). *The Theory of the Growth of the Firm* (Fourth Edi). Oxford University Press.

Pereira, S. P. M., Correia, P. M. A. R., & Lunardi, F. C. (2022). Desafios na Implementação da Nova Gestão Pública na Judicatura Portuguesa: O Juiz Tradicional Versus o Juiz Gestor. *Humanidades & Inovação*, 9(19), 125-134.

Piening, E. P. (2013). Dynamic Capabilities in Public Organizations: A literature review and research agenda. *Public Management Review*. Taylor and Francis Ltd. https://doi.org/10.1080/14719037.2012.708358

Pulkkinen, M., Sinervo, L. M., & Kurkela, K. (2023). Premises for sustainability – participatory budgeting as a way to construct collaborative innovation capacity in local government. *Journal of Public Budgeting, Accounting and Financial Management*. https://doi.org/10.1108/JPBAFM-04-2022-0077

Quek Anderson, D. (2019). The convergence of ADR and ODR within the courts: the impact on access to justice. *Civil Justice Quarterly*, *38*(1), 126–143.

Raykov, T. (1997). Estimation of Composite Reliability for Congeneric Measures. *Applied Psychological Measurement*, *21*(2), 173–184. https://doi.org/10.1177/01466216970212006

Rêgo, M. C. B., Teixeira, J. A., & Da Silva Filho, A. I. (2019). The effects of coproduction on judicial conciliation results: Society's perception of an innovative service. *Revista de Administracao Publica*, *53*(1), 124–149. https://doi.org/10.1590/0034-761220170230

Schilke, O., Hu, S., & Helfat, C. E. (2018). Quo vadis, dynamic capabilities? A content-analytic review of the current state of knowledge and recommendations for future research. *Academy of Management Annals*, *12*(1), 390–439. https://doi.org/10.5465/annals.2016.0014

Schumpeter, J. A. (1934). *The theory of Economic Development*. Cambridge, Massachusetts: Harvard University Press.

Šipulová, K., Spáč, S., Kosař, D., Papoušková, T., & Derka, V. (2022). Judicial Self-Governance Index: Towards better understanding of the role of judges in governing the judiciary. *Regulation and Governance*, (December 2021). https://doi.org/10.1111/rego.12453

Sousa, W. G. de, Melo, E. R. P. de, Bermejo, P. H. D. S., Farias, R. A. S., & Gomes, A. O. (2019). How and where is artificial intelligence in the public sector going? A literature review and research agenda. *Government Information Quarterly*, *36*(4), 101392. https://doi.org/10.1016/j.giq.2019.07.004

Sousa, M. D. M., & Guimaraes, T. A. (2018). Resources, innovation and performance in labor courts in Brazil. *Revista de Administracao Publica*, *52*(3), 486–506. https://doi.org/10.1590/0034-761220170045

Sousa, M., & Guimarães, T. (2014). Inovação e desempenho na administração judicial: desvendando lacunas conceituais e metodológicas. *Innovation & Management Review*, *11*(2), 321. https://doi.org/10.5773/rai.v11i2.1373

Sung, H. C. (2020). Can Online Courts Promote Access to Justice? A Case Study of the Internet Courts in China. *Computer Law and Security Review*, *39*, 105461. https://doi.org/10.1016/j.clsr.2020.105461

Teece, D. (2014). The Foundations of Enterprise Performance: Dynamic and Ordinary Capabilities in an (Economic) Theory of Firms. *Academy of Management Perspectives*, *28*(4), 328–352. https://doi.org/10.5465/amp.2013.0116

Teece, D. (2016). Dynamic capabilities and entrepreneurial management in large organizations: Toward a theory of the (entrepreneurial) firm. *European Economic Review*, *86*, 202–216. https://doi.org/10.1016/j.euroecorev.2015.11.006

Teece, D., Pisano, G., & Shuen, A. (1997). Dynamic Capabilities and Strategic Management. *Strategic Management Journal*, *18*(7), 509–533. Retrieved from http://linkinghub.elsevier.com/retrieve/pii/B9780750670883500097

Teixeira, J. A., Rêgo, M. C. B., & Filho, A. I. da S. (2020). Innovation in justice: co-production, competence and user satisfaction in judicial mediation. *Revista de Administracao Publica*, *54*(3), 381–399. https://doi.org/10.1590/0034-761220190129x

Timeus, K., & Gascó, M. (2018). Increasing innovation capacity in city governments: Do innovation labs make a difference? *Journal of Urban Affairs*, *40*(7), 992–1008. https://doi.org/10.1080/07352166.2018.1431049

Timmerman, M. E., & Lorenzo-Seva, U. (2011). Dimensionality assessment of ordered polytomous items with parallel analysis. *Psychological Methods*, *16*(2), 209–220. https://doi.org/10.1037/a0023353

Torfing, J., Sørensen, E., & Røiseland, A. (2019). Transforming the Public Sector Into an Arena for Co-Creation: Barriers, Drivers, Benefits, and Ways Forward. *Administration and Society*, *51*(5), 795–825. https://doi.org/10.1177/0095399716680057

Torvinen, H., & Haukipuro, L. (2018). New roles for end-users in innovative public procurement: case study on user engaging property procurement. *Public Management Review*, *20*(10), 1444–1464. https://doi.org/10.1080/14719037.2017.1400581

Torvinen, H., & Jansson, K. (2022). Public health care innovation lab tackling the barriers of public sector innovation. *Public Management Review*. https://doi.org/10.1080/14719037.2022.2029107

Trivellato, B., Martini, M., & Cavenago, D. (2021). How Do Organizational Capabilities Sustain Continuous Innovation in a Public Setting? *American Review of Public Administration*, *51*(1), 57–71. https://doi.org/10.1177/0275074020939263

Wallace, A., & Laster, K. (2021). Courts in Victoria, Australia, During COVID: Will Digital Innovation Stick? *International Journal for Court Administration*, *12*(2), 1–19. https://doi.org/10.36745/IJCA.389

Wang, C. L., & Ahmed, P. K. (2007). Dynamic capabilities: A review and research agenda. *International Journal of Management Reviews*, *9*(1), 31–51. https://doi.org/10.1111/j.1468-2370.2007.00201.x

Weber, B., & Heidenreich, S. (2017). When and with whom to cooperate ? Investigating effects of cooperation stage and type on innovation capabilities and success. *Long Range Planning*, 1–17. https://doi.org/10.1016/j.lrp.2017.07.003

Wilden, R., Devinney, T. M., & Dowling, G. R. (2016). The Architecture of Dynamic Capability Research Identifying the Building Blocks of a Configurational Approach.

