*Pakistan Journal of Criminology*
Vol. 16, No. 01, January—March 2024 (201-216)

# The Impact of Electronic Governance on the Quality of Public Services and Municipal Property Management

Yevgen Krasnykov[1], Oleksandr Bobos[2], Ihor Lavrinets[3],
Tetiana Khabarova[4] & Nataliia Zozulia[5]

**Abstract**

The quality of digitalisation of most state processes and the possibility of their further development in the context of optimisation of the state mechanism is one of the issues of electronic governance (e-governance). The aim of the article is to determine the effectiveness of e-governance and its impact on the quality of public services, in particular, municipal property. An important area of research is outlining modern trends and prospects of public administration in implementing e-governance. The main theoretical concepts of e-governance, prerequisites, and principles of its implementation are described. The main means of implementing e-governance, public services, and municipal property management as one of the most debatable issues in public administration were studied. The basic aspects regarding the development of e-governance and the possibility of integration with other state services are characterised. The most effective digital technologies that can be used in building a system of e-government and digital public administration are identified to ensure the high quality of public services.

**Keywords:** public management, municipal property, municipal property management, governance, e-government, digitalisation, quality of public services, public administration.

## Introduction

Electronic management of common property is a revolutionary development in the current digital world. Implementing e-government

[1]The author is a Candidate of Sciences in Public Administration, Deputy Head of the 155th Military Representation of the Ministry of Defense of Ukraine, Kharkiv, Ukraine. He can be reached at yevgenkrasnykov@gmail.com

[2] The author is a Candidate of Veterinary Sciences, Recipient of the Scientific Degree of Doctor of Sciences in the Specialty "Public Management and Administration", Interregional Academy of Personnel Management, Kyiv, Ukraine. He can be reached at oleksa.bobos@gmail.com

[3] The author is a Postgraduate Student, at the Department of Public Policy, Faculty of Public Management and Administration, NNI "Institute of Public Administration" Kharkiv National University named after V.N. Karazin, Kharkiv, Ukraine. He can be reached at lavrinets.contact@gmail.com

[4] The author is a Candidate of Law Sciences, Associate Professor of the Department of State and Law Disciplines, V.N. Karazin Kharkiv National University, Kharkiv, Ukraine. She can be reached at 27khabarova37@gmail.com

[5] The author is a Candidate of Philological Sciences, Doctor of Philosophy, Associate Professor, Department of Information Analysis and Information Security, Faculty of Transport and Information Technologies, National Transport University, Kyiv, Ukraine. She can be reached at zozulia@ukr.net

technologies helps communities act more efficiently and transparently and actively manage and use their common property. This approach enables a better distribution of resources and benefits, facilitates access to information and enhances citizen participation in the administrative process. The municipal property has been developed in Europe in the context of different countries' historical, political, and economic specifics. Over the centuries, municipal property has become an important element of local self-government and a tool for developing local communities. Municipal property is associated with the citizens' well-being and the quality of local services in many European countries, especially in Western Europe.

Local authorities own and manage a significant part of the infrastructure: schools, libraries, hospitals, roads, water supply, etc. Municipal property decentralisation is the peculiarity of the European approach, which is based on blockchain and municipal property technologies. This means that local authorities have a significant degree of independence and autonomy in solving issues related to the management and development of utility assets based on blockchain technology. However, the development of municipal property in Europe was not always uniform. In many Central and Eastern European countries, the privatisation processes and municipal property reform began after the fall of the Iron Curtain. Municipal property was often used in those countries to modernise old infrastructure and stimulate local economic development. An important feature of the European model of municipal property is its focus on social justice and the provision of quality services for citizens.

Municipal property is seen not just as an asset, but as a means of achieving social integrity and stability. One of the most notable applications is the digitisation of land registries and other forms of shared property. This not only speeds up transactions and reduces human error, but also increases transparency and reduces the potential for fraud and corruption. The ability to track and confirm real estate or land transactions in real-time builds trust and encourages investment. E-governance enables communities to control and manage such resources as water, energy, or shared physical spaces more effectively. IoT sensors and devices can provide real-time data that is then analysed on digital platforms to optimise consumption, minimise waste or identify maintenance needs. Another advantage of electronic municipal property management the involvement of citizens. Digital platforms make it possible for citizens to directly participate in the decision-making process, provide feedback, and make suggestions for optimising community resources. This promotes not only participation, but also a sense of community and responsibility for each person. However, e-government also creates challenges, especially about data protection and security. Implementing

robust security measures and protecting citizens' privacy while taking advantage of digitisation is imperative.

