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## Article

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# Issues and challenges of implementing e-governance in developing countries: a comprehensive analysis of civil service models

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## ABSTRACT

The e-government approach continually changes the ways in which the government system serves the public. E-Services include a number of necessary steps to ensure the successful realization of services by institutions for development and administration. This article covers the e-growing services' trends, effectiveness, and the problems associated with addressing the situation, with a view to providing efficient services. The study is organized into key sections, beginning with an introduction that outlines the research problem and objectives. The Background Theory provides insights into existing knowledge on e-governance challenges and civil service models. The theoretical framework establishes the conceptual basis, while the methodology section details the research design and data analysis techniques. In order to generate data for the case study, content analysis and survey methods were employed. The research suggests that the virtual nature of the Internet and its dynamics can enhance public service and new users' ability to conduct secure transactions in e-commerce. The study concluded that e-Government is necessary to manage future problems and respond to current and historical occurrences in order to improve people's confidence. Knowledge regarding the reduction of present and future inefficiencies, the probability of efficiency, and the cost of alternative outcomes helps mitigate their effects. Regulatory, legal, engineering, and procedural procedures, as well as education, capacity building, and continual updating of technology, pose challenges related to e-service. The main problems in public service involve the three levels of staff and management: seamless management and coordination at the federal, provincial, and local levels.

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## 1. Introduction

The advent of the Internet and its integration into official functions has birthed a transformative concept – e-governance. This study seeks to move beyond the conventional definitions of e-governance, delving into its multifaceted impact on government practice, management, and the intricate relationships between public servants and society at large.

The journey of electronic communication, initiated by Alexander Graham Bell's invention of the Telephone in 1876, has evolved into an indispensable aspect of our personal, social, and official lives. The applications of the Internet have permeated various dimensions, shaping personal interactions, social dynamics, and the very fabric of government activities. Embracing Information and Communication Technology (ICT), governments worldwide aim to leverage its potential for enhanced governance—boasting better transparency, improved work efficiency, heightened accountability, and increased public participation in policy development. The promise of reduced costs and the battle against corruption in government processes further underscore the significance of ICT in contemporary governance (Dada, 2006).

E-governance extends beyond the narrow confines of specific online services (e.g., e-tax, e-education, e-tourism) and emerges as a broader discipline. It is an evaluative concept, assessing the profound

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impact of technology on governmental practices and interactions between public servants and society. This study navigates the evolving landscape of global society, marked by heightened connectivity, as central and municipal governments worldwide embrace digitalization. However, the implementation of e-governance in developing countries is not devoid of challenges. Intricacies such as the undue influence of intermediaries, the expansion of government agencies without commensurate results, and the prevalence of process-oriented service delivery over results pose significant hurdles (Central Intelligence Agency, 2009; Heeks, 2003; InfoDev, 2008; Kwon, 2015).

This exploration of e-governance is fueled by a common curiosity among people about its implications. Beyond a mere technological shift, the essence of e-government lies in explicating relationships, elucidating advantages, and providing diverse services through public administration. The study recognizes the transformative power of ICT, crucial for the national development plans of developing nations. Embracing ICT as an essential element, the focus shifts to its role in fostering good governance, addressing longstanding e-government challenges, and tackling public service issues specific to developing countries (Kumar & Panchanatham, 2015; Mainali, 2010).

In essence, this study seeks to unravel the intricate interplay between ICT, e-governance, and public service in developing countries, offering a nuanced perspective that extends beyond conventional definitions.

## 2. Methodology

This study adopts a case study approach to investigate the challenges and issues surrounding the implementation of e-governance in developing countries, with a specific focus on the impact of civil service models within these countries.

The selection of developing countries is based on considerations such as geographical diversity and varying levels of economic development. The objective is to capture a comprehensive range of challenges and experiences related to e-governance implementation. These developing countries will serve as individual cases for in-depth analysis. Within each chosen developing country, a purposive sampling method is employed to select specific civil service models for detailed examination. The identification of these civil service models is guided by their prevalence and significance in the discourse surrounding e-governance within the respective country. The study employs a combination of qualitative methods, including interviews with key stakeholders, document analysis of e-governance initiatives, and an extensive review of existing literature. Triangulation of these sources enhances the robustness and reliability of the findings.

