

Research Article

Street-Level Innovators: The Role of Street-Level Bureaucrats in Driving Local Innovation

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Abstract

This study examined the roles and importance of street-level bureaucrats in advancing innovation in local government. While previous research has emphasized their influence on policymaking in security, welfare, and education, this study focused on their role in innovation, based on perspectives of professionals and managers in the field. Using a qualitative approach, 37 in-depth, semi-structured interviews were conducted with innovation professionals in local governments and national organizations. Thematic analysis revealed five key themes: a focus on the public, street-level bureaucrats as change agents, structural constraints, artificial intelligence as a supporting tool, and encouragement from leadership. Innovation in local government occurs within an *innovation space*—an arena shaped by top-down support, recognition of street-level bureaucrats' significance, and bottom-up solution design. These frontline employees play a crucial role due to their proximity to residents, their understanding of local needs, and their translation of policies into practice. They serve not just as implementers, but as mediators between ideas, policy, technology, and everyday life. Investing in their training and providing them with appropriate tools is essential for fostering urban innovation. Street-level bureaucrats are innovators who can tailor solutions to residents' needs and thereby create public value. Real innovation emerges where top-to-bottom support and street-level bureaucrats' meet.

Keywords

Local Innovation, Street-Level Bureaucrats, Innovation Space, Public Value

1. Introduction

1.1. Street-Level Bureaucrats and Their Importance in Promoting Urban Innovation

A recent review of studies based on the theory of the street-level bureaucrat emphasized the need for future studies to examine more varied aspects of different policy fields in different parts of the world, aside from the US and the UK [1]. The current study was designed to provide a refreshing examination of the street-level bureaucrat theory, with a focus

on a question that has been difficult to answer: How can innovation in local government be advanced?

Recent research has underscored how public innovation is increasingly rooted in the activities of street-level bureaucrats, as they act as policy entrepreneurs, applying their frontline discretion to initiate and shape innovations in public services. Studies by Cohen and Aviram [2] and Edri-Peer et al. [3] have demonstrated how these bureaucrats engage in bottom-up innovation processes that often bridge gaps between policy design and pragmatic implementation, especially in municipal

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and local government. thus, innovation is promoted not only in formal innovation labs or top management strategy [4, 5]. However, few studies have explicitly examined how these frontline actors contribute to innovation dynamics. This research addresses this gap by positioning street-level bureaucrats at the center of urban innovation processes.

Urban innovation that tries to find solutions for old problems in new ways often has a difficult time doing so, due to different limitations and barriers [6, 7]. This is particularly apparent in the era of artificial intelligence (AI), which has changed the work of street-level bureaucrats, in terms of the use of personal judgement, working conditions, and patterns of activity [8].

Following Cohen and Aviram [2], I refer to street-level innovation as discretionary innovation efforts initiated, generated, and adapted by frontline bureaucrats who act not merely as implementors, but as active policy entrepreneurs. These bureaucrats mediate between policy and practice, proposing and shaping service solutions from the bottom up [2]. This concept extends Lipsky's [9] foundational framework of discretion by adding an innovation-oriented perspective, emphasizing the creative agency of street-level actors in navigating organizational constraints and citizens' needs while promoting adaptive and responsive public services.

The concept of the street-level bureaucrat was developed by Michael Lipsky to describe the public-service workers engaged in frontline activities, who come into direct contact with the public as they do their jobs. Lipsky [9] argued that these workers face heavy workloads, vague organizational goals, and limited resources and, at the same time, are able to exercise a notable amount of personal discretion as they put policies into practice. Lipsky demonstrated how the accumulated decisions of these workers create *de facto* policies—in the field, they determine who gets what—and, in that way, significantly influence citizens' lives. The main dilemma is that although their job is to provide reasonable services to all who approach them, their own working conditions are often subject to practices of budgeting resources, filtering, and bureaucratization of the treatment of those who turn to them for services, with those practices acting as solutions for coping with various pressures [9].

Lipsky's theoretical contribution was his turning the spotlight on the junior ranks as a way to understand the implementation of public policies. The research literature that has developed in his wake has continued to take a close look at these issues. Researchers have examined how bureaucrats' personal values and beliefs influence their use of their personal judgement and how organizational factors (e.g., organizational culture or managerial supervision) moderate the behavior of street-level workers [10, 11]. Other studies have addressed the main influences of the personal judgement of street-level bureaucrats, including ramifications for clients/residents and readiness to implement policy [12, 13].

In addition to providing an understanding of potential barriers and failures, previous studies have also emphasized the

creative potential of frontline workers. Street-level bureaucrats do not just passively implement policies. In many cases, they can act as innovators and change agents from the inside. For example, Durose [14] described how community workers in local governments in England act as "civic innovators" as they find innovative solutions while maneuvering between residents' needs and official policies [14]. Other studies have noted that bureaucrats can become policy entrepreneurs, thanks to their expertise and daily interactions with the public. They identify gaps in service, initiate changes, and recruit partners to advance solutions [15, 16]. This ability is especially apparent during times of crisis. For example, during the COVID-19 pandemic, street-level bureaucrats were on the frontlines of national responses to the pandemic. They were required to quickly improvise new ways of working, while demonstrating flexibility and exceptional creativity [17]. In doing so, they demonstrated how their freedom of action could be used to cope with problems and also drive efforts to adopt innovative solutions in real time.

