



## RESEARCH ARTICLE

### EVOLVING BUREAUCRACIES: A COMPARATIVE ANALYSIS OF DIGITAL TRANSFORMATION IN THE CIVIL SERVICE SYSTEMS OF CHINA AND VIETNAM

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#### ABSTRACT

Digital transformation has become a critical pathway for enhancing public administration efficiency, transparency, and citizen engagement in government services globally. This study conducts a comparative analysis of digital transformation initiatives in the civil service systems of China and Vietnam, with a focus on their strategic frameworks, technological adoptions, and implications for public service delivery. Both nations have undertaken significant digital reforms to improve administrative efficiency, transparency, and citizen engagement. China, under the "Digital China" initiative, emphasizes advanced technologies such as artificial intelligence (AI), big data, and blockchain to position itself as a global leader in digital governance. Conversely, Vietnam's National Digital Transformation Program prioritizes accessibility and inclusivity, particularly in rural regions, aiming to bridge digital divides and promote equitable access to public services. The findings reveal shared challenges, including cybersecurity threats and infrastructural disparities, while highlighting unique obstacles—China's need to balance regulatory measures with rapid technological advancement and Vietnam's resource constraints and inter-agency coordination issues. The study demonstrates how digital transformation has positively impacted organizational efficiency and citizen satisfaction, with China leveraging AI for data-driven governance and Vietnam enhancing digital accessibility and literacy. These insights contribute to the understanding of context-specific factors influencing digital governance in varying socio-political landscapes. This analysis provides a foundation for policymakers to strategically integrate digital solutions within the public sector, with recommendations for future research on the ethical and long-term implications of emerging technologies in governance.

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## INTRODUCTION

The civil services in China and Vietnam are important components in their respective governmental establishment; they constitute the framework for administrative apparatus and public service delivery. The history of civil service in China can be traced back to dynastic empire and has developed from imperial to present People's Republic of China. It is also characterized by having a well-defined bureaucratic structure, and more emphasis is placed on the authority structure, recruitment, and promotions. Like other Asian countries, Vietnam also has the tradition of civil administration founded on Confucianism that has shaped its bureaucratic system to a very large extent. Modern Vietnamese civil service was influenced by its colonial experiences and the socialist government that followed where control and political loyalty were stressed (Painter, 2003). Both countries have developed hierarchical bureaucratic systems for administration for state policies and regulation of civil order with the Chinese bureaucracy being more institutionalized and rigid than the Vietnamese which is fairly structured and elastic (Nguyen, 2022).

Over the last decade, digital transformation has become a worldwide phenomenon in the context of public administration due to the necessity of improving organizational processes, increasing openness, and engaging with citizens. There are greater efforts being made by governments all over the world to wire many processes, cut expenses, and enhance the delivery of services (Kettl, 2015). The importance of digital transformation stems from the ability of revolutionizing traditional bureaucratic processes towards being more adaptive to their mandate. For instance, social media can enhance interpersonal interaction between the government and the public hence enhancing accountability and minimising embezzlement (Herbert, 2017). Moreover, maturity in the applications of technology solutions such as artificial intelligence, big data, and blockchain can improve the decision-making process and stimulate innovation in the public sectors (Yang *et al.*, 2021). Therefore, digitalization has significant importance in the context of China and Vietnam as both countries want to remodel their civil service structures for the challenging environment of fast-growing economy and society.

The primary objective of this research is to conduct a comparative analysis of the digital transformation efforts in the civil service systems of China and Vietnam. To this end, the study focuses on the analysis of possessing the strategies, implementations, challenges, and outcomes of the two countries concerning the concept of digital government and intends to contribute to the understanding of how digital transformation is gradually altering the dynamics of public administration and delivery of services. This research is guided by several key questions: What are the strategic initiatives and policy frameworks that can be linked to the civil service systems' digital transformation in China and Vietnam? How are these countries executing their concepts of 'digital government,' and what technologies are being employed? What are the issues they encounter when adopting a digital strategy? They (these initiatives) question what are the outcomes and impacts of these initiatives on public administration and service delivery? Finding answers to these questions will not only enrich the corresponding proposition of digital government in China and Vietnam but also fill the theoretical and empirical gap in the research focusing on public sector innovation and modernization (Kunkel and Matthes, 2020).

## LITERATURE REVIEW

**Digital Government Frameworks:** The elements of digital government frameworks have now become essential in contemporary practice of public administration, acting as tools that help governments improve the processes of the delivery of public services as well as the integration of citizens in the management of issues through embracing ICTs. One of the popular conceptual models is the Digital Government Evolution Model that explains stages ranging from the digitization of bureaucratic activities to the use of ICTs in public services with emphasis made on the strategic possibilities of the changes (Calista and Melitski, 2007). Another key model is the UN's E-Government Development Index (EGDI) that measures the degree of e-government infrastructure across the nations to set reference points (Alqudah and Muradkhanl, 2021). Of all these frameworks, the two most appropriate for comparative analysis are the political frameworks of china and Vietnam. China still launched Digital China which aims at enhancing the application of ICTs within the government departments and organizations (Pham, 2013). The applicability of this framework is clearly seen in China as ACM constitute of digital infrastructure, data management as well as citizens' services (Ju *et al.*, 2018). Likewise, Vietnam's National Public Service Portal conforms these frameworks because the primary goal of the single point of accessing the public services to simplify and improve the access (Pham, 2023). These models emphasize the significance of a strategic direction and suitable policies, moreover engaging the relevant actors in the digital transformation process. This way such frameworks benefit China and Vietnam in knowing priorities, being able to set achievable objectives, and tracking processes systematically. On the same note, adherence to the international standards like the EGDI shows these nations how they stand in relation to other nations hence any improvements and innovations in the public service delivery is encouraged as it is in line with standard international quality indicators (Theisohn and Lopes, 2013).

**Previous Comparative Studies:** The literature reviews on comparative analysis of digital transformation in the public administration have offered an understanding of various experiences and issues that many countries experienced. For example, a study that compared the digital government strategies of South Korea and Singapore revealed that the regular political leadership and partnership between the government and the private sector were significant promoters of digitization (Chung and Kim, 2019). Likewise, the study on the differences in web strategies U.S and U.K stressed on the roles of engagement of the citizens and protection of their data within digital governance (Jetzek *et al.*, 2019).