Academy   of   Management   Annals,   *10*(1),   997–1076. https://doi.org/10.1080/19416520.2016.1161966

Yuming, C., & Zhuoxin, L. (2022). The Impact of Inclusive Leadership on Employee Well-being: The Mediating Role of Organizational Trust. *Business and Management Studies*, *8*(1), 10. https://doi.org/10.11114/bms.v8i1.5568

Zuiderwijk, A., Chen, Y. C., & Salem, F. (2021). Implications of the use of artificial intelligence in public governance: A systematic literature review and a research agenda. *Government Information Quarterly*, *38*(3), 101577. https://doi.org/10.1016/j.giq.2021.101577

Zyzak, B., & Jacobsen, D. I. (2020). External managerial networking in meta-organizations. Evidence from regional councils in Norway. *Public Management Review*, *22*(9), 1347–1367. https://doi.org/10.1080/14719037.2019.1632922

Appendix A - Free and Informed Consent Form

Dear Sir or Madam,

We would like to count on your participation, as an interviewee, in an academic research that aims to identify factors associated with the innovation capacity in courts. The study is developed by me, Leonardo Ferreira de Oliveira, doctoral student at the Management Graduate Program - PPGA, at the University of Brasília - UnB, under the guidance of Professor Tomas de Aquino Guimaraes.

The interview is of great importance for us to better understand this important topic. In this sense, we ask for your authorization, if you agree with the general conditions of this term, described below:

1. The data from this research are confidential and used exclusively for academic purposes, with no names or specific positions being disclosed that may link the interviewee and the content, in accordance with the principles of the General Data Protection Law (LGPD), Law 13.709/2018, and according to ethical standards and norms in scientific research.
2. In the interview, only questions related to the objectives of the study will be asked in relation to the professional activity developed by the interviewee.
3. The interview will last approximately 30 minutes and will be recorded (audiovisual), with transcription, with the consent of the interviewee. However, the recording can be interrupted at any time and/or deleted at the end of the interview if the interviewee so wishes.
4. The results of the study may be published in meetings, conferences and/or scientific and academic journals, without identifying the research participants, as well as being sent to the interviewees, if they so request.

For clarification of doubts or additional comments, or knowing the results of this research, I am available by phone (xx) xxxxx-xxxx and e-mail: xxxxx@xxxx.com.

AUTHORIZATION (text to be read by the interviewer at the beginning of the interview)

I declare that I have read this FREE AND CLEAR CONSENT FORM, understood the information related to this research and voluntarily accepted to participate as an interviewee. I authorize recording and transcription during the interview.

Location, day/month/year

_____

Interviewee's Signature

(Signature can be replaced by verbal acceptance at the beginning of the interview)

Appendix B - Semi-structured Interview Guide

1. Introduce yourself, inform that the research is a step of the Doctoral Course in Administration at PPGA/UnB and express gratitude for the participation in the interview.
2. Check authorization of the Free and Informed Consent Term, by signing or reading followed by verbal acceptance.
3. Present the research objective of identifying factors associated with innovation capacity in courts.
4. Emphasize that research data are confidential and used exclusively for academic purposes, as well as highlighting that there are no right or wrong answers to the questions to be asked, regardless of the interviewee's perception of the topic.
5. Request permission to record and transcribe the interview.

Nº	Questions	Objectives
1	Could you comment on your experience working with innovation in courts?	Identify factors associated with innovation capacity in courts.
2	Could you think of an innovation in courts, which has participated in its development or adoption, describe it and comment on the main points for the success or failure of the case?	
3	How can leaders in judicial organizations create a favorable environment for the development and adoption of innovations?	Understand technical and behavioral skills of public managers who work in creating an organizational environment that pushes the development and adoption of innovations in courts.
4	What behaviors do you think are most relevant for the development and adoption of innovations in courts?	Understand behaviors (individual and organizational) relevant to the development and adoption of innovations in courts.
5	How does internal and external collaboration affect the development and adoption of innovations in courts?	Identify how the sharing of experiences and knowledge, formal and informal, internal and external to the organization, can support the development and adoption of innovations in courts.
6	In your view, which organizational resources are most relevant for the development and adoption of innovations in courts?	Understand which means (financial, material, human and technological) are most relevant to support the development and adoption of innovations in courts.
7	How does knowledge management (administrative practice involving the transfer of knowledge between participants within and between organizational units) contribute to the development and adoption of innovations in courts?	Understand how the management of experiences, values, information, and knowledge (tacit and explicit) can support the development and adoption of innovations in courts.
8	How does information technology contribute to the development and adoption of innovations in courts?	Understand how information technologies can enable superior analysis based on data and information, as well as develop platforms and new communication channels in support of the development and adoption of innovations in courts.
9	Anything else that you think is important to add, related to innovation in courts?	Give the interviewee the opportunity to comment on any aspect not covered by the previous questions.
10	Could you indicate judges or court clerks who are a reference in the subject of innovation in courts?	Raise other possible interviewees for the survey.

Appendix C - Preliminary Innovation capacity measurement scale in courts – 95 items (in native language Portuguese)

