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INNOVATION IN URBAN POLICY: THE EMERGENCE OF I-LABS AS INSTRUMENTS OF MANAGEMENT AND GOVERNANCE

INOVAÇÃO EM POLÍTICA URBANA: A EMERGÊNCIA DOS I-LABS COMO INSTRUMENTOS DE GESTÃO E GOVERNANÇA

INOVAÇÃO EM POLÍTICA URBANA: LA EMERGENCIA DE LOS I-LABS COMO INSTRUMENTOS DE GESTIÓN Y GOBERNANZA

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RESUMO:

O artigo explora a ascensão dos laboratórios de inovação (i-labs) como instrumentos para inovação em política urbana, abordando os desafios intricados das cidades modernas, como desigualdade, degradação ambiental e restrições fiscais. A partir de uma análise institucional, o estudo examina 33 i-labs em 30 cidades globais, ressaltando seu papel na experimentação de abordagens colaborativas e ágeis na formulação de políticas públicas urbanas. Com uso de design thinking e métodos experimentais, esses laboratórios facilitam a integração entre governo e sociedade, criando um ambiente favorável ao desenvolvimento de novas políticas urbanas. Os resultados indicam que, apesar de muitos i-labs terem uma vida útil limitada, alguns alcançam estabilidade ao se institucionalizarem, assegurando a continuidade de suas práticas. Conclui-se que esses laboratórios podem ser instrumentos estratégicos para uma governança urbana mais participativa e socialmente responsiva, contribuindo para políticas urbanas localmente adequadas e fortalecendo a capacidade dos governos locais de enfrentar crises contemporâneas.

PALAVRAS-CHAVE: Laboratórios de Inovação Urbana; Governança Colaborativa; Inovação em Políticas Públicas; Design Thinking no Setor Público; Gestão Urbana Adaptativa; Sustentabilidade Institucional em Governos Locais.

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ABSTRACT:

The article explores the rise of innovation laboratories (i-labs) as tools for innovation in urban policy, addressing the complex challenges of modern cities, such as inequality, environmental degradation, and fiscal constraints. The study uses institutional analysis to examine 33 i-labs across 30 global cities, revealing their role in experimenting with collaborative and agile approaches in urban public policy formulation. Using design thinking and experimental methods, these laboratories facilitate integrating government and society, creating an environment conducive to innovation in urban policies. The results indicate that, although many i-labs have a limited lifespan, some achieve stability by becoming institutionalized, ensuring the continuity of their practices. In conclusion, i-labs can be strategic instruments for more participatory and socially responsive urban governance, contributing to locally tailored urban policies and strengthening local governments' capacity to address contemporary crises.

KEYWORDS: *Urban Innovation Laboratories; Collaborative Governance; Public Policy Innovation; Design Thinking in the Public Sector; Adaptive Urban Management; Institutional Sustainability in Local Governments.*

RESUMEN:

El artículo explora el ascenso de los laboratorios de innovación (i-labs) como herramientas para la innovación en política urbana, abordando los complejos desafíos de las ciudades modernas, tales como la desigualdad, la degradación ambiental y las restricciones fiscales. A partir de un análisis institucional, el estudio examina 33 i-labs en 30 ciudades globales, resaltando su papel en la experimentación de enfoques colaborativos y ágiles en la formulación de políticas públicas urbanas. Con el uso de design thinking y métodos experimentales, estos laboratorios facilitan la integración entre gobierno y sociedad, creando un ambiente propicio para la innovación en políticas urbanas. Los resultados indican que, aunque muchos i-labs tienen una vida útil limitada, algunos logran estabilidad al institucionalizarse, asegurando la continuidad de sus prácticas. Se concluye que los i-labs pueden ser herramientas estratégicas para una gobernanza urbana más participativa y socialmente responsiva, contribuyendo a políticas urbanas localmente adecuadas y fortaleciendo la capacidad de los gobiernos locales para enfrentar crisis contemporáneas.

PALABRAS CLAVE: *Laboratorios de Innovación Urbana; Gobernanza Colaborativa; Innovación en Políticas Públicas; Design Thinking en el Sector Público; Gestión Urbana Adaptativa; Sostenibilidad Institucional en Gobiernos Locales.*

INTRODUCTION

Urban managers worldwide currently face a "perfect storm" of increasingly intricate and interconnected challenges, including persistent, interlinked issues such as poverty, inequality, fiscal austerity, population growth, aging, resource scarcity, environmental degradation, climate change, and security threats (CHATTERTON et al. 2018). Simultaneously, in recent decades, reforms have transformed local governments from centralized organizations to decentralized and structurally dispersed arenas, granting greater autonomy to provide services such as public transportation, water supply, health, and social welfare (LEIXNERING 2021).

Addressing these intricate issues requires an ethos of innovation. However, introducing innovative practices into entities operating urban policies is challenging due to the public sector's natural risk aversion, which operates in an environment resistant to experimentation. This aversion has fostered growing concern among public administrators and urban managers about the potential impacts of failures and accountability dynamics (POLLITT 2011), further intensified by political and media scrutiny of unsuccessful policies (TONURIST et al. 2015).

In this context, urban management, anchored in bureaucratic and legal accountability mechanisms, strongly influences decision-making, particularly in urban planning led by local governments (SCHOLL & KEMP 2016). This bureaucratic apparatus favors legitimacy through legal compliance, emphasizing safety over effectiveness and prioritizing procedural security over citizen-centered solutions. Altshuler and Behn (1997) argue that innovation thrives through learning from failures. While the private sector often embraces this iterative approach, the strict controls within the public sector intensify risk aversion, discouraging managers from implementing innovations for urban policies (BORINS 2006). Nevertheless, public organizations are increasingly aware of the limitations of their socio-legal context and recognize the need for tools to address the complexity of urban policies and foster sustainable innovation (BACLIJA 2013; BUCK 2017; SILVA & PROCOPIUCK 2019).

This scenario has sparked an academic debate on the need to "do things differently," with change often presented as imperative for the public sector (BUCK 2017; CAVALCANTE 2017). Within this debate, local governance reclaims a central role, with authors such as Healey (2006), Mäntysalo (2018), Schmitt (2018), and Granqvist (GRANQVIST 2021) asserting that the governance of urban policies remains a key theme for those seeking to reform government and urban planning. Thus, local governments emerge as ideal spaces, "strategic entry points," for innovation through their policies sector (ROTH 2023). The new municipalism movement exemplifies this phenomenon,

introducing various new practices, political subjectivities, strategies, and organizational forms (RUSSELL 2023).

In this context, this article seeks to contribute to the debate by examining the global proliferation of innovation labs (i-labs) in cities across four continents, highlighting them as essential tools for innovative practices in urban management and policy. Based on the premise that innovation in management practices drives urban policy improvements, the article explores how i-labs represent a new organizational form and introduce agile, experimental methods that enable more responsive urban planning and management (MCGANN et al. 2018). This approach frames urban planning and management as an articulated set of public policies designed to respond to the specific challenges of each urban context. This discussion aligns with the right to the city as i-labs create space for social participation and collaboration between government and civil society, echoing Scholl and Kemp (2016). reflections on the importance of governance that integrates diverse sectors and actors.

To achieve these objectives, the article adopts an institutional perspective that considers the organizational structure and impact of i-labs in strengthening governmental capacities (WILLIAMSON 2015; TIMEUS & GASCÓ 2018). It also incorporates concepts from public policy studies, urban management, and design to assess the diversity of configurations and missions of these labs. This analysis reveals how i-labs have been used to test and implement new governance approaches, emphasizing the flexibility and adaptability needed to overcome barriers to innovation in the public sector (BORINS 2006).