When it comes to China and Vietnam, there is an increase in literature on the respective countries' digital transformations. Chen *et al.* (2020) examined the comparative analysis of China's and Vietnam's policies on digital governance focusing on DH; the authors observed that China has developed a more advanced digital governance system that incorporates big data and artificial intelligence into public service delivery. On the other hand, Vietnam has invested in the interface and convenience of the services especially in rural regions (KHOA, 2021). Nevertheless, several gaps exist in the literature with reference to these studies. More research is needed on the general difficulties of China and Vietnam in operating digital government strategies with regard to areas such as cybersecurity, digital literacy, and inter-organizational collaboration (Van Tam *et al.*, 2024). Also, there is a call for increased attention to the longitudinal research, following the progresses of the digital transformation through time and analyze the factors which influence sustainable success of the digital governance (Chen *et al.*, 2022).

**Contextual Background:** It is pertinent to note that political, economic, as well as the social environments of China and Vietnam shape the process of digital transformation. On a political context, both the nations are centralized, most of the digital activities are led by the central government. In China, the government agenda as described in the Digital China plan defines a major strategy where digital transformation is directed mainly to economic development and competitiveness on the global level (Wang *et al.*, 2020). Vietnam in pursuing its e-Government Master Plan seeks to improve public administration and service delivery as a sovereign expression of its willingness in the socio-economic development as well as global integration processes (Walsh).

Economically, China boast of a strong economy hence is able to spend a lot of its resources in development of digital infrastructure and innovations. This economic capability enables it to undertake enormous projects like smart cities and digitized health strategies that form China's digital government framework (Shenkar, 2006). On the other hand, Vietnam's economic capital is relatively limited; however, the country has focused its budget on effective and cheap digital systems and collaborations to improve its digital transformation process (Cameron *et al.*, 2018). Socially, several issues such as the level of digital awareness and digital gap are similar between the two countries. For the purpose of inclusion in China, there are sustained attempts being made and there are targeted enlightenment campaigns to enhance several demographics' knowledge on the use of digital technology (Fang *et al.*, 2019).

Vietnam also aim at narrowing the digital divide, especially in the rural population, so that all population groups can benefit from digital government services (Tipton, 2002). All these contextual factors are vibrant and central to China and Vietnam's digital transformation plans, and therefore brings into focus that there is no one size that fits all when it comes to digital transformation.

## METHODOLOGY

**Comparative Research Design:** This research used comparative research method in order to provide a better structure of the research in analyzing projects for the civil service systems in both China and Vietnam. Comparative research entails the comparison of one case with another in order to enhance the understanding of the causes or determinants of a set sort of consequences (Woodside, 2020). China and Vietnam were chosen because they are unique but similar enough in terms of S-P & E, which enables a comparative examination of digital transformation strategies and how contextual factors influence these procedures.

The comparative approach was organized around the key areas of the digital transformation that are the policies, technologies, organizations, issues and experiences. These dimensions allowed the breakdown of the process of each country's digital transformation and helped to reveal the successful practices and the potential development sites. This structure of comparison allowed for identification of the strategies and practices in both countries that are responsible for successes and possible difficulties in different fields, which will be helpful for policymakers and practitioners all over the world.

**Data Collection Methods:** For the purpose of this study data were gathered from various sources as to allow for more than one method of analysis. Primary data were collected by administering structured questionnaire surveys to the senior management officials of companies in China and Vietnam that have embarked on digital transformation. These were the key stakeholders that comprised of government employees, it specialists, and scholars, who offered a wide viewpoint of the analysis topic (Yin, 2018). Lastly, all interviews were conducted with a view of asking a set of predetermined questions to enhance the comparison of the responses obtained.

The secondary data collected are from government papers, policies, and journal publications. Current government publications like annual reports, ministries, policies and so on from both nations were analyzed to deliberate their hierarchal strategies, missions and advances in digital transformation programs. To include original research and criticisms into the study, research articles were obtained from academic journals that are available from scientific publications. Moreover, Sport anlage secondary data collected from international databases, for instance, the United Nations E-Government Survey, was also employed to compare the digital transformation activities of China and Vietnam with other countries. These sources offered a strong background that aided the comparative analysis that was done on the two texts.

**Analytical Framework:** The conceptual model for this research study was underpinned on a multi-dimensional

perspective of digitalization. These points of reference were the technology policy and strategy, technological diffusion and adoption, business and organizational adjustments, issues, and impacts. Each dimension was categorized into systematic and comparative factors that were systematically compared between the two areas of China and Vietnam. For instance, the policy and strategy dimension consisted of National Digital Strategies, Legislation, and/or Strategic Plan Goals among others (Heeks, 2005). Technological advancement was measured through signs like kinds of technology in use, range and scale of the digital services provided and how integrated the degrees of technologies across the government ministries and departments. The dynamics in organizations relative to structures, practices, and workforce competencies were used to assess the changes that took place within organizations. Problems were further divided according to discipline areas like cyber security, e-literacy, and collaboration among agencies. The treatment that generated an improvement in service delivery, namely, the level of transparency as well as engagement that citizens have with the government services was used in assessing outcomes. This structured analytical framework helped and enabled a proper and systematic structure of the type of comparison in the two countries' attempts at digital transformation.

**Equations and Analytical Tools:** For the purpose of analyzing the information for this research, several analytical techniques and formulas were used. To describe the study's quantitative findings, frequency analysis was adopted, which involved portraying the results for service offering and rates of technology uptake by the selected firms. Comparative analysis involved using the indices and the ratios in a bid to bring out the strengths and weaknesses or similarities and differences in the efforts that China and Vietnam are currently putting in their Digital Transformation processes. For instance, the Digital Government Index (DGI) was calculated to measure the overall progress of digital transformation initiatives, using the formula:

$$DGI = \frac{\sum(\text{Scores of individual indicators})}{\text{Total number of indicators}}$$

Further, the findings were also analyzed with the help of regression analysis to determine independent and dependent variables affecting the degrees of digital transformation success. Regarding the dependent variable, the regression model employed the level of digital transformation attained to analyses the data, with the identified factors as independent variables:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + \epsilon$$

Where Y represents the level of digital transformation,  $\beta_0$  is the intercept,  $\beta_1, \beta_2, \dots, \beta_n$  are the coefficients for the independent variables  $X_1, X_2, \dots, X_n$ , and  $\epsilon$  is the error term.

