

The Impact of E-Government on Street-Level Bureaucracy: A Literature Review

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Abstract

E-government and street-level bureaucracy are two interrelated subfields in the sphere of public administration. E-government is defined as the use of Information and Communication Technologies (ICTs) for public service delivery. Street-level bureaucrats (SLBs) are public officials who directly deal with clients on the ground. When the applications of ICTs rearrange the service provision process, traditional roles played by SLBs change either positively or negatively depending on the context and the culture. This study aims to understand the impact of e-government on the SLBs using a literature review. A time frame from 1980 to 2024 and keywords including “street level bureaucracy, frontline workers, e-government, digital government, online service delivery, automation” were set in the search using the University of Sydney online library and Google Scholar search engines. After reading the abstracts, ten peer-reviewed academic publications were selected for the review. The results revealed three basic theses regarding e-government and SLBs: enablement theory, curtailment theory and continuation theory. According to enablement theory, e-government enables SLBs' work by increasing efficiency, providing more information for decision-making and reducing workload. The curtailment thesis emphasizes that e-government inhibits SLBs' discretionary power by various means. Thirdly, the continuation theory states that by using adapting and coping mechanisms, SLBs continue to exercise their power amidst the active use of digital tools. Another significant finding is that there is a scarcity of studies connecting these two fields. Moreover, most of the available studies are qualitative and represent the Global North contexts. As scholars argue that e-government's impact on SLBs depends on context, culture and personal traits, there is an urge for research in this field in the Global South context.

Keywords: e-government, street-level bureaucracy, enablement theory, curtailment theory, continuation theory

1. Introduction and Background

E-government and street-level bureaucracy are two interrelated subfields in the sphere of public administration. E-government is defined as the use of Information and Communication Technologies (ICTs) for public service delivery (Buffat, 2015). Over the past decades, it has become an integral part of government and public administration, shaping the public service delivery process with efficient, quality, and easily accessible services (Ball,2023; Jansson & Erlingsson, 2014).

The concept of "Street Level Bureaucracy" was initially introduced by Lipsky (1980) as the “public service workers who interact directly with citizens in the course of their jobs and who have substantial discretion in the execution of their work” (Lipsky,1980, p.3). They possess discretionary power, the authority to make decisions and exercise judgement in delivering services (Lipsky,1980).

The concept dealt with the 'bottom-up' perspective, which gained prominence in the 1970s, challenging the dominant top-down approach. From the bottom-up perspective, policy is seen less as the creation of policymakers and more as the result of actions carried out by frontline organisational actors (Ellis, 2011). According to Lipsky (1980), initial street-level bureaucracy research primarily focused on studying activities in areas such as schools, police and welfare departments, lower courts, and legal services offices.

Over time, the scope of this research field has expanded. While teachers, police officers, and social workers are still considered 'traditional' street-level bureaucrats, attention has broadened to include other subcategories like court clerks, tax auditors, emergency call operators, attorneys, correctional officers, and local housing officials (Hupe, 2019). The earlier research studies have extensively focused on concepts like discretion and SLBs' coping strategies (Hupe, 2019). The author further indicates that concepts like ‘policy alienation’ and ‘uncertainty’ became central in SLB research later. There has been a focus on the institutional or agency levels

of SLBs. However, many studies on individuals' perceptions emphasise the importance of individual traits in service delivery.

When the applications of ICTs rearrange the service provision process, traditional roles played by SLBs change (Ball et al.,2023; Buffat,2015; Pors, 2015). SLBs' discretionary power is impacted, either positively or negatively. As Ball et al. (2023) pointed out, digitalisation is a vague concept that varies from routine process automation to artificial intelligence. However, there is only a limited literature looking into it (Busch et al.,2018). This study aims to investigate the limited existing literature regarding the e-government and street-level bureaucracy and analyse the existing theories based on the research question “What is the impact of e-government on street-level bureaucrats?”. Consequently, the study sheds light on the gaps in literature particularly regarding the developing countries in the Global South. This paper is structured as follows. The methodology will be elaborated in the next section, followed by the results. Finally, the conclusion at the end will summarize the findings and highlight the research gap.