THEORETICAL AND CONCEPTUAL FRAMEWORK OF INNOVATION LABORATORIES IN URBAN POLICY

The following subsections present a theoretical and conceptual analysis of the trajectory, structure, and contribution of innovation laboratories (i-labs) to urban policies, divided into three main sections. First, the origin and evolution of i-labs in the academic context are examined, highlighting various interpretations and definitions of their role and purpose in public administration over time. Next, the institutional role of these laboratories is explored, understanding them as artifacts operating within complex networks, where legitimacy and innovation are articulated through processes of institutionalization and collaboration. Finally, the use of design and design thinking in public policy formulation is addressed, demonstrating how these methods aid in solving intricate issues and adapting urban management practices.

Tracing the Trajectory: The Evolution of I-Labs in Academic Literature

The phenomenon of innovation labs in the public sector remains underexplored by political scientists (MCGANN et al. 2018). This might explain why their

nature remains ambiguous in academic literature. Descriptions vary: some see them as agile organizations (TONURIST et al. 2015), others as hybrid entities (WILLIAMSON 2015), or as platforms for experimentation in collaborative governance (ZIVKOVIC 2018). Some interpret them as innovative organizational structures in the public sector (TIMEUS & GASCÓ 2018), while others define them as entities that advance methodologies for broad stakeholder engagement in urban policy design (WHICHER & CRICK 2019).

This diversity of terms further adds to conceptual imprecision. A literature review reveals varied nomenclature, including “change lab,” “city lab,” “civic innovation lab,” “co-creation hub,” “design lab,” “governance lab,” “government innovation lab,” “innovation team” (i-team), “policy lab,” among others (MCGANN et al. 2018). However, the lab concept remains consistent, indicating a historical continuity in public administration. For example, in the 1990s, the Clinton administration used the term “reinvention lab” when launching the National Partnership for Reinventing Government.

The Reinvention Labs program was formally established in 1993 when Vice President Gore requested that heads of departments and independent agencies designate programs or units as “laboratories for reinventing government.” This title did not confer formal authority but conveyed to stakeholders the legitimacy of change efforts. By 1994, around 140 reinvention labs were distributed across 28 departments and agencies (THOMPSON 2000).

Innovation labs address, in part, the barriers to innovation in urban policies. The idea is that the skills and mindsets needed for systematic city innovation differ from those required to maintain stable operations and deliver the daily services that characterize public service routines (CARSTENSEN & BASON 2012). At the institutional level, the literature reveals varied operational structures. Some i-labs function as units within government departments; others operate directly in executive departments or collaboration with government agencies or public institutions. Some i-labs operate as NGOs contracted to foster innovation within the public sector (MCGANN et al. 2018).

A common feature among i-labs is their hybrid position, strategically situated at the intersection of government and society. This position partly enables them to circumvent the rigid bureaucratic logic of the administrative apparatus, creating space to experiment with new approaches (SCHOLL & KEMP 2016). Being at the boundary is essential for accessing and disseminating new knowledge, operating through networks, partnerships, alliances, and collaborations that cross-sectoral boundaries and integrate resources from political, academic, and media spheres (WILLIAMSON 2015).

On the technical level, the role of i-labs in building innovation capacity within cities lies in establishing a separate organizational structure where innovation can be explored without disrupting the traditional bureaucratic organization.

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This makes i-labs a practical and effective way for governments and public managers to respond to external pressures for "more innovation" without resorting to large-scale structural reforms (TIMEUS & GASCÓ 2018). Accordingly, municipal i-labs become environments of experiential learning conducive to new forms of governance (SCHOLL & KEMP 2016). The literature emphasizes their capacity for knowledge dissemination, emphasizing the importance of organizing and managing contributions from all external knowledge sources (SCOZZI et al. 2017).

Within the organizational realm of i-labs, the "ubiquity" of design thinking is also observed. Applying design thinking approaches to public policy formulation is central for many i-labs, with some proponents arguing that the role of these labs is to foster design thinking as a tool for developing and formulating urban policies (MCGANN et al. 2018). Design thinking is imagining what does not yet exist and materializing it as a new, intentional addition to the real world (ZIVKOVIC 2018).

Moreover, several labs are at the forefront of using digital technologies, big data, and design methods, including design thinking, agile methodologies, user ethnography, and data mining (WILLIAMSON 2015). However, technological solutions and scientific knowledge are less prominent in municipal i-labs than urban experimentation labs (SCHOLL and. Often, there is no evidence that technology enhances innovative capacity (TIMEUS & GASCÓ 2018). Nonetheless, there is enthusiasm for the new avenues i-labs offer. They are seen as a creative way for political participation, where communication is fundamental to establishing new relationships between public institutions and society (ROMERO-FRÍ-AS & ARROYO-MACHADO 2018), frequently involving active citizen participation in contests, online competitions, and collective innovation workshops (SCOZZI et al. 2017).

In the political dimension, the literature presents some caveats. While essential for managing institutions and individuals, experimental methods, data mining, and evidence collection can distance themselves from existing political disputes (WILLIAMSON 2015). The risk is that excessive technification depoliticizes discourse and action, turning them into instruments for technocrats to coordinate people and resources. Critics argue that when urban innovators want to adopt an experimental viewpoint, it is vital to define who conducts the experiments, on whose behalf, and with what potential impacts (SCHOLL & KEMP 2016). Who is this change made for? (KIEBOOM 2014).

In the political dimension, literature also suggests that it is generally necessary—or helpful—for a higher authority to grant legitimacy to i-labs to experiment. This is because a high degree of autonomy is usually not readily accepted in the public sector. Consequently, if an i-lab loses the support of its sponsors, its survival chances drop drastically (TONURIST et al. 2015). This context reinforces the need for more profound debates on i-labs and co-production

techniques, emphasizing how they can respond to the urgency for a more politicized institutional restructuring capable of offering alternatives to neoliberalism in the face of urban crises (CHATTERTON et al., 2018).demandas da sociedade e promover uma gestão mais eficiente e transparente (Vieira; Barreto, 2019).

Dentre os dispositivos da governança, denominados mecanismos, tem-se no mecanismo controle a atenção particular, para este trabalho, por fato deste dispositivo/mecanismo, o responsável pela exposição aos *stakeholders* das ações dos gestores, por meio dos portais da transparência (Vieira; Barreto, 2019).

A Lei 12.527/2011 regula o acesso à informação, e que tem sua previsão no inciso XXXIII do art. 5º, no inciso II do § 3º do art. 37 e no § 2º do art. 216 da Constituição Federal, onde é definido que todos têm direito a receber dos órgãos públicos informações de seu interesse particular, ou de interesse coletivo ou geral, que serão prestadas no prazo da lei, sob pena de responsabilidade, ressalvadas aquelas cujo sigilo seja imprescindível à segurança da sociedade e do Estado (Brasil, 2011).

The Institutional Approach

Institutions have been a central focus of political science (IMMERGUT 1998). In the 1970s, the institutional approach experienced a revival marked by the emergence of new institutionalism, which was applied to the study of organizations. This approach adopts the concept of open systems, implying that an organization can only be fully understood when examined by its environment, with a permeable boundary between the inside and outside of organizations (MUELLER et al. 2018). New institutionalism addresses informal conventions, formal rules, and structures, analyzing how institutions embody values and power relations in a continually evolving tradition — the “spirit in motion” of new institutionalism (LOWNDES 2001).