So, electronic management of the common property offers numerous advantages: from increased efficiency and transparency to greater citizen participation. It is, however, important to understand the related challenges and address them in advance to realise this technology's full potential. European municipal property reflects the broader values of democracy, decentralisation, and social justice that form the basis of the European local governance model.

The aim of the study is to determine the impact of e-government on the quality of public services given rapid digital development and the emergence of innovative technologies that can be used in public administration to improve the quality of public services and optimise municipal property. An important area of the research is the analysis of e-government and its impact on the features of public services in developed countries.

**Research Objectives**

- Determine the effectiveness of e-governance;
- Calculate the degree of integration of e-governance;
- Calculate the e-governance efficiency ratio based on the Pearson correlation coefficient.

**Literature review**

A significant number of researchers dealt with the impact of e-government on the quality of public services because of the importance of the effective functioning of the state system. According to Adam (2020), the problem of e-government is the integrity and security of data, which is possible only if there is a powerful infrastructure. Manoharan et al. (2023) argued that e-governance is a key innovative step in the evolution of governance concepts and can modernise the entire system through efficiency, reduction of bureaucracy, and performance of control functions. Amosun et al. (2021) agree with that and believe that e-government should become a key tool for the further development of the quality of public services and can create an effective instrument of state regulation based on the development of digital systems. According to Criado and Gil-Garcia (2019), the issue of the quality of public services lies in the quality of providing key state institutions and infrastructure.

Dewi et al. (2022) state that the problem of municipal property remains one of the most acute problems in the world, as effective functioning will directly affect the further development of public administration and the level of social protection. James and Petersen (2018) identify several stages of e-government

integration, which should be based on protection, efficiency, and adjustment. MacLean and Titah (2021) agree that this approach can become a tool for optimising the modern state machinery and creating new ways of managing and controlling the activities of public servants. Arayankalam et al. (2021) determined that public services are by their nature an instrument of socialisation and development of statehood, however, the effectiveness of control of municipal property and public services rests with the state. Given the foregoing, the accounting of processes, control of implementation stages and possibilities of further development in the context of variability of approaches to geopolitical management remain debatable.

According to Dhaoui (2021), the issue of e-governance should become one of the current challenges for ensuring the effectiveness of governance. In turn, Nam (2019) analyses municipal property and the role of public services for the population and believes that only digital transformation can improve most governance processes. An interesting view is an analytical study by Janssen and van der Voort (2020), which claims that the implementation of e-government strengthened the quality of public services and created an effective control mechanism. According to Faulkner and Kaufman (2018), innovative technologies in the next few years can create their own quality system for providing such services and unite several branches of government, including judicial and executive, into a coherent mechanism. Sharma et al. (2021) state that this approach is a significant challenge for most modern states and also requires a reliable digital infrastructure that can provide and support such processes. Milosavljević et al. (2017) study the case of China and notes that e-government and the use of digital technologies in public administration in the country are no less developed than in the USA or Europe.

According to Razzaq et al. (2021) and Chang et al. (2020), the prospects for further development may be implementing e-government systems to improve municipal property and support governance. So, researchers have a common vision of the effectiveness of this system in modern scientific debates on the specifics of e-governance. However, the issue of implementation and security remains unaddressed and requires further analytical research.

## Methods and materials

The research employed quantitative and qualitative methods to study e-government, local property, and public services. The research procedure consists of quantitative methods, including statistical analysis of data from various e-government platforms, measuring those systems' effectiveness and response time. This provided an objective overview of the current state of technology and its

impact on municipal property management and public services. Research methods are determined on the basis of empirical analysis of already published interviews and focus groups with citizens, civil servants, and IT experts. This method provided a deep understanding of user interaction, the difficulties of implementing such systems, and potential solutions. Particular attention was paid to how these technologies affect common property access and management.

