A Perspective of Good Governance on the Reform of Correctional Governance System and Capabilities in the Digital Era

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ABSTRACT: The construction of smart cities and smart government is in full swing. Public sectors emphasize the advancement of electronic processes and applications to foster innovation. Hence, accelerating the digital reform of the correctional governance system and capabilities is the general trend. This article utilizes the good governance theory as its central framework to elucidate the integration of the rule of law, accountability, transparency, efficiency, equity, responsiveness, participation, and consensus within the corrective institution in Macao. Additionally, the article seeks to analyse the impact of implementing big data on the governance system through a multidisciplinary policy analysis. Drawing from the perspectives and values associated with good governance, this study examines the various components and assessments of capabilities. Specifically, it identifies leadership, innovation, execution, responsiveness, and readiness as the determinants that collectively shape the path of capabilities reform. The incorporation of relevant implications and practices offers a scientific foundation and orientation for the digital reform of governance system and capabilities within correctional services.

KEYWORDS: Good governance, Governance system, Governance capability, Smart corrections, Digital reform.

I. INTRODUCTION
The advancement of smart cities and smart technologies has expedited the progress of principles and ideas about public governance (Lindquist, 2022). The increasing expectations of society for the establishment and enforcement of legal principles, as well as the protection of individual rights, necessitate the continuous adaptation and improvement of public governance systems and their capabilities to remain relevant in contemporary times. Indeed, correctional services encounter intricate challenges during the course of digital reform. From a comprehensive security standpoint, the global occurrence of the COVID-19 pandemic in 2020 has resulted in a significant public health emergency, leading to profound consequences for institution management and the implementation of sentences (Zhang & Wang, 2021). Corrective institutions continue to face the imperative of exercising caution in their response to prospective public health emergencies. At the macro level of prison administration, there has been a significant rise in crimes involving high intelligence, economic offenses, and drug trafficking (Macaulay, 2017). The expansion of gangs and the occurrence of various forms of violence disrupt the order within prisons (Butler, Slade, & Dias, 2022; Jones, 2014; Wooldredge, 2020). The aforementioned potential risks give rise to concerns regarding the preservation of custody security. Therefore, it is imperative to implement elevated enforcement standards and intensify efforts to effectively address these issues. The selection criteria for smart building technologies in prisons have posed a challenge from a contemporary technological standpoint (Aldhaheri, Xia, & Nepal, 2022). Certain intelligent devices currently do not possess autonomous learning capabilities, and there is still room for improvement in recognition accuracy. Consequently, these limitations hinder the further reduction of frontline workload. The escalating intricacy of correctional work and the mounting challenges faced by law enforcement are placing significant burdens on the supervision system and institutions. Hence, there is a pressing need to expedite the facilitation of the governance system and capabilities reform (Bandyopadhyay, 2007; Ndimu, 2013).

The objective of this article is to explore the strategies employed by the Macao Correctional Services Bureau (MCSB) to enhance its governance system and capabilities, with a focus on implementing the governance concept of "Collaborative progress, change, and innovation" (SAR, 2023b). This study adopts multidisciplinary policy analysis to assess the viability of big data governance.
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strategies, drawing on the principles of good governance, as well as the concepts of smart corrections and smart government. Furthermore, it outlines the elements and criteria used to assess capabilities, suggests a reform path for achieving sustainable development, and offers valuable insights on the necessary reforms to governance systems and capabilities, thereby guiding future strategies and orientations in the field of smart corrections.

II. METHODS

This study utilizes a literature review methodology to examine prominent research on correctional governance system and capabilities reform, as well as good governance theory from both domestic and international sources. The aim is to establish a solid foundation for theoretical development. From the review of legislation and regulations pertaining to the implementation of sentences and rehabilitation in Macao, this article acknowledges the strategic positioning and developmental trajectory of smart government and smart corrections. Additionally, the existing policies, essential measures, and correctional practices implemented by MCSB are evaluated and considered as substantial evidence supporting the claims presented in this study.