The main feature of the institutional approach is its emphasis on institutions. In Douglass North’s classic definition, institutions are the “rules of the game” and always have a history from which they are products, making it impossible to understand them without understanding the historical process that shaped them (BERGER & LUCKMANN 1985). In this article, this perspective will be referred to as institutionalism. Avoiding rigid labels is essential, as they can promote orthodoxies and limit analytical capacity. True to its flexible spirit, the approach adopted here integrates perspectives from Design Studies, STS (Science, Technology, and Society Studies), and Actor-Network Theory to describe the global proliferation of i-labs in local governments.

Table 1 - Institutional Approach Premises

Premise	Description
Institutions as Artifacts	Artifacts are human constructions created with utilitarian purposes aimed at human goals and objectives (SIMON 1996). They facilitate the activities of others (LATOUR 1992). For example, institutions are created to help individuals cope with uncertainties in human relations (DENZAU & NORTH 1994).
Artifacts Understood as Networks	The institutionalist approach recurrently uses networks (as in MEYER & ROWAN 1977; DIMAGGIO & POWELL 1983). Still, in some fields, networks encompass physical artifacts and the entire cultural context. In SCOT (Social Construction of Technology) theory, technology includes artifacts, the technical system in which they are embedded, their knowledge, and the associated practices (BIJKER *et al.* 2012). Artifacts establish technologies and techniques; together, they organize the world and order human activity (LATOUR 1992; DE VRIES 2008).
Institutions in Constant Stabilization or Institutionalization	Institutions are norms, rules, and practices that structure action in social contexts. These sets gain existence and meaning through continuous effort that reinforces and alters meanings and materialities. Social action involves interacting and forming meanings, values, and 'knowledge' (HEALEY 2006). Institutionalism addresses institutions' central paradox or 'dual life,' simultaneously 'human products' and 'social forces in their own right' (LOWNDES 2001).
Ideas Circulating Through 'Carriers'	Ideas, values, and cognitive models circulate among individuals, crossing organizational boundaries — including in the public sector — through social processes. Understanding their introduction and influence is essential (CARSTENSEN & SCHMIDT 2016). Scott (2014) defines 'carriers' as the mechanisms that allow us to observe the movement of ideas across time and space, identifying who or what carries them.
Institutionalization and Legitimacy	In institutional analysis, institutionalization involves the concept of legitimacy, of being socially accepted. Legitimacy incorporates the idea of 'stabilization' from STS Studies, indicating when technology has gained public support and been adopted by society (BIJKER *et al.* 2012). Legitimacy is fundamental in social transformation processes and is favorably evaluated only when the public perceives that the institution fits a pre-existing, thus legitimate, category (SUDDABY *et al.* 2017). Denzau and North (1994) note that people assess legitimacy based on myths, dogmas, ideologies, and 'precarious' (still developing) theories. Identifying the relationship between individuals' mental models, developing ideologies, and the institutions structuring social interactions is thus crucial (DENZAU & NORTH 1994).

Source: Authors (2024)

The relevance of institutionalization and legitimation becomes even more evident when considering the circulation of ideas and innovative practices among different organizations, especially in the public sector. There is extensive literature on this topic, dispersed across various labels, including innovation diffusion, technology transfer, organizational learning, and management fads (SCOTT 2014). The institutionalist analysis reveals that some ideas gain popularity not due to their characteristics but to who transmits and supports them and how they are presented. Ideas become legitimate, popular, and indispensable

mainly because certain actors adopt them. Thus, management fads evolve: some disappear over time, while others are absorbed and eventually institutionalized (SAHLIN & WEDLIN 2008).

The institutionalist approach adopted in this study provides an in-depth description of the proliferation of i-labs among local governments, showing their role in influencing urban policies. This theoretical framework enables identifying and analyzing institutional artifacts — such as procedures, laws, reports, departments, and agencies — in the day-to-day practice of public planning and management. For the institutionalist researcher, these artifacts are central, as they represent tangible elements subject to innovation and adaptation, which reflect and shape the dynamics of urban policies over time.

Design Studies

From the outset of public policy science, thinkers like Harold Lasswell highlighted the importance of design in policy formulation (PETERS et al. 2018). At that time, researchers like Buckminster Fuller and Herbert Simon aimed to develop a "science of design." Despite these early initiatives, the 1970s saw significant opposition to design science, with even some of its original advocates, such as Christopher Alexander, abandoning its core principles (CROSS 2001).

By the 1980s, design studies had consolidated as a distinct discipline. Adopting a constructivist perspective that positioned design as an autonomous field, a consensus emerged among researchers and designers that designing or conceiving a solution is fundamentally different from scientific endeavors and always will be (CROSS 2001). Consequently, design epistemology articulated the logic behind creativity, hypothesis formulation, and the invention process—a challenge that seems to have eluded the philosophers of science (GLYNN 1985).

The 1973 publication by Rittel and Webber introduced the concept of "wicked problems" to describe the challenges faced by the government (RITTEL & WEBBER 1973). They argued that social issues act as connectors, linking various interdependent systems. In this scenario, solutions to one problem become inputs to others. This interconnected structure makes it difficult to identify core problems and intervention points, even when there is consensus on objectives. Viewing the social context as a complex network of open systems, each with its interests yet interconnected and mutually influential, reveals an essential distinction: unlike the natural sciences, issues in government, social, and political planning remain undefined, with their resolution dependent on political evaluations.

There is an inevitable gap between the promises of urban policies and their actual outcomes. However, this divergence is not inherently problematic. Every society accommodates a certain anticipated and expected performance level concerning

these promises: public support remains relatively stable as long as public organizations manage this performance gap within reasonable parameters (ANSELL et al. 2016). In this context, where challenges and solutions intersect and demand the integration of diverse knowledge domains, design encompasses the tangible practices adopted by the most innovative professionals across various organizations and fields. This shift underscores the growing volume of academic studies on successful case examples (KIMBELL 2011) related to public policy development and management in different contexts.

While the design may not fit within the science category within this evolved epistemology, its analysis can adopt a scientific approach. Essentially, design as an activity becomes an object of scientific investigation (CROSS 1993). From this perspective, design knowledge often arises from direct engagement with the activity or specific problem rather than following predefined rules typical in legal-bureaucratic paradigms. Fostering design thinking should not require practitioners to memorize and recall information on demand; instead, they should have opportunities to engage with content, reflect on it, and use it to generate new insights. Preparing practitioners for future work situations requires teaching them to use their minds well (RAZZOUK & SHUTE 2012). Engaging external participants to enhance an organization's innovation process is known as 'open innovation,' an approach increasingly adopted by institutions (KASK 2012).

RESEARCH DESIGN AND METHODOLOGY

Innovation labs have been proliferating, with over 100 units operating at local, regional, and national levels of governance worldwide (WHICHER & CRICK 2019). This study covers 33 labs across 30 cities in 13 countries and four continents (Table 2).

