

Techno-Structural Disconnects in Digital Governance: Mechanisms, Challenges and Adaptive Pathways for Social Governance Innovation - A Case Study of Mengzi's Comprehensive Law Enforcement Platform

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Abstract

This study investigates the mechanisms, challenges and pathways through which digital technology platforms empower social governance, focusing on the comprehensive administrative law enforcement command and dispatch platform in Mengzi City. Employing the 'structural adaptation - process collaboration - functional optimization' framework grounded in adaptive governance theory and sociotechnical systems theory, we analyze operational data from 12,703 cases processed in 2024, supplemented by field interviews and policy document reviews. Our findings reveal that, despite the platform achieving a 95% case resolution rate and improving governance transparency via a unified command system and real-time data dashboards, significant structural disconnections persist. Specifically, a 40% shortage of grassroots personnel is evident, there is a misalignment between standardized work processes and local governance requirements, and cross-departmental incidents continue to depend on manual coordination. Moreover, the emergence of data silos, exacerbated by incompatible standards and policy constraints, has further undermined the 'trustless collaboration' mechanism facilitated by blockchain technology. In terms of public participation, the feedback mechanism remains superficial, resulting in citizen involvement being limited to a mere 6.8% of reported cases.

Furthermore, This study identifies three paradoxes that impede digital governance in developing jurisdictions. First, advanced platform architectures conflict with under-resourced implementation, creating a techno-structural friction that undermines system performance. Second, high technical specifications coexist with incomplete data

integration, leaving information silos that frustrate decision-making. Third, participatory interfaces exist alongside constrained public engagement, so opportunities for civic input fail to translate into meaningful participation.

Theoretically, we extend the application of adaptive governance theory by showing how institutional inertia impedes technological assimilation in multi-ethnic border regions. At the practical level, we propose a tripartite solution. Dynamic government-enterprise partnerships can address hardware and capacity gaps at the front-line, and algorithmic responsibility-matching systems automate inter-agency coordination by routing tasks according to jurisdictional competence and workload. Meanwhile, blockchain-anchored incentive ecosystems stimulate civic participation can be stimulated by establishing blockchain-anchored incentive ecosystems. These strategies offer feasible pathways to reconcile ambitious digital governance goals with the contextual realities in developing countries.

Keywords: digital governance, digital technology, structural adaptation, process collaboration, functional optimization, adaptive governance theory, sociotechnical systems theory, three paradoxes, a tripartite solution

1. Introduction

1.1 Introduce the Problem

The integration of digital technology platforms into social governance has fundamentally reshaped administrative paradigms, yet important gaps remain in our understanding of their operational effectiveness and the systemic obstacles within the context of law enforcement coordination. Although a previous study emphasizes the transformative potential of digital tools in governance (Janssen & Kuk, 2016), their application in multi-ethnic border regions where institutional fragmentation, cultural diversity and limited resources intersect has received scant attention. In addition, existing studies tend to employ fragmented analytical approaches and therefore do not adequately capture the dynamic interactions among technological design, organizational restructuring and functional optimization.

In the field of digital construction of administrative law enforcement platforms, there are three major contradictions that urgently need to be resolved. Specifically, despite the claim of having a unified command system, the platform architecture often conflicts with the law-enforcement capabilities at the grassroots. Taking the administrative law enforcement platform in Mengzi City as an example, the law-enforcement units in townships are facing a 40% manpower shortage, which exposes the contradiction between the standardized digital work processes and local actual operations (Qin, 2023). In terms of data governance, although the platform theoretically supports cross-departmental collaboration, due to inconsistent data standards and policy barriers, cross-institutional coordination still requires manual intervention. This runs counter to the concept of ‘trustless collaboration’ in blockchain advocated in the platform design. Moreover, the mechanism for citizen participation remains superficial (Revez et al., 2022). Cases initiated by the public only account for 6.8% of the total cases handled, far lower than the average of 23% for similar platforms in OECD countries.

1.2 Research Gap

Regarding the difficulties faced by the digital construction of administrative law enforcement, some studies have proposed some optimization paths. For example, Zhang (2025) summarizes in the practical pattern of digital transformation of administrative law enforcement that the off-site law enforcement model driven by digital technology shows significant advantages. It has greatly improved its ability to discover case clues, and with the help of drones, high-definition surveillance and other technologies; it has changed from passively accepting reports and complaints to actively identifying risks and hazards. The efficiency in the investigation and handling of illegal activities is outstanding. For cases with clear facts and simple plots, law enforcement officers can complete identification, evidence collection (eg., image fixation) and preliminary processing online without being present at the scene. This is evidenced by the widespread application of traffic ‘electronic police’ and urban management monitoring. Simultaneously, this model brings great convenience to the counterparts, allowing them to complete information inquiries, statements and defenses, and fine payments online without leaving home, effectively saving time and costs. In addition, facing the dilemma of long-term restrictions on law enforcement information disclosure channels, digital technology has effectively improved the timeliness and accuracy of disclosure. Relying on the special publicity section established on the portal website of the county (district) level or linking to the provincial platform has become a realistic choice to ensure the effective disclosure of grassroots law enforcement information, effectively breaking the ‘last mile’ obstacle to the disclosure of grassroots law enforcement data. Faced with the problem of fragmented bureaucratic governance, Liu & Zhang (2025) proposed the idea of strengthening digital empowerment to reengineer administrative law enforcement processes, optimize functions and reconstruct systems with the goal of meeting social needs. At the provincial level, developing a digital application platform for law enforcement and supervision, integrating all four-level administrative law enforcement processes in the province

into platform supervision and integrating administrative inspection, administrative penalties, law enforcement supervision and other law enforcement process elements can build a 'demand-oriented' administrative law enforcement model (Liu & Zhang, 2025). On this basis, we can rely on data flow and data reconstruction to promote the 'multi-cross collaboration' connection of government functional departments and rely on digital platforms to achieve application, system and mechanism integration, thereby promoting the orderly connection and deep integration of government departments' duty performance and service processes (Liu & Zhang, 2025). In order to solve the problems of weak generalization ability of algorithm models and poor data circulation and sharing in the intelligent construction of administrative law enforcement supervision, it is considered as a feasible strategy to explore the multi-modal fusion of algorithms and standardize the improvement of data quality (Lei, 2025). Nevertheless, existing adaptive governance studies rarely test sociotechnical integration in low-resource and multi-ethnic localities.