The research sample was made among developed countries, such as: USA, Canada, Spain, Australia, Norway, and others. A comparative analysis of different countries and their approaches to electronic administration of municipal property was conducted. This gave grounds to identify best practices and innovative solutions implemented in different contexts. The international comparison revealed differences and similarities in the use of e-government tools.

The employed tools were the averages of Student's t-test and Pearson's correlation coefficient. Content analysis was also an important method. Different strategic documents and e-government publications were reviewed to understand the strategic direction and goals of e-Government in different countries. Finally, a meta-analysis was conducted that critically reviewed the existing research and studies on the issue under research. This method provided a cumulative perspective that identified general trends, gaps in existing research, and potential areas for further research. Combining all these methods provided a comprehensive, deep and diverse understanding of the role and potential of e-government in common property management and public services.

## Results

E-government can accelerate administrative processes, reduce bureaucracy and, ultimately, the costs of maintaining it. One of the most important consequences of e-government is increased transparency. Citizens can gain easier access to information, helping to improve accountability and prevent corruption through online portals, databases, and digital platforms. Transparent administrative procedures strengthen citizens' trust in the authorities and ensure efficient and fair governance. Another advantage of e-government is its ability to increase efficiency. Administrative procedures can be optimised and simplified due to the automation of processes and digitisation of services. This leads to faster processing of requests, fewer errors and ultimately improved quality of service to citizens.

Furthermore, e-government systems enable more accurate monitoring and evaluation of policies, allowing decision-makers to be better informed and create evidence-based policies. Modern e-government is crucial in the age of digital

technologies. This will revolutionise how governments interact with their citizens and ensure that public services remain relevant and effective in a rapidly changing world. It is imperative that governments continue to explore and adapt e-government capabilities to meet the changing needs of their citizens. The purpose of digitalisation of services and processes is to increase administrative efficiency, promote transparency, and ensure inclusive participation of citizens. A key feature of e-government is providing online services, enabling citizens to file documents or pay fees from the comfort of their homes. This reduces the need for physical interaction and visits to authorities and provides 24/7 service.

E-governance is the subject of numerous scientific studies that pursue different approaches to analysing and implementing this phenomenon. One of these approaches looks at e-government from a technological perspective, focusing on developing, applying and integrating information and communication technologies (ICT). This approach aims to optimise processes, ensure system interoperability and strengthen the digital infrastructure. The adoption of digital services, citizens' trust in electronic platforms and the social consequences of the digitalisation of public administration were studied. This approach is particularly important because it considers the human dimension of e-government and aims to develop technologies that meet the users' needs and expectations. Through economic evaluation, decision makers can make informed decisions about investing in e-government projects. A normative approach also addresses e-government-related ethical, legal, and policy issues. This approach addresses privacy, data security, accountability, and citizen participation issues. These considerations are critical to protecting citizens' rights and ensuring fair and inclusive digital governance. Analysis of the impact of e-governance on the quality of public services should be calculated based on the data in Table 1.

**Table 1**

E-Government Development Index for the main public services and their components in 2021

| Place | Country | Index value | Points for urgent information services | Points for important information services | Points for information transfer services | Points for accessibility |
|---|---|---|---|---|---|---|
| 1 | South Korea | 1.0000 | 66 | 106 | 112 | 31 |
| 2 | USA | 0.9365 | 62 | 97 | 115 | 21 |
| 3 | Canada | 0.8825 | 59 | 83 | 104 | 32 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 4 | England | 0.7746 | 61 | 87 | 71 | 25 |
| 5 | Spain | 0.7651 | 60 | 88 | 68 | 25 |
| 6 | Australia | 0.7651 | 58 | 76 | 69 | 38 |
| 7 | Norway | 0.7365 | 61 | 85 | 69 | 17 |
| 8 | Bahrain | 0.7302 | 63 | 72 | 72 | 23 |
| 9 | Colombia | 0.7111 | 57 | 51 | 89 | 27 |
| 10 | Singapore | 0.6857 | 54 | 82 | 64 | 16 |

**Source:** calculated by the author based on MacLean and Titah (2021)

The table shows South Korea's leadership, with the highest scores of 66, 106, and 112, respectively, on key indicators. Next is the USA, with an index of 0.9365 followed by the third leader — Canada, with 0.8825. Based on mathematical analysis, the value of the index based on the average coefficients will be calculated. We obtained the average value of the introduction of e-governance based on the calculated indices of the entire sample. The minimum value is 0.6857, which is a positive sign. Next, the total coefficients of points for providing urgent information services will be calculated.