Table 2 – List of 30 Cities (with Population) and 33 Laboratories Included in the Sample

North America		
Laboratory	City	Inhs.
I-Zone NYC - Opportunity	New York	8.405
Innovation Team	Los Angeles	3.990
Superpublic	San Francisco	884
Innovation & Performance Team	Seatle	715
New Urban Mechanics	Boston	685
Innovation Team		
Innovation Team	Long Beach	462
Office of Civic	Minneapolis	422

Latin America		
Laboratory	City	Inhs.
(011)Lab	Sao Paulo	12.250
Lab Para La Ciudad	Mexico City	8.918
LABCapital	Bogota	6.840
Vivelab Bogota		
Linq – Lab de Innovación Quito	Quito	1.980
Europe Union		
Urban Lab	Barcelona	1.613
Erame Urban Lab	Lyon	513
Bexley Innovation	Bexley	231

Innovation			Lab		
Innovation Team	New Orleans	393	Solutions Lab	Copenhagen	602
Innovation Team	Jersey City	270	Center for Innovation in Aarhus	Aarhus	336
Innovation Team	Albuquerque	245	Design Department	Kolding	54
Innovation Team	Mobile	195	Co-Battipaglia	Battipaglia	52
Innovation Team	Syracuse	145	Co-Mantova	Mantova	48
Innovation Team	Peoria	115	Asia and the Middle East		
Innovation Team	Rochester	114	Seoul Innovation Bureau	Seul	9.838
Innovation Team	Centennial	103	Innovation Team	Jerusalem	874
City Studio	Vancouver	675			

Source: Authors (2024)

These diverse cities in Table 1 include metropolises, satellite centers, capitals, and smaller localities, with populations ranging from 12.25 million in São Paulo to 48,000 in Mantova. In some cases, two cities are within the same metropolitan area, such as New York paired with Jersey City and Los Angeles paired with Long Beach. Specifically, ten towns, shown in Figure 1, serve as bases for local and upper levels of government. The sampling for the study was based on two online sources: the Design for Europe database, organized by the European Union (2014-16), and the Government Innovation Lab Directory by Apolitical, launched in October 2018.

The methodological process outlined for the study on the proliferation of i-labs comprised various stages and frameworks that structured the sample selection, data collection, and analysis (Figure 1). First, a sample of i-labs to be studied was defined, encompassing 33 innovation labs across 30 cities in 13 countries on four continents. The sample included various urban centers, such as metropolises, satellite centers, capitals, and smaller localities. The sample selection was guided by two primary sources: the Design for Europe database, organized by the European Union (2014-16), and the Apolitical Government Innovation Lab Directory, launched in 2018. These sources served as an initial basis for identifying and validating the i-labs included in the study.

In Figure 1, to capture the diversity of urban contexts in which i-labs operate, the cities in the sample were classified into four categories: metropolises, satellite centers, capitals, and small localities. Data collection was guided by ten research questions addressing fundamental aspects for understanding the role and structure of i-labs, such as who initiated the lab's creation, main actors involved, funding sources, location, governance, the role of local government, and practical outcomes. These questions served as data mining criteria and directed collecting relevant information on each i-lab. The data mining stage was conducted online, using the research questions as guides, collecting 273 documents and 641 extracted citations. These text segments constituted the analytical core of the study.

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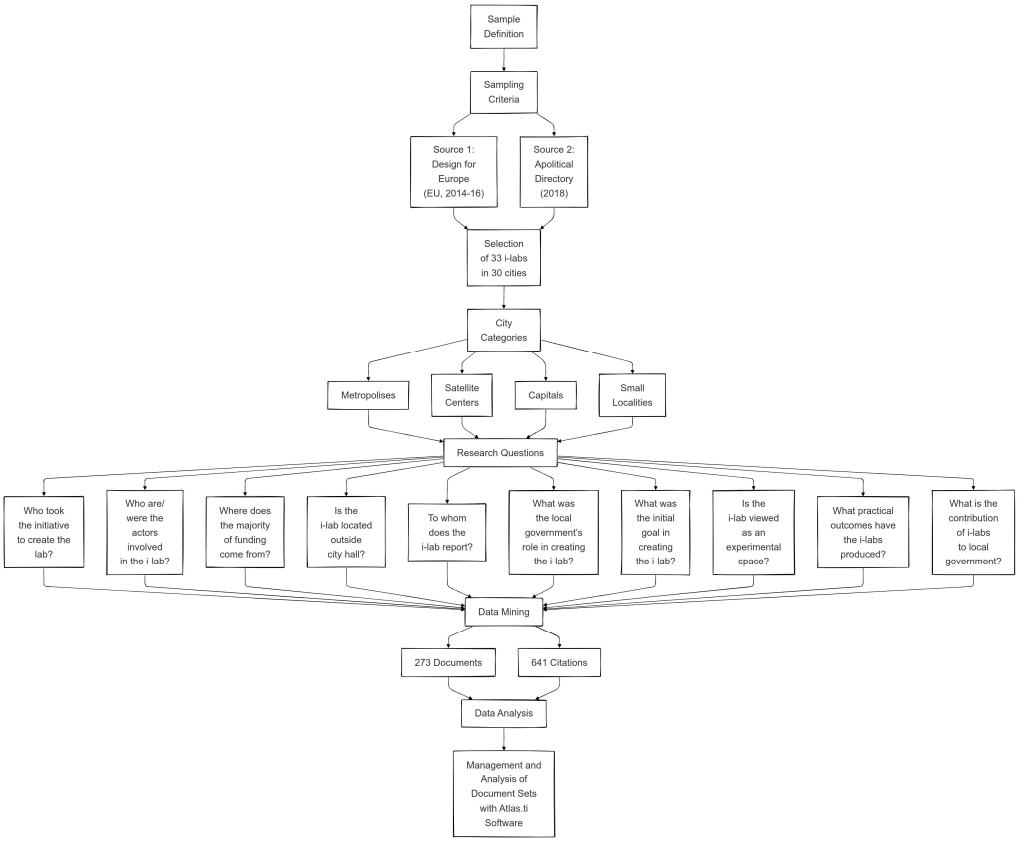
Figure 1 – Methodological Flow



Source: Authors (2024)

Atlas was used to analyze the documents and extract citations. This software enabled efficient data set management, facilitating the organization and interpretation of collected information. It was used to categorize and interpret content, supporting qualitative analysis and allowing for a deeper understanding of the data.

RESULTS AND DISCUSSION

The analysis of the results is based on examining the nature and evolution of the labs, identifying enduring trends and the fundamental drivers for their creation. Subsequently, the i-labs are examined across the three dimensions of policy science analysis. First, i-labs are interpreted as a new form of "policy," considering their organizational structure and procedures. Next, in the technical dimension, we analyze how i-labs work to transform public policies. Finally, the last subsection provides an assessment of these labs' initiatives and strategies contextualized within the field of urban policy.

I-labs: Evolution, Nature, and Urban Potential

Figure 2 illustrates the temporal evolution of the number of i-labs in operation, highlighting expansion and variation from 2008 to 2019. In 2008, the first i-lab,

the Barcelona Urban Lab, was established, operating for nearly a decade before its closure. In 2010, two additional i-labs were launched in Boston and New York, remaining active through the end of the study. From 2014 onwards, there was an acceleration in the emergence of new i-labs, reflecting significant growth until 2016, as evidenced by the steep curve in the graph. This phenomenon demonstrates the increasing interest in public sector innovation, which, according to Whicher and Crick (2019), spurred the creation of over 100 i-labs across different governance levels.

Despite the rapid growth, the graph reveals that, after peaking in 2017, the total number of i-labs in operation began to decline. This trend suggests that some i-labs were discontinued, corroborating Timeus and Gascó's (2018) assertion that, although promising, i-labs are experimental structures prone to rapid closure, especially when institutional support wanes. McGann et al. (2018) reinforce this observation, noting that i-labs can be established and discontinued as swiftly as launched, particularly during political change or funding shortages.