III. RESULTS AND DISCUSSION

A. Good governance from a correctional perspective

The establishment of good governance is considered a fundamental requirement for governance systems and capabilities reform (Choudhary, 2020; Christensen et al., 2016). The theory of good governance encompasses various components, including the rule of law, accountability, transparency, efficiency, equity, responsiveness, participation, and consensus (Adegbami & Uche, 2015; Ali, 2019). The principle of the rule of law serves as the fundamental basis for good governance, placing significant emphasis on the principles of equity and adherence to legal norms. The governor is expected to fulfill the correctional functions granted by the law and undertake social responsibilities (Almquist et al., 2013). Also, the governor should strive for effective implementation of policies and duties, while promoting inclusivity and consensus-building among all relevant stakeholders. The objective is to ensure the rigorous implementation of laws in an equitable and objective manner, while also collaborating with communities to facilitate rehabilitation, decreasing the likelihood of re-offending, proactively addressing societal needs, and enhancing the overall working conditions and welfare of personnel. Additionally, there is a commitment to maintaining transparency and accountability, as well as welcoming external scrutiny (Adegbami & Uche, 2015; Headley & Garcia-Zamor, 2014). From the perspective of correctional services, the incorporation of good governance theory significantly contributes to the enhancement of governance systems and capacities in the context of reform. In accordance with the values and principles of safe custody and corrections (Legislative Assembly, 1994), this study offers practical strategies and valuable insights for the reform process.

B. Governance policy in the digital era

The achievement of governance goals necessitates the integration of the elements of good governance with governance tasks and specific needs (Adegbami & Uche, 2015). The subjects that are associated with this topic encompass problem formulation, decision-making, implementation, and problem resolution. The governance system has been designed under the specifications of the intelligent framework to facilitate the execution of sentences, manage prisons, and respond to emergencies (Zhang Xiaohua, 2020). MCSB has developed an advanced correctional system that incorporates various components such as information management systems, databases, security applications, and business platforms. The primary application technologies encompass intelligent management platforms, automatic face recognition, smart alarm systems, behavior analysis technology, prisoner trajectory inquiries, and self-service kiosk systems (SAR, 2023c). The utilization of multidisciplinary policy analysis serves to effectively tackle challenges encountered during system reform and attain the overarching policy objective through the anticipation of potential issues, evaluation of possible outcomes and risks, identification of existing barriers, provision of suitable recommendations, and ongoing performance evaluation (Dunn, 2018). The approach of multidisciplinary policy analysis is characterized by a cyclic analysis, as depicted in Figure 1. The governance countermeasures of big data implementation are employed to elucidate the analysis process as follows.

1) Problem structuring

Problem structuring encompasses activities such as the formulation of novel policies, strategic goal setting, problem diagnosis, and exploration of values. To implement big data governance, the policy design and goal is to promote the coordinated development of "data, technology, and applications" in institutions, overcome the limitations of the traditional experience management mode, and achieve transparency and data sharing, thereby optimizing emergency response and process (Jiang Jinbing, 2017). The significance of big data resides in its utilization for mining and analysis, with the aim of predicting behavioral attributes, group dynamics, and violations, so as to effectively accomplish prevention and governance.

2) Forecasting
Forecasting involves examining the circumstances subsequent to enacting policies and making estimations regarding potential outcomes and conditions so as to gather diverse information. The implementation of big data results in the generation of substantial quantities of raw data. To ensure the stability and efficiency of the overall operation, it is imperative to thoroughly test and verify the performance of information systems, databases, unified management platforms, and networks, as they are responsible for handling substantial volumes of data access. Maintaining the feasibility and extensive implementation of intelligent technologies deployment is necessary. This includes the utilization of video surveillance, sensing equipment, facial recognition, smart alarms, behavior analysis, and trajectory query. For institutions to adhere to legal requirements and the functioning of correctional facilities, it is essential to establish an optimal equilibrium between operational effectiveness and the protection of individual privacy.

3) Prescription

Prescription is to conduct an analysis of the potential risks and impact of spillovers, as well as to outline the criteria for selection and the responsibilities associated with implementation. Given that big data encompasses various types of information, including the basic status of prisoners, qualitative distribution, evaluation of violent tendencies, and risks of infectious diseases, it is imperative to formulate rigorous regulations to safeguard personal privacy, as well as to govern data collection and access. The establishment of standards and guidelines for data management is necessary for ensuring efficient and effective handling of data. It is essential to systematically allocate responsible departments and dedicated personnel for tasks related to data access, transmission, and analysis. The introduction of professionals and training programs could be considered as a means to enhance task assignments and responsibilities.

