The Efficiency Logic and Co-governance Reconstruction of Artificial Intelligence Empowering Social Governance

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https://doi.org/10.70695/IAAI202602A4

Abstract

Artificial intelligence (AI) technology is rapidly evolving from a specialized tool to a fundamental supporting structure of social systems, deeply integrating into all aspects of public decision-making, government services, and social governance. The "AI+Governance" model, while significantly enhancing administrative efficiency, has also sparked increasingly intense debates between technological rationality and political values. This article takes this as a starting point to examine the dual logic of embedding AI in social governance: efficiency-oriented technological empowerment and value-oriented governance reconstruction. Research shows that contemporary China is establishing an action framework of "governing efficiency through co-governance": on the one hand, the top-level policy design at the central level has incorporated AI governance into the legal track; on the other hand, local practices are addressing practical challenges such as ambiguous responsibilities, data bias, and the digital divide. The key to future governance does not lie in choosing one over the other, but in building a dynamic institutional balance that enables efficiency and co-governance to support each other.

Keywords Artificial Intelligence; Social Governance; Efficiency Logic; Governance Reconstruction

1 Introduction

AI technology is deeply embedding itself into all aspects of social operation at an unprecedented speed. In the field of public management, from intelligent decision support to precise government services, from grassroots governance to emergency management, "AI+Governance" is driving a transformation in governance models from traditional human-centered to human-machine collaboration, becoming an important path to address complex governance challenges and optimize the quality of public services [1]. With the issuance of the "Opinions on Deeply Implementing the 'AI+' Initiative" by the State Council in 2025 and the systematic deployment of artificial intelligence as the core engine of new productivity in the "15th Five-Year Plan", "AI+Governance Capacity" has risen to a core issue at the national strategic level.

However, technological empowerment of governance is not a smooth path. As large language models cross the boundary of passive question-answering and enter the stage of "intelligent agents" with autonomous decision-making and system control capabilities, risks such as algorithm "black boxes", data bias, and ambiguous responsibility are also magnifying [2]. The International Energy Agency predicts that global data center electricity consumption may double by 2026, and the computing power gap is replacing the traditional digital divide as a new source of systemic inequality.

Against this backdrop, the fundamental proposition of artificial intelligence empowering social governance becomes increasingly clear: Can technological empowerment enhance governance efficiency without undermining the legitimacy of governance? Are high efficiency and multi-stakeholder co-governance mutually exclusive or can they support each other and coexist? This paper attempts to analyze this core tension and explore how contemporary China seeks a dynamic institutional balance between efficiency enhancement and co-governance deepening.

2 Dual Logic: Technological Empowerment and Governance Reconfiguration

The role of artificial intelligence in social governance is not a one-way linear push but unfolds along two interwoven yet implicitly tension-filled logics.

2.1 Efficiency Logic: Governance Leap Driven by Technological Rationality

The most direct logical support point of AI empowering social governance lies in its unparalleled efficiency enhancement capabilities. In the field of public decision-making, machine learning algorithms can conduct in-depth analysis of massive data, uncover structural patterns behind deviations, and shift decision-making from experience-driven to data-driven [3]. In the field of public services, government large models, with their natural language understanding and content generation capabilities, can provide 24-hour online intelligent consultation and guidance as well as precise policy push. In the field of social governance, intelligent early warning systems can move traditional "post-event handling" to "prevent perception", achieving a leap from passive response to proactive prediction. The essence of the efficiency logic is the systematic replacement and optimization of traditional administrative tools by technological rationality, with the ultimate goal of achieving "computationalization" and "computability" of the governance process [4].

