International Journal of Enhanced Research in Educational Development (IJERED)
ISSN: 2320-8708, Vol. 14 Issue 2, March-April, 2026

From Street-Level to System-Level: Conceptualizing Discretion in AI-Driven Public Administration

Manisha

Manilohchab1048@gmail.com

ABSTRACT

Artificial intelligence (AI) is increasingly reshaping public administration by transforming how governments process information, allocate resources, assess cases, and deliver public services. This paper develops a conceptual framework for understanding discretion in AI-driven public administration, moving analytically from the traditional street-level perspective to a broader system-level approach. Drawing on the concept of street-level bureaucracy, the paper argues that discretion does not disappear when administrative decisions are automated; rather, it is redistributed across human actors, algorithms, institutional arrangements, data infrastructures, and technology providers. At the street level, frontline officials may exercise discretion in interpreting algorithmic recommendations, responding to exceptional cases, and managing conflicts between automated outputs and contextual knowledge.

At the system level, discretion is embedded earlier in the design, selection, training, deployment, and governance of AI systems, where choices concerning data, objectives, thresholds, models, and performance criteria shape the boundaries of subsequent administrative action. The paper therefore conceptualizes AI-mediated discretion as distributed, layered, and relational, challenging the assumption that automation necessarily produces more rule-bound and neutral administration. By connecting frontline decision-making with the technological and institutional structures that condition it, the proposed framework provides a basis for examining accountability, transparency, bias, and administrative autonomy in AI-enabled governance. The paper concludes that understanding discretion in the digital state requires shifting attention from individual bureaucrats alone toward the wider sociotechnical systems within which public decisions are produced.

Keywords: Artificial Intelligence; Public Administration; Administrative Discretion; Street-Level Bureaucracy; Algorithmic Governance.

INTRODUCTION

The growing adoption of artificial intelligence (AI) in government is transforming the ways in which public administrations make decisions, allocate resources, deliver services, and interact with citizens. Governments increasingly employ algorithmic systems for tasks such as welfare eligibility assessment, fraud detection, predictive policing, risk classification, tax administration, immigration processing, and public service allocation. These applications are frequently justified in terms of efficiency, consistency, accuracy, and evidence-based decision-making. Yet, the integration of AI into public administration raises a fundamental question: what happens to administrative discretion when decisions are increasingly mediated by algorithms?

Discretion has long been recognized as an essential feature of public administration. Classic scholarship on street-level bureaucracy emphasizes that frontline public officials operate in environments characterized by limited resources, ambiguous rules, complex cases, and competing policy objectives. Under such conditions, bureaucrats inevitably exercise judgment in interpreting rules and applying policies to individual circumstances. This discretion is not simply an institutional defect; it can allow public officials to respond to contextual differences, accommodate exceptional circumstances, and translate general policy objectives into practical outcomes. At the same time, discretion creates concerns regarding inconsistency, unequal treatment, accountability, and the potential for individual biases to influence administrative decisions.

The emergence of AI appears, at first glance, to challenge this traditional understanding of discretion. Algorithmic systems can standardize procedures, automate routine decisions, and constrain the scope for individual judgment.

Where a human official previously assessed a case, an automated system may now generate a risk score, recommendation, eligibility determination, or prioritization decision. This development has encouraged a narrative of de-discretion: the idea that automation reduces the role of human judgment and replaces subjective administrative decision-making with standardized and supposedly objective computational processes. However, this interpretation overlooks the fact that AI systems themselves are products of human and institutional choices.

Discretion may therefore be shifting rather than disappearing. Decisions about which administrative problem should be automated, what data should be used, how categories are constructed, which outcomes are prioritized, what thresholds determine intervention, and how algorithmic errors are handled all involve forms of judgment. These choices occur at different stages of the administrative process and involve actors beyond frontline bureaucrats, including policymakers, senior administrators, data scientists, technology vendors, system designers, and oversight institutions. Consequently, the locus of administrative discretion may move from the visible interaction between street-level officials and citizens toward less visible stages of system design, procurement, implementation, and governance.

The central conceptual proposition of this paper is that AI-mediated discretion is distributed, layered, and relational. It is distributed because decision-making authority is shared across multiple actors and technological components; layered because discretionary choices occur at different stages, from policy formulation and system design to frontline implementation; and relational because the extent and form of discretion depend on interactions among officials, algorithms, organizational rules, and institutional contexts. This perspective challenges binary distinctions between human discretion and automated decision-making and instead draws attention to the ways in which technological systems reshape the conditions under which administrative judgment is exercised.