2. Literature Review

By reviewing the existing literature, a large number of studies, framed by the adaptive governance theory and social systems theory, focus on a series of key themes regarding digital economic platforms.

From the perspective of adaptive governance theory, the research emphasis lies in how to customize technological tools according to the specific needs of governance processes, including optimizing work processes and clarifying division of responsibilities (Reiner et al., 2002). For instance, some studies have explored how digital platforms simplify administrative processes and enhance law-enforcement efficiency through real-time data and analysis technologies (Wang, 2024). However, the existing research still lacks in-depth exploration of the long-term adaptability of these technologies in a dynamic governance environment (Dubey et al., 2023).

Under the framework of sociotechnical systems theory, research focuses on the synergistic effects between digital platforms and multiple stakeholders such as the government, the public and law-enforcement agencies (Wang, 2024). One study shows that effective multi-party collaboration can significantly improve overall governance effectiveness (Ansell & Gash, 2008). Nevertheless, challenges such as information asymmetry and coordination difficulties have become bottlenecks in achieving seamless information integration (Vosooghidizaji et al., 2020). Of note, although digital platforms have the potential to promote information sharing, improper management may also give rise to new divides (Ferreira et al., 2021).

Additionally, the existing research has also discussed the issues of 'fragmentation' (Iwuoha & Mbaegbu, 2021; Krüger et al., 2024; Li, 2024; Xie et al., 2025) and 'overemphasis on construction while neglecting operation' in technology-driven law enforcement (Alashwal & Fong, 2015). These issues highlight the need for a more comprehensive strategy in the development and implementation of digital technologies in governance (Flyverbom et al., 2019). While the construction of digital platforms is crucial, it is equally important to ensure their effective operation and maintenance (Adamenko et al., 2020). This requires not only technological expertise but also a deep understanding of the governance context and the needs of various stakeholders (Zhao et al., 2022).

This study adopts an innovative framework 'structural adaptation - process collaboration - functional optimization' based on adaptive governance theory (Folke et al., 2005) and sociotechnical systems theory (Luhmann, 1994) to fill the research gap. Through analyzing the operational data of 12,703 cases handled by the comprehensive law-enforcement platform in Mengzi City in 2024, we reveal how digital solutions strengthen and challenge the rationality of traditional governance in China's border areas. The study finds that although digital technology platforms have the potential to enhance governance capabilities, they also face problems such as structural misalignment, poor collaboration and functional limitations (Chen et al., 2021). Furthermore, this study reveals the mechanisms and challenges of applying digital technology platforms to social governance and provides guidance for other fields facing similar problems.

3. Method

3.1 Theoretical Foundations

3.1.1 Adaptive Governance Theory

Adaptive governance theory emphasizes the need for dynamic adaptability between problem contexts and governance instruments. It requires aligning technological capabilities with law-enforcement needs and designing processes that embody procedural rationality (Reiner et al., 2002). Applied to digital technology platforms, the theory highlights the importance of matching technical concordances to the specific requirements for law enforcement. For example, predictive algorithms and real-time data analysis can improve law-enforcement effectiveness by supplying timely, contextually relevant information. Notably, the theory also stresses the necessity

of continual adaptation so that technological tools remain pertinent and effective within evolving governance environments.

3.1.2 Sociotechnical Systems Theory

Sociotechnical systems theory examines how internal and external elements included in a system are coordinated. In the context of digital technology platforms, this coordination encompasses interactions between the platform and government agencies at multiple levels, public engagement and the circulation of data flow (Wang, 2024). When these actors act in a coordinated fashion, overall governance capacity can be strengthened. To illustrate, e-platforms can improve exchanges between government and citizens and facilitate information sharing, thereby promoting more open and inclusive decision-making processes (Clarke et al., 2019). Nevertheless, information asymmetry and coordination failures have the ability of frustrating the effective articulation of these factors and may impede the effective realization of these benefits, so it is necessary to use systems-based solutions to tackle such challenges.

3.2 Research Design

The ‘structural adaptation - process collaboration - functional optimization’ framework is applied to examine the integration of digital technology platforms into social governance from an overall perspective (see Figure 1). This framework is adopted to test the adaptation of technological tools to governance structures, the effectiveness of collaborative processes and the optimization of platform functions.

3.2.1 Structural Adaptation

This dimension concerns how well the digital technology platform adapts to the administrative law-enforcement responsibility system and the accompanying organizational structure. It evaluates whether the platform’s design and operational procedures align with the prevailing governance model. For instance, a coordinated command-and-dispatch system can enhance policing efficiency by streamlining incident reporting, deployment and supervision (Reiner et al., 2002). However, the platform is liable to encounter difficulties when its architecture or technological capabilities no longer correspond to organizational requirements or law-enforcement needs.