2. Methodology

The study used a scoping literature review as mentioned in Jesson et al. (2012) as the methodology. It documents what is already known and critically analyses the gaps in the knowledge set for future research. The review had the following steps in its process.

2.1 Search Strategy

The literature review used two electronic search databases: Google Scholar and the University of Sydney online library. These databases were selected since they give indexes of peer-reviewed literature and cover a wide range of publications. It used a time frame from 2010 to 2024 and keywords “street level bureaucracy, frontline workers, e-government, digital government, online service delivery, automation.” Accordingly, 397 articles from Google Scholar and 21 from the University of Sydney online library were screened.

2.2 Inclusion and Exclusion Criteria

In the second stage, characterising inclusion and exclusion criteria was carried out. The selection of articles was confined to those written in English, aligning with the language of this literature review to maintain language consistency. Google Scholar yielded English articles as anticipated, resulting in no alteration in volume. However, the number of articles available via the University of Sydney online library decreased to 17. Subsequently, the shortlisted articles underwent a further screening process to ascertain the presence of peer review and full-text availability. This sorting led to a shortlist of 29 reviewed articles from Google Scholar and 12 (peer-reviewed and full-text available) from the University of Sydney online library. The reason for selecting peer-reviewed sources is to ensure the quality, credibility, and reliability of the information being used and to verify the accuracy of the content and the validity of the research methods. Using the full-text availability option, I ensured I had access to the complete content of the articles I am using because it is important to understand the research, as abstracts alone might not provide sufficient depth or context.

Table 1

Inclusion and Exclusion Criteria for the Review

	Inclusion criteria	Exclusion criteria	Reason for exclusion
Language	English	Non-English	It is challenging to understand and assess content in languages other than English.
Temporal horizon	2010-2024	All papers published before 2010	To reach the most recent updates of the scholarly work
Literature type	Peer-reviewed	Grey literature, non-peer-reviewed literature	To give priority to concrete data and findings that rely on evidence-based research.

Publication status	Published and online available journal articles	Physical books, reports, meetings, etc.	Obtaining physical items within a given time frame is challenging, and online journal
			Articles are more accessible for rapid research.

2.3 Quality and Eligibility Assessment

Then the article titles and abstracts were carefully reviewed manually to assess their relevance to e-government and street-level bureaucracy. It ensured the relevance to the topic.

Finally, after removing duplicates, ten (10) articles were selected for the scoping review.

3. Results

Firstly, the analysis of the ten articles will be presented in chronological order with a summary at the end. Then the key findings and the identified research gap will be discussed in the conclusion section.

The digital government's impact on street-level bureaucracy has two types of theses in literature. In his review article “Street-level Bureaucracy and e-government,” Buffat (2013) discusses these two-fold arguments: the curtailment thesis and the enablement thesis. The author elaborates, with examples, on how the curtailment thesis scholarship argues that e-government restricts the discretionary power of SLBs.

Buffat (2013) puts forward several critiques of this thesis, highlighting the limitations and weaknesses to proceed with the argument. Next, the author examines the scholarship regarding the enablement thesis. He presents how several studies concluded that e-government is an enabling factor for street-level bureaucrats.

He points out that, in addition to facilitating the SLBs’ work, e-government can also enhance the discretionary power of SLBs by equipping them with

updated information. Overall, the author argues that e-government is critical, but it is only one of the many factors that mainly enable SLBs' everyday work, supporting the enablement thesis. Though the author stamps his argument, he needs to be more conclusive on which digital government practices affect SLBs and which do not. Instead, the author leaves such investigations for future research, highlighting the limited empirical results. He identifies discretion and accountability as two major areas that should be investigated concerning e-government. Another critique is that this review is dated, as it was published in 2013.