Thematic analysis is utilized to analyze the collected data, facilitating the identification and categorization of key issues and challenges associated with the implementation of e-governance within the selected civil service models in each developing country.

## 3. Background theory

Deciding as a country that has three conditions: low living standards, underdeveloped industrial foundations, and a low Human Development Index (HDI) compared to other nations (Kwon, 2015). Developing countries, often known as LDCs, exhibit three conditions: there are various e-government definitions. The government's capacity to deliver governmental information and services electronically, promptly, and accurately to citizens at the lowest cost and effort over the Internet through a single website can be characterized as e-government (Kabir, 2015). The World Bank has described e-government as the use of IT technology by government authorities, enabling the modification of contacts with citizens, companies, and other governmental entities (Worldbank.org), using technologies such as wide-range networks, the Internet, and mobile computing. The use of ICTs to enhance the government process, also known as citizen services, technology redevelopment, or Internet procurement (Liu et al., 2003) is also characterized as electronic governance. E-Government, as illustrated in Table 1, transforms conventional government into electronic government.

However, to comprehensively contextualize the exploration of e-governance in this study, it is imperative to delve into the theoretical underpinnings and varied civil service models that shape

**Table 1.** The difference between traditional government and E-government.

Traditional government	E-government
The hierarchical power is clearly established in bureaucratic control	Unclear hierarchy of customer service and empowerment of the community
Centricity of process	Center of customer
Secure management functions and data collection	Comprehensive resource service and knowledge emphasis
Unit function or geographical distortion	Unit barrier removal, integrated government
Decision based on organizational norms and approvals of reports	Discussion and implied controls and approvals
Separately, management functions	Services of integrated resources
Technologies for silo information	Solutions of integrated network
Process slowly and time consuming	Rapid simplified answers

administrative structures. This review encapsulates the nuanced differences in the French, Portuguese, and Anglo-Saxon civil service models, shedding light on their unique characteristics and influences.

### **3.1. French civil service model**

The French civil service model is deeply rooted in the Napoleonic tradition, characterized by a centralized bureaucracy. With a strong emphasis on meritocracy, the French civil service traditionally places high value on competitive examinations to ensure the recruitment of qualified personnel. This centralized structure has implications for the implementation of e-governance, influencing decision-making processes, and the relationship between central and local government entities (Kickert, 2007).

### **3.2. Portuguese civil service model**

Portugal, with its own historical and administrative intricacies, has shaped a civil service model distinct from its counterparts. The Portuguese model reflects influences from its history of exploration and colonial administration. Examining the Portuguese civil service model provides insights into how historical legacies may impact the adoption and adaptation of e-governance initiatives. Additionally, understanding the bureaucratic landscape is crucial for evaluating the effectiveness of e-governance in this context (Corte-Real, 2008).

### **3.3. Anglo-Saxon civil service model**

The Anglo-Saxon tradition, encompassing the United Kingdom and its administrative progenies, has historically embraced a decentralized approach to governance. With an emphasis on individual freedoms and local autonomy, this model shapes the administrative landscape in a manner distinct from the French and Portuguese models. Exploring the Anglo-Saxon civil service model adds a comparative dimension, offering insights into how different administrative structures respond to the challenges and opportunities presented by e-governance (Kickert, 2007).

## **4. Civil service in developing countries**

Most developing country constitutions refer to governments that may constitute the civil service and other government services that may be required for the administration of the country (Kumar & Panchanatham, 2015). The constitution, operation and terms of service shall be there as determined by law. Since the past, this service has been called 'civil service' and includes all holders of government service except for those defined as not in the civil service. Services and positions in, other than those of military officers, soldiers, armed police and police, and any other service or office excluded from Civil service or positions in those governments (Kumar & Panchanatham, 2014).

## **5. Administrative reform scenario for making efforts in service delivery effective**

The country could not move ahead whenever the government and citizens are not ready to improve public service delivery. There might be many reasons for improving service delivery but the most essential things is that government's willing power dedication of government employees and peoples interest

in national building. Technology friendly working environment at the workplace, e-administration at the organization, equal opportunity for all staffs, necessary Rules and Acts, proper monitoring, supervision and control mechanism is necessary for the improvement in service delivery (Khan et al., 2010; Mutula & Mostert, 2010).