2.2 Value Logic: The Return of Publicness in Governance Reconstruction

In contrast to the logic of efficiency, the technological embedding of AI is not a neutral and objective process. It inevitably carries specific value presuppositions and has a reshaping effect on the existing governance structure. Song Kaiye and Xu Yaqian's empirical research on the operation of algorithms in China's police departments found that algorithms not only changed efficiency but also reconstructed the power relations of governance at a deep structural level - "police departments construct the relationship structure outside the organization through algorithms, and at the same time, reshape the power boundaries within the organization through algorithm intensification". This discovery reveals the profound impact of algorithmic power: when key decisions are increasingly made by algorithms, which knowledge is adopted, which groups are prioritized, and which risks are focused on are all embedded in the parameter settings and model architectures of the algorithms themselves [3].

The more fundamental challenge lies in the reconstruction of the administrative responsibility system. The embedding of algorithmic technology in the administrative system has reshaped the content of government responsibility, the relationship between subjects, and the bureaucratic structure, leading to the deconstruction of power and mechanism failure in the subject dimension, the collapse of responsibility and the dispersion of power in the object dimension, and the blurring of standards and the loss of focus on values in the content dimension [5]. When an automated decision leads to adverse consequences, is it due to design flaws in the algorithm itself, selection biases in training data, or procedural oversights in deployment and application? The traditional chain of responsibility becomes fragmented, making accountability extremely difficult.

Value logic thus forms an internal "brake" on the logic of efficiency: the more efficient the technology, the greater the risk of deviating from the legitimacy of governance; the more invisible the algorithm, the more difficult it is to trace responsibility. This constitutes the core paradox of "intelligent governance".

2.3 The Internal Tension Between the Two Logistics

The logic of efficiency and the logic of value have formed a continuous tension: the logic of efficiency pursues the maximization of technological capabilities, advocating "calculating as much as possible", and tends to transform as many governance affairs as possible into standardized processes that can be handled by machines; the logic of value, on the other hand, requires an examination of the alignment between any technological application and public values - fairness, justice, privacy, and participation. The relationship between the two can essentially be understood as a dialectical movement between "the technological of governance" and "the governance of technology".

2.4 Policy Synergy: Complementary Layout of Two Types of Documents

In response to this tension, the policy layout in contemporary China presents a clear complementary structure, with the core feature being the coordination of the two logistics through policy tools with different functional orientations. Technological development-oriented documents promote the expansion of technological capabilities: the "Opinions on Deeply Implementing the 'AI+' Action" issued in 2025 explicitly regards artificial intelligence as the core engine for cultivating new productive forces and

forming new forms of intelligent economy and society, proposing to "accelerate the formation of a new form of intelligent economy and society characterized by human-machine collaboration, cross-border integration, and shared creation". This is a typical manifestation of the logic of efficiency, aiming to maximize the social and economic potential of artificial intelligence [6].

Parallel to this are regulatory constraint-oriented documents that define the boundaries of technological application. At the end of 2025, the Central Cyberspace Administration and the National Development and Reform Commission jointly issued the "Guidelines for the Deployment and Application of Large Models of Artificial Intelligence in the Government Sector", requiring "fulfillment of obligations such as algorithm filing and security assessment in accordance with the law", and constructing a "classification and grading governance system for large models of artificial intelligence in the government sector". At the same time, it emphasizes that government departments should abide by the relevant provisions of the "Interim Measures for the Management of Generative Artificial Intelligence Services". These regulatory measures clearly reflect the presence of the logic of value - technological application cannot come at the expense of data security, traceability of responsibility, and administrative justice [7].

3 Practical Paradox: The Game Between Efficiency and Co-governance in Grassroots Governance

The dual policy layout at the policy level still faces more complex practical games when implemented. If the top-level design at the central level provides a dual-logic institutional framework, the key to whether this framework can operate effectively in specific fields lies in how grassroots practices respond to the imbalance of the traditional governance order under the impact of efficiency orientation [8].

3.1 The Downward Shift of Algorithmic Power: Bureaucratic Disorder under the Impact of Efficiency

In the context of grassroots governance, the large-scale introduction of artificial intelligence often initially manifests as a sudden increase in efficiency - administrative processes are compressed, response times are shortened, and performance evaluations are quantified. However, this "efficiency explosion" often clashes sharply with the local logic of grassroots governance [9].