Liderança	Id	Item	Referência
Competências técnicas e comportamentais de gestores públicos que atuam na criação de uma cultura organizacional que privilegia o comprometimento e a motivação das equipes com a inovação, o processo decisório ágil, a visão sistêmica, a ponderação de interesses de partes envolvidas, o compromisso com a boa ética pública e a coordenação de ações e de estratégias que contribuam para o desenvolvimento e à implementação de inovações.	Li	**Quanto aos gestores do órgão em que trabalha, responda L1 a L23:**	
	Li1	Têm o hábito de ouvir novas ideias.	Castro e Guimaraes (2019; 2020)
	Li2	Apoiam projetos inovadores.	Castro e Guimaraes (2019; 2020)
	Li3	Viabilizam a continuidade dos projetos de inovação após trocas de gestão.	Castro e Guimaraes (2019; 2020)
	Li4	Estimulam a experimentação de novas formas de execução do trabalho.	Castro e Guimaraes (2019; 2020)
	Li5	Estimulam os indivíduos a desenvolverem novas competências.	Castro e Guimaraes (2019; 2020)
	Li6	Fomentam a busca de soluções de problemas da organização.	Castro e Guimaraes (2019; 2020)
	Li7	São tolerantes aos erros gerados durante o desenvolvimento e a implementação de inovações.	Castro e Guimaraes (2019; 2020); Gullmark (2021)
	Li8	Implementam mecanismos de estímulo à inovação.	Castro e Guimaraes (2019; 2020)
	Li9	Evitam o excesso de formalismo.	Boukamel e Emery (2017)
	Li10	Privilegiam a agilidade.	Boukamel e Emery (2017)
	Li11	Atuam para a criação de um ambiente organizacional favorável à inovação	Castro e Guimaraes (2019; 2020); Gullmark (2021)
	Li12	Incentivam constantemente o desenvolvimento e a implementação de novas ideias.	Gullmark (2021)
	Li13	Impulsionam a equipe rumo a um caminho específico.	Nik Hashim (2022);
	Li14	Coordenam ações que contribuem para o desenvolvimento e à implementação de inovações.	Nik Hashim (2022);
	Li15	Tomam decisões que contribuem para o desenvolvimento e à implementação de inovações.	Nik Hashim (2022);
	Li16	Utilizam abordagens que enfatizam a transformação por meio do desenvolvimento e da implementação de inovações.	Lewis et al. (2018b)
	Li17	Realizam escolhas estratégicas que modificam rotinas anteriores do comportamento organizacional.	Lewis et al. (2018b)
	Li18	Ponderam entre diferentes interesses e valores envolvidos no desenvolvimento e na implementação de inovações .	Meijer (2019); Palmi et al. (2021)
	Li19	Escolhem dentre opções aquela que mais contribui para os resultados desejados à sociedade.	Meijer (2019); Palmi et al. (2021)
	Li20	Têm conduta ética.	Meijer (2019)

	Li21	Atuam na formulação do planejamento com fixação de objetivos e metodologias para possibilitar inovações.	Meričková & Muthová (2021)
	Li22	Trabalham pela continuidade dos projetos de inovação mesmo após mudanças no corpo dirigente.	Castro e Guimaraes (2019; 2020)
	Li23	Fornecem suporte aqueles que assumem riscos na tentativa de desenvolver abordagens novas e promissoras para solução de problemas complexos	Meijer (2019)

Comportamento Inovador	Id	Item	Referência
Conjunto de comportamentos (tanto individuais como organizacionais) relevantes ao desenvolvimento e à implementação de inovações no setor público, englobando o compromisso organizacional com a mudança, a abertura para iniciativas de baixo para cima, a flexibilidade de estrutura e de arranjos de trabalho, o tratamento de riscos, o empoderamento dos servidores, a orientação para a solução do cliente, a geração de ideias novas, a experimentação e a mobilização para atitudes pró-inovação.	CI	**Quanto ao órgão em que trabalha, responda CI1 a CI22:**	
	CI1	Meus colegas de trabalho contribuem na minha motivação para inovar.	Castro e Guimaraes (2019; 2020)
	CI2	Meus colegas de trabalho participam no desenvolvimento das ideias inovadoras que tenho.	Castro e Guimaraes (2019; 2020)
	CI3	Há compromisso organizacional com a mudança.	Alnuaimi e Khan (2019)
	CI4	Há abertura para iniciativas surgirem de baixo para cima.	Boukamel e Emery (2017)
	CI5	Existe flexibilidade de arranjos de trabalho.	Boukamel e Emery (2017)
	CI6	O risco é tolerado.	Boukamel et al. (2019)
	CI7	O risco é monitorado.	Boukamel et al. (2019)
	CI8	Os processos de tomada de decisão permitem a criatividade e a experimentação	Boukamel et al. (2019)
	CI9	Os servidores têm apoio dos superiores para tentar com autonomia.	Clausen et al. (2020); Gullmark (2021); Palmi et al. (2021)
	CI10	A atitude de servidores de tentar é reconhecida pelos superiores.	Clausen et al. (2020); Gullmark (2021); Palmi et al. (2021)
	CI11	Há pouca hierarquia para experimentar.	Clausen et al. (2020); Gullmark (2021); Palmi et al. (2021)
	CI12	São utilizadas técnicas de verificação de soluções desenvolvidas em conjunto aos clientes	Nik Hashim (2022)
	CI13	Há orientação para a solução do cliente	Nik Hashim (2022)
	CI14	Existe flexibilidade em relação aos procedimentos formais para permitir a experimentação	Meijer (2019)
	CI15	São realizados treinamentos constantes encorajando a tomada de riscos calculados	Timeus e Gascó (2018)
	CI16	São realizados treinamentos constantes encorajando o aprendizado a partir de falhas	Timeus e Gascó (2018)
	CI17	Existe estímulo para contratações de novos colaboradores de forma a aplicar a heterogeneidade da equipe, englobando participantes de diferentes perfis e áreas de formação.	Timeus e Gascó (2018)

	CI18	A produção de novas ideias leva em conta os recursos disponíveis	Timeus e Gascó (2018)
	CI19	A produção de novas ideias leva em conta a estrutura interna da organização	Timeus e Gascó (2018)
	CI20	A produção de novas ideias leva em conta a colaboração com atores externos	Timeus e Gascó (2018)
	CI21	A estrutura é flexível, permitindo relações horizontais e não apenas na hierarquia de comando e controle.	Gullmark (2021); Lewis et al. (2018b); Timeus e Gascó (2018)
	CI22	Existem interações de-baixo-para-cima e de-cima-para-baixo relativas a inovações nas equipes.	Gullmark (2021); Lewis et al. (2018b); Timeus e Gascó (2018)