Street-level bureaucrats are also affected by artificial intelligence (AI). Recent studies have shown how AI reshapes discretion, identity, and ethical accountability in street-level work [18-20]. Gillingham et al. [8] emphasized this point in four areas: personal judgement, changes in working conditions, the adoption of a technology-based approach to performance metrics, and work patterns. In terms of personal judgement, they found that AI has different types of effects. Sometimes, it supports the use of personal judgment and sometimes it limits it. The effects of AI on working conditions are particularly noticeable as changes in resource-related constraints, ranging from a lack of time to insufficient training. The adoption of a technology-based approach to performance metrics (which provides few notable advantages over traditional evaluation measures and has led to privacy concerns) and interactions with clients are influenced by perceptions regarding AI, which stem from personal and contextual factors. There is limited literature on how most work patterns are influenced by the use of AI. In many fields, rationing at the client level has become more efficient thanks to the use of AI, but there has also been an exacerbation of biases due to the use of faulty data in the training of these tools and human-computer interactions [8].

Løberg [19] found that police officers do not blindly trust AI technologies or adopt algorithmic recommendations without question. Instead, they tend to rely on AI suggestions when those recommendations align with their existing intuitions, experiences, or situational assessments. In this way, AI functions less as a decision-maker and more as a form of confirmation or reinforcement for judgments officers have already begun to form. This selective use reflects the continued centrality of human discretion in frontline policing [19]. These insights provide conceptual groundwork for our argument that AI constitutes both an enabler and a limiter of innovation at the street level.

Current discussion about street-level bureaucracy has laid

the foundation for understanding the importance of local bureaucracy for advancing innovation in local government as a tightly focused policy field that has a broad influence on additional fields of policy. The understanding of street - level policy entrepreneurship is still in its infancy [3]. This study contributes to the theory in this field by extending Lipsky's concept of street-level discretion into the domain of public innovation under digital-era conditions [21, 22]. Practically, it sheds light on the institutional and technological conditions that enable street-level bureaucrats to act as agents of innovation, offering guidance for designing bottom-up innovation ecosystems in local government.

This study directs attention to the fact that change and renewal are powered by the junior ranks of public authorities. In general, this power may be formally found at the most senior levels of organizations, but that formal power does not stand alone. By examining the attitudes of individuals who work in innovation, this study reveals the critical importance of street-level bureaucrats' contribution to innovation in local government and shows that innovation is not only a product of planning from above or formal innovation teams, but rather is nurtured and driven from below—from the field—when there is space to allow that to happen. The findings from this study highlight the need to examine the contributions of street-level bureaucrats to the advancement of urban innovation, to identify the conditions that allow these bureaucrat to realize their potential as innovators and the factors that may limit them.

1.2. Innovation in the Public Sector, Including Local Government

In recent decades, there has been a growing understanding that innovation is not exclusive to the private sector, but is also essential for the public sector to be able to cope with complex challenges. Public innovation is defined as the implementation of a new idea, service, product, or process that creates greater value for the public, in terms of value for citizens, improved efficiency, or a solution for a public problem [6, 23].

In the past, the public sector was seen as conservative and slow. But, today, there is a clear trend of encouragement for public innovation. Government initiatives and international reports have encouraged the development of innovative solutions for current problems [6, 24], such as climate change, social inequalities, and aging populations. Studies have noted that a permissive organizational culture, supportive leadership, cooperation between organizations, and the empowerment of workers all contribute to the ability to innovate.

However, public innovation also faces barriers, such as risk adversity, limiting regulation, pressure to produce immediate results, and a lack of resources. To cope with these barriers, public-innovation laboratories, open competitions, and learning networks have been established [6, 24].

These barriers are particularly significant at the local-government level. Local governments are often subject to

the central government, in terms of rules and budgets, and are limited by national regulations. In addition, in local politics, great weight is given to short-term considerations. These factors and others influence the level of innovation observed in different local governments [25].

That said, local governments (municipalities and districts) are a central arena for public innovation due to their proximity to residents and their responsibility for everyday services. The ability to react to local needs in real time requires greater flexibility and, sometimes, ingenuity than that of the central government. Research has found that local governments tend to adopt technological, procedural, and institutional innovations, such as apps for managing city services, changes in organizational structure, models of public participation [26, 27], or regional partnerships among local authorities, to address common problems [25]. Successful local innovation often leads to the creation of tangible public value, for example, greater resident satisfaction, budgetary savings that can be directed toward other goals, or the reduction of inequities within the community [25].

The integration of frontline workers in the development of innovation—through training, focus groups, and providing space in which opinions can be voiced—is the currently recommended method for increasing the likelihood of success of innovations in local government [25]. Experts also recommend the creation of networks that strongly rely on learning from colleagues among street-level bureaucrats, for example, professional meetings that include city engineers, welfare managers, or city-innovation advisors, during which the different participants can exchange ideas with one another [26].

