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RESEARCH ARTICLE

How Do Digital Technologies Enhance Public Service? A Review of the Governmental Administrative Reform in China

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Abstract

Digital technologies play a crucial role in various sectors, enabling governments to provide more efficient, responsive, and transparent public services. China swiftly embraced this concept, and digitalized its governance, implementing the "Visit Once at Most" governmental administrative reform nationwide in 2018. This reform aims to minimize physical interactions between citizens and government agencies by utilizing online services or visiting the one-stop service window once at most in obtaining one service as defined by the citizens. Based on a review of Chinese and English literature, this study finds that the "Visit Once at Most" reform utilizes digital technologies to achieve government objectives, promote public participation, drive internal reform, and transparently deliver essential public services, ultimately leading to digital transformation. Unlike traditional e-government reforms, this reform generates a strong sense of gain for the public. Nevertheless, it also presents challenges related to long-term sustainability, user-friendly ecosystem development, and cross-departmental data sharing and regulatory adjustments.

Keywords

digital technologies, public services, governmental administrative service reform, Zhejiang, China

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Introduction

Since the turn of the 21st century, globally, digital technologies have become an increasingly important means of enhancing the quality and efficiency of public services. Its benefit is that it transforms the entire process of public services to be more accessible, easy, and efficient. According to the E-Government Development Index (EGDI), Nordic countries are known to have some of the most e-governments, especially Denmark, Finland, and Sweden, which ranked first, second, and fifth, respectively. Emerging countries, such as China, Brazil, Russian Federation, South Africa, and Thailand, were ranked 43rd, 49th, 42nd, 65th, and 55th, respectively (The United Nations, 2022). Several of these governments have started e-government processes in parallel. Brazil started the process of e-government in the 2000s and digital transformation in 2015 which saw a fruitful result (Filgueiras et al., 2019). Similarly, the Chinese government initiated the Online Government Project (OGP) in 1999 and invested in a series of e-government projects ever since (Chen et al., 2023). Among 31 provincial governments in mainland China (excluding Taiwan, Hong Kong, and Macao), Zhejiang Province[1] is one of the leading governments known for being a highly developed, innovative, and digitized province. A series of governmental administrative reforms in Zhejiang started in 1992, however digital technologies only became prominent in 2009, when the examination and approval process went online in parallel with a window service (Lang & Shu, 2018; Yu, 2018).

Although governments at all levels in Zhejiang Province have adopted several reforms over the past 30 years, these reforms still had a strong government-centrism feature, and it was difficult for the reform results to be translated into a sense of gain for the public (Fan & Chen, 2017; Yu, 2018). To better translate the results of government reforms into the people's sense of gain and fully implement service-oriented government, the then-Vice-Secretary of the Zhejiang Provincial Party Committee and the governor of Zhejiang Province, proposed the concept of the "Visit Once at Most" (VOM) reform at the end of 2016, calling for the establishment of "people-centered" approach, and asking the government to change and reform based on the experience, satisfaction, and sense of gain of the public (Yu & Huang, 2019). Significantly, VOM employed digital technologies as the primary tool in reforming the function of the public sector and delivering public services, as it was the most painless and effective means (Duan, 2018; Huang & Yu, 2019). The effect of VOM was felt throughout the country. Vertically, this idea was proposed at the end of 2016, and officially implemented in February 2017. By the end of March 2017, 958

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[1] Zhejiang is an eastern coastal province of the People's Republic of China. At the end of 2022, it is home to 65.77 million permanent residents with 101,800 square kilometers land, the 8th largest in China. Zhejiang consists of 11 prefecture-level cities, 37 municipal districts, 20 county-level cities, and 33 counties. Its economic size is ranked fourth in the country.
(Source: https://www.zj.gov.cn/art/2023/2/27/art_1229631744_60045352.html, accessed 12 January 2024)

provincial-level service items, 1,002 city-level items, and 862 county government service items had implemented VOM (Fan & Chen, 2017). Horizontally, starting from Zhejiang Province in February 2017, by June 2018, 29 out of 31 provinces in mainland China have implemented some forms of the reform. Meanwhile, the government agencies at the national level and local level have issued over 400 policy documents related to the reform (Yu, 2018).