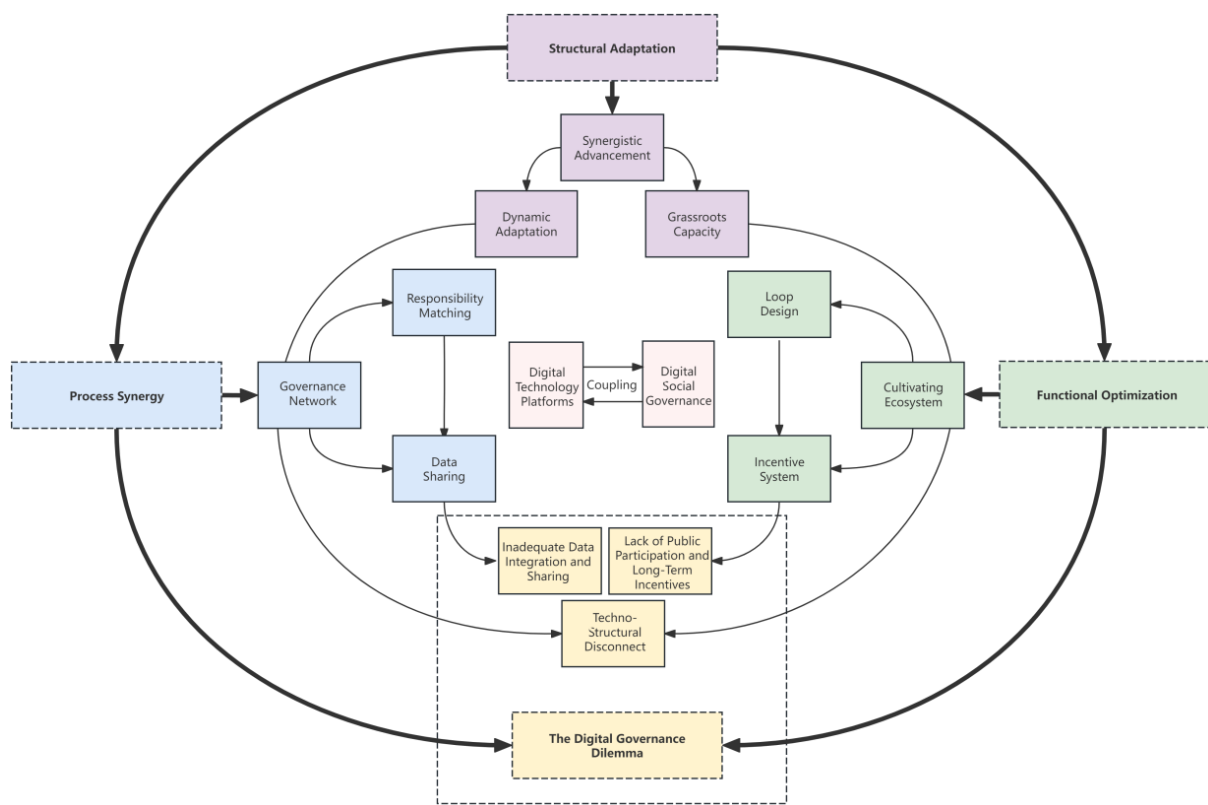


Figure 1. Three-tier Analysis Framework Diagram

3.2.2 Process Collaboration

This indicator tests the adequacy of interdepartmental collaboration, the extent of citizen engagement and the efficacy and transparency of process-handling functions. It examines how well the platform facilitates coordination and communication among stakeholders such as government departments, the public and law-enforcement agencies. For example, the deployment of mobile applications and real-time information sharing can improve the timeliness of enforcement actions by accelerating and streamlining open-ended event processing (Wang, 2024). However, persistent problems such as information asymmetry and coordination failures may have a negative impact on the operation of such processes.

3.2.3 Functional Optimization

This aspect examines the fulfillment of the primary functions that include data integration, risk alerting and law-enforcement monitoring. Simultaneously, it checks whether those functions are organized and upgraded to meet the needs of social governance. For example, the integration of data analysis and predictive algorithms can enhance the platform's ability to detect and respond to emerging risks (Alashwal & Fong, 2015). Conversely, shortcomings may emerge if the platform's functions are not fully utilized or when the platform is poorly integrated with other governance instruments.

3.3 Research Methods

3.3.1 Research Procedure

This study mainly employs the case study method, and a smart city project in Mengzi, Yunnan Province, called the 'comprehensive administrative law enforcement command and dispatch platform,' is selected as the object of analysis. Through operational data analysis, field research and individual case interviews, relevant data and materials are obtained to present the practical effects and governance challenges of digital technology platforms empowering social governance. Since Mengzi City in Yunnan Province was selected as a pilot city for the second batch of national smart cities in 2013, the city has continuously increased its investment. In combination with the actual situation, it has successively issued policies such as the Notice on Regulating New Infrastructure Information Projects and Smart City Construction in Mengzi and the Mengzi Smart City Construction Plan to accelerate the construction process of the smart city. Mengzi City has built multiple sets of digital governance application systems, including a command and dispatch center and a data security center. Therefore, analyzing the practical logic of the city's 'Comprehensive Administrative Law Enforcement Command and Dispatch Platform' in enhancing the efficiency of digital-empowered social governance has typical reference value.

3.3.2 Data Collection and Processing

The author spent six months in successively visiting key departments such as Political and Legal Committee, the Development and Reform Bureau, the Administrative Law Enforcement Command and Dispatch Center, the Public Security Bureau, the Letters and Visits Bureau and the Civil Affairs Bureau in Mengzi City, as well as three sub-district offices in the central city and their affiliated community residents' committees. We randomly selected five staff members from each of the above departments and institutions for semi-structured interviews. First-hand information was obtained through on-the-spot investigations to gain a deep understanding of the operation status and prominent features of the comprehensive administrative law enforcement command and dispatch platform. Moreover, we randomly selected 30 citizens from the community for qualitative interviews with the aim of understanding their awareness and satisfaction with the platform. After finishing qualitative interview, content analysis was used to summarize relevant themes and analyze the tendency of awareness and satisfaction. Meanwhile, we utilized the SPSS analysis platform to examine the relationships among the case completion rate, policy orientation, digital technology and residents' participation and satisfaction. Notably, we adopted thematic code to compare the governmental department staffs' perspectives with qualitative data from public's interview, aiming to ensure cross-verification among government data and field observations and enhance the validity and reliability of data. These efforts have laid a solid foundation for elaborating on the analytical framework and core viewpoints in detail.

3.3.3 Innovation and Significance

This study focuses on systematically analyzing the application limitations and efficiency dilemmas of digital technology in social governance, exploring the paths to improve the efficiency of digital-empowered social governance and ultimately achieving the two-way coupling between the digital technology platform and the overall digital social governance system (Li et al., 2022).