2. Materials & Methods

2.1. Qualitative Approach

This qualitative study aimed to investigate different interpretations of a single reality through the construction of clear experiential memory, to facilitate the description of the subjects and the explanations for them, in all of their multifaceted complexity [28]. This study was based on semi-structured, in-depth interviews, which were used to examine the attitudes and perceptions of workers and managers in the innovation space regarding the factors that encourage and discourage urban innovation. These interviews were conducted with individuals in the innovation space in the public sector in Israel. The qualitative approach facilitated the broad and deep examination of many processes [29].

2.2. Participants

Interviewees were professionals and managers in the field of innovation within their organizations, who were engaged in various aspects of public-sector innovation. They included

heads of municipal innovation departments, chief technology officers, digital transformation leaders, IT specialists, and other domain experts responsible for the planning, implementation, and management of innovation initiatives.

A total of 37 semi-structured interviews were conducted with individuals employed by 26 local governments (representing both large cities and peripheral municipalities) and 11 national-level organizations (e.g., government ministries, government agencies, and public-innovation units). This sample composition ensured a diverse range of perspectives across institutional levels, organizational types, and geographic locations. Within each local government or organization, we used a purposeful sampling approach aimed at identifying key informants with direct experience and strategic roles in technological and organizational innovation. Our goal was not statistical representativeness, but rather the inclusion of participants who could provide rich, practice-based insights into the phenomenon under investigation.

The initial pool of interviewees was identified in collaboration with professionals from the Israel National Digital Agency, which oversees the promotion of digital services in local government. Through a combination of expert referrals (i.e., snowball sampling) and targeted outreach, we recruited participants from municipalities and public-sector entities who were known to be actively engaged in digital and innovation-related programs. This sampling strategy enabled us to evaluate attitudes, perceptions, and institutional practices from a broad perspective grounded in the experiences of those leading innovation efforts on the ground and at the policy level.

2.3. Procedure

The interviewees signed an informed-consent form for their participation in this study, which was approved by the college's Ethics Committee. They were initially contacted via email or WhatsApp and invited to express interest by reaching out to the research team. Upon receiving a response, the purpose of the study was explained in detail and interviews were scheduled. All interviews were conducted via Zoom and were recorded with participants' consent. Each interview lasted between 45 and 60 minutes. The interviews followed a structured protocol consisting of 23 open-ended and semi-structured questions. The protocol was designed to elicit information in three main areas: (1) participants' professional background and role within their organization; (2) attitudes and perceptions regarding innovation processes in local government; and (3) perceived barriers, enablers, and contextual factors influencing innovation. To ensure transparency and depth, the interview protocol was developed based on prior literature and piloted before its final use. Examples of questions include: "How do you define innovation?"; "Can you describe a case in which innovation was successfully implemented?"; and "What barriers to innovation do you encounter?"

The interviewees included men and women of a range of ages who had professional backgrounds in innovation, digital transformation, technology, and management. Participants held mid- to senior-level positions in 26 local authorities and 11 national bodies, providing a diverse mix of geographic regions (central, peripheral, and mixed municipalities), organizational cultures, and professional perspectives.

A qualitative, thematic analysis was conducted. This analysis revealed recurring categories and themes across the interviews. This consistency indicated that the sample size was sufficient to meet the study's aims. Thematic analysis, as described by Braun and Clarke [30], is a qualitative method for identifying, organizing, and presenting patterns of meaning in textual data. It allowed the detection of shared perceptions, contextual nuances, and contrasting interpretations.

The analysis process consisted of three major stages: (1) familiarization with the data through repeated reading of transcripts; (2) initial coding of explicit and latent themes; and (3) categorization and naming of core themes and subthemes. Codes were grounded in participants' responses, and selected quotes are used to illustrate key themes. The diversity of the interviewees contributed to a richer understanding of how innovation is practiced and understood in different organizational and cultural contexts.

To enhance the trustworthiness of the thematic analysis, several validation procedures were applied. Triangulation was employed by comparing findings across interviews with participants from different types of organizations (local vs. national) and participants with varied roles. In addition, participant quotes were used throughout the analysis to ground interpretations in the data and provide direct evidence for each theme, thereby supporting both the credibility and the confirmability of the findings.

3. Results

3.1. First Theme: Street-Level Bureaucrats as Change Agents - Designing and Carrying out Innovation Policy

While many researchers have studied street-level bureaucrats in specific policy fields, such as policing, welfare, and education [1], this study, which was based on the attitudes and perceptions of individuals working to promote innovation in local government, identified the centrality of the street-level bureaucrat in the promotion of urban innovation. The first theme identified in this study concerns the role of these bureaucrats as change agents, the innovators on the inside who identify challenges and develop solutions. The hundreds of change agents acting within the organization demonstrate how innovation can develop from the ground up. The findings show that junior and mid-level workers (i.e., street-level bureaucrats) play an important role in putting innovation into practice. As one participant said, "We identify processes that

are still done by hand, to make them digital...” (Interview 16).