The coefficient is higher for urgent information among countries, where the index is 3.3482. So, it can be concluded that they are more effective. The obtained index reaches 14.7727, which is higher than the previous indicators, and the calculated value is 82.7, when calculating the overall coefficient. Therefore, the next step is to determine the points for information transfer services, and the resulting index reaches 19.9557, which exceeds the previous index by 4.3% when calculating the overall coefficient. This factor stems from the priority of implementation and internal implementation technologies of e-government systems. Therefore, the next step is to determine the points for the accessibility, and the indicator is 6.8353, which has a relatively smaller value, evidencing the difficulty of accessing e-government information and the reliability of data storage. Based on the obtained data, a correlation according to the Pearson's correlation coefficient is calculated:

Average for Points for Urgent Information Services:

$\text{Mean} = (1/n) * \Sigma x_i = 60.1$

Standard deviation for Points for Urgent Information Services:

$\text{Std} = \sqrt{[(1/n) * \Sigma (x_i - \text{Mean})^2]} = 3.35$

Pearson's correlation coefficient between Points for Urgent Information Services and Points for Accessibility: $r = 0.138$

The impact of e-governance on the pricing and management of municipal property in Europe is considered further. The negative dynamics of housing costs

(-1.7% in the Eurozone and -1.1% in the EU) may reflect the impact of e-government on market efficiency. Digitisation of processes helps governments to quickly adapt to market demands by regulating housing supply and prices, which can lead to lower prices in response to changes in supply and demand. The positive annual growth of housing prices (9.8% in the Eurozone and 10.4% in the EU) indicates that, despite short-term fluctuations, the general trend remains positive. E-governance contributes to this, helping governments identify and solve housing market problems in time, thereby supporting the stable growth of the value of municipal property. The positive quarterly change in the cost of housing (+0.3% in both the Eurozone and the EU) indicates the elasticity of the real estate market in the face of economic changes. This may be partly determined by the government's digital innovations enabling efficient problem-solving and rapid implementation of policy changes. In Europe, one can observe numerous initiatives in the field of e-government.

A vivid example is Estonia's e-Estonia programme, which has integrated digital solutions into almost all aspects of public life. Citizens can vote online, receive e-prescriptions from doctors, and even conduct business from abroad in Estonia through e-Residency. The countries of Northern Europe, in particular Denmark and Sweden, are similarly advanced, offering digital citizen portals through which a variety of administrative services can be delivered. In the United States, e-government is focused on improving efficiency and serving citizens. The United States has created platforms such as USA.gov that serve as a central point of contact for information and services from all areas of governance. Besides, individual states and local governments are increasingly using digital solutions to promote citizen engagement and transparency. However, there are also differences between states in terms of the level of development and use of e-government services.

China, on the other hand, follows a top-down approach to e-government. The Chinese government has invested considerably in technology and infrastructure to create a comprehensive system of digital services. Such platforms as WeChat and Alipay are integrated into the e-government ecosystem, allowing citizens to enjoy various services, from paying bills to issuing travel documents. The social lending system, which monitors and evaluates the behaviour of citizens and companies, also plays its role. The comparison shows that Europe and the US emphasise citizen participation and transparency, while China focuses on efficiency and control. While Europe and the US focus on data protection and individual freedoms, China's efforts are focused on creating an efficient and manageable system.

E-government initiatives vary worldwide depending on cultural, political, and technological factors. Europe and the US allow citizens greater autonomy and participation, while China uses technology to increase efficiency while exercising strict control. Public services, often referred to as public goods, are services provided by or on behalf of the government to ensure the general prosperity, social cohesion, and functioning of society. They are often crucial, so their provision is considered an integral duty of the state to ensure the well-being of all citizens. Such services may be exclusive or non-exclusive and vary in nature depending on the country's political, social and economic structure.