Interview data were analyzed qualitatively to reveal themes and patterns in the stakeholders' response to the research questions. The method of combining both quantitative and qualitative analytical instruments made the study solid and efficient to examine the civil service systems' Digital transformation in China and Vietnam.

## RESULTS

**Policy and Strategy Analysis:** E-Government as the aspect of digital transformation in the public administration has been noted as the direction of development for both China and Vietnam that have unveiled their country's guidelines on the development of the digital transformation of governance. The overall digitalization plan framed in 2017 is known as 'Digital China', thus it is Possible to consider it the main strategy of this country to turn into the digital one. This is to improve application of IT in various activities such as the different programs of governance, economic development and the social services. Some elements of the Digital China agenda are the completion of the digital infrastructure hardware, the promotion and development of digital industries, the establishment of a reliable cyber defense, and citizens' training (Hien, 2024).

Vietnam's envisagement of digital transformation is spelt out in the National Digital Transformation Program by 2025 with visions to the year 2030. This therefore gives the strategic plan of transforming the Government into digital Government, transforming the economy into digital Economy, consequently developing the society into a digital Society. Some of these are connected with certain targets, such as the extent of the online public services, the proportion of the digital economy in Vietnam's Gross Domestic Product, or others that can be called general that may include, for instance, achieving high internet speed for everyone. The second domain includes cybersecurity, data protection, and the creation of new digital literacy competencies among the workforce (Pawlicka *et al.*, 2023).

As will be seen, it is also evident that the structural and the type of business also responds differently to the strategies that have been employed for the digital transformation. At the same time, the main priorities of both China and Vietnam are related to the provision of digital platforms as the main conditions for further actions and the protection of the digital environment. However, in the case of public service provision, China is more focused on the adoption of such new age technologies such as artificial intelligence and big data. However, Vietnam's goal is relatively more aligned with convenience which not only highlights easy accessibility of digital services but also literacy to force all individuals in Vietnam, including the dwellers in the villages, to use it (Han *et al.*, 2024). Among the advanced technologies, it is necessary to mention that China pays special attention to artificial intelligence, investing in the development of AI and the use of big data in medicine, transport, and safety. These pathways are manifestations of broader direction to make China as an innovative nation and globally competitive especially in Information Technology. Like many other countries, Vietnam also focuses on developing digital technologies but having a strong focus on the safeguarding of people in utilizing technologies for improvement of their lives. This includes handling steps to boost the availability of internet and connectivity to rural areas, increasing the digital literacy, and making new digital public services easily accessible (Van Deursen and Van Dijk, 2009). The comparative analysis adopted in this paper shows that although the two countries have similar objectives when it comes to achieving their distinct digital agendas, the ways and manners in which they approach those objectives and implement their strategies are

dissimilar due to the differences in socio-economic setting and developmental requirements. China can be said adhere to a unique top-down strategy that is strongly based on the use of technology to enhance the country's technological competitiveness on the international level. On the other hand, Vietnam follows a longer term strategy that considers the users' need to make websites more accessible and the general goal of developing the quality of public services for everyone in the country.

**Technological Adoption:** The variation in the technological change realization in digital service delivery in China and Vietnam demonstrates an advancement of both nations in utilization of technology, as well as illustrating the distinct copier approaches of the two countries. China has strategically embraced the IT innovations in its public administration particularly the AI, big data, block chain, and IoT among others. These technologies have been implemented in several industries including; healthcare, transport, security, and social sectors to increase productivity, quality service delivery, and most importantly, the delivery of public service. AI and big data analysis are the core components of the digital governance concept in China. The Chinese state has created many AI innovation institutes and a large number of big data analyzing facilities for decision-making and policy-making. For instance, with the application of artificial intelligence in healthcare, there has been enhancement in the medical diagnosis and other individualized medicine. In the same way, big data prospecting is practiced in city planning and traffic control for the efficient usage of resources, and avoidance of traffic jam. Block chain systems are likewise implemented for increasing the level of protecting government operations and records, specifically where the issues of finance and land registration are involved.

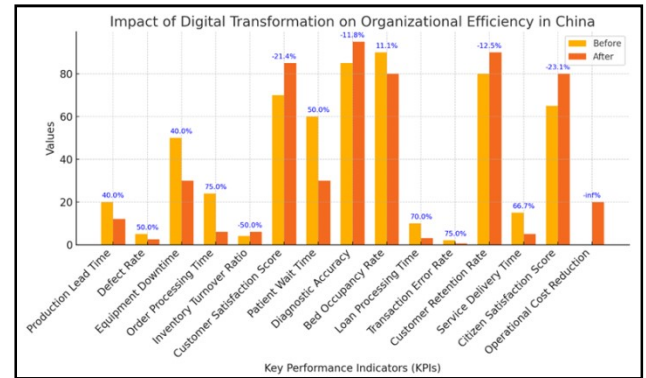
Vietnam's technology has been more pragmatic in hoteling application and more inclined towards making it accessible to the general population of the developing country especially the rural users. The Vietnamese government has established online public services, which can be accessed by citizens, for example, National Public Service Portal that delivers multiple services like administrative procedures, taxes' payments, and social security benefits. The goal of this particular platform will be oriented towards eliminating the necessity of face-to-face meetings and improving the effectiveness of various actions of citizens and businesses in terms of interactions with local and central authorities. Vietnam has also advanced comprehensively its internet and mobile phone connection, being cognizant of the fact that these are instrumental in narrowing the digital portage. Mobile technology represents one of Vietnam's key priorities in the development of digital government, since many of the offered services can be completed through applications. Using the fact of a high percentage of physical mobile phone ownership in the country this approach aims to make digital services more accessible, including in regions with low internet connectivity. This table show that even though, both the countries are using various technologies in their digital government services, their strategic priorities are different. China has higher usage of new technologies including AI and block chain in its order indicating its desire to operate as a technological powerhouse. Even though Vietnam represents a lower level of investment as

compared to Australia in tablet technology, the country has a higher priority for mobile technology and Internet connection in line with Vietnam's objective of providing digital services for every citizen in the country. Additionally, technological adoption presents special difficulties for both nations. In China, challenges such as data protection and cybersecurity are considered significant since the country is among the world's leading users of AI and big data. To counteract these, the government has put in place certain rules and regulation as well as effected the cyber security frameworks. In Vietnam, the issues which are in focus are related to the stability of digital structures in rural regions and the general levels of digital proficiency among people (Nguyen, 2021). To this end, the government has developed some programs that focus on the enhancement of digital competency and on the management of digital media in all the territories.