In 1992, the Administration Reform Commission, a body constituted by Kazakhstan, conducted an exhaustive evaluation of the civil service. The culmination of this evaluation was comprehensive. The report presented a plethora of recommendations designed to fortify the civil service, making it more robust, effective, qualitative, result-oriented, and people-oriented.

Among the multifaceted recommendations, a pivotal focus was on enhancing service delivery. The commission proposed the implementation of a performance contract system, empowering field-level offices, and encouraging the active involvement of service consumers and the non-government sector to elevate the effectiveness of service delivery. Despite the far-reaching nature of these recommendations, the anticipated enhancements in service delivery, as outlined by the commission, faced challenges in implementation, falling short of both the intended spirit and literal execution (Bhuiyan, 2010).

The subsequent sections of this study delve into the intricacies surrounding the non-implementation of these recommendations and analyze their repercussions on the broader landscape of e-governance.

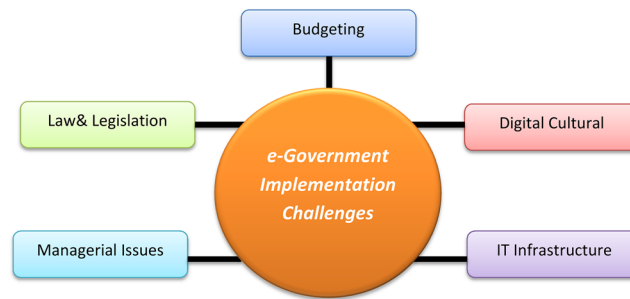
## 6. Developing countries' challenges and trends in civil service

A major permanent mechanism of the State is a policy for civil service. The effectiveness of the state depends largely on its government service's strength and capacity (Sang et al., 2009). Political management has changed from time to time, yet public officials continue to hold office for a lengthy set and competitive term. They are hence referred to as perpetual government. Civil service is the major consultant and the ineffective government supporter inside the democratic political system. Civil servants support the government to formulate the policies and to implement them with their expertise. In totality, civil service is in the key position of service delivery, supporting the government for the decision making and strengthening the effectiveness of the governance. So, the success of the government and the prosperity of the country mostly depend on the efficiency, transparency and accountability of the civil service.

Civil service is an important administrative segment of the state (Nkohkwo & Islam, 2013). It has its own characteristics. Impartiality and neutrality are its main characteristics. Civil service always has political neutrality. Merit system based is its another specialty. Recruitment, Posting and promotion all are dependent on merit system. To establish civil service as a permanent government there is a provision of proper job security, retaining civil servants to the certain age. There is a proper arrangement of career development to attract capable individuals of the society in it. There are also some additional arrangements in the service to motivate civil servants to their duties. Not only these, there is also a provision of pension for the livelihood of after retirement. Professionalism is a necessary condition of the civil service, which is not possible without being impartial, accountable and providing qualitative service to the people (Mohammed et al., 2016).

Developing country's civil service still could not be established. Frequent change in structure and size, lack of the development of the working culture depend on value and norms of professionalism, lack of institutional development, lack of adequate motivational factors, the tendency of avoiding accountability and responsibility, political interference, instability in the name of reform and lack of proper use of reward and punishment are the reasons responsible for it. A civil service should be independent, impartial, professional, respective, and result-oriented (Al-Rashidi, 2010; Moher et al., 2009) (Figure 1).

Developing countries' civil service could be developed strongly despite the past effort to make it competitive, responsible, and result-oriented. Due to the competition to make it in favor of political parties, it could not be developed professionally. Politicization in civil service is over all through the trade unions. Basic norms and values of civil service could not be established, enhanced and institutionalized in it. Works and efforts are more process oriented rather than result oriented. In civil service, posting, transfer, promotion and award and punishment are still could not be system oriented and predictable. Due to not being able to make the transfer and promotion transparent and objective, the credit of civil service could not be increased (Pidgeon et al., 2016). There are challenges of working in political instability, the lake of professional values and norms, the effect of political parties' influence and lack of