Colaboração	Id	Item	Referência
Compartilhamento de experiências e de conhecimentos, formais e informais, internos e externos à organização, compreendendo o desenvolvimento de conexões, a participação em redes, o processo sociocognitivo de sentido, o aumento da confiança, a interdisciplinaridade e a mobilização que sustentam o desenvolvimento e a implementação de inovações.	Co	**Quanto ao órgão em que trabalha, responda Co1 a Co19:**	
	Co1	Existe colaboração com outras organizações que impulsionam inovações em minha organização	Castro e Guimaraes (2019; 2020)
	Co2	Recursos humanos de outras organizações são aportados nos projetos de inovação da minha organização.	Castro e Guimaraes (2019; 2020)
	Co3	Recursos materiais de outras organizações são aportados nos projetos de inovação da minha organização.	Castro e Guimaraes (2019; 2020)
	Co4	Recursos tecnológicos de outras organizações são aportados nos projetos de inovação da minha organização.	Castro e Guimaraes (2019; 2020)
	Co5	A colaboração facilita a difusão de inovações de minha organização em outras organizações do Judiciário.	Castro e Guimaraes (2019; 2020)
	Co6	Há possibilidade para envolver diferentes atores (internos e externos) em projetos de inovação.	Boukamel e Emery (2017)
	Co7	Predomina a visão colaborativa em contraposição a visão departamental	Boukamel e Emery (2017)
	Co8	Conexões entre diferentes atores (internos e externos) são desenvolvidas em razão de projetos de inovação.	Boukamel et al. (2019)
	Co9	O conhecimento externo é utilizado no desenvolvimento e na implementação de inovações.	Boukamel et al. (2019); Clausen et al. (2020); Palmi et al. (2021); Timeus e Gascó (2018)
	Co10	Equipes compostas por colaboradores de diferentes unidades organizacionais são criadas para o desenvolvimento e a implementação de inovações.	Gullmark (2021)
	Co11	Há ênfase no compartilhamento de experiências e conhecimentos em toda a organização.	Gullmark (2021)
	Co12	Existe a busca sistemática de ideias de fora da organização para o desenvolvimento e a implementação de inovações.	Gullmark (2021); Meričková & Muthová (2021);
	Co13	Há o uso da cocriação de inovações com cidadãos e organizações voluntárias, públicas e privadas, locais e nacionais.	Gullmark (2021); Meričková & Muthová (2021);

	Co14	Usuários finais são consultados em busca de colaboração para o desenvolvimento de produtos, serviços e soluções.	Nik Hashim (2022)
	Co15	Há participação em redes sociais informais.	Lewis et al. (2018b)
	Co16	O aprimoramento das relações de confiança é viabilizado pela comunicação interpessoal.	Lewis et al. (2018b)
	Co17	São desenvolvidas ações frequentes visando ao aumento da confiança geral na organização.	Ma (2017)
	Co18	A construção de sentido conjunto é um elemento crítico no em projetos de inovação.	Magnusson et al. (2021)
	Co19	Existe estímulo para o engajamento colaborativo de atores relevantes ao processo de inovação.	Meijer (2019)

Recursos Organizacionais	**Id**	**Item**	**Referência**
Meios financeiros, materiais, humanos e tecnológicos necessários para sustentar o desenvolvimento e a implementação de inovações.	RO	**Quanto ao órgão em que trabalha, responda RO a RO4:**	
	RO1	A minha organização proporciona oportunidades para os indivíduos adquirirem novos conhecimentos.	Castro e Guimaraes (2019; 2020)
	RO2	A organização em que trabalho disponibiliza recursos tecnológicos para apoiar projetos inovadores.	Castro e Guimaraes (2019; 2020)
	RO3	Há disponibilidade de recursos financeiros para projetos de inovação.	Lewis et al. (2018); Clausen et al. (2020)
	RO4	Existe disponibilidade de recursos materiais, humanos e tecnológicos para projetos de inovação.	Timeus e Gascó (2018)

Gestão do Conhecimento	**Id**	**Item**	**Referência**
Gerenciamento de experiências, valores, informação e conhecimento (tácito e explícito), abrangendo o desenvolvimento e a manutenção de rotinas, processos e práticas da organização, o envolvimento organizacional, a formação recorrente de colaboradores, o uso de ferramentas e a obtenção e uso de novas ideias, informações e conhecimentos de forma a apoiar o	GC	**Quanto ao órgão em que trabalha, responda GC1 a GC10:**	
	GC1	Inovações anteriores são fonte de conhecimento para o desenvolvimento e a implementação de inovações.	Boukamel et al. (2019); Meričková & Muthová (2021); Nik Hashim (2022); Favoreu et al. (2019)
	GC2	Há o compartilhamento de experiências e conhecimentos em toda a organização por meio de múltiplas ferramentas digitais.	Gullmark (2021)
	GC3	Existem reuniões periódicas para o compartilhamento de experiências e conhecimentos sobre o processo de inovação.	Gullmark (2021)
	GC4	Há uma coordenação central do processo de inovação.	Gullmark (2021)
	GC5	Existe um apoio centralizado ao desenvolvimento e a implementação da inovação	Gullmark (2021)
	GC6	Os colaboradores recebem formação fornecida pela unidade de inovação	Gullmark (2021)
	GC7	São utilizadas ferramentas ao longo de todo o processo de desenvolvimento e implementação da inovação	Gullmark (2021)

desenvolvimento e a implementação de inovações.	GC8	Novas informações são aproveitadas.	Timeus e Gascó (2018)
	GC9	Documentos, rotinas, processos e práticas da organização são gerenciados de forma a aproveitar o conhecimento (tácito e explícito)	Timeus e Gascó (2018)
	GC10	Existem normas que moldam a ação e o entendimento dos colaboradores sobre como adquirir e utilizar novas ideias e conhecimentos	Timeus e Gascó (2018)

Tecnologia da Informação	Id	Item	Referência
Uso de tecnologias digitais de forma a habilitar análises superiores com base em dados e informações e a permitir o advento de novas plataformas e canais de comunicação para o desenvolvimento e a implementação de inovações.	TI	**Quanto ao órgão em que trabalha, responda TI1 a TI7:**	
	TI1	O mercado de tecnologia da informação é monitorado com foco na geração de inovações	Boukamel et al. (2019)
	TI2	Há ganhos de desempenho decorrentes da digitalização	Nik Hashim (2022)
	TI3	Existe um melhor aproveitamento de oportunidades decorrente da digitalização	Nik Hashim (2022)
	TI4	A tecnologia da informação é analisada segundo diferentes atores da inovação e seus múltiplos contextos	Magnusson et al. (2021)
	TI5	A tecnologia da informação é utilizada em desafios que envolvem a combinação entre problema-solução	Magnusson et al. (2021)
	TI6	A tecnologia da informação é utilizada de forma a permitir o acesso, o armazenamento e a análise de grande quantidade de dados e informações.	Timeus e Gascó (2018)
	TI7	A tecnologia da informação é utilizada para criar plataformas nas quais novos serviços podem ser gerados e entregues	Timeus e Gascó (2018)

Appendix D - Evaluation Criteria for the Innovation capacity measurement scale in courts – 37 items

Dear Evaluator,

We would like to count on your participation in an academic research that aims to identify factors associated with the innovation capacity in courts. The study is developed by me, Leonardo Ferreira de Oliveira, a doctoral candidate at the Management Graduate Program – PPGA at the University of Brasília - UnB, under the guidance of Professor Tomás de Aquino Guimarães.