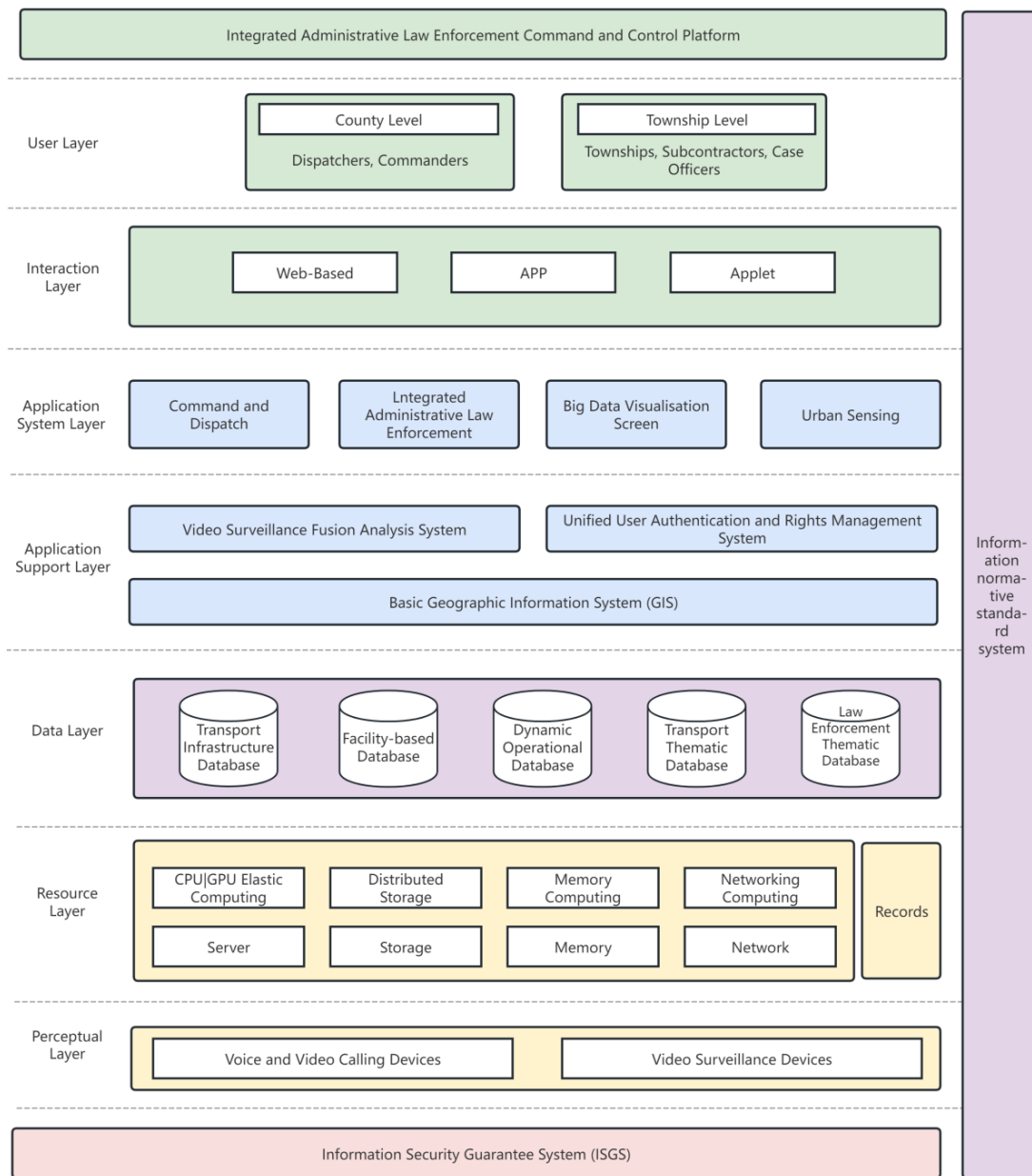


Figure 2. Platform Architecture Diagram

4. Results

4.1 Empirical Case Analysis

4.1.1 Platform Architecture

The Mengzi’s comprehensive administrative law enforcement command and dispatch platform adopts a ‘five-level command system + seven-layer technical architecture’ to manage the entire cycle of incident reporting, dispatch, enforcement and assessment. It innovatively constructs an ‘1115’ model for administrative law enforcement command and dispatch, comprising an ‘integrated setup’ for unified command, ‘one-click’ dispatch, ‘one-network’ supervision, ‘five-party’ linkage and ‘unified assessment.’ Specifically, the ‘integrated setup’ establishes county-level and township (district)-level administrative law enforcement teams, consolidating multiple dispatch platforms and creating interaction channels between government and enterprises and between government and the public. The ‘one-click’ dispatch function centralizes coordination, comprehensive tasking, monitoring and analysis, supervision and assessment and system evaluation within a single command-and-dispatch platform. Meanwhile, ‘one-network’ supervision system enables the real-time transfer, immediate notification and dynamic monitoring of information on administrative licenses, daily supervision and administrative penalties among different

departments. It implements unified acceptance and scheduling of matters that need to be handled and directly delivers relevant information to front-line law enforcement officers. The ‘five-party’ linkage strengthens combined online and offline oversight, enabling rapid social reporting (‘snap and report’), a synergistic cooperation of professional three-level command centre and transparent rule-of-law practices that are visible, appreciable and subject to supervision. As shown in Figure 1, the platform’s seven-layer technical architecture is arranged from top to bottom as follows: perceptual layer, resource layer, data layer, application support layer, application system layer, interaction layer and user layer.

4.1.2 Functional Design

In terms of structural adaptation, the platform integrates the 12345 hotline and 110 non-police emergency calls, and establishes a mechanism of ‘unified command - dispatch - supervision.’ This integration aims to simplify the processes of incident reporting, dispatch and supervision, ensuring the efficient handling of various administrative law-enforcement tasks. By centralizing these communication channels, the platform can coordinate resources more efficiently and respond to public demands in a timely manner.