This conceptual shift is particularly important for questions of accountability and democratic governance. When an algorithmic decision produces an adverse outcome, responsibility may become difficult to locate. A frontline official may attribute the decision to the system, while system designers may point to organizational requirements, policymakers may emphasize statutory objectives, and technology providers may regard themselves as merely implementing technical specifications. Such fragmentation can create what may be described as an accountability gap, in which the distribution of decision-making authority is not matched by a clear distribution of responsibility. Understanding where discretion resides is therefore essential for determining who should be accountable for decisions produced through AI-enabled administrative systems.

The paper proceeds conceptually rather than empirically. It first examines the theoretical foundations of administrative discretion and street-level bureaucracy, followed by an analysis of how algorithmic systems alter conventional forms of bureaucratic judgment. It then develops a system-level conceptualization of AI-mediated discretion and identifies its implications for accountability, transparency, fairness, and administrative autonomy. The paper ultimately argues that the rise of AI does not mark the end of administrative discretion. Instead, it represents a transformation in where discretion is located, who exercises it, how it becomes embedded in technological systems, and how its consequences can be governed.

CONCEPTUALIZING DISCRETION IN AI-DRIVEN PUBLIC ADMINISTRATION

The theoretical framework of this paper is grounded in the intersection of street-level bureaucracy, administrative discretion, algorithmic governance, and sociotechnical systems theory. Together, these perspectives provide a basis for understanding how the increasing use of artificial intelligence (AI) transforms—not simply eliminates—the exercise of discretion in public administration. The central proposition is that AI-driven administration changes the location, form, and visibility of discretion by distributing decision-making across frontline officials, organizational structures, algorithms, data infrastructures, and technology providers.

1. Administrative Discretion and Street-Level Bureaucracy

The concept of administrative discretion has traditionally been associated with the capacity of public officials to make judgments when implementing laws and policies. Formal rules rarely determine every possible administrative situation. Officials must interpret ambiguous provisions, prioritize competing objectives, respond to individual circumstances, and decide how policies should be applied in practice. Discretion is therefore an unavoidable feature of policy implementation.

The theory of street-level bureaucracy, most prominently associated with Michael Lipsky, provides an important foundation for understanding this phenomenon. Street-level bureaucrats—such as social workers, police officers, teachers, health officials, and licensing officers—interact directly with citizens and possess some degree of autonomy in applying public policy. Their decisions can substantially influence citizens' access to public services and the practical meaning of government policy.

From this perspective, discretion is not merely individual freedom. It is shaped by organizational pressures, resource constraints, professional norms, institutional expectations, and the characteristics of citizens and cases. Street-level

officials therefore operate within a broader administrative environment in which discretion emerges from the interaction between formal rules and practical circumstances.

2. Discretion as a Distributed Phenomenon

Traditional theories tend to locate administrative discretion primarily within the actions of individual bureaucrats. AI-driven administration requires a broader conceptualization. Discretion can be understood as distributed across multiple stages of the policy and administrative process.

At the policy level, decision-makers determine which problems should be addressed through AI and what objectives the system should pursue. At the design level, technical and administrative actors select datasets, variables, models, categories, thresholds, and performance indicators. At the organizational level, agencies determine how algorithmic outputs will be incorporated into existing procedures and how much authority officials will retain to challenge them. At the street level, frontline workers interpret and implement algorithmically mediated decisions. Finally, at the review and governance level, oversight bodies determine mechanisms for auditing, correcting, contesting, and evaluating AI-enabled decisions.

3. Algorithmic Governance

The second theoretical pillar is the concept of algorithmic governance. Algorithmic governance refers broadly to the use of computational systems to classify, predict, rank, recommend, monitor, or otherwise structure decisions within governance processes. AI systems can influence administrative decisions even when they do not make the final decision themselves.

Algorithms can exercise influence by defining what information becomes salient, assigning risk scores, establishing priorities, identifying supposedly anomalous cases, or recommending particular administrative actions. In this sense, algorithms can function as institutional decision-making mechanisms that structure the choices available to human officials.

However, algorithms do not operate independently of human decisions. Their outputs reflect choices made during problem definition, data collection, model development, implementation, and evaluation. Consequently, algorithmic governance should not be understood simply as the replacement of human discretion with machine objectivity. Rather, it involves the reconfiguration and redistribution of discretion between human and computational actors.