At this stage of the research, we would like your assistance in examining the items that will make up the questionnaire for the Innovation Capacity Measurement Scale in Courts. The items presented in a preliminary version are the result of a literature review and qualitative research with judges and court clerks of the Judiciary. The objective is to improve the items for the next stage of the research.

The time required to complete the questionnaire is estimated at 15 minutes. Please do not share this link. This stage of the research is aimed at people selected with the profile to play the role of evaluators of the instrument.

Questions and comments can be directed to email leonardo.administrador@gmail.com.

Thank you in advance for your valuable collaboration.

Leonardo Oliveira – PhD student in Management.

Tomás de Aquino Guimarães – Professor-Advisor.

What is your professional role?

( ) Judge
( ) Civil servant
( ) I don't work in the judiciary
( ) I prefer not to inform

Instructions:

The items below constitute a preliminary version of the Innovation Capacity Measurement Scale in Courts.

The items were structured and grouped in relation to theoretical dimensions, each represented by a factor. In the table below, the first column informs the name and definition of each factor, while the other columns contain information about the items related to the factor.

I kindly ask you to evaluate, for each item, the clarity of the language, its practical pertinence and how relevant you consider the item to be as an explanatory content of the respective factor, using numbers from 1 to 5 (1-Low and 5-High). If you have suggestions for changes relating to the item, please indicate it in the last column.

Leadership	Id	Code	Item	Clarity (1-5)	Pertinence (1-5)	Relevance (1-5)	Suggestions for change
Technical and behavioral competencies of judges and judicial managers who work in creating an organizational culture that emphasizes team motivation, commitment, and coordination of actions and strategies that contribute to the development and adoption of innovations.	1	PL1	Leaders encourage the team to develop new skills.				
	2	PL2	Leaders are tolerant with errors generated during the development of innovations.				
	3	PL3	Leaders constantly encourage the development of new ideas.				
	4	PL4	Leaders make courageous strategic choices that positively change the organization's routines.				
	5	PL5	Leaders consider the different interests of parties involved in the development of innovations.				
	6	PL6	Leaders sponsor innovation.				
	7	PL7	Leaders are trained on innovation topics.				
Is there any important component not addressed in the items? If yes, which one?			**Item suggestion?**				

Team Behavior	Id	Code	Item	Clarity (1-5)	Pertinence (1-5)	Relevance (1-5)	Suggestions for change
Technical and behavioral skills of judges and court clerks relevant to the development and adoption of innovations, encompassing commitment to change, bottom-up initiative, user/citizen solution orientation, new ideas and experimentation.	8	PCE1	There is organizational commitment to change in my team.				
	9	PCE2	There is openness for initiatives to emerge from the bottom up in my organization.				
	10	PCE3	There is support from leaders for the team to act autonomously.				
	11	PCE4	The team verifies solutions developed together with end users.				
	12	PCE5	There is flexibility regarding formal procedures to allow for experimentation.				
	13	PCE6	There are spaces that allow the generation of				

				Clarity (1-5)	Pertinence (1-5)	Relevance (1-5)	Suggestions for change
			new ideas through horizontal relationships independent of the command and control hierarchy.				
Is there any important component not addressed in the items? If yes, which one?			**Item suggestion?**				

Collaboration	Id	Code	Item	Clarity (1-5)	Pertinence (1-5)	Relevance (1-5)	Suggestions for change
Sharing experiences and knowledge, both formal and informal, internal and external to the court, encompassing the development of connections, the sociocognitive process of meaning resulting from communication, interdisciplinarity, and the optimization of resources for the development and adoption of innovations.	14	PCo1	A collaborative vision and mutual help predominate in my organization.				
	15	PCo2	There is openness to involving different actors (internal and external) in innovation projects.				
	16	PCo3	Teams made up of court clerks from different organizational units are created to develop innovations.				
	17	PCo4	There is an emphasis on sharing experiences and knowledge across the organization.				
	18	PCo5	There are spaces where judges and court clerks discuss problems and solutions together.				
	19	PCo6	Users of judicial services are consulted in search of collaboration for the development of products, services and solutions.				
	20	PCo7	Collaboration is used to maximize team work and resource use.				
Is there any important component not addressed in the items? If yes, which one?			**Item suggestion?**				

Organizational Resources	Id	Code	Item	Clarity (1-5)	Pertinence (1-5)	Relevance (1-5)	Suggestions for change
Human, financial and technological resources necessary for the development and adoption of innovations.	21	PRO1	There are technological resources to support innovative projects in my organization.				
	22	PRO2	Financial resources are available for innovation projects.				
	23	PRO3	My team is trained in innovation methods, techniques and tools.				
	24	PRO4	My team has time to dedicate to innovation projects.				
	25	PRO5	My team is engaged in innovation activities.				
	26	PRO6	Financial constraints drive the search for innovations.				
Is there any important component not addressed in the items? If yes, which one?			**Item suggestion?**				

Knowledge Management	Id	Code	Item	Clarity (1-5)	Pertinence (1-5)	Relevance (1-5)	Suggestions for change
Management of experiences, values, information and knowledge (tacit and explicit), covering the search, development and maintenance of routines, processes and practices of the organization, training of court clerks, the use of tools necessary to obtain and use	27	PGC1	Formal documents and standards support the development and adoption of innovations in my organization.				
	28	PGC2	Periodic meetings are held to share experiences and knowledge about the innovation process.				
	29	PGC3	The team receives specific training provided by the innovation unit.				
	30	PGC4	The organization's documents, routines, processes and practices are managed in a way that takes advantage of existing knowledge.				