The VOM defined the "one" public service based on how citizens perceive it. Instead of having citizens run to different departments to complete one public service, the government now employs digital technologies to integrate one public service from various departments into 'one window' or 'one webpage.' When the application materials are ready, the process from submission to approval requires only one visit at most for the onsite service, or zero visits for the online service. During the reform in Zhejiang Province, provincial and city levels of government established a data resource management center to collect statistics on government affairs – data that was originally scattered across various departments. That measure aimed to have data processed for the people (Yu, 2018). Effectively, the measure forced the government to reform itself internally using digital technologies and, finally, the quality and efficiency of public services were enhanced.

To demonstrate the impact of digital transformation in government service, the implementation of the VOM in Zhejiang Province significantly streamlined administrative processes and improved efficiency (Huang & Yu, 2019). For instance, in the case of purchasing a house, the VOM reform defined it as a 'one item' service, consolidating the required interactions with multiple departments into a single leading department. Furthermore, over 90% of public affairs can now be completed online across all local government levels, reducing the number of public affairs requiring proof of identification from 860 to 266. The decision-making process for approving project investments also experienced a substantial reduction, from 2-3 months to just 15 days (He, 2018). These improvements were made possible through the reengineering of approval processes and the adoption of digital transformation practices. In Zhejiang Province alone, more than 13,500 sets of data were shared among 25 provincial departments across 57 sectors (He, 2018). Additionally, the establishment of the hotline 12345 for complaints allowed citizens to voice their concerns, resulting in a significant reduction in processing time from an average of 21.5 days to 4.2 days (He, 2018). The success of these reforms can be attributed to the government's focus on user experiences and satisfaction. By prioritizing the needs and sense of gain for the public, the government has placed the public at the center of the implementation process, ensuring that the reforms align with their expectations and requirements.

Given the success achieved by the governmental administrative service reform known as VOM, it is noteworthy to explore how the Zhejiang government leverages digital technologies to improve public services and achieve high levels of public satisfaction. A survey conducted on the reform revealed that an impressive 94.7% of respondents expressed high satisfaction with its

outcomes (Li, 2018). This indicates that the latest VOM reform has brought about a significant transformation in the delivery of public services, particularly in terms of efficiency, effectiveness, and responsiveness (Lang & Shu, 2018; Yu, 2018). Unlike other e-government reforms that primarily focused on utilizing digital technologies to enhance public participation channels and improve service efficiency, the VOM reform represents a distinctive approach. It employs digital technologies as a catalyst for comprehensive digital transformation, encompassing the reengineering of internal processes, interdepartmental data sharing, and, most importantly, addressing citizens' needs and enhancing their sense of gain and satisfaction. Consequently, the government underwent substantial internal restructuring while placing emphasis on meeting the frequently used services and feedback requirements of the public. This approach has resulted in a heightened sense of gain for citizens. Therefore, this study aims to examine the VOM governmental administrative reform to elucidate how digital technologies have played a pivotal role in enhancing government service delivery.

Research Objectives

This study has two objectives based on the research question of how digital technologies have enhanced public service delivery in China. First, it intends to investigate how the Chinese government, particularly the Zhejiang government, has enhanced public service delivery through the governmental administrative reform, "Visit Once at Most," using digital technologies. Second, it aims to assess the challenges and sustainability of such reforms by surveying related literature and conducting a content analysis.

Literature Review

Previous literature supports the notion that digital technologies have a positive impact on enhancing public services through the reengineering of governmental administrative processes and promoting public participation, both of which are centralized and people-centered. The transparency achieved through digital transformation contributes to controlling corruption and increasing accountability. In Indonesia, the transformation of government into e-government improves the value-added and accountability of public services (Sulistya et al., 2019). Certain studies argue that the availability of technology and equipment is important, as the development of digital public services could be hampered otherwise (Sang-Chul & Rakhmatullayev, 2019). While the availability of technology and equipment is important for developing digital public services, the change in institutional processes is even more crucial for digital transformation. The preference of governmental agencies to embrace digitalization, as demonstrated in the case of Brazil, determines the success of digital transformation in public services (Filgueiras et al., 2019). Simply having digital technologies is insufficient without