This perspective is particularly significant because algorithmic decisions can make discretion less visible. A frontline official's decision is often directly observable and attributable, whereas discretion embedded within a model's design or data architecture may be difficult for citizens and even administrators to identify. AI can therefore simultaneously constrain visible discretion while increasing the importance of less visible forms of system-level discretion.

4. Sociotechnical Systems Perspective

The third component of the framework draws on the sociotechnical understanding of technology. From this perspective, technological systems cannot be separated from the social, organizational, and institutional environments in which they are developed and used. AI systems are embedded in administrative rules, professional practices, organizational structures, legal frameworks, data infrastructures, and human judgments.

This perspective is particularly useful for public administration because an algorithm rarely operates in isolation. An AI-based welfare system, for example, may depend on legislation defining eligibility, databases containing citizen information, technical models generating classifications, organizational protocols determining how officials respond to those classifications, and appeal mechanisms allowing citizens to challenge decisions.

Accordingly, the administrative outcome is produced through interaction between human agency and technological mediation. The algorithm influences administrative judgment, while administrative actors influence how the algorithm is interpreted and applied. Discretion therefore emerges relationally from the interaction between technological capabilities and institutional practices.

5. From Street-Level to System-Level Discretion

Building on these perspectives, this paper proposes a distinction between street-level discretion and system-level discretion.

Street-level discretion refers to judgments exercised by frontline officials during the implementation of AI-mediated administrative decisions. This may include interpreting algorithmic recommendations, requesting additional information, overriding automated outputs, managing exceptional cases, or deciding how to communicate decisions to citizens.

System-level discretion, by contrast, refers to choices made in constructing and governing the administrative system itself. It includes decisions concerning policy objectives, data sources, classification categories, model selection, thresholds, automation levels, procurement arrangements, monitoring procedures, and mechanisms for human intervention. The distinction does not imply that these forms of discretion are independent. Rather, they are interconnected. System-level decisions establish the conditions within which street-level officials operate, while frontline experiences can influence the modification, retraining, or governance of AI systems. Discretion therefore moves vertically across administrative levels as well as horizontally among human and technological actors.

6. A Conceptual Model of AI-Mediated Discretion

The framework can be represented through four interconnected dimensions:

Table 1: Conceptual Model of AI-Mediated Discretion

Dimension	Primary Location	Form of Discretion
Policy discretion	Policymakers and senior administrators	Defining objectives, priorities, and rules
Design discretion	Developers, data scientists, vendors, and institutional designers	Selecting data, models, variables, thresholds, and system architecture
Street-level discretion	Frontline public officials	Interpreting, accepting, questioning, or overriding AI outputs
Governance discretion	Managers, auditors, regulators, and oversight bodies	Monitoring, evaluating, correcting, and governing AI systems

These dimensions form a continuous chain rather than isolated categories. Decisions at one level can shape discretionary possibilities at another. For example, a threshold established during system design may determine which citizens are flagged for investigation, thereby narrowing or redirecting the choices available to frontline officials.

The framework therefore conceptualizes AI-mediated discretion as distributed across the administrative decision-making chain. The degree of discretion available to any individual actor depends partly on decisions made elsewhere in the system.

PROPOSED MODELS AND METHODOLOGIES

This paper proposes a conceptual, multi-level methodological framework for examining how artificial intelligence (AI) redistributes administrative discretion from frontline officials to the broader sociotechnical system. Since the study is primarily conceptual, the proposed methodology is designed to provide an analytical structure that can subsequently be applied through qualitative, comparative, or mixed-method empirical research. The central methodological objective is to identify where discretion is located, how it is exercised, how AI mediates it, and how responsibility is distributed across administrative actors.

1. Proposed Conceptual Model

The paper proposes an AI-Mediated Discretion Model (AIMD) consisting of four interconnected levels: policy, system design, organizational implementation, and street-level practice.

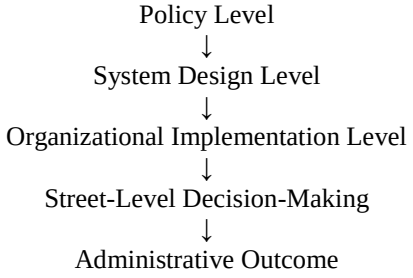


Figure 1. AI-Mediated Discretion Model

Across these levels, three cross-cutting factors—human judgment, algorithmic influence, and institutional constraints—interact continuously.