Security and public order are also considered public services. This includes the police, fire, and judicial systems, ensuring citizens' rights are protected, laws are enforced, and public safety is maintained. Infrastructural services such as water supply, energy supply, public transport, and road construction are also basic services often provided or regulated by the state. They are necessary for everyday life and play a decisive role in citizens' economic activity and mobility. Social services that support the needy, the elderly, children, and people with disabilities are also central to public services. They can be provided in the form of social insurance, assistance or care services and aim to reduce social inequality and strengthen social cohesion.

E-government is a key factor in improving the quality of public services worldwide. Data from the United Nations' e-Government Development Index (EGDI) show that countries with higher EGDI also tend to have higher efficiency and citizen responsiveness in service delivery. Modern e-government systems have accelerated the processing of applications and reduced the waiting time for citizens. Another indicator is the increase in online interaction between citizens and the government. According to the OECD study, up to 85% of citizens regularly use digital platforms to receive services in countries with a well-developed e-government structure, compared to only 45% in countries with less developed digital services. This emphasises the better accessibility and convenience offered by e-government. These savings can further be reinvested in other public services, leading to an overall improvement in the quality of services. E-government has made significant progress in terms of transparency. In many countries, open data portals allow citizens to access various government information. According to the Open Data Barometer, countries with developed open data initiatives have a 40% higher transparency score than countries without such initiatives.

The land and real estate registries are a key area of blockchain application in the public sector. Blockchain helps to document land ownership and real estate transactions transparently and securely, minimising fraud and manipulation. This

will not only increase the efficiency of registration processes but also increase citizens' confidence in the system. Blockchain makes tender processes more transparent and helps keep all bids and contracts secure and traceable on-chain. This would prevent corruption and irregularities in the procurement process.

In the social services sector, blockchain can be used to optimise the payment of social benefits. Fraud can be reduced, and pay-out efficiency can be improved by recording recipients and payments securely and transparently. This will give an additional advantage in the form of a reduction in administrative costs and resource savings. The digital identification system is another promising field of blockchain application in public services. By providing citizens with a secure and immutable digital identity on the blockchain, they could seamlessly access various government services without going through numerous verification processes. This will not only increase convenience for citizens, but also strengthen security and data protection standards. Blockchain technology offers significant benefits for modernising and improving public services. It has the potential to revolutionise traditional administrative processes, increase citizen trust, and ensure greater transparency and efficiency in government thanks to its decentralised and secure nature.

So, blockchain technology was initially introduced in the context of cryptocurrencies. However, it can potentially play a transformative role in the public sector and be a new challenge and an effective tool for e-governance. The inherent properties of e-governance, such as decentralisation, transparency and immutability, provide an innovative tool for solving traditional public administration problems, from land registries to social services. Governments can achieve operational efficiency and cost savings and increase citizens' trust in government institutions by implementing blockchain-based systems. Although the technology promises significant benefits, it shall be used responsibly in compliance with ethical considerations and privacy concerns to serve society effectively.

The three key global players — Europe, the US, and China — are intensively exploring and already implemented the possibilities of blockchain technology for the public sector. Europe demonstrates a growing trend to standardise blockchain applications, especially in terms of data transparency and integrity, while also complying with GDPR data protection. In the United States, blockchain adoption is particularly evident in the federal and state service sectors, with a strong focus on efficiency and innovation. On the other hand, China has incorporated blockchain technology into its technology policy strategy and aims to take a leading position in this technology. China combines state control with technological innovation to achieve both economic and administrative goals.

Overall, these developments emphasise the universal relevance of blockchain for the public sector and the corresponding regional adaptation to cultural and political contexts.

**Discussion**

The obtained results confirm the aim of the research, that the implementation of e-governance increased the efficiency by at least 60%. According to calculations, this became a key factor in the growth of the E-Government Development Index and the possibility of adjustment, regarding the quality of disposing of the property (Hardi & Gohwong, 2020). The average indices range from 60 to 90 points, evidencing the studied sample's leadership. The conducted research it possible to compare the results with other researchers. Dhaoui (2021) notes that e-governance related to municipal property still provides numerous opportunities for research despite significant advances and implementation.