In terms of process collaboration, the platform supports paperless office work and real-time collaboration through a mobile application. This function enables law-enforcement officers to view and update information on-site, significantly improving the efficiency of incident handling. The mobile application also promotes communication and coordination among different departments and government levels, achieving seamless information sharing and forming a collaborative response mechanism.

In terms of functional optimization, the system is equipped with a real-time monitoring data dashboard, an electronic law-enforcement record system and a ‘citizen snapshot’ function. The data dashboard presents a panoramic view of urban administrative law-enforcement activities, helping to improve decision-making efficiency and optimize resource allocation. The electronic law-enforcement record system greatly reduces the need for paper documents, significantly enhancing the efficiency and accuracy of document processing. Besides, the ‘citizen snapshot’ function allows citizens to report incidents through a mobile app, effectively promoting public participation and enhancing the transparency of the law-enforcement process. In addition to the above functions, the system also integrates cutting-edge technologies such as Artificial Intelligence (AI)-driven incident classification and risk prediction. These technologies enable automatic incident detection and prioritization, which not only reduces the workload of law-enforcement officers but also improves the overall efficiency of the system. The system also has a performance evaluation module. By linking law-enforcement scores with the assessment results of civil servants, it strengthens the sense of responsibility and encourages staff to enhance the quality of their work.

In terms of system integration, the platform is specifically designed with a connection plan to existing government agencies such as the judicial system and market supervision departments. Through data interconnection with these departments, data sharing and collaborative use among agencies are achieved, thereby remarkably enhancing the overall synergy of the platform (Stame, 2020). By breaking down data silos and establishing a unified data-sharing mechanism, the platform can not only better meet the needs of all stakeholders but also comprehensively improve the city’s comprehensive governance capacity.

In 2024, the Mengzi’s comprehensive administrative law enforcement command and dispatch center handled a total of 12,703 incidents, with an average completion rate of 95%, successfully implementing the concept of ‘One-net Governance.’ However, two major problems have emerged: first, the limited funds for digital government construction have hindered the progress of service procurement and business operation projects; second, cross-departmental coordination still relies on manual operations, and the handling of some incidents is delayed due to unclear responsibilities.

Table 1. Platform Operational Data

Source of the Event	Total Number of Reports	Number of Files	Completion Rate
	n	n	%
"Snap and Report" Reporting	942	904	96%
110 Non-police Emergency Calling Reporting	402	393	98%
12345 Hotlines Reporting	11291	10614	94%
371111 Livelihood Service Hotlines	68	68	100%
Totals	12703	11979	95%

4.2 Mechanism Study Based on a Three-dimensional Framework

4.2.1 Structural Adaptation

The original design of the five-level command system was intended to match the hierarchical structure of county-level and township-level law-enforcement teams. This structural design aims to ensure smooth command and information flow between governments at all levels and law-enforcement units. However, the shortage of law-enforcement forces in townships has emerged as a significant challenge. Each township has only 5-10 law-enforcement officers, severely limiting the ability to respond to emergencies and handle tasks efficiently. This shortage not only affects the response speed but also impacts the quality of law-enforcement as the police force is often overwhelmed by the workload.

In essence, the core contradiction lies in the huge gap between the platform's technical standards (such as the requirements for three-level protection and government cloud services that need to meet network requirements) and the actual hardware conditions at the grassroots. Specifically, townships lack the necessary servers and network facilities to meet the platform's technical requirements. This mismatch between the technical requirements and the existing configuration has given rise to multiple problems. From one perspective, the mismatch between the platform's capabilities and the actual operating conditions leads to inefficiency and delays. From another perspective, local governments find it difficult to allocate resources to meet these technical specifications without sufficient support, resulting in difficulties in resource allocation.

4.2.2 Process Collaboration

Having discussed structural adaptation, the next section explores how process collaboration unfolds in practice. Through previous case analysis, we have found that the platform has certain collaborative advantages. To illustrate, the 'Snap and Report' mini-program allows citizens to easily report incidents through a user-friendly interface, effectively promoting public participation. Nevertheless, data shows that cases reported by citizens only account for 6.8% of the total incidents, indicating insufficient social mobilization. This low proportion suggests that although the platform has the potential to attract the public, it has not achieved widespread popularity and active interaction.

The root cause of the collaborative obstacles is that cross-departmental incidents require manual coordination through 'joint meetings,' lacking an automatic matching mechanism for responsibilities and authorities. This manual coordination is error-prone, time-consuming and inefficient. Furthermore, due to the lack of a process for automatically identifying the responsible departments and authorities for incidents, inefficiencies and bottlenecks occur during the handling process. Consequently, the platform's ability to promote collaboration among departments is impaired.

4.2.3 Functional Optimization

Having discussed process collaboration, the next section illuminates how functional optimization unfolds in practice. There are several advantages to the platform's digital capabilities and digital intelligence tools. For instance, the data dashboard, one of the core features of the platform, enables supervisors and decision-makers to track current activities and make decisions based on the latest data by visualizing police processes in real-time. On the contrary, the platform's early warning function is currently limited to 'imminent expiration reminders' and has not yet integrated artificial intelligence-based risk prediction models. This limitation causes the platform to only take passive responses to possible problems rather than proactive prevention, thus weakening its overall risk management effectiveness.

Moreover, as an area where the platform has potential, the law enforcement assessment module still needs improvement in many areas. While the module provides a framework for evaluating law enforcement officer performance, the current reliance on manual scoring results in inefficiencies and potential bias. In addition, given the lack of deep integration with performance appraisal systems, assessment results are not fully used in decision-making processes such as promotions or training assignments. This disconnect weakens the platform's ability to drive performance improvements and ensure accountability.