The interview from which the above quote was taken emphasized the ability to identify manual processes and digitize them, a process that relies on close familiarity with the daily workings of the system. This quote presents an example of how street-level bureaucrats identify bottlenecks and opportunities for improvement within their daily work and promote innovation based on empirical knowledge.

In accordance with this ability, one interviewee who held a senior position reported, “The junior ranks, they’re the change agents ... because, at the end of the day, innovation occurs from the bottom up” (Interview 35).

In fact, a significant portion of the innovation described in this study grew from the bottom up, from initiatives and ideas that arose from the field. Interviewees spoke about how their organizations made a point of including frontline workers in the identification of problems and the development of solutions. In one of the local governments, we were told about a case of urban innovation that was identified by street-level bureaucrats, which led to the “development of a payment system that could accept digital checks” (Interview 32).

A participant from another local authority told about a solution for beachgoers that took the form of automatic machines that sold towels at a symbolic price. This solution was developed to solve a problem that had been identified by people in the field. It was adopted by the local authority and now serves the residents.

Local governments that recognized the centrality of street-level bureaucrats actively sought to include them in decision-making processes. For example, as one participant said, “We had a process with the City workers that was almost a year long ... we met the units, identified the pain points” (Interview 7).

In this cooperative process, innovation managers approached the different departments, listened to the pain points and daily challenges of workers at all levels, and used that accumulated knowledge to develop relevant solutions. In this way, workers in the field were partners in the definition of the problem and the design of the response, as opposed to just carrying out orders from above. This type of approach anchors innovation in daily operations and ensures that the developed solutions will meet the real needs of the public and the organization.

Street-level bureaucrats, who are positioned at the daily meeting point of residents and operational processes, have practical knowledge and a unique perspective on the needs in the field. The understanding of street-level bureaucrats as change agents and as those who possess unique knowledge that can be used to develop urban innovation has practical significance, as the interviewees involved in promoting innovation in local governments noted. For example, one interviewee said, “My starting point is to conduct observations. Actual observations, to go and sit with X [the street-level bureaucrat] and watch how she works” (Interview 16).

Organizations that recognized this actively sought to em-

power and recruit these workers for innovation efforts. As one participant noted, “Over 400 change agents ... they brought ideas, some of which were put into action” (Interview 22).

Street-level bureaucrats are public workers that come into daily contact with citizens. They make decisions in real time, subject to constraints, and “create policies in practice.” This study identified them as more than creators of policy in practice [9, 31]. As a result of their designing policies in the field, they were identified as ambassadors and initiators of innovation. These workers come up with ideas and develop initiatives. All of this reflects the critical role of street-level bureaucrats as those who carry out policies and initiate policies at the same time.

This theme of street-level bureaucrats as change agents in the field of urban innovation is based on the fact that their proximity to residents allows them to put the idea of “the person in the center” into practice. They focus on the resident standing in front of them, viewing innovation not as a goal in and of itself, but rather as a tool for improving residents’ quality of life.

3.2. Second Theme: Focus on the Public, Not on Innovation - Street-Level Discretion for Residents’ Needs

A central theme that arose from the field was that the importance of the street-level bureaucrat in the context of the promotion of urban innovation is expressed through the perspective that focuses on the needs of the public, as opposed to innovation or technology as goals in and of themselves. As one participant noted, “Innovation means to see the resident” (Interview 32).

Another participant explained, “Innovation is not a goal, but rather a tool for improving the service for the residents and making processes more efficient” (Interview 1).

This attitude prioritizes the needs of the organization and the residents over technological tools. It expresses a pragmatic perspective that emphasizes the needs of the organization and the citizens over any excitement about the technology itself.

The findings show that the implementation of the person-at-the-center approach is largely based on the implementation of innovative solutions, but also reflects the responsibility to make sure that the technology will serve the city and its residents and will not be forced upon them. In this way, the different actors bring forward practical solutions based on day-to-day familiarity with the problems and, in that manner, become partners in the development and implementation of policies. As one participant said, “They know the field, a street cleaner was the one who suggested using color-coding. They’re the ones who come up with solutions” (Interview 31).

This theme emphasizes the fact that bureaucrats need to balance their carrying out of policies with the tailoring of those policies to the situation on the ground and residents’

needs. They mediate the interaction between technological ideas and the context in which those ideas are to be applied and, sometimes, even protect the public from inappropriate solutions.

From here, we can see that, in the eyes of the bureaucrats, innovation is not a goal in and of itself, but rather a tool for improving services for the public. They exercise normative personal judgement as they consider new initiatives and their potential impact on residents, as opposed to basing their thinking on the language of organizational innovation. This finding is congruent with the literature that has noted that street-level bureaucrats work on the frontlines of government and interact directly with citizens. Unlike traditional bureaucrats, these professionals need to meet citizens' needs while meeting policy goals [1]. This emphasizes their role as ethical agents who identify gaps between policies and reality and then translate the needs of the public into practical initiatives.

"Our approach is that innovation needs to serve the city and not the other way around ... If the solution is not appropriate for the city, it will not be implemented" (Interview 20).