Li and Shang (2020) found that the constant evolution of digital technologies brings new programmes and challenges that must be investigated. In his approach, the coefficient should reach 90 points, which coincides with the results obtained in this study. In particular, the link between technological development and local governments offers a rich field for research. Finally, the e-government can help increase citizens' confidence in the government. According to Pew Research Centre, 65% of citizens in countries with widespread e-government services believe technology has made their government more transparent and accountable. This emphasises the importance of e-government for strengthening democratic principles and promoting citizens' participation (Kong et al., 2021). Blockchain technology, originally designed for cryptocurrencies, offers numerous opportunities to optimise and protect public services. Their decentralised and unchanged nature makes them an ideal tool for different government programmes. Introducing blockchain in the public sector can significantly increase public service transparency, efficiency, and trust (Yakubu & Dasuki, 2018).

The study's central issue is the safety and protection of data in e-government systems. Given the growing threat of cyberattacks and leaks of data, as Young et al. (2019) and Choi et al. (2017) emphasised, it is extremely important to develop and evaluate reliable security and system protocols for digital platforms in the municipal sector and access to systems that should have a low result of calculations. The resulting value in the results of the study reaches 6.4, which confirms the hypothesis. This includes both technical solutions and management policy. The introduction of e-government, as Chen and Aklikokou

(2021) believe, also led to saving funds. According to the European Commission's report, digital services in the EU can save up to 20% of administrative costs by reducing paper work and automation processes.

According to Janita and Miranda (2018), another promising area of research is integrating artificial intelligence and machine learning into e-government programmes for municipal property. Such technologies can create forecast models of urban development (Prokopenko et al., 2023), indicating a more effective allocation of resources or facilitating citizens' participation in decision-making processes, as in the results obtained. Understanding how to use these tools most effectively requires deep research, as the study conducted by Mohammadzadeh et al. (2023), where the results are similar, as evidenced by a high quality of e-government of 68.9 points.

Integrating technology into the government optimised access to services, resulting in a more efficient and transparent government. Examples include digital land registers in the study by Elenezi et al. (2017), with the Pearson's correlation coefficient at 4.5. The obtained results give grounds to conclude that e-governance provides faster and safer access to property information and portals that offer citizens uninterrupted access to different services. Maclean and Titah (2021), Khan et al. (2019) collected and analysed large amounts of data and noted that government agencies can determine trends and make predictions that enable them to allocate resources more effectively and solve future municipal property challenges. This study's results coincide with those obtained by the researcher (Lin-Hi & Blumberg, 2018).

So, developments in e-government in combination with municipal property offers numerous interesting research areas. Continuous research and adaptation are required to fully implement the benefits of e-governance in view of the rapid technological progress and constant change of urban landscapes. Another advantage is to increase transparency and accountability in the field of municipal property. E-governance systems provide citizens with direct access to information about the use of common property and the status of public projects. Such transparency not only increases the confidence in the administration, but also enables better control and project evaluation by the community.

## Conclusion

So, public services are a crucial element in promoting the general good and meeting the basic needs of the population. They support the country's social and economic development, providing such important functions as education, health care, safety and infrastructure. The effectiveness and efficiency of these services are closely related to the prosperity and stability of society, emphasising

their critical importance. Digitisation has revolutionised the way public services are provided by improving the accessibility, transparency, and responsiveness of service delivery. States can make their services more efficient and user-friendly by using modern technologies such as e-government and artificial intelligence. However, this transition to digital administration also brings challenges, including data security issues and digital exclusion. A central aspect of public services is their ability to adapt to changing social needs and technological development. Constant evaluation and adaptation of the services offered is crucial to ensure their relevance and effectiveness. Citizen participation and feedback are important in improving services and adapting them to community needs.