4.3 Comparison with Domestic and International Areas

Mengzi's comprehensive law enforcement platform integrates 12345 government service hotline, grid management system and AI intelligent analysis module to realize the effect of law enforcement work order 'can be handled immediately after receiving a complaint,' which promotes the efficiency of departmental collaborative disposal and improves the satisfaction of the public at the same time. Furthermore, the comprehensive law enforcement platform of Mengzi City takes the two major cores of digital government and digital economy as the core task, and centers on the construction of AI algorithms, the safe management of big data and the operation of

digital economic platforms, and builds the core chassis of arithmetic, storage and operation with local characteristics, which comprehensively promotes the digital transformation of local administrative law enforcement and effectively enhances the government's ability to govern digitally. Xinjiang, China, which is also an ethnic minority border area, also draws on this development model, which integrates integrated technology, data governance and AI algorithm construction into the construction of a smart law enforcement hub, comprehensively playing the supporting role of digital intelligence technology in the subject management, collaborative case handling, supervision and publicity, decision-making support and other links, and realizing the effect of law enforcement efficiency, supervision and innovation and service transparency. It can be seen that the practice of Mengzi City is universal, and is of reference significance for the digital construction of administrative law enforcement platforms in other multi-ethnic border areas in China.

For other OECD member countries, there is a lack of research related to the digitization of administrative enforcement platforms. Only in India has digital governance received attention. For instance, Adhvaryu & Mathew (2025) explores the intersection of data and governance based on the Indian context, focusing on the complexities of integrating data-driven governance within urban systems. Their study shows that despite India's strong push to digitize localities, the lack of standardized data collection methodologies prevents data from adequately reflecting the realities of urban governance. In addition, the multi-tiered governance system has led to inconsistent approaches to data management across locations, and data cannot be effectively integrated into a unified strategy. For developing countries facing difficulties in building digital governance, the successful practice of Mengzi City can serve as a lesson. On the basis of fully considering the development of digital technology, economic strength and policy orientation, countries should carry out the construction and optimization of digital platforms from the three aspects of structure, process and function, so as to organically combine administrative affairs and social governance, and to achieve the synthesis and integration of social governance.

5. Discussion: The Digital Governance Challenges and Implementation Path

5.1 Techno-Structural Disconnect

5.1.1 Misalignment Between Technological Development and Grassroots Implementation Capacities

The platform's design emphasizes a 'five-level command system' and a 'seven-layer technical architecture,' requiring township law-enforcement teams to respond to incidents in real-time and comprehensively record the disposal process. However, each township is only equipped with 5-10 law-enforcement officers, making it difficult to meet the platform's requirements. Finally, the shortage of personnel leads to a high risk of delays in incident disposal. Data shows that 2% of non-police incidents remain unresolved to date.

Additionally, the platform requires 'paperless office work' and 'real-time mobile positioning,' which necessitate the deployment of hardware facilities such as networks and terminal devices at the grassroots level. Nevertheless, due to budget constraints (with a total budget of 2 million yuan), some townships are unable to fully meet these technical standards, which restricts the implementation and application of technological functions.

5.1.2 Conflict Between Standardized Processes and Flexible Governance Needs

The platform presets a linear workflow of 'incidents scheduling - handling - evaluation.' However, in reality, cross-departmental events still require manual coordination through the 'joint meeting' mechanism, resulting in a rigid process. For example, 'non-police 110 incidents' often need to be transferred to multiple departments such as urban management and environmental protection. Besides, the platform lacks a dynamic responsibility matching algorithm and completely relies on individual subjective judgments, leading to low efficiency.

5.1.3 Incompatibility between Technical Standards and Policy Environment

The platform emphasizes high-standard technical requirements such as 'three-level protection,' 'government cloud complying with national network security standards' and 'blockchain data integration.' However, due to policy restrictions, projects such as the 'Data Security Center,' originally planned to be invested in by the government, have been implemented through the procurement of services. This transformation forces the implementation of technology to rely on the capabilities of enterprises, resulting in the blurring of the concept of data sovereignty (eg., enterprises may monopolize data interfaces), which runs counter to the original design intention of 'unified command.'

5.2 Inadequate Data Integration and Sharing

5.2.1 Data Silo Problem

Although a construction plan for the Traffic Data Resource Catalog System has been proposed, given that policy restrictions, projects such as intelligent transportation have shifted to the procurement-service model, impeding

the data integration process. In particular, there is a lack of unified data standards among different departments. To illustrate, the technical specifications and standards in multiple fields such as transportation and networking are not unified, resulting in low efficiency of cross-system connections. Undoubtedly, this leads to the formation of information silos, where information is isolated and difficult to share and integrate, thus constraining the platform's ability to provide comprehensive and coordinated governance.

5.2.2 The Lack of a Sharing Mechanism

The platform has integrated channels such as 12345 and 110, but it has not yet achieved in-depth connection with the systems of departments such as the judiciary and market supervision. The 'real-time transfer of administrative licensing and daily supervision information' is crucial for these departments. Hence, event scheduling still requires manual intervention through the method of conducting a joint discussion in the form of meeting, which is both time-consuming and error-prone. This lack of an automated sharing mechanism not only reduces the efficiency of event handling but also limits the platform's ability to provide real-time and accurate information to decision-makers.

5.3 Lack of Public Participation and Long-Term Incentives

5.3.1 Limited Participation Channels

Citizens can only report incidents through the 'Snap and Report' mini-program. Moreover, due to the lack of integration and analysis of citizens' comment data, the processing results cannot be promptly fed back to the parties involved. This situation is likely to lead to insufficient enthusiasm among the public for participation. Further, such limited public participation channels restrict the platform's ability to attract a broader audience and collect diverse opinions, thereby weakening the overall effectiveness of governance.