	Id	Code	Item	Clarity (1-5)	Pertinence (1-5)	Relevance (1-5)	Suggestions for change
of new ideas, information and knowledge in order to support the development and adoption of innovations.	**31**	PGC5	There are tools for obtaining new ideas, information and knowledge.				
Is there any important component not addressed in the items? If yes, which one?			**Item suggestion?**				

Information Technology	Id	Code	Item	Clarity (1-5)	Pertinence (1-5)	Relevance (1-5)	Suggestions for change
Use of information and communication technologies to support the decision-making process based on data and information and for the advent of new platforms and communication channels, aiming at the development and adoption of innovations.	**32**	PTI1	Information Technology is used in challenges that involve combining problem-solution.				
	33	PTI2	Information Technology is used to create platforms on which new services can be generated and delivered.				
	34	PTI3	Procedural systems that depend on Information Technology function properly.				
	35	PTI4	The data I need is available when I need it.				
	36	PTI5	Information Technology helps in automating work processes.				
	37	PTI6	Information Technology supports data analysis, allowing for better decision-making.				
Is there any important component not addressed in the items? If yes, which one?			**Item suggestion?**				

Appendix E - Content Validity Coefficient of the innovation capacity measurement scale in courts (in native language Portuguese)

Fator	Id	Item	Clareza	Pertinência	Relevância
Liderança - Competências técnicas e comportamentais de juízes e gestores do judiciário que atuam na criação de uma cultura organizacional que privilegia a motivação das equipes, o comprometimento e a coordenação de ações e de estratégias que contribuam para o desenvolvimento e a adoção de inovações.	PL1	As lideranças estimulam a equipe a desenvolverem novas competências.	0,891	1,000	1,000
	PL2	As lideranças são tolerantes com erros gerados durante o desenvolvimento de inovações.	0,909	0,982	0,982
	PL3	As lideranças incentivam constantemente o desenvolvimento de novas ideias.	0,891	1,000	1,000
	PL4	As lideranças realizam escolhas estratégicas corajosas que modificam positivamente rotinas da organização.	0,836	1,000	1,000
	PL5	As lideranças ponderam entre diferentes interesses de partes envolvidas no desenvolvimento de inovações.	0,836	0,982	0,982
	PL6	As lideranças patrocinam a inovação.	0,855	1,000	1,000
	PL7	As lideranças são capacitadas sobre temas de inovação.	0,855	1,000	1,000
Comportamento da Equipe - Competências técnicas e comportamentais de juízes e servidores do judiciário relevantes ao desenvolvimento e à adoção de inovações, englobando o compromisso com a mudança, a iniciativa de baixo para cima, a orientação para a solução do usuário/cidadão, a geração de ideias novas e a experimentação.	PCE1	Há compromisso organizacional com a mudança em minha equipe.	0,818	0,945	1,000
	PCE2	Há abertura para iniciativas surgirem de baixo para cima em minha organização.	0,891	1,000	1,000
	PCE3	Há apoio das lideranças para a equipe atuar com autonomia.	0,891	1,000	1,000
	PCE4	A equipe verifica as soluções desenvolvidas em conjunto com os usuários finais.	0,891	1,000	1,000
	PCE5	Existe flexibilidade em relação aos procedimentos formais para permitir a experimentação.	0,800	0,982	0,982
	PCE6	Existem espaços que permitem a geração de novas ideias por meio de relações horizontais independentes da hierarquia de comando e controle.	0,855	0,982	0,964
Colaboração - Compartilhamento de experiências e de conhecimentos, formais e informais, internos e externos ao tribunal, compreendendo o desenvolvimento de conexões, o processo sociocognitivo de	PCo1	Predomina a visão colaborativa e a ajuda mútua em minha organização.	0,891	1,000	1,000
	PCo2	Há abertura para envolver diferentes atores (internos e externos) em projetos de inovação.	0,873	1,000	1,000
	PCo3	São criadas equipes compostas por colaboradores de diferentes unidades organizacionais para o desenvolvimento de inovações.	0,873	1,000	1,000
	PCo4	Há ênfase no compartilhamento de experiências e conhecimentos em toda a organização.	0,855	1,000	1,000

sentido decorrente da comunicação, a interdisciplinaridade e a otimização de recursos para o desenvolvimento e a adoção de inovações.	PCo5	Existem espaços em que juízes e servidores discutem problemas e soluções conjuntamente.	0,873	1,000	1,000
	PCo6	Os usuários dos serviços judiciais são consultados em busca de colaboração para o desenvolvimento de produtos, serviços e soluções.	0,818	1,000	1,000
	PCo7	A colaboração é utilizada de forma a maximizar o trabalho da equipe e o uso de recursos.	0,855	1,000	1,000
Recursos Organizacionais - Recursos humanos, financeiros e tecnológicos necessários ao desenvolvimento e a adoção de inovações.	PRO1	Há recursos tecnológicos para apoiar projetos inovadores em minha organização.	0,873	1,000	1,000
	PRO2	Há disponibilidade de recursos financeiros para projetos de inovação.	0,927	1,000	1,000
	PRO3	Minha equipe é capacitada em métodos, técnicas e ferramentas de inovação.	0,818	1,000	1,000
	PRO4	Minha equipe tem tempo para se dedicar a projetos de inovação.	0,836	0,927	0,927
	PRO5	Minha equipe é engajada em atividades de inovação.	0,873	1,000	1,000
	PRO6	Restrições financeiras impulsionam a busca por inovações.	0,927	0,982	0,982
Gestão do Conhecimento - Gerenciamento de experiências, valores, informação e conhecimento (tácito e explícito), abrangendo a busca, o desenvolvimento e a manutenção de rotinas, processos e práticas da organização, a capacitação de colaboradores, o uso de ferramentas necessárias à obtenção e uso de novas ideias, informações e conhecimentos, de forma a apoiar o desenvolvimento e a adoção de inovações.	PGC1	Documentos e normas formais sustentam o desenvolvimento e a adoção de inovações em minha organização.	0,891	1,000	1,000
	PGC2	Reuniões periódicas são realizadas para o compartilhamento de experiências e conhecimentos sobre o processo de inovação.	0,855	1,000	1,000
	PGC3	A equipe recebe formação específica provida pela unidade de inovação.	0,818	1,000	1,000
	PGC4	Documentos, rotinas, processos e práticas da organização são gerenciados de forma a aproveitar o conhecimento já existente.	0,855	1,000	1,000
	PGC5	Existem ferramentas para obtenção de novas ideias, informações e conhecimentos.	0,836	1,000	1,000
Tecnologia da Informação - Uso de tecnologias de informação e comunicação para apoio ao processo de tomada de decisão com base em dados e informações e para o advento de novas	PTI1	A Tecnologia da Informação é utilizada em desafios que envolvem a combinação entre problema-solução.	0,909	1,000	1,000
	PTI2	A Tecnologia da Informação é utilizada para criar plataformas nas quais novos serviços podem ser gerados e entregues.	0,891	1,000	1,000
	PTI3	Os sistemas processuais que dependem de Tecnologia da Informação funcionam adequadamente.	0,909	1,000	1,000

plataformas e canais de comunicação, visando o desenvolvimento e a adoção de inovações.	PTI4	Os dados de que necessito se encontram disponíveis quando preciso deles.	0,927	1,000	1,000
	PTI5	A Tecnologia da Informação auxilia na automatização de processos de trabalho.	0,927	1,000	1,000
	PTI6	A Tecnologia da Informação suporta a análise de dados permitindo uma melhor de tomada de decisão.	0,927	1,000	1,000