The model assumes that administrative discretion is not concentrated at a single point. Instead, it is distributed across the decision-making chain. Policy actors exercise discretion when defining objectives and eligibility rules; system designers exercise discretion when selecting data, variables, models, and thresholds; administrators determine how AI outputs are incorporated into organizational procedures; and frontline officials interpret or act upon algorithmic recommendations.

The model can therefore be expressed conceptually as:
AI-Mediated Discretion = Policy Choices + System Design Choices + Organizational Mediation + Frontline Judgment
The model does not imply that these components have equal influence. Their relative importance may vary depending on the level of automation, institutional arrangements, legal requirements, and the degree of human oversight.

2. Dimensions of Discretion
To operationalize the concept, the study proposes five dimensions through which discretion can be examined:

1. Decision Authority – Who has the formal or practical capacity to influence the final administrative decision?
2. Algorithmic Influence – To what extent does an AI system shape, recommend, constrain, or determine the decision?
3. Human Intervention – Can and do public officials modify, reject, or override algorithmic outputs?
4. System Design Discretion – What choices are embedded in data selection, model construction, thresholds, classifications, and system objectives?
5. Accountability Allocation – How is responsibility assigned when AI-mediated decisions produce errors, bias, or adverse outcomes?

These dimensions allow discretion to be examined as both an observable administrative practice and an embedded property of technological systems.

3. Proposed Analytical Matrix
A multi-level analytical matrix can be used to map discretionary authority across the administrative system.

Table 2: Multi-level analytical matrix

Administrative Level	Key Actors	AI Function	Form of Discretion	Key Accountability Question
Policy	Ministers, policymakers, senior officials	Defines objectives	Policy discretion	Who determines what the system should achieve?
Design	Developers, data scientists, vendors	Builds and configures AI	Technical/design discretion	Which choices are embedded in the system?
Organizational	Managers and agencies	Integrates AI into procedures	Implementation discretion	How are algorithmic outputs used?
Street level	Frontline officials	Interprets recommendations	Operational discretion	Can officials challenge AI decisions?
Governance	Auditors, regulators, oversight bodies	Monitors AI	Regulatory discretion	Who evaluates and corrects the system?

This matrix provides a systematic basis for comparing conventional bureaucratic administration with AI-mediated administration.

4. Proposed Discretion Index
For comparative analysis, the study may also develop an AI Administrative Discretion Index (AADI). The index would not seek to reduce discretion to a single universal numerical value but would provide a structured comparative measure.

A preliminary formulation could be:

$$AADI = H + S + O + G - C$$

Where:
- H = degree of human judgment;
- S = system-design discretion;
- O = organizational discretion;
- G = governance and oversight discretion; and
- C = degree of algorithmic constraint.

Each dimension could be operationalized through indicators scored on a standardized scale. For example, human judgment could be assessed according to whether officials merely implement automated decisions, review algorithmic recommendations, or possess substantial authority to override them.

The index could subsequently be tested for reliability and validity using empirical case data. Its primary purpose would be comparative rather than predictive.

5. Analytical Strategy

The collected data can be analyzed using thematic coding and cross-case comparison. Initial coding categories would include:

- discretion;
- automation;
- human judgment;
- algorithmic recommendation;
- override;
- system design;
- organizational constraint;
- transparency;
- accountability;
- bias;
- contestability; and
- citizen impact.

The second stage would identify relationships among these categories. For example, the analysis could examine whether greater algorithmic constraint at the frontline is associated with increased discretion at the system-design level. Finally, cross-case analysis would identify recurring patterns and variations in how discretion is distributed across different administrative contexts.

RESULTS & ANALYSIS

As a conceptual study, this paper does not report statistical or field-based results. Instead, the results are derived from the theoretical analysis of discretion within AI-driven public administration. The analysis demonstrates that artificial intelligence does not eliminate administrative discretion; rather, it redistributes, restructures, and partially obscures discretion across multiple levels of the administrative system. The findings are organized around the proposed AI-Mediated Discretion Model.

1. From Individual Discretion to Distributed Discretion

The first major finding is that discretion can no longer be understood solely as a characteristic of frontline public officials. In conventional administrative settings, discretion is often most visible when street-level bureaucrats interpret rules, prioritize cases, or respond to exceptional circumstances. In AI-driven administration, however, discretionary choices are distributed across a broader decision-making chain.