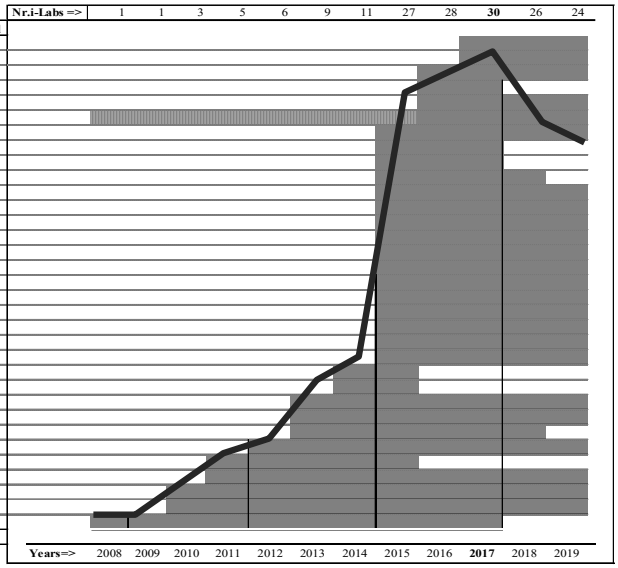
Additionally, the graph shows the average operational lifespan of i-labs, which is 5.3 years, illustrating their transitory nature. This fact supports Borins' (BORINS 2006) argument on the barriers faced by innovation in the public sector, often due to the risk of discontinuity imposed by the political cycle. The short average lifespan of i-labs also aligns with the view of Altshuler and Behn (1997), who argue that public sector innovation thrives only when there is room for learning from failures. However, the public institutional environment often inhibits this process due to risk aversion and administrative shifts.

The timeline of i-labs represented in the graph also illustrates the ephemeral nature of some of these initiatives. According to McGann et al. (2018), many i-labs were established as experimental spaces dedicated to innovation in public policy, yet their survival depends on sustained support and adaptability. This characteristic is exemplified by the Lyon i-lab, represented in the graph with a dotted bar, indicating its transition from a living lab to an i-lab focused on urban public policies in 2015. This case reinforces Scholl and Kemp's (2016) argument regarding the importance of flexibility and continuous innovation in urban policies.

In this chronological view presented in Figure 2, it becomes evident that the sample of 33 innovation labs compiled for this study was never complete at any historical moment. After starting with three labs in 2010 and six in 2012, i-labs continued to spread steadily until experiencing explosive growth in 2015, reaching 25 units. The sample reached its maximum size in 2017, with 30 innovation labs operating simultaneously in different cities. By the end of 2019, after nine had closed, the 33 i-labs in the sample were reduced to 24.

Figure 2 - Number of i-labs in Operation by Year

i-Lab	City	survival
(011).LAB	Sao Paulo	3
NYC - Opportunity	New York	3
LABCapital	Bogota	4
Superpublic San Francisco	San Francisco	2
Bexley Innovation Lab	Bexley	4
Erasme Urban Lab	Lyon	12
LINQ - Laboratorio de Innovacion Quito	Quito	5
Innovation Team	Albuquerque	3
Innovation Team	Centennial	3
Innovation Team	Minneapolis	4
Innovation Team	Boston	5
Innovation Team	Jersey City, NJ	5
Innovation Team	Jerusalem	5
I-Team / Office of Civic Innovation	Long Beach	5
Innovation Team	Los Angeles	5
Innovation Team	Mobile, AL	5
Innovation Team	Peoria	5
Innovation Team	Rochester	5
Innovation & Performance Team	Seattle	5
Innovation Team	Syracuse	5
CIFIA - Center for Innovation in Aarhus	Aarhus	5
Copenhagen Solutions Lab	Copenhagen	5
Co Battipaglia	Batipaglia	2
Co Mantova	Mantova	2
Vivelab Bogotá	Bogota	7
Seoul Innovation Bureau	Seoul	7
Lab para la Ciudad	Mexico City	6
Design Department	Kolding	8
Innovation Delivery Team	New Orleans	5
City Studio	Vancouver	9
New Urban Mechanics	Boston	10
Innovation Zone | I-Zone	New York	10
Barcelona Urban Lab	Barcelona	10
Average		**5,3**



Source: Authors (2024)

Indicating durability in terms of years is a necessary simplification given the difficulty in specifying dates, especially for closures. The values provided may suggest a longer average lifespan than reality due to the lack of specificity regarding months. For example, in the case of Superpublic in San Francisco, the duration was just one year. “On July 14, federal technicians, innovation consultants, and academics collaborated with city hall at the opening ceremony of San Francisco's innovation lab, Superpublic” [42:5]. It was closed twelve months later. “Project consultants attributed Superpublic’s closure to the lab’s failure to secure funding when government priorities shifted in July 2017” [289:3].

The average lifespan of labs that have closed is 4.1 years. Notably, the labs in Mantova and Battipaglia were established as projects with clearly defined start and end dates. Information gathered from the 24 active labs indicates they surpassed this four-year threshold. The current average operational duration of active i-labs is 5.3 years. When analyzing their survival duration, i-labs exhibit characteristics similar to other public policies: initiated by one administration and often discontinued by the next. The research findings align with existing literature: i-labs can be quickly terminated, just as they are created.

In summary, Figure 2 reflects the rapid rise and stabilization of i-labs on the global scene, illustrating their initial impact and the challenges they face in maintaining their continuity. The analysis reinforces Williamson's (2015) observations on the experimental nature of these labs and the fundamental role of political and institutional support for their sustainability.

I-labs as a New Form of Urban Governance

The analysis of citations collected under the “i-lab definition” code reveals critical information on how each local government structured this innovative form of urban governance. As discussed by Tonurist et al. (2015) and

Williamson (2015), the notion that i-labs can operate as agile organizations and hybrid entities is reflected in the diversity of definitions presented in Table 3. This classification covers six distinct categories, demonstrating the various forms that i-labs can take to meet specific innovation demands in different urban contexts. In the first category, "Department," there is the example of Kolding, which defined its i-lab as an "independent design secretariat," indicating a more formal integration within the governmental structure, aligning with the concept of i-labs as a new extension of local government, as suggested by Timeus & Gascó (2018).

Table 3 - Typologies of I-Labs in Urban Governance

CITY	DEFINITION	CONCEPT		CATEGORY
Kolding	Independent design secretariat	Department		Department
Bexley	Transferring new skills	Internal Team		
Aarhus	An internal innovation partner	Internal Partner		
Seoul	Agency	Agency	H	
San Francisco	A platform	Platform	H	Incubator
Copenhagen	Incubator for innovative city initiatives	Incubator	H	
Barcelona	Gateway for companies	Gateway or Entrance		
Boston-Monum	Research and design lab	Lab		Laboratory
Nova York I-Z	Acts as an incubation lab	Lab		
29 - Nova York Opp	Service Design Studio	Studio		
Vancouver	An innovation hub that unites	Gathering Point	H	Space
Mexico	Experimental and creative area	Area	H	
Lyon	Open innovation hub	Local	H	
Sao Paulo	Space for creating and experimenting	Space		
Bogota Labc	Collaboration space	Space		
Lin Quito	Collaboration space	Space	H	
Bogota Vive	Space for training and empowerment	Space		
Albuquerque	-	Consultants team		Consultants team
Boston	-	Consultants team		
Centennial	-	Consultants team		
Jersey City	-	Consultants team		
Jerusalem	A senior consulting group	Consultants team		
Long Beach	-	Consultants team		
Los Angeles	In-house innovation consultants	Consultants team		
Minneapolis	In-house consulting team	Consultants team		
Mobile	In-house innovation consultants	Consultants team		
Peoria	In-house innovation consultants	Consultants team		
Rochester	-	Consultants team		
Seattle	-	Consultants team		
Syracuse	In-house innovation consultants	Consultants team		
New Orleans	-	Consultants team		
Battipaglia	Governance workshop	workshop		workshop
Mantova	A new collective subject	collective subject		

Fonte: Source: Authors (2024)

The second category, "Incubator," comprising i-labs in San Francisco, Copenhagen, and Seoul, reflects Zivkovic's (2018) view of i-labs as "experimental platforms for collaborative governance." These i-labs are described as platforms and incubators for innovative initiatives, emphasizing

their role in fostering partnerships and driving new ideas within the urban ecosystem, a function Scholl & Kemp (2016) also identified as essential for accessing and disseminating new knowledge. The third category, "Laboratory," includes i-labs in Boston and New York, characterized as research and design labs with an explicit focus on experimentation, reinforcing the idea that these spaces operate with a clear mandate for continuous innovation and adaptation, as discussed by McGann et al. (2018).