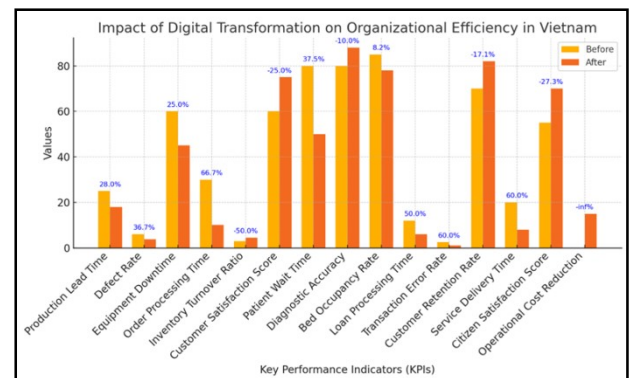
**Organizational Changes:** The digital initiatives have caused various transformations in the civil service systems in China and Vietnam through their alteration of the organizational format and procedures. Most of these reforms are aimed at increasing bureaucrat effectiveness and application of cost, time and performance consciousness, openness and accountability in public bureaucracies. In China, for example, Digital China that has altogether reformulated the governmental activities. Many authors describe how organizational structures based on traditional bureaucracy and strict hierarchies are becoming dynamically squared. For instance, e-business led to formation of new department such as digital service department, cyber security department and department of data management. They fancy restructuring includes linking of several government databases to enhance the flow of information and collaboration in departments. The Chinese government has also developed e-government solutions in form of electronic structures that enhance the flow of communication as well as decision-making processes that involve other departments, thus shortening the overall time taken tremendously.

In addition, the implementation of the digital government has also activated other practices of management. For instance, AI and big data are used commonly in the decision-making system to perform data-driven governance in which policy decisions as well as administrative actions rely on data analysis instead of bureaucracy. It has brought about efficiency and effectiveness in the execution of the government's functions discharge of its duties and satisfaction among the general public. In the same way, the emerged digitalization influenced some significant shifts in the Vietnamese organizations and their operations. Some of the administrative tasks have being centralize with the establishment of the National Public Service Portal hence eradicating many duplicates as well as enhancing co-ordination among various service deliverers of the government. This centralization has offered a new way and a simplified method of delivering services to their esteemed clientele. Further, to guide electronic administrative reforms according to digital transformation strategies at ministries and localities, the Vietnamese government has formed specialized agencies for implementing those reforms depending on ministries or local governments' responsibilities and scope. In the same manner, the introduction of digital technologies in Vietnam has improved the principles of transparency and accountability in public administrations.

For example, such technological changes as moving from using physical records to electronic ones as well as the creation of online service platforms helps in monitoring and auditing of government transactions to minimize on corruption chances and increase public trust. Mobile technology integration has also extended service delivery centralization; through making services available online the citizens have easy access to choice government services they require. Figure 1 and 2 below illustrate the impact of digital transformation on organizational efficiency in China and Vietnam, respectively.



**Figure 1. Impact of Digital Transformation on Organizational Efficiency in China**



**Figure 2. Impact of Digital Transformation on Organizational Efficiency in Vietnam**

These graphs show the trends in the different efficiency factors like time taken to complete administrative work, time taken in inter-organizational communication, and time taken to deliver public services among others. In China, the possibility of shortening the time for administrative documents' processing has been observed in the sphere of business permits and issues concerning social welfare, where traditional paper-based work has been replaced by digital solutions. In Vietnam the same efficiency improvement is evident in the fields of tax returns, health, education services.

Consumer's digital-friendly solutions have also called for shifts in organizational structures, which in turn require defined and systematic investments in human capital development. It is noteworthy to expound that both China and Vietnam have developed extensive training programmers that aimed at improving Information and Communication Technology competencies of the civil servants, allowing them to navigate newly adopted digital technologies and respond to restructured work processes. These training programs are vital for the continuation of the processes of the digital transformation of



the administrations and the effectiveness of public administration for the needs of the population.

**Challenges Faced:** This paper examines the processes of digital transformation in China and Vietnamese civil service systems and presented the following challenges. Some of them are similar to each other whereas some can be said to be contextual to each country’s socio-political and economic climate. There are many issues that can be pointed out, though one of the most significant issues of the modern international relations between the two countries is security and cyber security in particular. More so, as the various digital government initiatives continue to be implemented in various levels of government, and as we continue to store or transmit more and more information digitally, the susceptibility of cyber-attacks and breaches rises. Cyber threats exist in China and Vietnam, thus, the need to enhance novel cybersecurity regulatory frameworks for protection of sensitive government information and eradicating corruption in e-gov services. Even in the context of the ongoing attempts to enhance the defenses against cyber threats, the given subject area remains vulnerable due to the fast pace of modern technological development, which necessitates constant updates of measures and guidelines.

The final common issue on the European and American schooling systems is the digital divide, especially in rural and distant areas. However, within China the difference is observed where leading metropolitan areas such as Beijing and Shanghai are well equipped with digital connectivity and access to digitized services while the rural areas are comparatively worse off regarding internet access and other related services. Likewise, they discovered that Vietnam experiences the inequality issue in terms of digital connection and competence, both on an urban and rural level, which affects the potentials of digital government. To tackle these issues, a significant focus has to be made on infrastructure development and initiation of relevant digital literacy initiatives which can benefit every person in the country.