reengineering or redesigning the government's administrative processes. During the transformation process, digital technologies play a vital role in optimizing the governmental structure, facilitating inter-ministerial cooperation, and promoting administrative decentralization (Mergel et al., 2018; Sang-Chul & Rakhmatullayev, 2019). Therefore, governmental administrative reform is a key factor in achieving successful digital transformation. Co-design and co-production involving users are essential for digital transformation, and are seen as a means to legitimize public services (Mergel et al., 2018). Furthermore, big data is expected to drive further digital transformation in public services, as evidenced by its impact in the private sector (Saxena, 2021). In the governmental sector, digital technologies have supported the transition of European countries into "digital welfare" states by enhancing healthcare management through telemedicine, improving primary healthcare services, education, and citizen protection (Larsson & Teigland, 2019). In addition to fostering innovation in the public sector, digital transformation also promotes sustainable development in the private sector. Case studies in the lighting industry highlight the development of intelligent lighting systems, the use of the Internet of Things for smart mobility in public transportation, the effectiveness of healthcare services based on big data analysis, and the involvement of startups in educational activities (Andersson et al., 2018). Therefore, digital technologies enhance services provided by both private and public sectors.

Many countries have adopted a top-down approach to digital transformation, with the central government leading and engaging in public participation as a means to promote sustainable development (Filgueiras et al., 2019; Sang-Chul & Rakhmatullayev, 2019). Brazil exemplifies how legal frameworks can be successfully transformed at the national level using digital technologies to reform public services (Filgueiras et al., 2019). Brazil began by modifying infrastructure-related legal frameworks to facilitate digital transformation before reforming internal bureaucratic organization and citizen interactions. Given the potential for fragmentation and inequality among users, robust digital transformation policy design, coordination, and collaborative governance are vital for success; thus, highly centralized governance confers advantages. Reform driven by law and relying on a top-down approach also contributes to sustainable development (Sang-Chul & Rakhmatullayev, 2019). Essentially, digital technologies simplify public service processes, promote political participation via the internet and open data, protect individual privacy, and shift the focus from technology to citizens (Filgueiras et al., 2019). In other words, governments utilize digital technologies as a means to better address citizen needs, and engage them in public participation. However, business development and digital economic growth can lag behind public services (Sang-Chul & Rakhmatullayev, 2019). Therefore, governments must balance services to also drive digital economic development for businesses to avoid undermining the ultimate goal of benefiting both businesses and citizens through digital transformation. Likewise, a provider which focuses primarily on offered services rather

than user needs could undermine user engagement (Agostino et al., 2021). Thus, public participation represents an important factor behind the success of digital transformation.

Digital technologies in China have significantly reshaped public service delivery and government administration, with practices varying across provinces. Zhejiang's government reform, initiated in 1992, have experienced five phases of the reform (Yu, 2018). Phase One (1992-1998) saw county governments strengthened. This was followed by the establishment of a physical one-stop service center in 1999 (Phase Two, 1995-2005) to enhance administrative efficiency and mitigate service issues and arbitrary charges. The center evolved into a one-stop service hall in 2006, with approval authority decentralized to window staff, and the implementation of parallel and online channels in 2009 (Phase Three) to further improve efficiency and accountability. Thereafter, digital technologies became significant in Chinese public services delivery. Phase Four (2013-2016) witnessed the expansion of digital technologies via the "Zhejiang Provincial Government Service Network" launched in 2014, offering numerous public services and marking the government's commitment to digital tools for improved service quality and self-restraint its power. Finally, the post-2016 period (Phase Five) has seen a transformation towards digitized governance, with the government adopting a people-centered approach facilitated by digital technologies as seen by VOM reform, where the government uses digital technologies to precisely and efficiently deliver public services that the public most requires. Today, digital technologies are integral to public services in China, with an emphasis on data-driven and digital governance across various sectors such as Smart cities, mobile government services, and healthcare governance (Li et al., 2022).