Zhong Weijun's research based on the case of straw burning control in S Town, Y City, reveals a deep fracture in the grassroots human-machine collaboration - the "cognitive mismatch between general tool rationality and local contextual knowledge" [10]. Algorithmic systems generate warnings and instructions based on uniform standards, while grassroots cadres need to work in an environment filled with interpersonal networks, local knowledge, and informal norms. When algorithmic instructions ignore these complex local contexts and are directly output, grassroots levels inevitably fall into the predicament of "technology present but logic disconnected", with the implicit knowledge and judgment of grassroots cadres at risk of being replaced by algorithmic tools [3].

The essence of this predicament is the "external shock" of the efficiency logic on the co-governance order: the bureaucratic system has, through long-term accumulation, formed a complex system of power distribution and experiential knowledge, while the direct embedding of artificial intelligence often maximizes efficiency at the cost of bypassing the intricate negotiation mechanisms. The result is that the technical efficiency of grassroots governance has improved, but the political and relational dimensions of governance have been systematically compressed.

3.2 The Accountability Vacuum of Algorithmic Administration

The most intense conflict between efficiency and co-governance is concentrated in the accountability process. Xia Zhiqiang and Huang Linzhu's systematic analysis shows that the embedding of algorithms in the administrative process has led to the structural failure of the traditional accountability framework - the subject dimension of accountability has seen a deconstruction of power, the object dimension has seen a collapse of responsibility, and the content dimension has seen a blurring of standards and a loss of focus on values [5]. The traditional accountability mechanism is based on the principle of "who decides, who is responsible" for individual responsibility, while in algorithmic administration, decisions may be

automatically made by algorithms, and responsibility is infinitely dispersed among developers, deployers, and users.

The practice in Futian District, Shenzhen, offers a valuable institutional exploration. While promoting the application of AI digital employees, Futian District has issued the country's first management measures for government-assisting intelligent robots, establishing a dual control mechanism of "standard processes plus negative lists", and assigning a dedicated guardian to each digital employee, clearly defining the auxiliary role of AI and setting an unbreachable role boundary [11]. For instance, the repetitive reporting of digital employees has been reduced by 50%, the on-time completion rate of public demands has reached 100%, and the generation time of arbitration decisions has been shortened from half a day to a few minutes. The demonstration significance of this case lies in the fact that the fundamental premise of accountability is the clear attribution of responsibility, and the clarity of responsibility depends on a clear legal definition of the role of artificial intelligence [12].

3.3 The Digital Divide: Structural Exclusion in the Expansion of Efficiency

There is another more hidden but crucial tension between efficiency and co-governance: the expansion of technical efficiency may come at the expense of groups that are already in an informationally disadvantaged position, which is the essence of the "digital divide" problem.

A joint study by Zhejiang University and the Wuzhen Institute of Digital Civilization reveals that systematic inequalities around computing power, algorithms, data, talent, and governance rules are forming a severe risk of a "global next great divergence". Currently, the training corpora, evaluation standards, and value alignment mechanisms of mainstream global large models are still dominated by the English-speaking world and developed country scenarios, with a large number of low-resource languages, local knowledge, and social experiences from developing countries being underrepresented or absent in training data [13].

At the domestic level, the digital divide also constitutes a major concern in social governance. Many experts and scholars have pointed out that algorithmic bias and the lack of data representativeness have made certain groups, especially residents in remote areas, the elderly, and people with disabilities, become "invisible to algorithms". The higher the efficiency of intelligent governance, the more difficult it is for those systematically ignored by the algorithm to be included in the governance perspective [14]. The issue is not whether to apply artificial intelligence, but how to ensure that the application of technology does not run counter to the "inclusiveness" and "fairness" promised by governance.