Circumstances that are peculiar to each of the countries also apply in this mix. This paper on Chinese innovation regulatory system identifies one major challenge as balance between innovation and regulation. The government has a more centralized approach to technology development, which occasionally overlaps with the issues of regulation, specifically, the protection of users’ personal data, as well as the proper utilization of AI and big data methodologies. Such tension can hinder the pace for the adoption of digital solutions and increase ambiguity among the stakeholders. Thus, the primary reason in Vietnam is the question of resources. While China has more financial and technological capacities to transform digitally, Vietnam cannot afford that investment. This limitation hinders the scale and pace of digitalization that may explain why the government’s goals outlined in the National Digital Transformation Program are more of a stretch. Moreover, Vietnam has some barriers related to inter-organizational cooperation, where coordinated practices within and between various governmental departments are still weak, and different departments can work incoherently even on digital initiatives.

Table 1 below summarizes the common and unique challenges faced by China and Vietnam in their digital transformation efforts. Thus, cybersecurity is still an issue of mutual interest for both countries. Therefore, it has developed strict cybersecurity laws and set up unique cybersecurity bodies for surveillance and counteraction. Vietnam has also applied efforts to improve cybersecurity infrastructure: the creation of the National Cybersecurity Center and approximation to the international approaches to cybersecurity. Thus, the digital divide can only be solved through strategic measures that affect the condition of digital connection and readiness of the rural regions. For instance, China has implemented the Rural Broadband Project in a bid to extend Internet access to the rural inhabitants, the Vietnamese government has coordinated with the external associations on preparing digital literacy projects, targeting the rural people. With regards to handling such issues, China still strikes the balance between innovation and its enforcement of solid legal frameworks in technology. The government is in the process of drawing up broad rules for the correct practices of artificial intelligence and big data to address the fears and gain people’s trust. Lacking resources, Vietnam tries to optimize the effect of invested money cooperating with partners and participating in international projects to address challenges connected with digital transformation.

**Outcomes and Impacts:** The introduced measures of digital transformation in China and Vietnam are characterized by stated outcomes and impacts in the sphere of public administration and services. These changes have been massive reflecting on delivery of government services, how the business of public administration is handled and the efficiency and openness of the government’s business. In China, which is evaluated in this paper, the consequences of digital transformation are most expressed in the improvement of public service productivity. Current applications of advanced technologies within the different sectors include the use of artificial intelligence and big data analytics, which ensures that administrative works are well done within the shortest time with a fewer percentage of errors as compared to the past. Some of which include, application of artificial intelligence in diagnosing patients’ conditions and tailoring treatment that has reduced time taken during diagnosis, and the application of big data analysis in urban planning that has made efficient use of resources and equally worked to decongest traffic within increasingly congested urban centers. The following figure also depicts the achievement of a decrease in the processing times of major administrative services with the help of the applicable digital technologies.

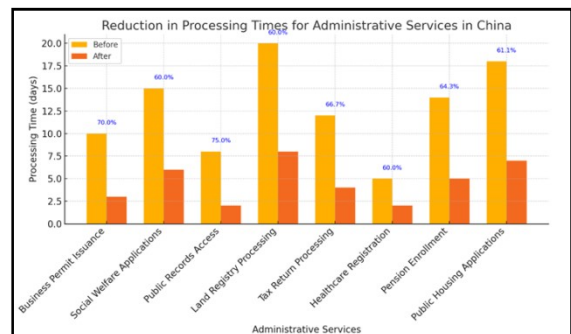


Figure 3. Reduction in Processing Times for Administrative Services in China

**Table 1. Summary of the key policies and strategies of China and Vietnam in their digital transformation efforts**

Aspect	China	Vietnam
Initiative/Program	Digital China Initiative	National Digital Transformation Program
Digital Infrastructure	High priority on developing ICT infrastructure, including 5G and fiber optics	Emphasis on expanding internet access nationwide
Cybersecurity	Comprehensive cybersecurity framework	Strong focus on data privacy and cybersecurity
Technological Integration	Advanced technologies like AI and big data	Focus on usability and accessibility of digital services
Digital Literacy	Enhancing digital skills across the population	Development of digital skills in the workforce
Economic Goals	Promoting digital industries	Expanding digital economy's contribution to GDP
Social Goals	Improving social services through digital means	Ensuring widespread access to digital services

**Table 2. Comparative Analysis of Key Technology Adoption Rates and Implementation Characteristics in Digital Transformation Efforts of China and Vietnam**

Technology Type	Adoption Rate in China (%)	Adoption Rate in Vietnam (%)	Application Domains	Examples of Use Cases	Outcomes/Benefits	Challenges
Artificial Intelligence (AI)	75%	50%	Healthcare, Urban Planning, Public Security	AI-assisted diagnostics, predictive urban traffic management	Improved diagnosis accuracy, reduced traffic congestion	Data privacy, ethical concerns
Blockchain	60%	30%	Finance, Land Registry, Public Records	Securing financial transactions, land ownership documentation	Enhanced record security, reduced fraud, increased transparency	High implementation cost, regulatory issues
Big Data Analytics	85%	60%	City Planning, Environmental Monitoring	Data-driven policy-making, real-time environmental assessment	Optimized resource allocation, faster response to urban issues	Privacy concerns, data handling complexities
Internet of Things (IoT)	70%	40%	Transportation, Infrastructure Management	Smart city infrastructure, traffic and environmental sensors	Real-time data collection, efficient infrastructure management	High maintenance costs, interoperability issues
Cloud Computing	80%	70%	Government Services, Data Storage	Centralized data management for public services	Reduced hardware costs, increased accessibility for remote users	Cybersecurity, data localization requirements
5G Network	65%	20%	Nationwide Connectivity, Emergency Services	High-speed internet for rural and urban connectivity	Faster communication, improved emergency response	High infrastructure cost, digital divide in rural areas

**Table 3. Summary of the common and unique challenges faced by China and Vietnam in their digital transformation efforts**