Research Methods

This study reviewed related literature to examine governmental administrative reforms in China and their relationship with digital technologies in enhancing public services. The review encompasses both Chinese and English-published peer-reviewed literature from the period spanning 2017, when the reform initiative began, to 2022. In order to specifically target the reform known as "Visit Once at Most" (VOM), the study employed the keywords "visit once" for English literature and the Chinese characters "最多跑一次" (zuì duō pǎo yī cì) for Chinese literature. The findings indicate an inadequacy of English-language published articles related to this reform, with only one article identified through the Google Scholar database. This scarcity outside China highlights the limited attention given to this reform within the international literature. However, the study identified a substantial number of articles (2,051) when searching the Chinese database of China National Knowledge Infrastructure (CNKI) using the aforementioned Chinese characters. To ensure a comprehensive review of influential literature, the study extracted the top 60 most-cited articles. Subsequently, the author examined these articles and further classified them based on their relevance to the term "digital technologies."

Consequently, the study identified 28 Chinese articles that were relevant to the research topic. In total, 29 articles, comprising both Chinese and English publications, were included in the study for content analysis.

The content analysis process involved the identification, summarization, and evaluation of the relevant articles. Initially, all 29 articles were thoroughly reviewed, followed by a systematic analysis of their content. The articles were categorized into three distinct sub-topics, namely public participation, government internal reform, and transparency, with a particular emphasis on how digital technologies enhance public services. Furthermore, the study critically examined the challenges associated with the reform, and limitations of the study. Finally, the study presents its findings and engages in a critique and discussion of the content analysis conducted on the reviewed articles and related literature.

Findings and Discussion

As suggested by the literature (He, 2018; Mergel et al., 2018; Sang-Chul & Rakhmatullayev, 2019) that re-engineering the governmental process and engaging public participation are vital to digital transformation that enhances public service quality and efficiency which leads to transparency), this study found that the latest iteration of the VOM governmental administrative reform demonstrated how the government used digital technologies to enhance the delivery of public services to be more responsive. The fundamental concept of the reform is to establish a new model for governments to respond to the needs of the public. Instead of asking what the government can offer, it takes the actual needs of the public as the departure point, and then forces the local government to engage the public in the reform, reform internal organization, and finally deliver transparent services. Digital technology was employed as a policy tool to accelerate the reform process and consolidate its effects (Chen & Huang, 2018; Chen, 2018; Deng, 2018; Fu & Shen, 2018; Weng, 2019; Yi, 2019; Yu & Gao, 2018; Zhang et al., 2018). Unlike the previous e-government reforms, VOM generates a strong sense of gain for the public following people-centered and service-oriented government. The reform engages public participation using digital technologies by enriching participation channels, reducing transaction costs, and acting as a potential mediator for the public to co-produce with the government without the additional cost of time and effort (Huang & Yu, 2019). Digital technologies opened new channels for interaction between government and its citizens because it collected the data from channels the citizens most used. Next, the government allocated more workforce or improved service time as seen necessary, while encouraging the citizens to participate in real-time feedback with no extra cost. The reform also adopted the innovative idea of transforming the government into a holistic organization to better respond to social and economic development via digital transformation (Yu & Gao, 2018). Effectively, the government was forced to reform internally to meet public expectations (Zhong, 2018). To

achieve multi-department collaboration, the VOM platform provides public services, consultation, and channels for voicing complaints to ensure transparent government (He & Yang, 2018). Consequently, the government has become more responsive to citizens' needs. The next section discusses in detail how digital technologies have enhanced public services, and the challenges of the reform.

Engaging Public Participation

Digital technologies engage a higher degree of participation by empowering the public to co-produce at no cost during the entire process of system design, implementation, and performance evaluation. VOM took a people-centric mentality as a departure point and empowered society involvement (He & Yang, 2018). The public was seen as an equal partner with public organizations in implementing the reform, and was involved in the process of public service design, coordination, evaluation, and feedback (Yu & Huang, 2019). Public opinion was prioritized during the defining tasks. As previously stated, "one item" service was defined from the perspective of the public. For example, buying a house in China requires three services offered by three different departments. The public needs to go to the Land Resource Department for land registration services, visit the Housing Department for property transaction permits, and finally to the Tax Department for tax payment. After the reform, buying a house was considered a 'one item' service and the public only needed to contact one leading department (Huang & Yu, 2019).