Jansson and Erlingsson (2014) conducted a qualitative case study in a Swedish municipality to determine the impact of e-government on the legitimacy of the political system. Lipsky (1980) identifies discretionary power as a requirement for creating legitimacy. Focusing on the policy implementation that SLBs carry out, the authors find that e-government hinders legitimacy-building by challenging SLBs' role in responsive listening and situational adaptation. They highlight that e-government has employed SLBs in additional tasks such as responding to emails. It reduces their time for face-to-face interactions, which is crucial for creating legitimacy and implementing democratic values (Jansson & Erlingsson, 2014). Further, standardised software's overly strict rules and regulations diminish the situational adaptation possibilities for exceptional cases. Jansson and Erlingsson (2014) also view the possibility of e-government of improving legitimacy with its neutrality and predictability. However, they argue that e-government and SLBs cannot replace each other. Since e-government was at the formative stage by then (in 2014), the authors admit to having difficulty drawing straightforward conclusions. This research was a case study, providing detailed information on the impact of e-government on SLB's role. However, its findings cannot be directly related to any other organization in any context.

Pors (2015) conducted an ethnography to examine the impact of e-government reforms on street-level bureaucrats at a citizen service centre in a Danish municipality. He notes that while e-government literature supports the enablement thesis, critical literature on professionalism and public

management supports the curtailment thesis. He identifies that the SLBs' mode of professionalism has been redefined from service to support, blurring their professional skills and personal competencies. It aligns with the critical literature on professions and public management (Pors, 2015). He highlights two fundamental changes in the SLB role: de-specialising tasks and intensified informality towards citizens. SLBs no longer require learning rules and regulations; their discretionary power is removed as automated computer applications make decisions (Pors, 2015). Instead, SLBs are required to be adaptable and work together with citizens openly and informally. The author points out that "working together with the client" is a rewarding practice as both the parties "work and learn together" (Pors, 2015, p.188). E-government has brought a series of practical, professional and emotional challenges for SLBs (Pors, 2015). This research has revealed the nuances of the impact of e-government on SLBs. However, these ethnographic findings need to be more conclusive amidst the two opposite theories and have limited generalisability.

Busch et al. (2018) also identified that ICT can have both enabling and constraining effects on the discretionary power of SLBs. They conducted a qualitative study in two Norwegian institutions, a court and a tax administrative office, to identify how and why public service workers react to digitised discretionary practices. Unlike previous research, this study provides an in-depth investigation from the perspective of SLBs. The study revealed that SLBs adopt strategic responses (compliance, acquiescence, habitual acceptance, appropriation and defiance) to cope with institutional complexity in digitalised street-level bureaucracies. Further, SLB's preferences for a particular strategy depend on public service provision characteristics (decision quality, societal considerations, routinisation, technology utilisation, professionalisation, information uncertainty, case complexity, decision consequence and autonomy). Adding a new theory to the literature, they conclude that SLBs reflect on the impact of digitalisation and react accordingly. So, enabling or curtailing discretionary power depends on SLB's attitude.

Giest and Raaphorst's (2018) research on "failed" implementation of electronic health records in the United Kingdom (p.141) finds two main hurdles that hinder the application of e-government at street-level; "existing hierarchies and the accompanied power asymmetries" (p.150) and "willingness and/or ability of street-level bureaucrats" (p.151). This analysis emphasizes the important role of personal traits and contextual factors of SLBs in adapting to e-government.

Conducting research on relocating accountability through e-government, Petrakaki (2018) argues that in the era of e-government, accountability is embedded in technology and its standards, creating a horizontal relationship where officials are accountable for managing digital interfaces, and citizens are co-producers of digital information, responsible for holding the public sector accountable. The paper highlights that these changes shift the sources and locations of accountability, making it more precarious, without necessarily improving or worsening accountability outcomes.

Deviating from the research in the global north in the field of SLB, Plantinga (2022) provides insights into the use of Artificial Intelligence (AI) in public service in Africa. It identifies key foundational factors shaping AI adoption, including public officials' technology experiences, regional public administration values, and emerging AI principles for public use. Four major concerns are highlighted: Integrity issues due to unreliable infrastructure and data management, Inclusivity challenges exacerbated by AI's technical and opaque nature, Safety and sustainability issues from AI systems implemented outside traditional accountability structures, Privacy and autonomy implications from AI's alignment with big data activities. The paper emphasizes the need for recognizing the role of public servants in mediating AI's use and impact, incorporating their professional, ethical, democratic, and relational values in decision-making.