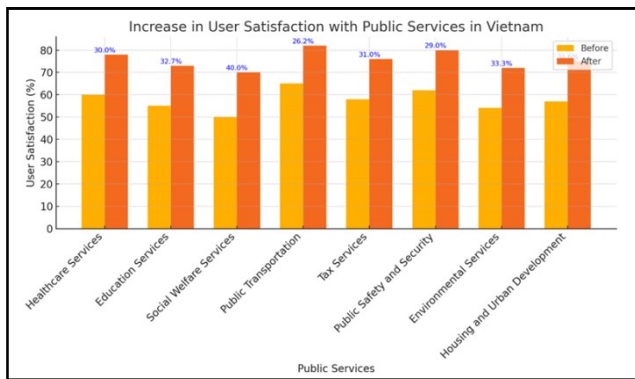
Category	China	Vietnam
Common Challenges	- Cybersecurity threats	- Cybersecurity threats
	- Digital divide in rural areas	- Digital divide in rural areas
Unique Challenges	- Balancing innovation with regulation	- Resource constraints
	- Ensuring data privacy and ethical use of AI	- Inter-agency coordination issues

**Table 4. Comparative Analysis of Digital Transformation Strategies and Objectives in Public Service Delivery between China and Vietnam**

Aspect	China	Vietnam
Digital Infrastructure	Extensive investment in ICT infrastructure, including 5G and data centers	Significant investment in internet and mobile connectivity, focusing on rural areas
Cybersecurity	Comprehensive cybersecurity framework	Strong focus on data privacy and cybersecurity
Advanced Technologies	Emphasis on AI, big data, and blockchain	Emphasis on accessibility and user experience
Service Delivery Focus	Integration of advanced technologies in public services	Centralized online public services portal
Strategic Goals	Positioning as a global tech leader	Ensuring digital inclusion and accessibility

Another major effect that is at work in China is to increase efficiency of the public organizations particularly in regard to the operational effectiveness as well as the accountability. Block chain as a technology has been used in the public records and the transactions which has enhanced the security of the records hence reducing corruption. It has also been equally beneficial in the areas like finance and land registry in which is openness paramount. Vietnam has also witnessed a great advancement in the aspect of Public Administration due to the onset of digitalization. Some of the services include one-stop national public service portal which has centralized different services and many more others.

It has also reduced contact with the society and the minimum length of time it takes to obtain officials' clearance from the public. Thus, from the above graph, it can be recommended that there has been innovation of the users in the provision of public services in Vietnam after the introduction of the National Public Service Portal. Also, the availability of mobiles devices and internet connection has also paved the way for the delivery of government services, especially in the rural areas and in areas where there is limited access to technologies. This has helped to close the gap of those who are left out when it comes to the use of technology in governance, thus more citizens are benefiting.



**Figure 4. Increase in User Satisfaction with Public Services in Vietnam**

Due to the increases in accessibility, the citizens have been able to participate fully in various governmental activities and schemes. In the same way, it was noted that in both countries, the digital transformation process has also had a positive effect on economic growth. In China, the development of digital industries has been further acceleration and has stimulated the development of many industries including e-commerce, fintech and smart manufacturing area. This economic boost is seen by the enhanced proportion of the digital economy to the China's GDP. Thus, in Vietnam, digital transformation has increased the size of the digital economy by helping SMEs to expand their markets and optimize their business processes. In addition, it is evident that the implementation of technology has enhance the emergencies and calamities response and mitigation in both countries. Big data as well as AI has been used in China for the purpose of forecasting and combating of natural disasters thus improving on the efficiency of the government in its disaster preparedness and prevention. Vietnam has incorporated mobile phone and Internet based technologies for passing out information and organizing the response and recovery during emergencies and disasters that in the long run enhances the general resilience. It is evident from the above presented figures and graphs of the contexts that how effective digitalization is in the civil servants' performance and public service delivery. These visual aids stress on how digital initiatives have enhanced efficiency, transparency and more importantly accessibility in China and Vietnam.

## DISCUSSION

China and Vietnam have integrated the characteristics of similar economic development patterns and different socio-economic structures and engines of their socio-political strategies when undertaking digital transformation strategies. It is obvious that both countries understand the importance of ICT application to revitalize and advance the public administration and related services. They have designed national action plans that focus on the establishment of the use of information technology in government services, enhance cybersecurity and raise the level of digital literacy (Chohan and Hu, 2022). A primary similarity is that they share an interest in building sound Information Communication Technologies Ict fundamentals. As for the ICT infrastructure, China and Vietnam have spent large amounts of capital on improving their broadband, mobile, and data services. Through such investments, society's digitalization has become higher and IT has been incorporated into public administration (Hai *et al.*, 2023; Shah, 2022).

Further, both nations have focused on the advancement of cybersecurity measures to shield the various governmental information and guarantee the reliability of the online services (Zhou *et al.*, 2021). But when coming to the styles of doing politics, there are significant differences. AI and big data have been considered as the prominent technologies that have been highly prioritized by China within the framework of development of a digital government. This emphasis correlates with the vision China has for itself on the international scene, which is to be a hub for science and technology. The Chinese government has set up many AI research institutes and big data service systems to facilitate AI applications across industries and improve government officials' decisions and citizens' services (Du *et al.*, 2024).

Vietnam's digital strategies, however, have been more centered on ease of access and features for the consumers. The Vietnamese government has introduced e-governance solutions that consist of the presence of online government services especially for the rural people and other unserved citizens. This approach is designed towards achieving the purpose of involving all the citizens benefiting from the processes of DT and this is Vietnam's policy towards the inclusiveness of the development (Ho *et al.*, 2021). Thus, this comparative analysis shows that although China and Vietnam are equally focused on the digital transformation agenda, their approaches are distinctly rooted in their contexts and realities. While China follows a centralized, tech-oriented plan that has laid out the vision to dominate the world technologically, whereas, embracing the paradigm of users and leveraging technology to heighten the quality of public services for the entire population is Vietnam's strategy (Guo *et al.*, 2020).