4) Monitoring

Monitoring refers to the systematic assessment and observation of the implementation outcomes of policies, as well as the identification of barriers and the collection of information on the achieved results. Big data provides a reliable and scientific foundation for safety prevention, early warning, response, decision-making, and the acquisition of evidence for violations. The emphasis should be placed on advocating for the transition from traditional governance to data governance. Data prediction models are applied to anticipate the workload and police demand in specific regions, enabling the proactive allocation of resources and the formulation of duty schedules (Kaun & Stiernstedt, 2020). The intelligent analysis and application software assesses the execution of sentences, crime attributes, daily behavior, violent tendencies, and mental state, and provides recommendations for transfer and management. The mechanisms of data monitoring, periodic review, and sampling inspection serve as a crucial strategy to ensure the alignment of policies with the law and the "Personal Data Protection Act" (Legislative Assembly, 2005).

5) Evaluation

Evaluation aims to assess the extent to which problems have been resolved, generate data on policy performance, and engage in critical evaluation of value. The extensive deployment of big data governance strategies serves as an indication of effectiveness and worth, enhancing the correlation between internal data and enhancing service capabilities, including query and retrieval, comparison and subscription, and data push (Zheng Xi, 2021). The effectiveness of the strategy can be evaluated by considering the probability and trend of violations and emergencies. However, it is important to note that the accuracy of the analysis and the comprehension of individuals play a crucial role in determining policy performance. Given that data entry, processing, analysis, and management are all essential professional competencies, meticulous planning is necessary with regard to training, recruitment, and knowledge management. Additionally, consideration should be given to establishing information exchange channels between courts, and judicial departments. This will enable the efficient utilization of data and smart applications, leading to improved performance and value.
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C. Path of Governance Capabilities Reform

As the complexity of correctional work and the challenges encountered in law enforcement continue to expand, there is a corresponding need to augment governance capabilities. The broad lack of unified standards and guidance in defining governance capabilities can be attributed to variations in legal systems, governance concepts, social culture, and institutional structures. Drawing upon the perspectives and values of good governance theory, as well as existing scholarly investigations on the constituents and assessment of capabilities (Weng Wen & Shao An, 2015; Yanqing et al., 2021), this article puts forth a set of five determinants, which constitute the path of reform (Figure 2.) and serve to foster the advancement of governance capabilities.

1) Leadership
Scientific decision-making represents the integration of leadership qualities and the application of principles such as the rule of law, accountability, and equity within the context of good governance. Based on smart corrections, emergency response mechanisms are established at various levels to attain efficient command and dispatch capabilities through a unified intelligent management platform and auxiliary decision-making system. Proactive, community, and public-relation policing concepts (SAR, 2023c) are advocated to foster a flexible organizational culture, establish various communication channels, promote participation in management, and ultimately enhance cohesion, team morale, and a sense of value. Governors at all levels are required to have leadership abilities that encompass actively promoting correctional work, fostering a spirit of care and inclusion in rehabilitation, and guiding personnel toward embracing the values of corrections (Bruhn et al., 2017).

2) Innovation
Pragmatic innovation, reform of diverse thinking, new promotion, and establishment of a talent echelon system are effective policies to promote innovation capabilities and diverse thinking (Legislative Assembly, 2021). Innovative community cooperation models should be adopted in the domains of counseling, correction, and social reintegration (Lian Chunliang, 2019). Under the guidance of the MCSB, social organizations and communities engage in active participation and collaboration to establish a robust cooperative framework aimed at facilitating social reintegration and rehabilitation. The development of new and diverse counseling and correction services, such as “Mental health education,” “Healthy lifestyle,” and “Original art therapy,” is being facilitated through the close collaboration of the Social Welfare Bureau, Legal Affairs Bureau, social service agencies, and nonprofit groups. This collaborative effort aims to foster innovation and provide additional support in relevant domains (SAR, 2023c).

3) Execution
Dynamic enforcement, rigorous intensity, and team efficiency are the fundamental elements of execution and an integral component of capabilities (Wen Houmin & Peng Yuanchun, 2021). Execution highlights the key tenets that law enforcement and security operations should embody in the face of evolving circumstances: 1) A thorough comprehension of legal permissions and the rights of prisoners; 2) Dynamically integrate information technology to support law enforcement; 3) Ensure that enforcement processes are characterized by efficiency, mobility, and transparency. 4) Dynamically implement investigation strategies and
expand the intelligence network system; 5) Strengthen disciplinary supervision and ethics, and maintain professional image and credibility; 6) Aim to form an honest and efficient team as the ultimate goal.