The interviewee quoted above gave voice to a mediator-critic approach, according to which innovations are evaluated in terms of how well they suit the local context. Her words demonstrate the responsibility of street-level bureaucrats to evaluate the practical suitability of innovative solutions for the local context, a clear process of mediating between a technological idea and its practical relevance.

The literature on street-level bureaucrats offers differing views on this exercising of personal judgement. Some see it as a negative factor that undermines managerial control and responsibility; whereas others view it as a positive factor that allows bureaucrats to repair policy failures and provide better service [1]. In the context of the promotion of innovation in local government, it appears that the exercising of personal judgement has a positive influence, acting not only as a driving force for the promotion of innovation, but also as a driver for the promotion of appropriate innovation that provides public value. This is important, in general, and in the era of AI, in particular.

3.3. Third Theme: The Role of the Street-Level Bureaucrat in the Era of Digitization, AI, and Smart Cities

The third theme focuses on the digital era, which offers new tools, but also brings up ethical, professional, and social dilemmas. Street-level bureaucrats need to navigate the paradox between automation and preserving the human element, between efficiency and accessibility, and, sometimes, they need to act as agents, bringing technologies to populations that are not digitally literate, both within and outside of their organization.

The role of the street-level bureaucrat has become even more important in the digital age. The interviewees spoke

about how the adoption of innovative digital processes by local government sometimes fails due to difficulties involving human capital: "There are people who are simply not comfortable with technology ... They'll write a note on a piece of paper and the secretary will type [it up] for them" (Interview 16).

Many of them "have low digital literacy" (Interview 4).

This brings another dimension of human sensitivity to the mediation process:

When there's a clear goal from the Authority, like getting rid of paper forms, it's easier to advance digital processes... Not everyone here is comfortable with technology, so there are things that need to be explained to them or tailored for users who are less tech savvy (Interview 12).

There is a need to make things accessible, to explain, and to serve as a bridge between the technological solution and the workers or residents who find it difficult to use digital tools. This statement emphasizes the bidirectional challenge faced by street-level bureaucrats: to implement innovation-related policies and, at the same time, to ensure that those policies will be equitable, accessible, and relevant. Local bureaucrats do not only implement policies; they also translate them, sort them, and, sometimes, even act to protect the public from the negative consequences of innovations that are inappropriate for the situation on the ground.

These findings emphasize the way in which these bureaucrats not only put policies into action, but also design them to meet local needs. This demonstrates how effective technology in a local government relies not only on technological tools, but also, and most importantly, on the judgement, experience, and relationships of workers in the field, who are the true middlemen between policy and urban life as it is actually lived.

This theme reveals a paradox of the era of AI and digitization. On the one hand, bureaucrats can be conservative human capital that acts as a bottleneck limiting the spread of innovation. In light of this issue, interviewees told us that, in order to build trust, you do not need to make big revolutions: "The goal is not to re-educate people, but to give them tools that are compatible with what they are already used to doing" (Interview 12).

On the other hand, they are also the ones who may identify opportunities for the appropriate, precise use of AI in the field: "In the Collections Department, a problem with residents' payments was identified and the frontline workers suggested developing an AI system on the local government's website that would allow payments" (Interview 32).

These findings are congruent with the variable work environment of the street-level bureaucrat and underscore the need to provide appropriate tools, to elevate the bureaucrats' work in the field and to allow these workers to strengthen their innovation muscles.

With regard to personal judgement, this study highlights the tension facing frontline workers in this era of smart technologies. On the one hand, AI systems increase efficiency and

facilitate data-based decision-making. On the other hand, there is a need for human judgement, sensitivity, and consideration of the local context. The bureaucrats experience this paradox between automation and a human touch and between standardization and initiative. This provides an understanding of the role of the bureaucrat as someone who balances the new (AI) with the old (human connection) and, especially, of how perceptions about innovation are tested by the values of trust, ethics, and social justice, under conditions of structural (and other) constraints.

3.4. Fourth Theme: Structural Constraints - Workload, Lack of Positions, and Lack of Training

The fourth theme concerns structural constraints, including lack of manpower and lack of training, which impede innovation. An important aspect of the theory of street-level bureaucracy is the recognition of the fact that street-level bureaucrats work under conditions of ongoing lack of resources: time, manpower, training, technology, and institutional support. This sometimes leads them to develop shortcuts, survival strategies, and filtering mechanisms.

The operational workload, lack of manpower, and lack of budgeted job positions create an organizational reality in which it is difficult to implement existing policies or initiate or advance innovation. As one interviewee said, "There are no incentives, there are no budgeted positions for hiring skilled people" (Interview 1).

Workload can also act as a barrier to innovation. As one participant noted, "It's hard for people to lift up their heads above the everyday [workload] and evaluate their methods" (Interview 19).

This means that even when there is a recognized need for innovation, there may be insufficient organizational infrastructure to support it, which broadens the gap between the digital vision and budgetary limitations in local government: "It's a lot of money to bring in information systems, a local government doesn't have money growing on trees" (Interview 3).