The concept of "Space," the most represented category, includes seven i-labs in São Paulo, Bogotá, Lin Quito, Vancouver, and others. These i-labs are described as "collaborative spaces" and "experimental areas," reaffirming Whicher & Crick's (2019) argument that these physical environments are created to facilitate innovation independently of central government structures. Many of these spaces have independent headquarters, symbolizing the boundary position between government and society, as Scholl & Kemp (2016) proposed, allowing these i-labs to operate autonomously with greater freedom to experiment with new approaches.

The category "Consultant Team," including 14 i-labs supported by the Bloomberg Foundation, such as those in Albuquerque, Boston, Los Angeles, and Minneapolis, reflects the temporary and specialized approach of these i-labs, which function as internal innovation and consultancy teams. This model reinforces the role of i-labs as "innovation teams" or "i-teams," described by McGann et al. (2018), which often operate as specialized consultancies linked to the mayor's office, but with enough autonomy to explore new solutions without being directly embedded in the government bureaucracy.

Finally, the last category, "Workshop," includes two Italian i-labs in Battipaglia and Mantova, described as "workshops" or "new collective entities." These i-labs align with the notion of "workshops" or "brief seminars," where experts and citizens gather to discuss and develop specific skills in a collaborative environment, as suggested in the literature on shared learning and innovation spaces (WILLIAMSON 2015).

The six categories presented in Table 2 thus demonstrate the different approaches and strategic choices made by local governments in implementing their innovation labs. These categories reflect varied institutional

es and objectives that adapt to each city's specific urban context and the expected role of i-labs in policy formulation and innovation management. By adopting these different configurations, local governments demonstrate a practical response to contemporary urban challenges while promoting the integration of innovative practices in their administrations, as highlighted by Borins (2006) and Williamson (2015).

Functions of I-labs in Transforming Urban Policies

The analysis of citations under the "initial objective" code revealed the emergence of i-labs as a new urban policy approach strategically implemented in response to crises faced by various cities. This trend is evident in a compilation of 85 citations addressing different dimensions of this innovative strategy. A notable example is the citation stating that "the primary objective of the project is to establish a dynamic platform for discourse, analysis, and active engagement, promoting the integration of inventive concepts and practices into local public administration" [233:4]. The Mantova Lab case illustrates a coordinated effort to provide "cutting-edge solutions for the collaborative management of the city's cultural heritage, enhanced by the integration of ICT tools" [104:2], demonstrating the role of i-labs in fostering innovations in culturally relevant areas.

Moreover, i-labs often tackle specific challenges, as exemplified by the Jerusalem initiative, where "three municipal departments and dozens of NGOs are involved in addressing at-risk youth, each with its definitions and parameters, resulting in a lack of unified statistics. Mayor Nir Barkat identified this issue as a major challenge for the city. He turned to the innovation team to create a unified analysis framework based on in-depth research and mapping of organizational actions" [199:3]. Similarly, Rochester's mayor's initiative focuses on combating poverty in a localized area before expanding: "What we are trying to do here is not to put ourselves in the position of solving poverty city-wide (...) We want to start in a specific area and grow from there. The innovation team will aim to reduce the poverty rate in just one city neighborhood by one percentage point over one year" [58:3].

This detailed analysis of citations allowed for categorizing i-labs according to their innovation objectives, encompassing government functions, urban planning, specific public policies, and new business creation, as illustrated in Table 4. These categories reflect the broad range of approaches and purposes of i-labs, varying from transforming local public administration to developing solutions focused on specific policy and social issues.

Table 4 – What type of objective was set for i-labs?

CITY	OBJECTIVE	CATEGORY	ORDER
San Francisco	Bring government and society closer.	1. Innovate Across all Government	Management
Vancouver	Bridge University and the government.		
Kolding	Bring design to the government.		
Bexley	Bring design to the government.		
Aarhus	Bring design to the government.		
Seoul	Bring government and society closer.		
Mexico City	Bring government and society closer.		
Boston	Bring design to the government.		
Sao Paulo	Bring design to government.		
Quito	Bring design to the government.		
Battipaglia	Initiate a discussion about the City Master Plan	**2.** Innovate in Urban Planning	
Mantova	Co-management of cultural assets.		

Mobile	Revitalization of degraded urban areas.		
Jersey City	Revitalization of degraded urban areas.		
Boston	New housing policies.		
Peoria	Innovate in urban infrastructure.		
Syracuse	Innovate in urban infrastructure.		
Albuquerque	Design for public security policy.	**3.** Innovate in Specific Public Policies	
Jerusalem	Design for youth assistance policy.		
Long Beach	Design for employment and entrepreneurship.		
Los Angeles	Design for social assistance policy.		
Minneapolis	Design for social assistance policy.		
Rochester	Design for social assistance policy.		
Seattle	Design for social assistance policy.		
Nova Orleans	Design for public security policy.		
Nova York I-Z	Design for public education policy.		
Nova York Opp	Design for social assistance policy.		
Bogota Labc	Design for public ombudsperson policy.		
Centennial	Design for mobility.		
Barcelona	Innovation in the urban environment.	**4.** Innovate to Create New Businesses	Entrepreneurship
Copenhagen	Innovation in the urban environment.		
Lyon	New public services through ICTs.		
Bogota Vive	New public services through ICTs.		

Fonte: Source: Authors (2024)

The analysis of Table 4, which organizes i-labs according to their objectives and innovation categories, highlights how these initiatives serve as instruments for urban modernization and renewal, responding to various local needs and contexts. The first category, “Innovating Across Governance,” includes i-labs such as those in San Francisco, Vancouver, and Mexico City, which aim to strengthen the relationship between government and society and integrate a culture of design within government, as seen in cities like Kolding, Bexley, and Boston. This category reflects the discussions by Williamson (2015) and Tonurist et al. (2015) on i-labs as platforms for collaborative and agile governance, emphasizing engaging multiple sectors to make government more accessible and responsive. Here, “Management Order” is prominent, as these i-labs work by integrating design and innovation across all administrative sectors, fostering closer collaboration between public and private sectors and facilitating a more inclusive and dynamic governance, as McGann et al. (2018) noted.

The second category, “Innovating in Urban Planning,” focuses on the physical revitalization and restructuring of cities, encompassing initiatives aimed at infrastructure planning, such as the i-labs in Battipaglia, Mobile, and Jersey City. These labs represent an attempt at structural innovation, responding to the “wicked problems” concept described by Rittel and Webber (1973), where complex urban development issues, such as urban decay and the need for new housing policies, demand collaborative and experimental approaches. This category also aligns with Scholl and Kemp's (2016) idea that i-labs operate at the boundary between government and society, allowing experimentation outside conventional bureaucratic logic to tackle large-scale urban challenges.

The third category, “Innovating in Specific Public Policies,” includes i-labs that operate in areas such as public safety, social assistance, and education, such as Albuquerque, Jerusalem, and New Orleans. This category indicates the role of i-labs as tools for addressing intricate social issues through innovation, targeting sectoral and well-defined public policies. This perspective reflects Altshuler and Behn's (1997) observations on the importance of learning through experimentation and failure and the need for a flexible yet technically grounded approach that allows governments to innovate in sensitive areas, addressing specific challenges and adapting to local contexts. Here, Management Order is again prominent, with i-labs playing a consultative role and supporting public administration in formulating solutions to local issues.