Wihlborg and Iacobaeus (2023) argue that the context is pivotal for fostering entrepreneurial behaviours in enhancing digital inclusion in street-level bureaucracy. The study highlights that digital context fosters entrepreneurial approaches and citizen support, but bureaucrats have a limited influence over digital services constraints in long term. Three types

of discretion are critical for entrepreneurial approaches: organizational discretion (what the context allows and demands), competence-based discretion (professional skills and experience), and micro-level project-based flexibility. The study, conducted in Sweden's advanced welfare state, suggests similar outcomes in similar structures but calls for further research in different welfare contexts and with user perspectives to deepen understanding of digital inclusion.

Ball et al. (2023) explore how different forms of digitalisation in service delivery affect both SLBs and citizens' ability to act within social protection systems in three countries (Denmark, Belgium and the UK). Through their qualitative interviews, the authors identify three discrete models of digitalisation in welfare-to-work programmes: virtual engagement, transactional automation and targeted activation. Providing solid evidence, they conclude that automated discretion, as predicted by some scholars, is far from reality. The three digitalisation modes exhibit apparent effects on how citizens interact with bureaucracies, the challenges they face in accessing social protection, and the extent to which street-level discretion continues to influence welfare administration (Ball et al., 2023). Overall, this recent study takes a step forward in SLB and e-government research and provides conclusive findings to the literature.

Marienfeldt (2024) carried out a qualitative systematic literature review based on the research question, "How do digital tools change decision-making in street-level bureaucracies as evident in empirical research?" (p.2). It is an updated and nuanced version of Buffat (2013). Analysing 36 empirical studies, the author discusses how the curtailment thesis and enablement thesis are proven in literature. He identifies three roles played by digital tools in the scope of SLB: supportive (ex, websites), leading (ex, risk assessment tools), and decisive (ex, algorithms) roles. He finds that by applying digital tools, SLBs' discretionary power in service-oriented organizations (ex, citizen service centres) is reduced as per the curtailment thesis. However, in regulation-oriented organizations (ex, Police), e-government tools enable the discretionary power of SLBs, providing comprehensive information bases for decision-making (Marienfeldt, 2024).

In addition, he applies the “continuation thesis,” developed in the social work field, to elaborate on the findings. The continuation thesis identifies the coping mechanisms developed by SLBs to implement policies amid e-government practices as resilient measures. For instance, the continuation thesis explains rule-bending and rule-breaking coping mechanisms. In a way, it supports the argument made by Busch et al. (2018) that the enablement or curtailment of discretion depends on SLBs’ strategies and attitudes. The author also argues that the traditional role of SLBs is now reshaped to “screen-level bureaucrats” (p.13) while citizens’ and intermediaries’ roles are also changed. Opposing the argument (automated discretion is far from reality) made by Ball et al. (2023), the author concludes that the “usefulness or meaningfulness of digital tools for both public servants and citizens is less positively perceived than often assumed” (p.16). However, he admits that administrative burdens and the digital divide hinder the outcomes. Marienfeldt (2024) also suggests several new avenues for future research. For instance, the impact of artificial intelligence on classical SLB roles such as teachers and policing. He emphasizes the need to identify the frustration of SLBs (an emotional challenge identified by Pors, 2015) in the digital service provision environment. Another feature of this recent analysis is identifying the need for quantitative studies with large-n samples to top up the existing qualitative literature.

The summary of the key findings of the review is illustrated in the Table 2.

Table 2

Summary of the Findings

Article	Key Theories discussed/ supported	Methodological Approach	Countries involved	Summary of Conclusions
Buffat (2013)	Enablement and Curtailment	Literature review		E-government is critical, but it is only one of the many factors that mainly enable SLBs' everyday work.
Jansson and Erlingsson (2014)	Curtailment (hindering legitimacy)	Qualitative case study	Sweden	E-government hinders legitimacy-building by challenging SLBs' role in responsive listening and situational adaptation.
Pors (2015)	Curtailment, Enablement	Ethnography	Denmark	E-government has brought a series of practical, professional and emotional challenges for SLBs.
Busch et al. (2018)	Curtailment, Enablement, Situational adaptation	Qualitative study	Norway	SLBs reflect on the impact of digitalisation and react accordingly.
Giest and Raaphorst's (2018)	Curtailment	Qualitative study	United Kingdom	The disconnect between organisational structures and digital tools is magnified at street-level, which may threaten discretionary power.