5.3.2 Weak Design of Incentive Mechanisms

Although the platform has proposed a 'point-reward system,' it lacks a periodic assessment of the implementation effect. As a result, the actual implementation cannot be made public and social mobilization remains at the stage of 'passive response.' In addition, after citizens participate in social governance and cooperate with law-enforcement investigations, they rarely receive positive feedback (such as publicizing good deeds through online media, community workers awarding pennants to outstanding citizens or inviting exemplary figures to share their experiences on-site). Therefore, the lack of clear and effective incentive measures significantly dampens citizens' enthusiasm for participating in governance, further constraining the platform's ability to enhance governance effectiveness through public participation.

5.4 Synergistic Advancement of Technology Integration and Organizational Restructuring

5.4.1 Dynamic Adjustment Mechanism

Based on the theory of adaptive governance, a 'demand - technology' dynamic assessment model should be established. This model can achieve the continuous optimization of platform functions by regularly collecting user feedback, analyzing changes in governance demands and evaluating technological progress. For example, the introduction of an AI event classification engine can automatically identify and classify event reports, significantly reducing the pressure on manual dispatching. Simultaneously, the deployment of an intelligent early-warning system can predict potential events and allocate resources in advance. This mechanism ensures that the platform's technological capabilities are always in sync with governance demands, thereby significantly enhancing law-enforcement efficiency, reducing response time and improving processing accuracy.

5.4.2 Grassroots Capacity Building

Grassroots capacity should be enhanced through structured partnerships between government and enterprises. The government and relevant departments should proactively sign strategic agreements with multiple technology companies to share resources and professional knowledge and jointly develop customized solutions. For instance, by purchasing services such as cloud computing platforms, outsourcing IT support and hardware leasing, key hardware resources can be supplemented instead of simply relying on government investment, thus maximizing cost-effectiveness. Moreover, it is worthy of consideration to conduct comprehensive digital skills training for law-enforcement officers, covering modules such as platform operation, data analysis and network security, to enhance their ability to effectively use the platform. This not only significantly improves the technological proficiency of grassroots police officers but also ensures the smooth operation of the platform at the local level and enhances the community's security response capacity.

5.5 Building an Intelligent Collaborative Governance Network

5.5.1 Algorithm and Responsibility Matching System

Based on the social system theory, a cross-departmental responsibility mapping system should be developed. Through comprehensive analysis of the multi-dimensional characteristics of incidents (such as incidents type, scope of influence and historical handling records), the system can automatically identify the department to which an incident belongs. Especially in the scenario of 'cross-departmental incidents,' it significantly reduces the cost of manual coordination and time delay. Furthermore, by leveraging advanced machine learning algorithms and natural language processing techniques, the platform system can analyze the nature of events in real-time and precisely match the most suitable handling department. This notably enhances the efficiency of event dispatching, effectively reduces the need for manual interventions and supports the dynamic optimization of the responsibility allocation process. It is worth mentioning that the platform system should also integrate real-time monitoring data and optimize the feedback mechanism. For instance, it can introduce AI to analyze law-enforcement data in real-time and promptly feed back the case handling results to the parties involved and law-enforcement officers, ensuring the accuracy and traceability of responsibility mapping and improving the overall governance response speed.

5.5.2 Data Sharing Alliance

Core departments such as the judicial and transportation departments should cooperate to sign data interoperability agreements and optimize blockchain technology. Through deeply integrating the local blockchain system with the provincial level platform blockchain system, the functions of distributed ledgers and smart contracts can be realized, ensuring the security and trustworthy transfer of data during transmission, storage and access. The purpose of this alliance is to break down data silos. By establishing unified data standards and sharing interfaces, it promotes the real-time and efficient sharing of cross-departmental information, thereby comprehensively enhancing social governance effectiveness and supporting refined decision-making, risk early-warning and public service optimization, while safeguarding data privacy and compliance.

5.6 Cultivating a Socialized Governance Ecosystem

5.6.1 Participation-Feedback Loop Design

In the design of the participation-feedback loop, in order to significantly enhance the transparency of the 'Snap and Report' mini-program, the platform should plan to add a 'Real-time Progress Query' function. This enables citizens to track the processing status of reported events in real-time through the mobile application, including details of each stage such as event acceptance, in-progress handling and resolution. Meanwhile, a 'Citizen Rating' function should be introduced, referring to the design of the 'Law-Enforcement Assessment' module. After the event is processed, citizens can rate the results and provide written feedback, such as evaluating the response speed and handling effectiveness. These functions not only strengthen the platform's publicity and traceability but also enhance citizens' sense of participation and responsibility in the governance process by granting them the right to actively evaluate, thus effectively promoting citizen participation.

5.6.2 Diversified Incentive System

Regarding the diversified incentive mechanism, the platform should strive to build a comprehensive incentive system. Through closely integrating points redemption with various public services, including parking discounts, priority access to community services and preferential use of public facilities, tangible rewards can be provided to citizens. This mechanism aims to encourage citizens to continuously participate in governance activities through the accumulation of points. To illustrate, after citizens actively report events or provide valuable feedback, the system will automatically accumulate corresponding points based on their behavioral contributions and users can redeem the required services in the points mall. This not only can improve the platform's attractiveness and user stickiness but also can cultivate citizens' sense of belonging and ownership through the sharing of community benefits. In addition, the government department in charge of publicity should actively report typical deeds of public participation in social governance and call on communities to regularly organize themed activities on 'Public Participation in Social Governance,' inviting typical figures to share their experiences, further inspiring more people to participate in social governance and forming a new pattern of 'co-construction, co-governance and co-sharing.'