After the task was defined, digital technologies were utilized to prioritize services based on their frequency of use, with the government analyzing statistical information to identify 100 high-frequency services in areas such as business registration, investment approval, real estate registration, and social affairs (He & Yang, 2018). Practically, it meant that these services could be completed via "one window acceptance and integrated approval" services (Fan & Chen, 2017). VOM also rearranged public resources by frequented services, and updated the list of "one item" instantly (Huang & Yu, 2019). It can be said that the "one item" service was objectively selected by digital technologies, and was highly responsive. Real-time feedback mechanisms, including hotlines, online message boards, mobile applications, and questionnaire surveys, were established to enable the public and businesses to provide input and evaluate the effectiveness of the reform (Yu & Gao, 2018; Yu & Huang, 2019). The reform offered several channels such as the hotline, the online message board, the service application on mobile devices, the WeChat official account, and questionnaire surveys to collect feedback. The government's performance in implementing the VOM reform was also evaluated as part of its overall performance assessment, promoting accountability and efficiency (Yu & Gao, 2018; Zhao et al., 2018).

Furthermore, the VOM reform utilized intelligent management systems, such as big data and machine learning, to analyze real-time data on public behavior and satisfaction. This included factors such as service request times, response durations, chosen platforms, waiting times, search history, access pathways, and satisfaction ratings (Huang & Yu, 2019). The government's responsiveness improved as a result, as evidenced by the reduced processing time for complaints from 21.6 days to 4.2 days (He, 2018). Third-party assessment reports indicated high levels of public satisfaction with the reform, with 94.7% expressing high satisfaction, and 87.9% expressing satisfaction (Li, 2018). These figures demonstrated an upward trend over time and across regions within Zhejiang Province, reflecting an increased sense of gain among the public as the reform progressed (Li, 2018).

Reforming the Government Internally into a Holistic and Service-Oriented Public Sector

Digital technologies have played a significant role in restructuring the government-public relationship, transforming the government from a management-oriented to a service-oriented entity. This transformation involves integrating internal information systems and re-engineering administrative processes to better cater to public needs (Fan & Chen, 2017; Wang, 2017). Recognizing the duplication of materials and the potential to reduce costs, governments at all levels in Zhejiang Province have emphasized the importance of information sharing among different departments to achieve holistic governance (Huang & Ding, 2019; Zhang et al., 2018; Zhong, 2018). To facilitate this integration, Zhejiang Province introduced the slogan "Let the data run instead of people run" in 2017 (He, 2018). The Data Resource Management Center of Zhejiang Province took the lead in standardizing services, including the name, applicable basis, application materials, handling process, time limit, and form content for each specific item (He, 2018; Yu, 2018). Additionally, data catalogs were organized, and data generated by each department that could be shared with others were identified (Yu, 2018). By August 2018, more than 13,500 sets of data from 25 provincial departments were shared across 57 sectors, resulting in a reduction of services requiring identification proof from 860 to 266 in Zhejiang Province (He, 2018).

Meanwhile, the examination and approval system has also been re-engineered with the use of digital technologies. The re-engineering process of the examination and approval system was another core principle of VOM (Chen, 2018; Chen & Tong, 2018; Fu & Shen, 2018; He & Zhang, 2018; Li, 2017; Ma, 2018; Wang, 2017; Yu & Huang, 2019; Zhao et al., 2018). This process involved the innovative re-engineering of authority and procedures within the system, with the aim of achieving a more efficient and comprehensive government structure (Chen, 2018; Chen & Tong, 2018; Li, 2018). Compared to the previous approach of establishing one-stop service centers that primarily focused on physical integration of various departments, the reformation of

the examination and approval system under the VOM principle emphasized the integration of services, online collaboration, and data sharing, as well as the establishment of clear government responsibilities and regulations based on service-oriented and rule-of-law principles (Chen & Huang, 2018; Duan, 2018; Ma, 2018; Wang, 2017). This holistic approach transformed the one-stop service centers in Zhejiang Province from physical models into comprehensive governance structures that encompassed all levels of government simultaneously. As a result, Zhejiang Province transitioned from a "government service + Internet" model to an "Internet + government service" model (Yu & Gao, 2018). Previously, the government service network was an auxiliary component of the traditional administrative system. However, with the reform, the government service network has evolved into the central hub of government administration, serving as the "brain" of the system. The public now only needs to visit the responsible department for "one-window acceptance" when conducting public affairs, and they can obtain integrated services through data sharing and system connectivity across various departments. This transformation represents a shift from a fragmented administrative system to a holistic government structure (Yu & Gao, 2018). The application of digital technologies has played a crucial role in expediting the reform of the examination and approval system, facilitating internal information sharing and process re-engineering, ultimately leading to successful digital transformation.