Petrakaki (2018)	Neither support enablement nor curtailment	Conceptual paper on e-government and accountability		E-government does not inherently improve or worsen accountability but fundamentally shifts its sources and locations.
Plantinga (2022)	Continuation theory	Narrative review	Africa	AI adoption in African public administrations is deeply shaped by historical experiences with digital systems, institutional capacity, and prevailing public service values.
Wihlborg and Iacobaeus (2023)	Contextual factors	Qualitative study	Sweden	Digitalisation in public administration introduces a paradox of empowerment and constraint.
Ball et al. (2023)	Enablement	Qualitative interview	Denmark, Belgium, UK	Automated discretion, as predicted by some scholars, is far from reality.
Marienfeldt (2024)	Enablement, Curtailment, Continuation	Systematic literature review		The “usefulness or meaningfulness of digital tools for both public servants and citizens is less positively perceived than often assumed”

4. Conclusion

Scholarly work on street-level bureaucracy presents three key theories regarding the applications of e-government. One argument is that e-

government enables SLBs' discretionary power by increasing efficiency, providing more information for decision-making and reducing workload. On the other hand, the curtailment thesis emphasizes that e-government inhibits discretionary power by various means. Thirdly, Marienfeldt (2024) recently introduced the continuation theory as the changes/coping mechanisms in street-level work due to the active use of digital tools (p. 7).

4.1 Curtailment Theory

The common argument forwarded by the scholars supporting the curtailment thesis is that ICTs diminish frontline discretion and authority partially or entirely, and the “authority shifts to other actors within the system” (Buffat, 2015, p.153). Through automation, ICT challenges SLBs' ability to manipulate information and excludes them from decision-making (Buffat, 2015). Thus, SLBs no longer require learning rules and regulations as automated computer applications make decisions (Pors, 2015). Some scholars argue that SLBs' discretion will completely vanish with ICT involvement (Bovens & Zouridis, 2002) and that pre-defined algorithms and software will replace human judgement (Buffat, 2015). Pors (2015) identifies the redefined role of SLBs from service to support, blurring their professional skills and personal competencies. The mismatch between organisational structures and digital tools becomes more pronounced at the street level, potentially undermining the discretionary power and autonomy of public servants and making their daily tasks more complex and time-consuming (Giest & Raaphorst, 2018). The literature contains several criticisms and unclear areas regarding the curtailment thesis, highlighting the limitations and weaknesses of the argument. Buffat (2015) points out that this thesis overestimates the power of ICT. Standardised software's overly strict rules and regulations diminish responsive listening and situational adaptation possibilities for exceptional cases, which may also hinder legitimacy (Jansson & Erlingsson, 2014). SLBs' and citizens' interest in using digital tools is insufficient (Buffat, 2015).

4.2 Enablement Theory

Against seeing e-government as the end point of SLBs' discretionary power, the enablement theory argues that e-government is only one factor that can be considered as a "further step in the SLB process" (Buffat, 2015, p.153). Providing comprehensive information bases for decision-making, thus increasing legitimacy (Buffat, 2011; Marienfeldt, 2024), managerial oversight over the formal aspects of daily organisational operations, such as the volume of applications processed (Jorna & Wagenaar, 2007) and clients' interest in direct contact with state agents for 4 more complex cases (Ball et al., 2015, p.155) are the supporting arguments for the enablement thesis. This thesis is also supported by the conclusions of the Ball et al. (2023) study on social protection systems; that SLBs' discretion continues to influence welfare administration, and automated discretion is far from being a reality.