The findings also show the challenges of supporting and training street-level bureaucrats. The quotations presented above point to a common situation in which innovation in the field occurs on an informal, ad hoc basis, as motivated workers who have the necessary personal skills try to improve processes on their own, without guidance or institutional resources for support. The interviewees noted a lack of official mechanisms for developing innovation capabilities, in general, or frontline workers' capabilities for technological innovation, in particular. As one of the interviewees described, "I think there's a need for more training for workers, because we have a digital-literacy problem here" (Interview 16).

An additional paradox is found in the ability to identify and develop a solution, but then to discover that it does not meet regulatory requirements or is not compatible with budgetary

or other constraints. In this manner, tension is created between local creativity and external limits and bureaucrats find themselves trapped between the vision and the framework. In addition, these bureaucrats must also bridge the gap between advanced technology and a diverse, non-technologically literate population, while maintaining equality and accessibility.

The personal initiative of a street-level bureaucrat who is going beyond the requirements of his or her official job is significant for furthering urban innovation. However, this also emphasizes the need to develop organizational infrastructure to support these workers. Without such support, there is a danger that innovative actions will remain dependent on a few highly motivated units and will not be integrated into the broader routine of the organization.

In this context, urban innovation is not seen as a privilege or an opportunity, but rather as an additional challenge on top of existing workloads. Innovation processes require time, learning, and room for trial and error, all of which are scarce resources in organizations focused on putting out fires. This situation emphasizes the importance of local bureaucrats as those who advance innovation despite unfavorable conditions. They need to not just think creatively, but also to maneuver within institutional limits and act at the margins of the possible. Their mediating between innovation policies, organizational capabilities, and needs in the field is subject to difficult constraints and requires broader systemic recognition of the distance between expectations and the ability to put things into practice.

Another type of innovation often develops from within these situations of organizational distress: innovation led by bureaucrats with innovative tendencies who need to find solutions in order to continue to function. The lack of supportive infrastructure does not necessarily discourage them. Rather, it gives rise to creative practices, innovation, and the adaptation of existing solutions to local needs. For these workers, innovation is a product of need, as opposed to ideal circumstances. It is an attempt to make processes more efficient, simplify regulations, or gradually introduce technology, even in the absence of resources or formal training. In this way, the constraints are not only limitations; they are also an internal driver for those bureaucrats who feel deeply obligated to improve public services.

These findings support the fact that innovation develops from the ground up, through daily contact with problems and subject to the constraints that lead to initiative. That said, the findings also reveal that the likelihood that street-level bureaucrats will become innovators is greatly dependent on support from above.

3.5. Theme 5: Encouragement from Above to Create a Fertile Innovation Space for Street-Level Bureaucrats

Some local governments have begun to invest in training workers for a change in thinking and culture. As one of the

interviewees said, “We took workers and caused them to think differently, to look at problems in a different way” (Interview 14).

Another interviewee said, “I expect the workers to identify the challenges themselves and to come up with a response” (Interview 8).

These programs, which focus on the development of creative thinking skills and problem-solving among frontline workers, aim to make innovation part of each worker’s job and to allow junior-level bureaucrats to implement large and small solutions in their daily work. When street-level bureaucrats are equipped with the tools, knowledge, and appropriate autonomy, they can be transformed from passive agents carrying out orders into active change agents. The findings show that the success of innovation depends not only on the policies of senior managers, but also on the ability to harness the power of the entire operational staff. Organizational support for street-level workers, in the form of training, guidance, and permission to try new things, is what allows these workers to actualize the innovative potential inherent in their work and to contribute to the integration of change into the organization.

Support from the senior ranks is a critical factor for the promotion of innovation in public organizations. When senior management (e.g., mayors, CEOs, department heads) sees innovation as a strategic goal and actively promotes it, that filters down through the ranks and creates an organizational culture in which change is possible. Innovation processes require both formal authorization and personal support that can provide those processes with legitimacy and provide the necessary resources. The need for support from more senior decision-makers, like mayors and CEOs, was described as follows: “If there’s no assistance from above, it won’t move

forward” (Interview 1).

When the head of a local government or a CEO emphasizes innovation, that creates an obligation for mid-level managers, who understand that it is an organizational priority. In such cases, innovative projects may be granted designated budgets. In contrast, in organizations in which the senior leadership does not view innovation as a key value, projects will get stuck and the implementation of new solutions will become challenging.

This research emphasizes the importance of an activity space that is protected and supported by management as a condition for the development of innovation at the street level. When they have permission to bring up problems, propose solutions, and experiment, bureaucrats will rise to the challenge. When the organizational climate discourages discussion, the potential for innovation will not be realized or will be realized in only a limited manner.

Urban innovation succeeds when it builds on what already exists, not when it acts in opposition to the existing bureaucracy, but rather when it develops naturally from that bureaucracy. There is a need for recognition of the roles of street-level bureaucrats as not only those who implement policy, but as workers who are sources of inspiration and initiative.

This study identified that the promotion of innovation in local government does not occur in any isolated arena at the higher or lower levels of an organization. Rather, innovation occurs when there is a shared arena based on support from above and recognition of the role of the street-level bureaucrat, who works from the bottom up. In the subsequent Discussion, this arena is referred to as the *innovation space*.