Delivering Transparent Services

Finally, the application of digital technology has also enhanced transparency and reduced the chance of corruption by curbing the power of the authorities and allowing the public to directly submit or conduct their affairs using digital portals. Local governments at all levels in Zhejiang Province offered online and on-site public services simultaneously. On one hand, the province used the Zhejiang Provincial Government Service Network as a unified online service platform to establish cross-departmental government services, making the information exchange, coordination work among various departments, and linkage between systems possible. This platform greatly reduced the interaction cost between various departments and enabled the service center to confirm and consolidate new work procedures in the form of computer programs. On the other hand, the service centers of cities and counties in Zhejiang Province have implemented the reform model of "one-window acceptance and integrated service". The window staff of the one-stop service center physically accept the materials, digitize paper materials, and then distribute them to various departments through the online platform to coordinate multi-department office work. Importantly, the approval authority cannot be directly contacted. The combination of these two types of practices ensures that departments cannot arbitrarily change administrative procedures (Yu, 2018).

Digital governance implies transparency, standardization, and the connotation of forcing the government to adhere more to rule-of-law principles (Guo, 2019; He & Yang, 2018; Wang, 2018). The use of digital technologies for the reform is a top leadership commitment that formed a combination of top-down performance assessment, and bottom-up public supervision. Effectively, it created an active and efficient atmosphere and mechanism for the government to deliver public services and perform its duties strictly under the law, while making the entire process transparent (Wang, 2018). To illustrate, the approval time for an investment project was reduced from 2-3 months to 15 days, and the "60-minute on-the-spot certificate collection" for real estate transaction registration has been realized (He, 2018). To efficiently deliver public services, several cities have increased the online services channel and reduced the window services. For example, in 2016, Yiwu City had 288 windows operating at the one-stop service center. That number was decreased to 240 windows in 2017, and continuously reduced by another 60 in 2018 (Yu, 2018). Over time, the public services delivered became more transparent, efficient, and responsive.

Challenges of the "*Visit Once at Most*" Reform

Despite having engaged public participation, reformed the fragmented government into a holistic one, and delivered transparent public services through digital technologies, VOM reform does not come without its own challenges. How to efficiently and effectively use the new government service tools whilst increasing the responsiveness and responsibility of the government is an important structural challenge faced by governments in Zhejiang Province.

First, the government needed to pay more attention to the development and promotion of user-oriented government service products online. When governments at all levels were promoting the integration of online and offline government services, they failed to improve the user experience of online products in a relatively short time and guide users to use more online government services (Weng, 2019; Zhang, 2019; Zhou, 2019). The survey found that only approximately 40% of 532 respondents in 2018 were aware of the online services, and only about one in ten respondents used them (Yu, 2018). The earlier practice of the reform also found the existing mechanism design to be more inclined to meet the service needs of businesses rather than citizens. Certain governments relaxed the approval process for businesses when they failed to submit the complete application. Meanwhile, the sense of gain and satisfaction of the general public was also generally lower than that of people from the business sector. Thus, a service and response mechanism with more equal opportunities for different groups was needed (Yu, 2018). However, since the expectations of the public are unlimited, the government needs to institutionalize the reform systemically going forward (Zhang, 2019).

Secondly, the cooperation between different departments and data sharing required further improvement (Huang & Yu, 2019; Weng, 2019; Zhang, 2019; Zhang et al., 2018; Zhou,

2019). Each department developed its data systems that varied greatly in terms of framework, structure, data, and protocol. Once the service was digitized, the power of each department would be limited, and their movements would be supervised by a third party. Consequently, it created external institutional constraints on local exploration (Yu, 2018). This included the fragmented data vertically and horizontally, making the goal of 'data running for the people' hard to achieve. A conflict between localized reforms and national laws and regulations was also found during the implementation. For instance, the digital identification photos created by Zhejiang Province were only recognized within the province and not elsewhere (Zhang, 2019). Sometimes, the reform was constrained by conflicting responsibilities too. For instance, the "Fire Review Opinion" and "Construction Permit" were mutually pre-approved documents in the infrastructure projects, but which should be approved first? (Chen & Tong, 2018). This challenge of legal adjustment has no easy solution, and commitment from top leadership was crucial in mitigating this problem (Huang & Yu, 2019).