4) Responsiveness

Diversified interaction and responsiveness are crucial aspects of good governance, which necessitate the establishment of a “responsive” government. The institution has to promptly respond with diversified channels to address social criticism, group suggestions, public opinion, and other significant concerns according to the nature of issues, popularity, and attributes of the response objects. Empirical studies also indicate that in the process of improving responsiveness, the governance system should give priority to initiative, equity, speed, method diversity, and information transparency (Lihua et al., 2017). Diversified publicity helps foster community cooperation through campus activities such as the “Rebirth of Impressions. Correctional Community” symposium, “Talk about Punishment”, and “Youth Symposium”. Notably, active involvement in the “Police and Citizens Together” TV program, as well as the creation of informative publications such as "Correctional Services Administration Annual Report", "Correctional Newsletter", and "Startup", serve to promote correctional work and enhance transparency (Correctional Services Bureau, 2022; SAR, 2023a).

5) Readiness

Command systems, strain mechanisms, contingency plans, and response teams are integral elements of emergency response capabilities that must function cohesively. Within the context of smart corrections, the command system utilizes a unified intelligent platform to coordinate distinct security systems. It also suggests effective strategies and a collaborative approach to handle emergencies by means of system integration, resource distribution, intelligent alerts, and logistical assistance. Contingency plans offer structured planning to prepare for and respond to various emergencies, including but not limited to the prevention of riots, epidemics, disasters, and health crises. The employed approach is grounded in scientific principles and the epidemic prevention strategy known as "Preventing import from outside and ensuring safety internally" (SAR, 2023c). Also, readiness encompasses the ongoing engagement in interdepartmental and interdisciplinary collaborative exercises, aimed at enhancing comprehensive emergency response capabilities, including tactical utilization, mobile responsiveness, and anti-riot team coordination. These efforts are crucial in effectively upholding prison order and strengthening safety measures.

![Figure 2. Path Of Capabilities Reform](image-url)

IV. CONCLUSION

The principles comprised within the good governance theory, namely the rules of law, accountability, transparency, efficiency, equity, responsiveness, participation, and consensus, are fundamental components that permeate the entire governance system and the process of reforming its capabilities. From the standpoint of correctional work, good governance practices play a constructive role in penalty supervision, penalty execution, psychological correction, vocational training, counseling, and rehabilitation. Multidisciplinary policy analysis is commonly employed in governance mechanisms and system planning to systematically evaluate governance policies. This approach involves problem structuring, forecasting, prescription, monitoring, and evaluation, enabling the effective resolution of diverse issues and offering valuable insights for the modernization of the governance system. Furthermore, to implement the reform of governance capabilities within the framework of good governance,
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it is imperative to adhere to the reform path of leadership, execution, innovation, responsiveness, and readiness; scientifically balance the levels and requirements of various capabilities, and collaborate with the system development. In general, the correctional governance system and capacity reform in the digital era are mutually reinforcing, and characterized by collaborative mechanisms that are intelligent, scientific, standardized, and procedural in nature.

V. RECOMMENDATIONS AND FUTURE RESEARCH

Based on the analysis of Macao's legislation and regulations pertaining to corrections, the present phase focuses primarily on the development of smart government, web portals, and the mobile application "One account", while the advancement of smart corrections receives less attention. There exists a pressing necessity to develop an incentive framework that integrates smart governance and smart corrections, in addition to advancing the optimization of legislation and top-level designs. In the era of 5G+, the adoption of wearable health monitoring devices, drones, and patrol robots presents a potential solution to the challenges posed by limited human resources and environmental constraints (Weijun, 2022). Priority should be given to innovative applications in this domain. Nevertheless, the related fiscal allocation for corrective institutions is partially constrained by social norms and issues of privacy. Big data implementation leads to ethical concerns in the context of surveillance operations, potentially exacerbating power imbalances between the watched and the watcher (Martin, 2015). Governors must consider the adverse externalities associated with surveillance. These theoretical and practical issues are particularly significant for the digital reform of correctional services and deserve further discussion.

REFERENCES

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