**Best Practices and Lessons Learned:** The scale up transformation experiences of China and Vietnam provide many global examples and these are summarized below in the form of best practices and issues that needs to be known. Understanding the foregoing developments one key best practice that has been achieved in China Is the integration of advanced technologies including; artificial intelligence and big data analysis in public administration. They have greatly revolutionized the function and delivery of services within the governments, transforming processes that previously relied on guess work to evidence based. For instance, AI applications in healthcare and the city planning system have significantly enhanced diagnostics' accuracy and resources distribution (Wang *et al.*, 2020). Still another best practice that can be emulated is how Vietnam tried to guarantee the digital assistance. Alongside this, the incorporation of policy measures aiming at providing equal access to digital services for all citizens, especially the citizens residing in rural areas and other previously underserved regions has stimulated the growth of digital literacy and citizens' engagement. The example of centralization formed by the National Public Service Portal that offers numerous government services online is a good example of how to make the provision of public services more effective, and more accessible for users as well (Herbert, 2017). From these cases, it is evident that political leadership and the ability to devise strategic vision play a significant role in countries' digital transformation. In China, it has been noted that due to the government-centric direction towards technology advancement with clear visions as seen in the Digital China



drive, the direction on transformation has been well articulated (Zhou *et al.*, 2021). Likewise, objectives and targets are included in Vietnam's National Digital Transformation Program, thus implying a strategic and purposeful course toward digital government (Pham *et al.*, 2022). These best practices show the best practices required in the need to adopt ICT in its broad and all-inclusive sense. Therefore, incorporating new technologies, making programs available, and keeping focused on a clear strategy helps other nations to manage their paths to becoming digital and experience generally higher degrees of advancement in public administration and services.

**Policy Recommendations:** Consequently, the following policy recommendations can be proposed for the improvement of digital transformation in public administration based on the results of this study. First and for most, there is the need to develop physical and informational infrastructures. In this aspect, China and Vietnam have also shown that the establishment of a strong DT infrastructure is a crucial prerequisite for the implementation of their digital government agendas. The government should encourage investments on broadband internet, mobile/telecom networks and data centers to allow for the use of online-based services across the population (Chen *et al.*, 2023). Second, there is need to adopt strong security measures that will protect the computer systems from cyber threats. While the emphasis on the establishment of the digital government escalates, the possibility of cyber threats and hacker's attacks escalates as well. The introduction, enhancement and the continual improvement of broad cybersecurity measures is vital for the safeguarding of confidential governmental information and stability of online services (Zhou *et al.*, 2021).

Third, utilization of higher technologies, including artificial intelligence and the utilization of the big data, may contribute substantially to improving the effectiveness and the productivity of the public administration. The governments should create research institutes and online portals through which such technologies can be promoted and adopted across production sectors such as healthcare, urban construction, and social welfare (Chen *et al.*, 2022). Fourth, e-inclusion must be addressed as well. The type of digital transformation that should be initiated should be one that is friendly to users and ideal for citizens where they live or whichever social-economic status they fit into. Such as the initiatives like extending the broadband internet coverage to the rural regions, creating the appealing interfaces for the digital platforms and strengthening the citizens' digital capacity to interact with the e-services. Last but not least, both strong and sustainable political support and political strategies are prerequisites for the success of digital transformation plans. There is, therefore, a need for governments to come up with sound strategies with stipulated objectives and achievable objectives for digital government. There is a need to have compelling political commitment and advanced governance systems to lead and maintain the execution of digital transformation programs (Guo *et al.*, 2020).

## CONCLUSION

In reviewing the topic of the digital transformation of civil services in both China and Vietnam, this work has drawn attention to both the commonalities and discrepancies between the two. In terms of experience it can be observed that both countries have committed considerable amount of money to ensure stronger digital communication infrastructure and security mechanism. Ever since China has set its vision to be a technological superpower or country, it has worked on implementing technological frontiers like artificial intelligence and big data analysis. The public administration has benefited from the application of these technologies in enhancing efficacy and the decision-making system. Vietnam has also concentrated on accessibility and usability with particular efforts made to provide equal access to hi-tech services offered electronically to the rural and other relatively deprived areas. The focus on consolidating government services is well illustrated by the example of National Public Service Portal in Vietnam, which aims at improving the delivery of public services. Despite issues similar to cybersecurity risks and digital divide, there are niche challenges that are peculiar to China comprising of its regulatory balancing act, and Vietnam's issues of scarcity of resources. Besides the above findings related to the digital divide and digital transformation, the study also explored the success factors of digital transformation; for instance, China has adopted technological solutions for efficient public administration, and Vietnam has employed policies aimed at promoting digital inclusion. Therefore, the findings of this study offer a starting point for future research and practice in the context of EBP implementation. Studies in the future should examine the long-term effects of DA on PAs technical, social, economic productivity, and response to the needs of diverse societies. Also, there are emerging ethical and regulatory issues regarding sophisticated technologies such as AI and Big data analytics—more research should be done in these areas. Lastly, on a more operational level, governments, policymakers, and institutions can learn from the experiences of China and Vietnam and come up with the measures to adopt and further digitalization processes in more efficient and less discriminating ways. In this respect, countries have to learn from China and Vietnam to craft and implement better digital transformation strategies. Stressing the technological aspect along with the accessibility aspect will be important to sustaining digital governance.

## REFERENCES

- Alqudah, M. A., and Muradkhanl, L. (2021). E-government in Jordan and studying the extent of the e-government development index according to the United Nations report. *International Journal of Multidisciplinary: Applied Business and Education Research*2, 310-320.
- Calista, D. J., and Melitski, J. (2007). E-government and e-governance: Converging constructs of public sector information and communications technologies. *Public Administration Quarterly*, 87-120.
- Cameron, A., Pham, T., and Atherton, J. 2018. Vietnam today: First report of the Vietnam's Future Digital Economy Project. *Canberra: CSIRO*.
- Chen, J., Lv, Y., and Fan, T. 2023. Research on the evolution and driving factors of digitalization of energy in China—a new perspective based on coupling coordination. *Heliyon*9.