The analysis identifies at least four principal locations of discretion: policy formulation, system design, organizational implementation, and frontline decision-making. Each level contributes to the final administrative outcome.

For example, a policymaker may decide which citizens should be subject to a particular risk assessment; a system designer may determine which variables are used to classify those citizens; an agency manager may establish whether officials must follow the algorithmic recommendation; and a frontline officer may decide whether to accept or override the resulting recommendation. The final decision is therefore the product of multiple discretionary choices rather than a single act of bureaucratic judgment.

This finding supports the central proposition of the paper that AI creates a distributed architecture of discretion.

2. The Redistribution Rather Than Elimination of Discretion

The second finding concerns the relationship between automation and discretion. AI systems can reduce certain forms of frontline discretion by standardizing procedures and narrowing the range of choices available to officials. However, this reduction does not necessarily imply an overall reduction in discretion.

Instead, discretion may move upstream toward system design and policy formulation. Decisions about training data, variables, classification categories, thresholds, optimization criteria, and error tolerance can have significant

consequences for citizens. These decisions are often made before an AI system is deployed and may therefore remain outside conventional understandings of administrative discretion.

The analysis consequently distinguishes between frontline discretion and embedded discretion. Frontline discretion is exercised visibly by officials during implementation, while embedded discretion is incorporated into the technological and institutional architecture of the system.

This distinction is important because a highly automated system may appear to be highly rule-bound while simultaneously containing substantial discretionary choices within its design.

3. The Emergence of System-Level Discretion

The third result is the emergence of system-level discretion as a distinct analytical category.
System-level discretion refers to the choices through which administrative technologies are configured and governed. It includes decisions concerning:

- what administrative problem should be automated;
- which citizens or cases should be classified;
- what data should be collected and used;
- which variables should influence decisions;
- what thresholds should trigger intervention;
- how errors should be treated;
- how much authority should remain with human officials; and
- when an algorithmic system should be modified, suspended, or replaced.

These decisions can have effects comparable to traditional bureaucratic discretion because they shape the practical application of public policy. The difference is that they occur at a less visible institutional and technological level.

The analysis therefore suggests that the location of discretion has become more important than its absolute quantity. A system may reduce discretion at the street level while simultaneously increasing its significance at the system level.

4. Human–AI Interaction and Reconfigured Street-Level Discretion

The fourth finding concerns the continuing importance of frontline officials. The introduction of AI does not necessarily make street-level bureaucrats passive implementers. Instead, it creates a new form of human–AI interaction.
Frontline officials may perform several different roles:

1. Implementer – follows the algorithmic recommendation with limited intervention.
2. Interpreter – contextualizes the recommendation using professional knowledge.
3. Reviewer – evaluates whether the algorithmic output is appropriate.
4. Challenger – questions or rejects an algorithmic recommendation.
5. Overrider – formally changes the outcome generated by the system.

The extent to which these roles are available depends on organizational rules and system design. Where officials lack authority to override automated decisions, AI may substantially constrain street-level discretion. Where meaningful human review is required, frontline discretion may remain significant.

Thus, the relationship between AI and bureaucratic discretion is not simply one of replacement. It is better understood as a reconfiguration of professional judgment.

5. Algorithmic Authority and the Risk of Automation Bias

The analysis further indicates that the practical influence of an AI system may exceed its formal authority. Even where an algorithm technically provides only a recommendation, officials may treat its output as authoritative because of organizational expectations, perceptions of technical expertise, or concerns about departing from standardized procedures.

This creates the possibility of automation bias, in which human decision-makers place excessive confidence in algorithmic recommendations. In such circumstances, formal human discretion may remain available while practical discretion becomes significantly constrained.

Consequently, the existence of a human decision-maker should not automatically be interpreted as evidence of meaningful human oversight. The relevant question is whether the official has the capacity, information, authority, and organizational support to disagree with the algorithm.

6. Reduced Visibility of Discretion

Another significant finding is that AI can make administrative discretion less visible.

Traditional discretionary decisions can often be traced to a particular official or organizational unit. In AI-driven systems, however, the decision may result from a combination of legislation, organizational rules, historical data, model architecture, technical parameters, software configuration, and human intervention.

This creates a problem of discretionary opacity. Citizens may see the final administrative decision without being able to determine where the critical judgment occurred. The lack of visibility can make it difficult to challenge decisions or identify responsibility for errors.

The analysis therefore suggests that AI can produce a paradox: more standardized decision-making at the surface may coexist with more complex discretion underneath.