Finally, the fourth category, “Innovating to Create New Businesses,” includes i-labs in Barcelona and Copenhagen, which focus on creating new services and businesses, promoting entrepreneurship and urban innovation. This category relates to Harvey's (HARVEY 1996), 1989) discussion on the distinction between “Management” and “Entrepreneurship” as operational forms, with the difference here being that these i-labs seek to innovate not only in public services but also in entrepreneurial activities that expand the space for private actors and civil society organizations in urban development. These i-labs challenge the traditional view that the government is solely responsible for urban management by opening space for private entities and non-governmental organizations' participation, as Borins (2006) suggested, who argues that the public sector should embrace iterative and collaborative approaches to innovation.

Thus, Table 4 illustrates how i-labs vary according to their objectives and local priorities, functioning as adaptive responses to contemporary urban demands. By categorizing i-labs in terms of “Management Order” and “Entrepreneurship,” the table demonstrates different interpretations and applications of urban innovation, whether focused on transforming public policies, strengthening local government, or creating new economic opportunities. The diversity of models and objectives reflects the flexibility of i-labs, which, while temporary and adaptable structures, play a strategic and critical role in promoting innovation in urban policies, as highlighted by Timeus & Gascó (2018) and McGann et al. (2018) regarding these initiatives' capacity for adaptation and resilience amid institutional changes.

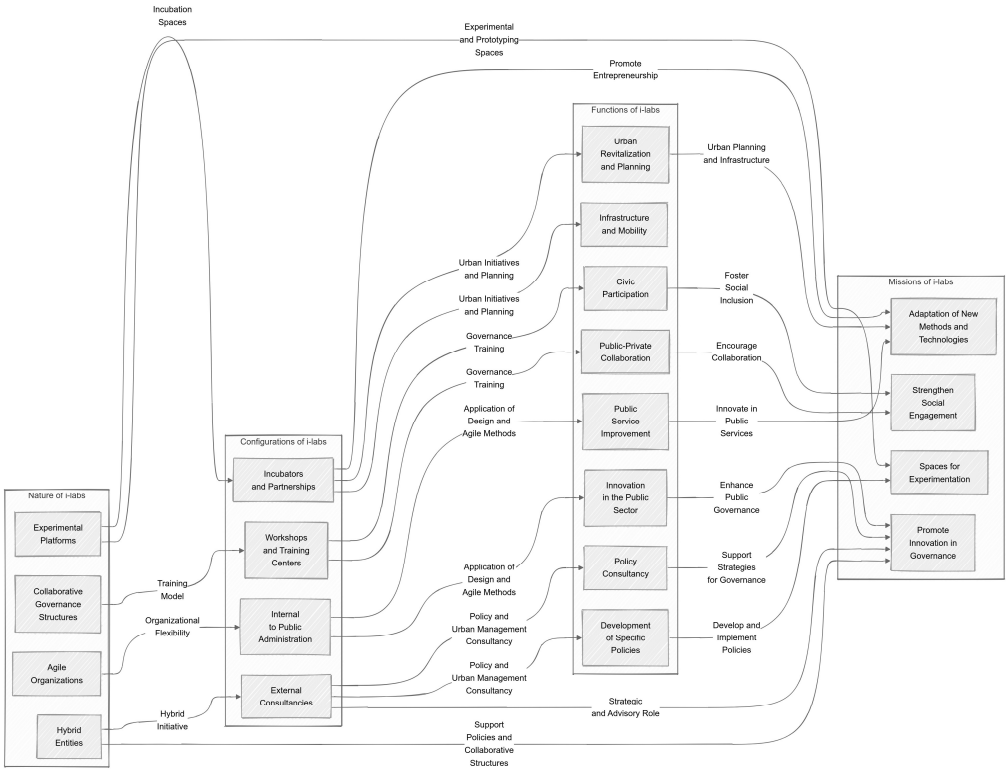
Structures and Relationships of I-labs in Urban Governance and Management

Considering the relationships of i-labs in urban policy innovation and public management, i-labs emerge as adaptive and collaborative tools, playing diverse and complementary roles that stand out in integrating new methodologies and technologies to enhance public policy, management, and urban governance. Figure 3 illustrates these relationships by organizing the categories of nature, configurations, functions, and missions of i-labs, revealing these connections'

non-hierarchical and diversified nature. This flow demonstrates how different structural configurations of i-labs—from agile organizations and experimental platforms to consultancies and incubators—interact to fulfill their missions and objectives, contributing to an urban innovation system based on public-private collaboration, civic participation, and improving public services.

The diagram in Figure 3, illustrating the dynamic relationships of i-labs in urban policy innovation and public management, aligns with the theoretical framework discussed at the beginning of this section, where the role and structure of these innovation labs are examined in terms of their organizational and operational characteristics. The interdependence among the categories of nature, configurations, functions, and missions of i-labs reflects, for example, the idea presented by McGann et al. (2018) about the flexible and experimental nature of these labs, which, even within governmental contexts, maintaining a capacity for adaptation and innovation.

Figure 3 - Interactions and Functional Relationships of I-labs in Urban Policy Innovation and Public Management



Source: Authors (2024)

The primary relationship between the nature and configurations of i-labs highlights the flexibility described by Williamson (2015), where agile and hybrid organizations are structured to operate within and outside public administration, adapting as needed and collaborating with various sectors. This flexibility is demonstrated by i-labs, which, as experimental platforms or collaborative governance structures, take the form of external consultancies,

incubators, and workshops, allowing them to develop adaptive solutions, as Scholl and Kemp (2016) suggested, in response to diverse governance demands.

When viewed with their functions, these configurations reveal how each i-lab finds its niche in developing and implementing specific policies. This validates Timeus and Gascó's (2018) analysis of i-labs' ability to experimentally engage in local policy work. As seen in Long Beach [278:2], external consultancies and partnerships support specific projects. At the same time, training centers focus on supporting governance and public-private collaboration, reinforcing Tonurist et al.'s (2015) description of the pursuit of inclusive and sustainable innovation.

The connection between functions and missions underscores the mission to promote innovation in governance and urban management, consolidating new work methods in local government and creating space for social engagement, in line with Whicher and Crick (2019), who discuss i-labs as "gateways" for public policy experimentation. Figure 3 shows how the missions of i-labs aim to overcome the innovation barriers identified by Borins (2006), providing an environment for experimentation and adaptation that fosters new forms of social engagement, aligning with Altshuler and Behn's (1997) view that innovation in the public sector depends on an iterative, learning-based approach.

By structuring this model, the diagram represents the adaptive and collaborative role of i-labs in promoting innovative practices and governmental experimentation, addressing challenges discussed in the literature and reinforcing the importance of these labs as strategic tools in urban management and innovation, equipping them to respond to the instability and change that characterize modern public administration.

3.5 Future Perspectives and Research Directions for I-labs

Considering i-labs as a tool for innovation in urban policies offers a new perspective on institutional stability, as discussed by McGann et al. (2018), who highlight these labs' experimental and potentially transient nature. Although this instability is often a characteristic of i-labs, among the 14 cities supported by Bloomberg to operate them, ten (71%) have opted to institutionalize them, ensuring the continuity of their innovative activities beyond the initial sponsorship phase and sustaining them with their resources. This decision reflects Williamson's (2015) and Tonurist et al. (2015) argument on the relevance of i-labs as collaborative and agile platforms that can become integral to the government structure even after external support ends.