Appendix F - Innovation capacity measurement scale in courts - survey

Innovation Capacity in Courts

We would like to invite you to participate in an academic research project aimed at identifying factors associated with innovation capacity in courts. The study is being conducted by Leonardo Ferreira de Oliveira, a doctoral student in the Management Graduate Program (PPGA) at the University of Brasília - UnB, under the guidance of Professor Ph.D. Tomas de Aquino Guimaraes.

Innovation capacity in the courts can be defined as the integration of resources and the assimilation of new knowledge for the continuous transformation of ideas into new services, products, and processes for the benefit of the organization and its stakeholders.

It is estimated that it will take about 7 minutes to complete the questionnaire. The target audience for this research includes Judges and court clerks. It is important to note that there are no right or wrong answers. What matters is collecting your sincere opinions on the research items.

The data from this research are confidential and will be used exclusively for academic purposes. Names, biographical data, or functional information that could link participants to the content will not be disclosed, in accordance with the principles of the General Data Protection Law (LGPD - Law 13.709/2018) and ethical standards and norms in scientific research.

Your participation is voluntary, and there will be no rewards or disadvantages. The results of this research will be accessible after the doctoral thesis defense, as it will be made available in the public repository of the University of Brasília - UnB.

If you have any questions or comments, please feel free to contact us at [email address].

We sincerely thank you in advance for your valuable contribution.

Leonardo Ferreira de Oliveira – Doctoral Student in Administration.

Tomás de Aquino Guimarães – Professor and Advisor.

1) Research items (presented randomly)

Answer the following items:

Use the following scale:
1 – Strongly Disagree
2 – Partially Disagree
3 – Neither agree nor disagree
4 – I partially agree
5 – Totally Agree

Id	Item
1	The leadership in my organization deals appropriately with errors that occur during the development of innovations.
2	The leadership constantly encourages the development of new ideas in my organization.
3	The leadership makes decisions that positively change the organization's routines.
4	In my organization, the leadership assesses the different interests of the parties involved in innovation development.
5	The leadership is trained in innovation topics in my organization.
6	The team I work with is committed to innovation.
7	There is openness for initiatives to emerge from the bottom up in my organization.
8	Innovative solutions developed in the unit where I work are verified jointly with end users.
9	There is flexibility to allow experimentation in the activities I perform.
10	In my organization there are opportunities for generating new ideas through horizontal relationships independent of hierarchy.
11	In my organization, there is openness to involve different external actors in innovation projects.
12	Teams composed of court clerks from different organizational units are usually created for the development of innovations.
13	In my organization there are spaces where judges and court clerks discuss problems and solutions together.
14	In my organization, citizens are consulted in search of collaboration for the development of new products, services, and solutions.
15	Collaboration is used to maximize the results of my working team.
16	There are technological resources to support innovative projects in my organization.
17	In my organization, financial resources are available for innovation projects.
18	The people in my working team have time to dedicate to innovation projects.
19	The people in my working team are engaged in innovation activities.
20	Financial constraints drive the search for innovations in my organization.

21	Formal documents and standards underpin the development and adoption of innovations in my organization.
22	Periodic meetings are held to share experiences and knowledge about the innovation process in my organization.
23	My working team receives training on topics related to innovation.
24	Documents, routines, processes, and practices of the organization are managed to take advantage of existing knowledge.
25	There are tools in my organization for obtaining new ideas, information, and knowledge.
26	In my organization, information technology is used in challenges that involve the combination of problem-solution.
27	In my organization information technology is used to create platforms on which new services can be generated and delivered.
28	The data I need is available when I require it.
29	Information technology assists in the automation of work processes.
30	Information technology is used to improve decision-making in my organization.

2) Respondent Profile

Now that you have completed the questionnaire, we would like to collect some of your biographical and functional data. These data are intended to analyze possible similarities and differences in responses among research participants, maintaining their anonymity.

What is the Federation Unit - UF in which you work?

List with the 27 units of the federation and the Federal District as a single choice + I prefer not to answer

How old are you?

List numbered from 1 to 100 + I prefer not to answer

What gender do you most identify with?

( ) Female
( ) Male
( ) Prefer not to inform
( ) Other (open field)

What is your education level? (full level)

( ) High school
( ) University graduate
( ) Postgraduate studies
( ) Master's degree
( ) Doctorate degree
( ) I prefer not to answer

What is your professional role in the Judiciary?

( ) Judge
( ) Civil servant
( ) I prefer not to answer

How long have you served in the Judiciary? (in complete years, if less than one year indicate one)

List with number 1 to 100 + I prefer not to answer

Do you currently hold a commissioned position?

( ) Yes (commissioned position FC)
( ) Yes (commissioned position CJ)
( ) No
( ) I prefer not to answer
( ) Not applicable

In what grade of jurisdiction is your work unit located?

( ) First degree
( ) Second degree
( ) Third degree
( ) Work on a Board
( ) I do not know how to answer
( ) I prefer not to inform

In what court or jurisdiction is your work unit located?

A drop down single-choice list containing 91 courts and 3 councils + Prefer not to answer

Appendix G - Innovation capacity measurement scale in courts - survey (in native language Portuguese)

Capacidade de Inovação no Judiciário

Gostaríamos de contar com sua participação em pesquisa acadêmica que visa identificar fatores associados à capacidade de inovação no Judiciário. O estudo é desenvolvido por Leonardo Ferreira de Oliveira, doutorando do Programa de Pós-Graduação em Administração – PPGA da Universidade de Brasília - UnB, sob a orientação do Professor Doutor Tomás de Aquino Guimarães.