Table 1. Promoting Urban Innovation (Framed by a Street-Level Bureaucrat).

Theme	Description	Related SLBs Principle	Implications for Local Government
Street-Level Bureaucrats as Change Agents	Bottom up: SLBs identify problems on the ground and propose solutions	Discretion; bottom-up initiative; policy implementation as an actual policy maker	Involve SLBs in the processes of identifying problems and designing solutions
Focus on the Public, Not on Innovation	Innovation is not a goal, but a tool for improving public service for residents	Citizen-oriented service; mediation between policy and needs	Encourage personal discretion and examine innovation in local context
SLBs in the Era of Digitization and AI	Mediate between technological and needs	Balancing Automation	Provide tailored training and tools
Structural Constraints	Workloads, staff shortages, and lack of training make it difficult to promote innovation in the field	Action within the limits of the possible	Invest in infrastructure and incentives; allow for trial and error
Encouragement From Above	Top down: management that encourages innovation creates room for action	Autonomy	Institutional support: given authority, resources, and legitimacy to take initiative; make innovation a declared organizational value

4. Discussion

4.1. Public Innovation as Networked Activity

This study presents a new perspective on innovation in local government, which does not only occur in the formal arena of innovation departments. Sometimes, innovation develops through the everyday work of street-level bureaucrats, those actors who regularly interact with the public and standard bureaucratic procedures. Expanding upon the classic work of Lipsky [9] and later studies [14, 17], this study broadens the view of street-level bureaucrats as policy designers and presents them as innovators within their respective organizations, who act within areas of institutional ambiguity and possess the ability to create policy change in practice.

The findings underscore how important it is that senior managers in local government recognize street-level bureaucrats as actors who translate ideas that spring from below and grant those lower-level workers the legitimacy they need to innovate. Instead of viewing innovation as the result of central planning alone, leaders should view it as the product of reciprocal relations between formal knowledge and professional intuition from the field.

This model is congruent with the new ideas of reflexive public management, according to which public innovation is a networked activity that develops at the interface between policy, organization, and the everyday [32]. Innovation is not imposed from above; it is formed, tailored, and fine-tuned through mediation processes conducted by diverse actors, who possess different resources and different perspectives.

4.2. The Personal Judgement of Bureaucrats as a Catalyst for Tailored Innovation

The literature on street-level bureaucracy has devoted considerable attention to the personal judgement of street-level bureaucrats and their ability to deviate from instructions or adapt those instructions to local conditions [9, 31]. Empirical studies have found that this judgement is influenced by the personal meanings that workers attach to their jobs, their proximity to the community, and their ability to act relatively autonomously [11].

The findings of this study point to an additional, relatively new factor affecting the use of personal judgement: personal attitudes toward innovation. Some bureaucrats do not implement policies just because of their professional obligations or the requirements of their job, but rather because they have personally recognized a gap, they feel that they can influence matters, and they feel a desire to solve a problem. This sense of mission, which was expressed by more than one change ambassador, proposes a new view of their role: as agents who

act to promote public value and not just apply rules.

This approach lends weight to studies [2, 3, 14], who argued that street-level bureaucrats are not only reactive actors, but also act as interpreters and creators of policies, when they are equipped with ethical intuition and contextual judgement. In the context of urban innovation, granting these workers encouragement, support, and recognition increases the likelihood that urban innovation will move forward.

4.3. AI and Street-Level Bureaucrats

The findings of this study clearly reflect the paradox of the AI era in local government. Smart technologies such as AI offer real opportunities for increased efficiency, predictions, and deep learning. However, these technologies also threaten the factors that make street-level bureaucrats key actors: personal judgement, empathy, and unmediated relationships with residents.

That said, this study revealed that this paradox can be transformed into a managerial opportunity. When street-level bureaucrats participate in the identification of technological needs, like a need for AI-based payment methods, they are not barriers to innovation; they are mediators of the relationship between technology and real life.

To realize this potential, organizations should invest in these bureaucrats and not only in technological infrastructure. These workers should be given training, space for discussion, and cognitive and ethical resources that will allow them to mediate the use of technology in an intelligent, appropriate, and humane manner. As one interviewee said, “The goal is not to re-educate people, but to give them tools that are compatible with what they are already used to doing.”

Here, we see the new role of innovation departments, not to impose AI from above, but to harness the power of street-level bureaucrats as implementation designers who mediate the relationships between algorithms and operations and between predictive models and human reality. This process requires a broad understanding of AI as an ethical practice, as noted by Crawford [33]. It is not just a tool, but rather a new field for public responsibility, which requires systematic integration of ethical principles and values into technological tools.

This study presents a new outline of the role of the street-level bureaucrat as someone who not only carries out instructions, but also identifies, translates, mediates, and moves things forward. Urban innovation is not based only on formal policies; it develops from the informal encounter with the public, familiarity with failures, and the ability to transform problems into opportunities. This process is possible when there is supportive organizational, ethical, and technological infrastructure and, importantly, when there is official recognition of the street as a source of knowledge and not just as a space in which policies are implemented.