7. Accountability as a System-Level Problem

The redistribution of discretion also changes the nature of administrative accountability. In traditional settings, accountability can often be directed toward the public official or agency responsible for a decision. In AI-mediated systems, responsibility may be distributed among policymakers, administrators, system designers, vendors, data providers, and frontline officials.

This creates the possibility of an accountability gap**.** For example, when an algorithm generates an erroneous classification, the frontline official may claim that the system produced the result, while the agency may attribute responsibility to the technology provider. The technology provider may, in turn, point to the specifications supplied by the public agency. Such fragmentation can make responsibility difficult to establish.

The analysis therefore indicates that accountability mechanisms must correspond to the distribution of discretion. If discretion is distributed across the system, accountability cannot remain concentrated exclusively at the street level.

8. Implications for Fairness and Administrative Justice

The redistribution of discretion also has implications for fairness. Human discretion can produce inconsistent or biased decisions, but algorithmic systems can reproduce or amplify biases embedded in historical data, institutional practices, or system design.

At the same time, standardized algorithmic procedures may reduce some forms of arbitrary treatment by applying consistent criteria across cases. The relationship between AI and fairness is therefore not inherently positive or negative.

The key issue is where discretionary choices occur and whether those choices are subject to meaningful oversight. A transparent and reviewable algorithmic system may reduce certain forms of inconsistency, whereas an opaque system with limited appeal mechanisms may institutionalize problematic assumptions at scale.

This suggests that fairness should be assessed not only at the point of final decision-making but across the entire administrative decision chain. The resulting analytical framework can be summarized as:

Traditional Model:

Policy → Bureaucrat → Administrative Outcome

AI-Mediated Model:

Policy → System Design → Algorithmic Processing → Organizational Mediation → Human Interpretation → Administrative Outcome

The second model demonstrates that discretion is increasingly exercised across a chain of interconnected decisions. Understanding this chain is essential for evaluating transparency, accountability, fairness, and administrative autonomy in the emerging AI-enabled public sector.

Table 3: Comparative Analysis of discretion across a chain of interconnected decisions

Dimension	Traditional Public Administration	AI-Driven Public Administration	Implication for Discretion
Primary Decision-Maker	Human bureaucrat or administrative officer	Human officials working with AI systems, or automated systems in some contexts	Decision-making becomes distributed rather than exclusively human
Location of Discretion	Primarily at the street level	Distributed across policy, system design, organizational,	Discretion shifts from individual officials toward the

		and street levels	wider administrative system
Basis of Decision-Making	Laws, rules, professional judgment, and experience	Rules, administrative data, algorithms, predictive models, and human judgment	Professional judgment is increasingly mediated by computational outputs
Role of Frontline Officials	Interpret rules and make case-specific judgments	Interpret, validate, accept, question, or override algorithmic recommendations	Frontline discretion is reconfigured rather than eliminated
Role of Technology	Mainly supportive and administrative	Central to classification, prediction, prioritization, and recommendation	Technology becomes an active mediator of administrative decisions
System-Design Discretion	Relatively limited in day-to-day decision analysis	Significant choices regarding data, variables, models, thresholds, and objectives	New forms of discretion emerge before frontline implementation
Degree of Standardization	Varies across officials and organizations	Generally higher where automated procedures are used	AI may reduce inconsistency but can also standardize problematic assumptions
Visibility of Discretion	Relatively visible through identifiable administrative decisions	Often distributed across technical and organizational processes	Discretion may become less visible to citizens and oversight bodies
Human Intervention	Usually central to the decision process	May range from substantial review to limited or no intervention	Meaningful human oversight depends on system design
Override Capacity	Officials generally possess practical decision-making authority within rules	May be constrained by organizational procedures or algorithmic recommendations	Formal human authority does not always guarantee effective discretion
Source of Error	Human judgment, misunderstanding, institutional bias, or inconsistent application	Human judgment, biased data, model limitations, system design, and automation bias	Sources of error become more complex and interconnected
Accountability	Primarily directed toward officials and public agencies	Distributed among policymakers, agencies, officials, developers, vendors, and oversight bodies	Accountability becomes a system-level challenge
Transparency	Decisions can often be explained through rules and official reasoning	May involve complex models, data processes, and technical systems	Explainability and transparency become more important
Possibility of Bias	Individual, organizational, or institutional bias	Historical data, model design, institutional practices, and human–AI interaction	AI can reduce some inconsistencies while reproducing or amplifying existing biases
Citizen Participation	Interaction primarily with human officials and administrative procedures	Interaction may involve automated interfaces and algorithmically mediated decisions	Citizens may have fewer opportunities for contextual explanation unless safeguards exist
Appeal and Contestation	Appeals generally directed toward officials or administrative bodies	May require challenging both the administrative decision and the underlying algorithmic process	Effective contestability requires access to both human and system-level review
Professional Autonomy	Relatively strong where officials exercise professional judgment	Potentially constrained by algorithmic recommendations and performance monitoring	Professional autonomy may decline unless officials retain meaningful override authority
Administrative Efficiency	Often dependent on staff capacity and procedural workload	AI can accelerate processing and automate repetitive tasks	Efficiency may increase, but efficiency does not necessarily imply fairness
Policy Implementation	Policy translated through human interpretation	Policy increasingly translated through computational rules and models	Policy choices can become embedded directly into technological systems
Overall Model of Discretion	Street-level discretion	Distributed AI-mediated discretion	The analytical focus shifts from the individual bureaucrat to the entire sociotechnical system