In Long Beach, for example, municipal departments now contribute financially to utilize the i-lab's services: "Under the new structure, city agencies such as the airport hire the Office of Civic Innovation as consultants to help them find new ways to solve their problems. For this service, agencies allocate part of their budget — from $50,000 for smaller projects to $200,000 for larger ones — to the Office of Civic Innovation to cover staff time. In this way, Long Beach points

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to a promising path for incorporating new working methods into local government over the long term" [278:2]. This example of institutionalization aligns with the discussions of Scholl & Kemp (2016), who emphasize the importance of a "boundary position" between government and society to promote sustainable innovation.

Viewing i-labs as a public policy rather than as new fixed institutions allows for a more flexible and realistic understanding of their instability. As suggested by Altshuler and Behn (1997), the success of innovation in the public sector often depends on the willingness to accept and learn from failure, and i-labs operate as temporary public policies whose existence is justified by their capacity to experiment and adapt quickly, as Borins (2006) observes. In this way, comparing i-labs to urban policies highlights their role as adaptive tools rather than fixed entities, where longevity is less expected, and legitimacy can be constantly reaffirmed or re-evaluated.

Additionally, the findings of this research suggest several promising directions for future studies, especially in contexts where the "legality" of innovation remains under debate. In the case of the São Paulo i-lab, for example, Professor Francisco Gaetani of BrazilLab, one of the innovation centers active in the Brazilian public sector, suggests an interesting perspective. Gaetani notes that "innovation in the public sector lacks legal mechanisms," pointing to the challenges government innovations face in light of existing legislation, a theme Williamson (2015) addresses by describing i-labs as subject to political reactions and institutional questioning. Gaetani emphasizes the need for a willingness to face risks and uncertainties when implementing innovative changes in the public sector. This underscores the relevance of an appropriate legal framework to support these innovations.

The exploration of the "legality" of innovation within the context of urban policies thus emerges as a relevant theme, especially in regions like Brazil, where the institutional framework can limit or hinder public experimentation. This aspect is reinforced by the experiences of Italian cities such as Battipaglia and Mantova, whose labs operate under the constitutional principle of subsidiarity, which grants citizens, civil society, and the community the right to collaborate with the government to pursue common interests. Promoting cooperation between different levels of government and citizens expands the space for urban management and governance innovation, consistent with Tonurist et al. (2015) on the need for institutional flexibility to support innovation demands. Similarly, Bogotá's District Capital Public Ombudsman's Lab Capital exemplifies efforts to align i-lab practices with Colombia's legal and institutional framework, allowing innovation tailored to local realities.

These experiences suggest that systematically cataloging i-lab practices implemented by local municipalities to strengthen urban planning and government management offers a rich field for further investigation.

Additionally, such cataloging could contribute to developing a more robust understanding of how i-labs can be sustained and legitimized as innovative public policies across different contexts, enabling a continuous dialogue between local practices and the global institutional challenges discussed in the literature.

CONCLUSÃO

The analysis of innovation labs (i-labs) as tools for innovation in urban policy and management allows us to conclude that these spaces represent an adaptive and experimental response to the complex demands of contemporary urban contexts. With their distinct configurations and missions, i-labs have proven promising tools for promoting agile and collaborative methods within the public sector, as observed in this study's various categories and objectives. Although some i-labs face sustainability and institutional stability challenges, the analysis shows that once institutionalized, these labs expand their functions and reinforce their legitimacy and relevance, mainly when supported by local and ongoing resources, as exemplified by the case of Long Beach. Thus, far from being short-lived structures, i-labs have proven to be strategic spaces for innovation, fostering significant advancements in urban planning, governance, and social engagement practices, aligning with the theoretical perspectives of Scholl and Kemp (2016) and Williamson (2015) on collaborative governance and public innovation.

The emergence and proliferation of i-labs in different global contexts reflect the adaptation of local administrations to the specific needs and challenges of each city, indicating a global trend toward seeking innovation directly applied to urban planning and management. The expansion of these labs, from the pioneering Barcelona Urban Lab in 2008 to over 100 i-labs distributed globally, demonstrates a movement responding to pressures for efficiency, social participation, and experimentation in urban public policies. As shown in the analysis of their categories and objectives, i-labs are structured with different functions and purposes: in some cities, they function as experimental platforms that integrate government and civil society, promoting public collaboration to solve intricate problems; in others, they serve as incubators for new policies and methodologies or as specialized consultancies that provide technical and strategic support to government sectors. This diversity of configurations enables i-labs to respond to the particularities of local contexts while maintaining a common innovation base, demonstrating a flexibility that makes them essential for addressing contemporary urban crises, aligning with the theories of collaborative governance and organizational innovation presented in this research.

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This study contributes to public policy, urban policy, urban management, and urban governance by showing how i-labs can serve as strategic tools for administrative transformation and developing innovative and adaptive policies. By demonstrating how i-labs are implemented in different contexts and configured to meet specific demands, this study provides a theoretical and practical foundation for creating public policies that employ innovative and experimental approaches, particularly in addressing complex urban crises. The research suggests that by fostering design methodologies and facilitating collaboration between government and society, i-labs promote a more participatory and responsive urban governance that values social engagement in developing urban solutions. Moreover, by analyzing the various configurations and missions of i-labs, the research underscores the importance of urban management beyond mere service implementation, promoting urban planning that prioritizes the right to the city. These possibilities provide an essential reference for policymakers and decision-makers interested in developing efficient governance structures that promote urban development aligned with contemporary societal demands.

In the Brazilian context, the challenge of conducting innovative public policies is exacerbated by an institutionalized risk aversion in the public sector, which operates in an environment marked by resistance to experimentation. This resistance largely stems from a rigid and statutory legal framework that binds administrative practices to highly regulated procedures, often discouraging innovation. This landscape reinforces the famous adage that "those who do nothing have nothing to fear," revealing a culture in which stability and compliance outweigh the potential for innovation and creative responses to public issues. In an environment where errors are often severely penalized, public managers have little space to explore new methodologies, such as those proposed by i-labs, which require minimum experimental freedom to test innovative solutions. Analyzing i-labs reveals the value of calculated risk and learning from failures, which are fundamental for innovation to take root in the public sector. However, for this culture of innovation to thrive in Brazil, it would be necessary to relax specific parameters and create institutional mechanisms that recognize the value of experimentation in policy formulation and implementation, minimizing legal burdens and encouraging administrative creativity.

While this research presents an expanded view of the nature and configurations, functions, and impacts of i-labs on urban management and policy, it has some limitations. First, the analysis was based on a sample limited to 33 i-labs distributed across different urban contexts, providing an initial but not entirely representative perspective on the diversity and complexity of these labs worldwide. Additionally, by focusing primarily on the institutional and operational aspects of i-labs, factors such as the concrete impact on the local population and the level of public acceptance of the initiatives proposed by these

labs were not explored in depth, representing a rich area for future investigation. Another limitation lies in the scarcity of longitudinal data, which prevents a more accurate assessment of the sustainability and adaptability of i-labs over time, especially in contexts of crisis or political change.

For future research, studies that deepen the relationship between design and urban policy development are proposed, associating design thinking methodologies with creating public policies that respond more agilely and citizen-centered to urban demands. Incorporating design approaches in urban planning and management could be explored to overcome resistance to innovation, especially in countries with rigid legal frameworks like Brazil. Future research could also examine i-labs as sources of inspiration for new administrative practices and to foster more effective integration between public policies and sustainable urban planning, strengthening the role of local governments in creating more sustainable cities. Such investigations would allow for an expanded understanding of how design can act as a transformative vector in the public sector, promoting policies that go beyond conventional solutions and thus add value and effectiveness to contemporary urban management.

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