4 Collaborative Approach: Towards a Governance Framework of Human-Machine Co-governance

To achieve a dynamic balance between efficiency and co-governance, it is necessary to move beyond the binary narrative of "efficiency or co-governance" and adopt a system design that "manages efficiency through co-governance".

Firstly, at the legal level, inclusive regulation and agile governance mechanisms such as "regulatory sandboxes" should be adopted to seek a dynamic balance between stimulating innovation and preventing risks. China's artificial intelligence legislation has entered an accelerated stage. The 2025 legislative work plan of the Standing Committee of the National People's Congress has clearly listed the legislation related to the healthy development of artificial intelligence as a preparatory review project. What needs to be constructed is a flexible governance system that can evolve with technological iterations, rather than a rigid static regulation. At the same time, the regulatory toolbox centered on algorithm filing, classified and graded governance, and ethical review should be continuously improved [15].

Secondly, at the grassroots practice level, it is necessary to promote the idea that "the true protagonist is human, and AI plays the role of 'assistant' ". This is precisely the core experience revealed by the case of Futian District. The optimal relationship model between algorithms and human judgment is not a simple "replacement", but "building a human-machine symbiotic paradigm through interaction, reaffirming and establishing the subjectivity of humans in the empowerment of public services by artificial intelligence". The "human-in-the-loop" supervision mechanism, explainable design, and the ultimate review and correction rights of humans over algorithm outputs should be established as standard components of the intelligent governance system.

Thirdly, at the public value level, it is necessary to promote technological distributive justice through institutional innovation. The bridging of the digital divide cannot rely solely on the spontaneous and

inclusive diffusion of the market, but also requires active policy intervention - including targeted investment in computing infrastructure in underdeveloped areas, mandatory implementation of algorithm audits and fairness standards, and enhancing the digital capabilities of marginalized groups. The ultimate goal of technology is not to create an optimal system dominated by algorithms, but to build an inclusive governance ecosystem where different groups can participate, benefit, and have a voice.

5 Conclusion

The empowerment of social governance by artificial intelligence is not only a leap in efficiency but also an update of order. Ultimately, the logic of efficiency addresses the technical issue of "whether it is done quickly", while the logic of co-governance answers the political and ethical question of "whether it is done correctly". In China's "AI +" action plan, we have seen a governance logic worth noting: the policy deployment at the central level clearly reflects the institutional rationality of "managing efficiency through co-governance"-maximizing the economic and social potential of artificial intelligence in technology development policies while setting an unbreakable bottom line for technology application in regulatory construction policies.

The real challenge for China's social governance in the future is not how to make a binary choice between efficiency and co-governance, but how to construct a system framework in practice that enables the two to support and reinforce each other. This requires the coordinated evolution of law, technology, and ethics, as well as higher institutional design resilience and deeper public value awareness. Only in this way can "AI + governance" truly fulfill its technological promise - enhancing governance efficiency while continuously consolidating the most fundamental value foundation of public management.

Acknowledgement

This work was supported without any funding.

Conflicts of Interest

The authors declare no conflicts of interest.

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人工智能賦能社會治理的效率邏輯與共治重構

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摘要：人工智能技術正從專業工具加速躍升爲社會系統的基礎性支撐結構，深刻介入公共決策、政務服務與社會治理各環節。「人工智能+治理」在顯著提升行政效能的同時，也引發了技術理性與政治價值之間日益緊張的爭論。本文以此爲切入點，考察人工智能嵌入社會治理的雙重邏輯——效率導向的技術賦能與價值導向的治理重構。研究表明，當代中國正在建立一種「以共治駕馭效率」的行動框架：一方面，中央層面的政策頂層設計已將人工智能治理納入法治軌道；另一方面，地方實踐正在破解責任模糊、數據偏見與智能鴻溝等現實困境。未來治理的關鍵，不在於取捨，而在於構建一種能夠使效率與共治相互支撐的動態制度平衡。

關鍵詞：人工智能；社會治理；效率邏輯；治理重構

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