- Chen, L., Tong, T. W., Tang, S., and Han, N. 2022. Governance and design of digital platforms: a review and future research directions on a meta-organization. *Journal of management* **48**, 147-184.
- Chohan, S. R., and Hu, G. 2022. Strengthening digital inclusion through e-government: cohesive ICT training programs to intensify digital competency. *Information technology for development* **28**, 16-38.
- Chung, C.-S., and Kim, S.B. 2019. A comparative study of digital government policies, focusing on E-government acts in Korea and the United States. *Electronics* **8**, 1362.
- Du, Z.-Y., Wang, Q., and Yu, Y. 2024. Asymmetric spatial competition and dynamics in digitalization: Will public R&D support and marketization exacerbate spatial polarization? *Cities* **152**, 105224.
- Fang, M. L., Canham, S. L., Battersby, L., Sixsmith, J., Wada, M., and Sixsmith, A. 2019. Exploring privilege in the digital divide: implications for theory, policy, and practice. *The Gerontologist* **59**, e1-e15.
- Guo, H., Yang, Z., Huang, R., and Guo, A. (2020). The digitalization and public crisis responses of small and medium enterprises: Implications from a COVID-19 survey. *Frontiers of Business Research in China* **14**, 1-25.
- Hai, N. C., Le, V. T. P., Son, N. T., and Tuan, P. V. 2023. Evaluation of citizens' satisfaction with the quality of public administrative services in the Mekong Delta, Vietnam. *GeoJournal of Tourism and Geosites* **48**, 751-762.
- Han, X., Hu, Y., Wang, L., and Zhou, R. 2024. Enterprise digital management: research review, current status and prospects. *Management System Engineering* **3**, 8.
- Heeks, R. 2005. Implementing and managing eGovernment: an international text.
- Herbert, L. 2017. "Digital transformation: Build your organization's future for the innovation age," Bloomsbury Publishing.
- Hien, B. N. 2024. Digital Empowerment in Vietnam: How Public Sector Innovation Boosts Citizen Satisfaction.
- Ho, M.-T., Le, N.-T. B., Tran, H.-L. D., Nguyen, Q.-H., Pham, M.-H., Ly, M.-H., Ho, M.-T., Nguyen, M.-H., and Vuong, Q.H. 2021. A Systematic and Critical Review on the Research Landscape of Finance in Vietnam from 2008 to 2020. *Journal of Risk and Financial Management* **14**, 219.
- Jetzek, T., Avital, M., and Bjørn-Andersen, N. 2019. The sustainable value of open government data. *Journal of the Association for Information Systems* **20**, 702-734.
- Ju, J., Liu, L., and Feng, Y. 2018. Citizen-centered big data analysis-driven governance intelligence framework for smart cities. *Telecommunications Policy* **42**, 881-896.
- Kettl, D. F. 2015. "The transformation of governance: Public administration for the twenty-first century," Jhu Press.
- KHOA, H. V. B. 2021. Study on Smart City Development in Vietnam Medium-Sized Cities: Stakeholder Approach, 서울대학교대학원.
- Kunkel, S., and Matthes, M. 2020. Digital transformation and environmental sustainability in industry: Putting expectations in Asian and African policies into perspective. *Environmental science & policy* **112**, 318-329.
- Nguyen, G. 2022. Political accountability, state capacity, and authoritarian resilience in Vietnam and China, Open Access Te Herenga Waka-Victoria University of Wellington.
- Painter, M. 2003. Public administration reform in Vietnam: problems and prospects. *Public Administration and Development* **23**, 259-271.
- Pawlicka, A., Tomaszewska, R., Krause, E., Jaroszewska-Choraś, D., Pawlicki, M., and Choraś, M. 2023. Has the pandemic made us more digitally literate? Innovative association rule mining study of the relationships between shifts in digital skills and cybersecurity awareness occurring whilst working remotely during the COVID-19 pandemic. *Journal of Ambient Intelligence and Humanized Computing* **14**, 14721-14731.
- Pham, D. N. 2023. Public administration reform within the socialist party state: the case of Vietnam. In "Handbook on Asian Public Administration", pp. 224-235. Edward Elgar Publishing.
- Pham, T. H., Hoang, T. T. H., Thalassinou, E. I., and Le, H. A. 2022. The impact of quality of public administration on local economic growth in Vietnam. *Journal of Risk and Financial Management* **15**, 158.
- Pham, T. L. H. 2013. "ICT development strategies," Anchor Academic Publishing.
- Shah, I. A. 2022. Cybersecurity Issues and Challenges for E-Government During COVID-19: A Review. *Cybersecurity Measures for E-Government Frameworks*, 187-222.
- Shenkar, O. 2006. "The Chinese century: The rising Chinese economy and its impact on the global economy, the balance of power, and your job," Pearson Education.
- Theisohn, T., and Lopes, C. 2013. "Ownership leadership and transformation: Can we do better for capacity development," Routledge.
- Tipton, F. B. 2002. Bridging the digital divide in Southeast Asia: Pilot agencies and policy implementation in Thailand, Malaysia, Vietnam, and the Philippines. *ASEAN Economic Bulletin*, 83-99.
- Van Deursen, A. J., and Van Dijk, J. A. 2009. Improving digital skills for the use of online public information and services. *Government information quarterly* **26**, 333-340.
- Van Tam, N., Toan, N. Q., and Van Phong, V. 2024. Investigating potential barriers to construction digitalization in emerging economies: A study in Vietnam. *International Journal of Information Management Data Insights* **4**, 100226.
- Walsh, J. Digitalising Public Services in Supporting Economic Development: The Case of Viet Nam.
- Wang, H., Feng, J., Zhang, H., and Li, X. 2020. The effect of digital transformation strategy on performance: The moderating role of cognitive conflict. *International Journal of Conflict Management* **31**, 441-462.
- Woodside, A. B. 2020. "Vietnam and the Chinese model: A comparative study of Vietnamese and Chinese government in the first half of the nineteenth century," BRILL.
- Yang, Y., Shi, Y., and Wang, T. 2021. A Blockchain technology application maturity assessment model for digital government public service projects. In "5th International Conference on Crowd Science and Engineering", pp. 68-72.
- Yin, R. K. 2018. Case study research and applications. Sage Thousand Oaks, CA.
- Zhou, L., Ying, M., and Wu, J. (2021). Conceptualising China's approach to 'Internet Plus Government Services': A content analysis of government working plans. *Information Development* **37**, 633-646.