4.3 Continuation Theory

The continuation thesis identifies the coping mechanisms developed by SLBs as resilient measures to implement policies amid e-government practices. Busch et al. (2018) find that compliance, acquiescence, habitual acceptance, appropriation, and defiance are strategic responses SLBs adopt to cope with institutional complexity in digitalised street-level bureaucracies. They state that SLBs reflect on the impact of digitalisation and react accordingly. So, enabling or curtailing discretionary power depends on the

SLB's attitude (Busch et al., 2018). Supporting this theory Plantinga (2022) states that the public officials are either bypassed or empowered to work with emerging technologies, and the adoption of these technologies impacts the public service values.

In summary, all the literature found here is related to the Global North except Plantinga (2022) study, where digitalization is advanced compared to the developing Global South. Most studies emphasize the occurrence and prevalence of both enablement and curtailment theories. The most recent

ones identify the importance of digital tools in SLB decision-making without suggesting the endpoint of SLB discretionary power. The personal traits of SLBs, contextual factors like resources, the digital divide, and clients' interests and trust may also shape discretionary power.

4.4 Identified Research Gap

Overall, the gaps identified in the reviewed literature are as follows. The scholars argue that enablement, curtailment, or continuation may also depend on the context and culture. As most of the studies are found from the Global North, Jansson and Erlingsson (2014) emphasize the need for future research on the changing role of SLBs with e-government in different local and national contexts. The inherent characteristics of a developing country will produce different results from those of a developed country that has adopted transactional automation. As Ball et al. (2023) pointed out, digitalisation is a vague concept that varies from routine process automation to artificial intelligence. As Bullock (2019) and Busch and Henriksen (2018) state, it is unclear which part/stage of this digitalization enables or curtails discretionary power and how it affects different tasks of SLBs. Though we find a categorization of five roles played by digital tools and types of organizations in Marienfeldt (2024), the other studies scatter in different scopes without explicitly identifying the type of task or technology. E-government tools may enhance SLBs in one task while inhibiting it in another. Busch et al. (2018) state how and why different technologies can have different effects on discretionary practices, and it should be investigated. So, the type of digital tools and SLB tasks or modes need to be specified. Another important highlight of this review is that qualitative studies (systematic, scoping, narrative reviews, interviews, ethnographies, and observations) related to these key concepts are dominant. Taking the epistemological position of interpretivism, this approach shows that SLB research on e-government is concerned with understanding different

contexts, and there is no “objective truth” (Marsh et al., 2017, p.190) that can be generalised to all contexts. So, the results are always interpretations

of the relationship between these two concepts with some premium reflexivity of the researchers. I find a gap in quantitative studies here in identifying causal relationships (to what extent street-level bureaucracy is affected by e-government).

5. Recommendations

Future research on street-level bureaucracy and e-government needs to look beyond the Global North and include a broad array of socio-political contexts, especially within developing nations, where infrastructural limitations, culture, and lack of resources may present different findings. Additionally, a comparison of e-government within developing and developed nations would also highlight the effect of contextual factors in mitigating the impact of digitalization on SLBs' discretion. Moreover, the field needs researchers who will view e-government broadly, rather than a homogeneous one, instead analyzing technologies such as workflow automation tools, artificial intelligence-driven decision support tools, and web-based management tools, and determining the level of digitalization within a plethora of tasks, because this would determine whether the instruments enable SLBs' discretion rather than restrict it.

From a methodology standpoint, the dominance of qualitative interpretive research calls for a stronger emphasis on the integration of quantitative methodologies in order to identify causality. There is a need for surveys, experiments, and longitudinal research to be used alongside other methodologies such as ethnography and interviews so that a stronger understanding can be derived concerning the degree to which discretion is impacted by technology.

Aside from methodology, ethics must be taken into serious consideration. As automation and artificial intelligence continue to develop, one thing is paramount in governance; ensuring fairness and a level of transparency so that legitimacy is retained.

Lastly, theoretical development is a must in order for curtailment, enablement, and continuation to be treated in a non-insular explanatory

methodology but rather one incorporating new concepts such as algorithmic discretion and digital resilience to adequately address the dynamic interplay of these theoretical components and new ideas concerning the impact of technology on frontline decision-making.

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