A capacidade de inovação no Judiciário pode ser definida como a integração entre recursos e a assimilação de novos conhecimentos para a transformação contínua de ideias em novos serviços, produtos e processos para o benefício da organização e de suas partes interessadas.

Estima-se em 7 minutos o tempo necessário para preenchimento do questionário. O público-alvo da pesquisa são Juízas e Juízes, Servidoras e Servidores do Judiciário. Ressalta-se que não há respostas certas ou erradas. O importante é coletar sua opinião sincera a respeito dos itens de investigação.

Os dados desta pesquisa são confidenciais e serão utilizados exclusivamente para fins acadêmicos, não sendo divulgados nomes nem dados biográficos ou funcionais que possam vincular o participante da pesquisa e o conteúdo, consoante os princípios da Lei Geral de Proteção de Dados – LGPD (Lei 13.709/2018), e conforme padrões e normas de ética em pesquisa científica.

Sua participação é voluntária, não havendo qualquer prêmio ou prejuízo. Os resultados desta pesquisa poderão ser acessados após a defesa da tese de doutorado, uma vez que esta ficará disponível em repositório público da Universidade de Brasília – UnB.

Dúvidas e comentários podem ser direcionados ao email: .

Agradecemos antecipadamente por sua valiosa colaboração.

Leonardo Ferreira de Oliveira – Doutorando em Administração.

Tomás de Aquino Guimarães – Professor-Orientador.

1) Itens da pesquisa (apresentados de forma randômica)

Responda os itens a seguir:

Utilize a seguinte escala:

1 – Discordo totalmente
2 – Discordo parcialmente
3 – Nem concordo e nem discordo
4 – Concordo parcialmente
5 – Concordo totalmente

Id	Item
1	As lideranças de minha organização lidam de forma adequada com erros ocorridos durante o desenvolvimento de inovações.
2	As lideranças incentivam constantemente o desenvolvimento de novas ideias em minha organização.
3	As lideranças tomam decisões que modificam positivamente rotinas da organização.
4	Em minha organização as lideranças avaliam os diferentes interesses de partes envolvidas no desenvolvimento de inovações.
5	As lideranças são capacitadas sobre temas de inovação em minha organização.
6	Há compromisso com a inovação na equipe em que trabalho.
7	Há abertura para iniciativas surgirem de baixo para cima em minha organização.
8	As soluções inovadoras desenvolvidas na unidade em que trabalho são verificadas conjuntamente com os usuários finais.
9	Existe flexibilidade para permitir a experimentação nas atividades que desempenho.
10	Em minha organização existem oportunidades para a geração de novas ideias por meio de relações horizontais independentes de hierarquia.
11	Em minha organização há abertura para envolver diferentes atores externos em projetos de inovação.
12	Usualmente são criadas equipes compostas por colaboradores de diferentes unidades organizacionais para o desenvolvimento de inovações.
13	Em minha organização existem espaços em que juízes e servidores discutem problemas e soluções conjuntamente.
14	Em minha organização os cidadãos são consultados em busca de colaboração para o desenvolvimento de novos produtos, serviços e soluções.
15	A colaboração é utilizada de forma a maximizar os resultados da equipe em que trabalho.
16	Há recursos tecnológicos para apoiar projetos inovadores em minha organização.
17	Em minha organização há disponibilidade de recursos financeiros para projetos de inovação.
18	As pessoas da unidade em que trabalho têm tempo para se dedicar a projetos de inovação.
19	As pessoas da unidade em que trabalho são engajadas em atividades de inovação.
20	Restrições financeiras impulsionam a busca por inovações em minha organização.
21	Documentos e normas formais sustentam o desenvolvimento e a adoção de inovações em minha organização.
22	Reuniões periódicas são realizadas para o compartilhamento de experiências e conhecimentos sobre o processo de inovação em minha organização.

23	A equipe de que faço parte recebe capacitação sobre temas relacionados à inovação
24	Documentos, rotinas, processos e práticas da organização são gerenciados de forma a aproveitar o conhecimento já existente.
25	Existem ferramentas em minha organização para obtenção de novas ideias, informações e conhecimentos.
26	Em minha organização a tecnologia da informação é utilizada em desafios que envolvem a combinação entre problema-solução.
27	Em minha organização a tecnologia da informação é utilizada para criar plataformas nas quais novos serviços podem ser gerados e entregues.
28	Os dados de que necessito se encontram disponíveis quando preciso deles.
29	A tecnologia da informação auxilia na automatização de processos de trabalho.
30	A tecnologia da informação é utilizada visando uma melhor tomada de decisão em minha organização.

2)   Perfil do Respondente

Agora que você já completou o questionário, gostaríamos de coletar alguns de seus dados biográficos e funcionais. Esses dados têm como finalidade analisar possíveis semelhanças e diferenças de respostas entre os participantes da pesquisa, mantido o anonimato destes.

Qual a Unidade da Federação - UF em que você trabalha?

Lista com as 27 unidades da federação e o Distrito Federal como opção de escolha única + prefiro não responder

Qual a sua idade?

Lista com número de 1 a 100 + prefiro não responder

Com que gênero você mais se identifica?

( ) Feminino
( ) Masculino
( ) Prefiro não informar
( ) Outro (campo aberto)

Qual seu grau de escolaridade? (nível completo)

( ) Ensino médio
( ) Graduação

( ) Pós-graduação
( ) Mestrado
( ) Doutorado
( ) prefiro não responder

Qual sua atuação profissional no Judiciário?

( ) Juiza ou Juiz
( ) Sevidora ou Servidor
( ) Prefiro não informar

Você tem quanto tempo de serviço no Judiciário? (em anos completos, se menos de um ano indique um)

Lista com número de 1 a 100 + prefiro não responder

Você ocupa atualmente função comissionada ou cargo em comissão?

( ) Sim (função comissionada)
( ) Sim (cargo em comissão)
( ) Não
( ) Prefiro não informar
( ) Não se aplica

Em qual grau de jurisdição está localizada sua unidade de trabalho?

( ) Primeiro grau
( ) Segundo grau
( ) Terceiro grau
( ) Trabalho em um Conselho
( ) Não sei responder
( ) Prefiro não informar

Qual seu principal vínculo institucional?

Lista suspensa de escolha única contendo 91 tribunais e 3 conselhos + Prefiro não responder