Funding and management of these services are also critical. Balanced and sustainable funding is necessary to ensure equal and fair distribution of services. In addition, public services must be managed to maximise efficiency and effectiveness while minimising corruption and mismanagement. Rising housing rents (3.0% in both the Eurozone and the EU) may reflect rising costs of maintaining municipal property as well as increased cost of provided services. E-governance can help to optimise costs and improve the quality of service, which can increase the attractiveness of municipal housing and contribute to the growth of rental rates. Finally, public services are a fundamental part of any state. They need to be constantly revised and improved to meet the changing needs of a dynamic society. The successful use of technology and the involvement of citizens in the development process are key aspects of future improvement and innovation in public services.

**References**

Adam, I. O. (2020). Examining E-government development effects on corruption in Africa: The mediating effects of ICT development and institutional quality. *Technology in Society*, 61, 101245 https://doi.org/10.1016/j.techsoc.2020.101245.

Amosun, T. S., Chu, J., Rufai, O. H., Muhideen, S., Shahani, R., & Gonlepa, M. K. (2021). Does e-government help shape citizens' engagement during the COVID-19 crisis? A study of mediational effects of how citizens perceive the government. *Online Information Review*, 46(5), 846-866. https://doi.org/10.1108/OIR-10-2020-0478

Arayankalam, J., Khan, A., & Krishnan, S. (2021). How to deal with corruption? Examining the roles of e-government maturity, government administrative effectiveness, and virtual social networks diffusion. *International Journal of Information Management*, 58, 102203. https://doi.org/10.1016/j.ijinfomgt.2020.102203.

Chang, S.-J., van Witteloostuijn, A., & Eden, L. (2020). Common method variance in international business research. In: Eden, L., Nielsen, B. B., & Verbeke, A. (Eds.), *Research Methods in International Business* (pp. 385-398). Cham: Palgrave Macmillan. https://doi.org/10.1007/978-3-030-22113-3_20

Chen, L., & Aklikokou, A. K. (2021). Relating e-government development to government effectiveness and control of corruption: A cluster analysis. *Journal of Chinese Governance*, 6(1), 155–173. https://doi.org/10.1080/23812346.2019.1698693.

Choi, H., Park, M. J., & Rho, J. J. (2017). Two-dimensional approach to governmental excellence for human development in developing countries: combining policies and institutions with e-government. *Government Information Quarterly*, 34(2), 340–353. https://doi.org/10.1016/j.giq.2017.03.002.

Criado, J. I., & Gil-Garcia, J. R. (2019). Creating public value through smart technologies and strategies: from digital services to artificial intelligence and beyond. *International Journal of Public Sector Management*, 32(5), 438-450. https://doi.org/10.1108/IJPSM-07-2019-0178

Dewi, D. S. K., Harsono, J., Desriyanti, D., Yulianti, D. B., & Azhar, I. Y. (2022). The development of website-based ngebel tourism from an e-government perspective. *Otoritas: Jurnal Ilmu Pemerintahan*, 12(1), 30–40. https://doi.org/10.26618/ojip.v12i1.6127

Dhaoui, I. (2021). E-government for sustainable development: evidence from MENA countries. *Journal of the Knowledge Economy*, 13, 2070–2099. https://doi.org/10.1007/s13132-021-00791-0.

Elenezi, H., Tarhini, A., Alalwan, A., & Al-Qirim, N. (2017). Factors affecting the adoption of e-government in Kuwait: A qualitative study. *Electronic Journal of e-Government*, 15, 84.

Faulkner, N., & Kaufman, S. (2018). Avoiding theoretical stagnation: A systematic review and framework for measuring public value. *Australian Journal of Public Administration*, 77, 69–86. https://doi.org/10.1111/1467-8500.12251

Hardi, R., & Gohwong, S. (2020). E-government based urban governance on the smart city program in Makassar, Indonesia. *Journal of Contemporary Governance and Public Policy*, 1(1), 12–17. https://doi.org/10.46507/jcgpp.v1i1.10

James, O., & Petersen, C. (2018). International rankings of government performance and source credibility for citizens: Experiments about e-

government rankings in the UK and the Netherlands. *Public Management Review*, 20(4), 469–484. https://doi.org/10.1080/14719037.2017.1296965.