6. Implications

6.1 Policy Implication

In the context of the traditional hierarchical system, the optimization of the digital construction of administrative law enforcement platforms needs to break down the barriers of formalism. The negative impact of formalism is mainly manifested in the duplicated construction of law enforcement platforms, superimposed functions and the collection of law enforcement information at multiple ends and duplicated reporting, which not only results in the empty consumption of administrative resources and inefficient financial investment, but also exacerbates the burden of front-line law enforcement personnel, departing from the original intention of technology-enabled law enforcement and enhancing efficiency (Zhang, 2025). Therefore, the government should strengthen top-level design and institutional coordination, integrate digital platforms scattered at different levels and build data sharing and business interoperability channels to avoid lack of cooperation and duplication of actions caused by scattered data. Besides, the relevant departments should strive to promote the transformation of administrative enforcement from 'compartmentalization' to 'overall coordination.' In terms of policy formulation to promote digitization, policymakers should target specific law enforcement needs, promote the exchange and sharing of massive data and information across levels, departments and regions, and reduce the negative impact of digital silos. This is conducive to the convenient and efficient completion of the administrative law enforcement process, thereby realizing the administrative law enforcement field of 'overall smart governance.' More importantly, through digital empowerment to force the administrative law enforcement system to continue to maintain adaptive change and strive to build a social demand-oriented administrative law enforcement system, further highlighting the superimposed advantages of digital and system-driven. At the national level, it is crucial to formulate a phased digitalization construction program. Relevant central government departments should actively cooperate with technology enterprises to formulate phased development programs and digital technology guidelines, taking into account the actual situation of digitization and social governance in different regions. Especially for regions lagging behind in the development of digital technology, the state should actively provide policy favoritism and financial and human resources support, promote the development experience of advanced regions and encourage local governments to formulate phased development programs in the light of regional realities. It is worth mentioning that the State should also break down the hierarchical barriers to data flow through the system, accelerate the construction of digital integration, realize high-quality data sharing on the premise of ensuring data security and enhance the overall effectiveness of digital governance.

6.2 AI Ethics Discussion

In the process of digitally empowering administrative law enforcement platforms, technological dependence can easily lead to the weakening of the government's credibility and the failure of supervision and regulatory procedures. AI-generated data is inevitably out of touch with the reality of the society or even falsified, and the government's over-reliance on data generated by AI algorithms will gradually weaken the existing social experience and judgment, causing law enforcement officers to ignore the real needs of the masses and the actual situation in the process of handling cases. The actual situation will ultimately lead to a result that getting half the efficiency with twice the effort. Over time, the credibility of administrative enforcement will be weakened. In addition, over-reliance on AI will also make law enforcement officers lack humanistic care in the process of handling cases, deviating from the original intention of law enforcement for the people. Traditional social governance decisions are usually made by multiple subjects through collective consultation, and the public participates in the decision-making process and actively contributes to it, making the decisions more responsive to the needs of the public. If administrative law enforcement departments rely too much on AI algorithms and lack effective means to regulate algorithmic black boxes, data forgery and algorithmic bias, the subjectivity of law enforcement officers and the public in the decision-making process will be greatly impaired. Based on the above ethical risks that may be caused by AI, the government level should establish standards that are compatible with the collection, storage and use of government data or standards that can be easily converted, and build public-private information platform facilities (Klievink et al., 2016) to realize the sharing of government data and social data. For another thing, the relevant departments of administrative law enforcement should reasonably control the flow of data to avoid excessive public disclosure of data affecting social equity. This initiative can also effectively prevent data from being speculated and reduce the negative impact of information bombardment on subjective judgment. More importantly, the public, technicians and law enforcers should adhere to the ethical bottom line, protect personal privacy and maintain subjective judgment and decision-making ability when analyzing data. Individual subjective initiative should not be replaced by AI. Hence, a reasonable division of labor between human decision-making and algorithmic optimization should be ensured in the process of promoting the digitalization of comprehensive law enforcement platforms. Relevant government departments should clarify the proportion of

division of labor between artificial and AI through the system to ensure the subjective status of human beings in the areas of people's interests, fairness in law enforcement, policy formulation and humanistic care, and to utilize AI to improve efficiency in mechanical matters. Essentially, in the context of digitization, individuals must retain the right to make independent decisions, analyze rationally and make substantive decisions on non-quantifiable social factors and enhance the public value of decision-making (Wang & Hao, 2024).

7. Conclusion

This study, based on the 'structural adaptation - process collaboration - functional optimization' framework, reveals the governance effectiveness of Mengzi's digital law enforcement platform in its initial stage of technology integration. Empirical indicators, such as a 95% resolution rate, demonstrate notable effectiveness following initial technological integration. Meanwhile, it also exposes deep-seated contradictions such as structural disconnection, inefficient collaboration and functional limitations. For instance, entrenched routines and fragmented authority structures prevent platforms from adapting to local administrative practices, which in turn limits learning and the iterative refinement of governance technologies. Theoretically, this study validates the proposition of adaptive governance theory that 'technological tools need to be dynamically adapted to the governance context' and extends the explanatory boundary of sociotechnical systems theory in digital collaboration. In terms of practice, it proposes a three-dimensional approach of 'government-enterprise cooperation to supplement hardware - algorithm-driven strong collaboration - ecological incentives to promote participation,' which can serve as a reference for similar regions. A key limitation of this research is its single-case focus and government-provided data. Future research should consider to deepen the study of mechanisms by comparing data from multiple cities and understand the opinions and suggestions of NGOs regarding the digital construction of comprehensive law enforcement platform.

Furthermore, the development of digital governance platforms requires approaches that transcend conventional and technology-centred thinking. Researchers should prioritize longitudinal studies to assess how these platforms evolve and adapt over time, particularly in ethnically diverse settings where historical governance arrangements and cultural practices continually reshape technology uptake. Comparative analysis of smart-city initiatives across China would also be instructive: contrasting implementation in poorer, border regions with that in major urban centers can clarify typologies of platform adaptability and inform context-sensitive policy design. Additionally, scholarship on digital governance must bridge the persistent divide between technologically driven interventions and extant governmental systems. Integrating quantitative data analysis with qualitative community-based research can reveal how minority groups - for example, residents of Mengzi City - engage with platforms in culturally mediated ways, an overlooked yet essential dimension of equitable technology deployment. Of note, as emergent infrastructures such as pervasive 5G connectivity and brain-like computing change how governments operate in real-time, the establishment of transparent governance for open algorithms and locally deployed AI will determine whether digital platforms become instruments of public service or novel mechanisms of administrative control.

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