Finally, a long-term mechanism also poses a challenge to the sustainability of the reform (Yu & Gao, 2018). The reform of VOM was promoted based on the Key Tasks Model, thus lacking a long-term mechanism, raising questions of sustainability. During the process, the Zhejiang government adopted a method of strengthening vertical accountability, and encouraged local governments and departments at all levels to implement the reform. However, key tasks were always time-limited, and that often changed with the leadership and government reform strategies. It was precisely for this reason that the reform of VOM required a more effective long-term mechanism to ensure that local governments adhere to the principle of being people-centered and deliver a government service optimization mechanism that meets the needs of the public (Yu & Huang, 2019). In the existing administrative system, the long-term mechanism depends on the commitment of high-level governments, that is, to strengthen the horizontal accountability mechanism centered on the local people's congress and the supervision system.

Discussion

The reviewed literature suggests that the success of the VOM reform in Zhejiang, China depends on the active participation of top leadership, despite its intended bottom-up approach. This phenomenon can be attributed to the hierarchical structure of the Chinese political system, which primarily operates under a top-down approach. In this system, higher authorities promote bureaucratic advancements based on performance evaluations, and directives from the top leadership are followed accordingly. The implementation of the VOM reform was incentivized by the prioritization of top leadership and its integration into performance evaluations, thereby implemented effectively. Notably, China has consistently prioritized economic growth as part of the performance legitimacy since the initiation of its Reform and Opening Up policy in 1978,

leading to a predominant focus on reforms that drive economic development. Furthermore, it is noteworthy that the VOM reform primarily targeted business investment areas, with comparatively less emphasis on general public affairs. Consequently, ensuring equitable access to digital services across different regions and socio-economic groups poses challenges due to the vast size of China and the significant disparities between developed and developing regions. Moreover, the management of legal adjustments in the context of the VOM reform remains ambiguous. While local governments within a province can adjust the legal framework through the Provincial National People's Congress, standardizing practices across different provinces can be difficult due to their autonomous nature. Additionally, ethical considerations regarding data privacy and security have not been adequately addressed in the Chinese literature. The focus has primarily been on the operation of the VOM and citizen involvement, rather than the issues surrounding data users.

It is also important to acknowledge the limitations of this study. The reliability of some reviewed articles in terms of accuracy and coverage may be questionable. Furthermore, since the literature primarily consists of Chinese-language sources, there may be inherent bias. Although Chinese journals adhere to peer-reviewed standards, the content tends to be predominantly positive and less critical of government practices. Moreover, this study solely relied on content analysis of the reviewed articles, suggesting the need for future research adopting different methodologies to gain insights from diverse approaches and perspectives.

Conclusions

This study demonstrates how China utilized digital technologies to enhance public services with the VOM reform serves as a case study, which originated in Zhejiang Province and was later implemented nationwide. The VOM reform actively engaged the public in co-producing services, involving them in system design, implementation, and performance evaluation. Unlike previous e-government reforms, the VOM reform prioritized public needs and feedback, creating a sense of benefit for the public. Digital technologies played a crucial role in restructuring the government-public relationship by integrating internal information systems to prioritize data utilization and re-engineering administrative processes to better address public needs. This transformation aimed to establish a holistic and service-oriented government. Additionally, digital technologies promoted transparency, and reduced the risk of corruption, aligning with China's anti-corruption policy. Although the reform followed a top-down approach, with nationwide implementation after central government appraisal, it originated as a local government initiative. The reform was driven by a people-centered mentality, focusing on the needs, satisfaction, and benefit of the public, thereby compelling the government to adapt accordingly. However, the reform faced challenges related to creating a user-friendly environment, facilitating data sharing across departments, prioritizing economic development-

related services over general public services, and ensuring long-term sustainability due to its reliance on leadership at the local government level, which can change frequently. The literature review also highlights that the VOM reform primarily emphasizes economic development objectives for performance legitimacy and evaluation reasons, placing less emphasis on legal adjustments across regions and ethical considerations. Finally, due to the limitations of this study, any conclusions drawn should be interpreted with caution.

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