CONCLUSION

The increasing use of artificial intelligence in public administration is transforming the nature of administrative decision-making and challenging conventional understandings of bureaucratic discretion. This paper has argued that AI should not be understood simply as a mechanism for eliminating human judgment. Rather, it redistributes and restructures discretion across the wider administrative system. The traditional focus on street-level bureaucrats therefore needs to be complemented by attention to policymakers, system designers, organizational managers, technology providers, algorithms, data infrastructures, and oversight institutions.

The conceptual analysis demonstrates that discretion in AI-driven administration operates at multiple levels. At the policy level, actors determine administrative objectives and priorities. At the system-design level, choices concerning data, variables, models, thresholds, and performance criteria embed particular judgments into technological systems. At the organizational level, agencies determine how algorithmic outputs are incorporated into administrative procedures. At the street level, frontline officials may interpret, validate, challenge, or override algorithmic recommendations. These interconnected levels demonstrate that administrative decisions are increaseingly produced through a human–AI–institutional configuration rather than by individual bureaucrats alone. A central finding of the paper is that automation can reduce visible frontline discretion while simultaneously creating or strengthening less visible system-level discretion. This creates important implications for accountability and transparency. If discretionary choices are embedded within algorithms, datasets, system architecture, and organizational procedures, conventional accountability mechanisms focused primarily on individual officials may be insufficient. Responsibility must therefore be considered across the entire administrative decision chain.

The paper also highlights that AI-mediated discretion presents both opportunities and risks. AI can improve consistency, processing speed, information management, and administrative capacity. At the same time, algorithmic systems may reproduce existing biases, generate automation bias, reduce professional autonomy, and make administrative decisions more difficult for citizens to understand or challenge. The critical issue is therefore not whether administration should be human or automated, but how human judgment and technological decision-making should be combined and governed.

The proposed AI-Mediated Discretion Model provides a conceptual foundation for addressing this challenge by connecting policy discretion, system-design discretion, organizational discretion, and street-level discretion. It shifts the analytical question from *"How much discretion does a bureaucrat possess?"* to *"Where is discretion located across the AI-enabled administrative system, who exercises it, and how can its consequences be governed?"*

Future research should empirically test this framework through comparative case studies, interviews, algorithmic audits, administrative data analysis, and citizen-centered research. Such studies can determine how different forms of AI deployment affect bureaucratic autonomy, accountability, fairness, and administrative outcomes across different sectors and institutional contexts.

Ultimately, the rise of AI does not signal the end of administrative discretion. It signals a transformation in the architecture of discretion. Moving from street-level to system-level analysis enables public administration scholarship to better understand this transformation and provides policymakers with a stronger basis for designing AI systems that are transparent, accountable, contestable, and consistent with democratic principles. The future of AI-driven public administration will therefore depend not only on the technical capabilities of algorithms, but also on how societies choose to distribute, constrain, and govern discretion within the systems that use them.