The movement to an era of smart governance cannot be based only on technological jumps. It also requires organiza-

tional and ethical jumps. When it is granted the necessary tools and legitimacy, street-level bureaucracy can not only further innovation; it can ensure that that innovation is ethical, appropriate, and sustainable.

One of the main concepts raised in this study is that of innovation space, a middle ground on which urban innovation can be put into practice. This is not only a physical space. It is an organizational and cultural arena, a mind space that is created when there is an active connection between institutional-managerial support from above and innovative activity of street-level bureaucrats.

The innovation space exists when senior personnel (e.g., mayors, CEOs, strategy departments) do not only allow innovation, but actually create the necessary conditions for innovation: permission to act, relative autonomy, listening to voices from the field, and incentives for independent thinking. At the same time, street-level bureaucrats identify problems, propose solutions, and sometimes even make changes without permission from above, based on their familiarity with the situation on the ground and their own sense of professional responsibility.

The innovation space exists between desire and ability, between an idea and its implementation, and it requires mediation, translation, and sometimes even protection. Innovation departments act as organizational infrastructure that connects the two worlds: They identify ideas from the field, facilitate their formulation, recruit managerial support, and sometimes even provide a technological or operational response to a concrete need.

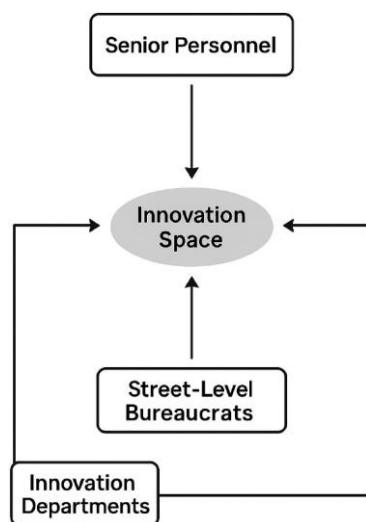


Figure 1. Innovation Space.

4.4. Study Limitations

Since this study was based on semi-structured interviews, some of the answers given in the interviews may have been influenced by the organizational or social context, which may have affected how the interviewees chose to express them-

selves. This may limit the generalizability of the findings to all local governments or all street-level bureaucrats. In addition, the fact that the study was conducted during a period in which the idea of innovation, especially as it relates to AI, is at its early stages made it difficult to evaluate supported processes or clear metrics. Finally, due to the qualitative nature of this study, its main contribution is that it provides a deeper understanding, as opposed to any quantitative conclusions or broad generalizations about the phenomenon.

4.5. Future Research

Future studies might expand on this research in a number of different directions. For example, researchers might work to identify ways to encourage the development of organizational initiatives by street-level bureaucrats or attempt to identify perspectives regarding the concept of innovation at the local level.

5. Conclusions

This study highlights the critical role of street-level bureaucrats as central actors in fostering innovation within local government. It challenges the traditional perception of innovation as a top-down process confined to formal innovation departments and instead frames it as a networked, dynamic activity that emerges through everyday interactions between public servants and residents. The findings demonstrate that meaningful policy change and innovation often occur in spaces of institutional ambiguity, in which bureaucrats exercise professional judgement, creativity, and ethical responsibility.

This research underscores how street-level bureaucrats are not merely policy implementors, but also innovators and policy designers. Their proximity to the community, personal attitudes toward problem-solving, and sense of mission enable them to identify gaps, propose solutions, and adapt policies to real-world conditions. Recognizing and legitimizing these contributions is vital for creating public value and advancing urban innovation.

This study also draws attention to the paradox of technological progress, particularly with the growing use of AI in public administration. While AI offers efficiency and predictive capabilities, it also risks eroding the human qualities—empathy, ethical judgement, and contextual decision-making—that define the work of street-level bureaucrats. The findings suggest that instead of replacing these workers, AI should be developed and implemented collaboratively with them, to ensure that this technology complements rather than undermines their role.

To realize the potential of this hybrid approach, local governments must invest not only in technological infrastructure, but also in organizational and ethical infrastructure. Senior managers and innovation departments should actively create the conditions for innovation by granting autonomy, provid-

ing training and resources, and fostering a culture that values insights from the field. The concept of *innovation space* introduced in this study captures this middle ground, where institutional support from above meets the creativity and initiative of street-level bureaucrats from below.

Ultimately, the transition to smart governance cannot rely solely on technological advancements. It requires organizational and ethical progress rooted in trust, professional empowerment, and recognition of street-level bureaucrats as key partners in innovation. By embracing this inclusive, networked model of innovation, local governments can ensure that technological developments are not only efficient, but also ethical, contextually appropriate, and sustainable.

Abbreviations

SLBs Street-Level Bureaucrats

Author Contributions

Vered Uziel is the sole author. The author read and approved the final manuscript.

Ethics Approval and Consent to Participate

The study was approved by the Ethics Committee of approval number 577. Informed consent was obtained from all participants.

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Conflicts of Interest

The author declares that while the data were originally collected for a government-funded report, the present study was conducted independently and the funding source had no role in the design, analysis, or interpretation of the data.

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