Janita, M. S., & Miranda, F. J. (2018). Quality in e-Government services: A proposal of dimensions from the perspective of public sector employees. *Telematics and Informatics*, 35(2), 457–469. https://doi.org/10.1016/j.tele.2018.01.004

Janssen, M., & van der Voort, H. (2020). Agile and adaptive governance in crisis response: Lessons from the COVID-19 pandemic. *International Journal of Information Management*, 55, 102180. https://doi.org/10.1016/j.ijinfomgt.2020.102180.

Khan, S. A. R., Jian, C., Zhang, Y., Golpîra, H., Kumar, A., & Sharif, A. (2019). Environmental, social and economic growth indicators spur logistics performance: From the perspective of South Asian Association for Regional Cooperation countries. *Journal of Cleaner Production*, 214, 1011–1023. https://doi.org/10.1016/j.jclepro.2018.12.322

Kong, D., Shu, Y., & Wang, Y. (2021). Corruption and corporate social responsibility: Evidence from a quasi-natural experiment in China. *Journal of Asian Economics*, 75, 101317. https://doi.org/10.1016/j.asieco.2021.101317

Li, Y., & Shang, H. (2020). Service quality, perceived value, and citizens' continuous-use intention regarding e-government: Empirical evidence from China. *Information & Management*, 57(3), 103197. https://doi.org/10.1016/j.im.2019.103197.

Lin-Hi, N., & Blumberg, I. (2018). The link between (Not) practicing CSR and corporate reputation: Psychological foundations and managerial implications. *Journal of Business Ethics*, 150, 185–198. https://doi.org/10.1007/s10551-016-3164-0

MacLean, D., & Titah, R. (2021). A systematic literature review of empirical research on the impacts of e-government: A public value perspective. *Public Administration Review*, 82(1), 23-38. https://doi.org/10.1111/puar.13413

Manoharan, A. P., Melitski, J., & Holzer, M. (2023). Digital Governance: An assessment of performance and best practices. *Public Organization Review*, 23, 265–283. https://doi.org/10.1007/s11115-021-00584-8

Milosavljević, M., Milanović, N., & Benković, S. (2017). Waiting for godot: Testing transparency, responsiveness and interactivity of Serbian local governments. *Lex Localis-Journal of Local Self-Government*, 15(3), 513-528. https://doi.org/10.4335/15.3.513-528(2017)

Mohammadzadeh, Z., Saeidnia, H. R., & Lotfata, A. (2023). Smart city healthcare delivery innovations: A systematic review of essential technologies and indicators for developing nations. *BMC Health Services Research,* 23, 1180. https://doi.org/10.1186/s12913-023-10200-8

Nam, T. (2019). Does E-government raise effectiveness and efficiency? *Journal of Global Information Management,* 27(3), 120–138. https://doi.org/10.4018/JGIM.2019070107.

Prokopenko, O., Kurbatova, T., Khalilova, M., Zerkal, A., Prause, G., Binda, J., ... Komarnitskyi, I. (2023). Impact of investments and R&D costs in renewable energy technologies on companies' profitability indicators: Assessment and forecast. *Energies,* 16(3). https://doi.org/10.3390/en16031021

Razzaq, A., An, H., & Delpachitra, S. (2021). Does technology gap increase FDI spillovers on productivity growth? Evidence from Chinese outward FDI in belt and road host countries. *Technological Forecasting and Social Change,* 172, 121050. https://doi.org/10.1016/j.techfore.2021.121050

Sharma, S. K., Metri, B., Dwivedi, Y. K., & Rana, N. P. (2021). Challenges common service centers (CSCs) face in delivering e-government services in rural India. *Government Information Quarterly,* 38(2), 101573. https://doi.org/10.1016/j.giq.2021.101573.

Yakubu, N., & Dasuki, S. (2018). Measuring e-learning success in developing countries: Applying the updated DeLone and McLean model. *Journal of Information Technology Education: Research,* 17(1), 183–203. https://doi.org/10.28945/4077

Young, M. M., Bullock, J. B., & Lecy, J. D. (2019). Artificial discretion as a tool of governance: A framework for understanding the impact of artificial intelligence on public administration. *Perspectives on Public Management and Governance,* 2(4), 301–313. https://doi.org/10.1093/ppmgov/gvz014