REFERENCES

1. Bannister, F., & Connolly, R. (2020). Administration by algorithm: A risk management framework. *International Journal of Information Management, 52*, 102090. https://doi.org/10.1016/j.ijinfomgt.2020.102090
2. Bell, D. A. (1976). *The coming of post-industrial society: A venture in social forecasting*. Basic Books.
3. Bovens, M., & Zouridis, S. (2002). From street-level to system-level bureaucracies: How information and communication technology is transforming administrative discretion and constitutional control. *Public Administration Review, 62*(2), 174–184. https://doi.org/10.1111/0033-3352.00168
4. Bullock, J. B. (2019). Artificial intelligence, discretion, and bureaucracy. *The American Review of Public Administration, 49*(7), 751–761. https://doi.org/10.1177/0275074019856123
5. Busuioc, M. (2021). Accountable artificial intelligence: Holding algorithms to account. *Public Administration Review, 81*(5), 825–836. https://doi.org/10.1111/puar.13293
6. De Laat, P. B. (2018). Algorithmic decision-making based on machine learning from big data: Can transparency restore accountability? *Philosophy & Technology, 31*, 525–541. https://doi.org/10.1007/s13347-017-0293-z
7. Dunleavy, P., Margetts, H., Bastow, S., & Tinkler, J. (2006). New public management is dead—Long live digital-era governance. *Journal of Public Administration Research and Theory, 16*(3), 467–494. https://doi.org/10.1093/jopart/mui057

8. Eubanks, V. (2018). *Automating inequality: How high-tech tools profile, police, and punish the poor*. St. Martin's Press.
9. Floridi, L., Cowls, J., Beltrametti, M., Chatila, R., Chazerand, P., Dignum, V., Luetge, C., Madelin, R., Pagallo, U., Rossi, F., Schafer, B., Valcke, P., & Vayena, E. (2018). AI4People—An ethical framework for a good AI society: Opportunities, risks, principles, and recommendations. *Minds and Machines*, *28*, 689–707. https://doi.org/10.1007/s11023-018-9482-5
10. Janssen, M., & Kuk, G. (2016). The challenges and limits of big data algorithms in technocratic governance. *Government Information Quarterly*, *33*(3), 371–377. https://doi.org/10.1016/j.giq.2016.08.011
11. Kroll, J. A., Huey, J., Barocas, S., Felten, E. W., Reidenberg, J. R., Robinson, D. G., & Yu, H. (2017). Accountable algorithms. *University of Pennsylvania Law Review*, *165*(3), 633–705.
12. Lipsky, M. (1980). *Street-level bureaucracy: Dilemmas of the individual in public services*. Russell Sage Foundation.
13. Meijer, A., & Wessels, M. (2019). Predictive policing: Review of benefits and drawbacks. *International Journal of Public Administration*, *42*(12), 1031–1039. https://doi.org/10.1080/01900692.2019.1575664
14. Mittelstadt, B. D., Allo, P., Taddeo, M., Wachter, S., & Floridi, L. (2016). The ethics of algorithms: Mapping the debate. *Big Data & Society*, *3*(2), 1–21. https://doi.org/10.1177/2053951716679679
15. Molnar, C. (2022). *Interpretable machine learning: A guide for making black box models explainable* (2nd ed.). Leanpub.
16. Pasquale, F. (2015). *The black box society: The secret algorithms that control money and information*. Harvard University Press.
17. Peeters, R., & Widlak, A. (2018). The digital cage: Administrative exclusion through information architecture—The case of the Dutch civil registry's master data management system. *Government Information Quarterly*, *35*(2), 175–183. https://doi.org/10.1016/j.giq.2018.02.003
18. Reddick, C. G., Chatfield, A. T., & Ojo, A. (2017). A social-technical approach to understanding cybersecurity and information technology management in public organizations. *Government Information Quarterly*, *34*(1), 65–73. https://doi.org/10.1016/j.giq.2016.12.004
19. Sunstein, C. R. (2015). *The ethics of influence: Government in the age of behavioral science*. Cambridge University Press.
20. Wirtz, B. W., Weyerer, J. C., & Geyer, C. (2019). Artificial intelligence and the public sector—Applications and challenges. *International Journal of Public Administration*, *42*(7), 596–615. https://doi.org/10.1080/01900692.2018.1498103
21. Yeung, K. (2018). Algorithmic regulation: A critical interrogation. *Regulation & Governance*, *12*(4), 505–523. https://doi.org/10.1111/rego.12158
22. Zuiderwijk, A., Chen, Y.-C., & Salem, M. (2021). Implications of the use of artificial intelligence in public governance: A systematic literature review and a research agenda. *Government Information Quarterly*, *38*(3), 101577. https://doi.org/10.1016/j.giq.2021.101577