**Figure 1.** Challenges for the implementation of the e-government framework.

intention of reform with farsightedness. The Civil Service Act 2049, a pivotal legislative framework, holds its origins in Nepal. Enacted by the International Labor Organization (ILO), this act lays down the foundational principles for the organization and functioning of the civil service in Nepal. Adopted in the 7th of May 1993, the act delineates the terms, conditions, and operational guidelines governing the civil service. Civil service act, 2049 was formulated with the objective of making civil service more capable, strong, service oriented and responsible. But due to political instability, political interference, unhealthy exercise to retain in the lucrative offices and the number and the role of the personnel trade unions and their working tendency with the political influence and due to be unable to set scientific and objective standards for posting, promotion, transfer, and study leave, developing countries civil service still could not be institutionalized as a professional and result in oriented service (Sarrayrih & Sriram, 2015). Law breaking tendency can be seen in the bureaucracy, which itself is responsible to enforce the law. If this type of tendency could not be stopped, the belief of people on the rule of law can be hampered. Reforms should be done realizing the relation and the demarcation between politics and the administration. Like this, both politics and bureaucracy should be committed to the rule of law (Asogwa, 2013).

The Service Delivery Framework (SDF) should be established to effectively deliver services. In order to give a consistent experience of service to a particular user group, SDF is a collection of principles, standards, regulations, and restrictions that govern the concept, development, deployment, and functions of a service provider (El-Sofany et al., 2012).

The service delivery situation in developing countries is not quite satisfactory. Cost and service duplication parameters are high, service delivery duplication, information and communication technology not used in full for the dissemination of information, lack of periodic monitoring, dispersion of human resources, lengthy and cumbersome process of obtaining any type of service from government units, and service seekers are unable to take due care (Nkwe, 2012).

To overcome all these hurdles and making the service delivery effective, qualitative and citizen needs monitoring of the service delivery should be entrusted to the civil society organization with ample resource and authority, the establishment of multipurpose tele-centers at least one in each village development committee to use the latest information technology by rural people for service delivery purpose, process for getting service from the government office should be simplified and parameter of service delivery should be fixed, citizen should be responded if service declined or late service with fixed time line to get it, separate law for procurement, expenditure and administration of service delivery unit should be formulated, client empowerment through sector wise participation should be initiated (Furuholt & Wahid, 2008; Rowley, 2011).

### 6.1. Operational system and methods

The government's basic functions can be classified as key and non-core functions. It includes principally law maintenance and law enforcement; legislation and enforcement; the delivery of basic goods and services and social security and capacity building operations in non-core areas. Public services encompass tasks such as social and economic services, infrastructure development and management services, poverty alleviation, social mobilization promotion activities, inclusion, empowerment, especially the disadvantaged and the poor, and capacity building public services (Odat, 2012).

Many entities have created a Management Information System (MIS) for the dissemination of accurate information and for the facilitation of correct decision-making. The systems include the Personal Information System (PIS), the Financial Management Information System (FMIS), the Ministry of Finance, the health management information system (HMIS) and the Education Management Information System (EMIS) (Mutula & Mostert, 2010). The information systems include public servant related personnel information systems (PIS) (Yanqing, 2011).

## **6.2. Public service roles and functions**

The government's duties and functions may be classified in four categories: economic, social, political and infrastructure governance. The governance activities encompass all actions related to administrative assistance, logistics, internal security and peace, foreign affairs and defense, human and other resources management and coordination and supervision, as well as promotion of monitoring (Almarabeh, 2011).

## **7. Technology-RTT recent trends**

ICT master plan plays a vital role in the development of ICT in the country. As the internet grows rapidly, the security of networks has become a global priority for policymakers and regulators (Dwivedi et al., 2012). The way we live and do business is continually changing with the Internet. It is becoming a problem to protect services and consumers from theft of information, fraud, denial of service assaults, hacking, cyber war, acts of terror and counterfeiting. One in 295 e-mails is viral, 3 in 100 e-mail messages include malware (Faroqi & Siddiquee, 2011) according to a worldwide assessment. All kinds of frauds and various methods used to spread malware, using tactics of social engineering and exploit human needs and anxieties and just be curious to exercise care when online. For the following two major reason, important information about an organization comprising personal data, critical business resources etc. is a possible source of attack. The overall naivety and knowledge required by hackers is greatly decreased and programs that can be disseminated via the Internet are considerably easier to develop to a hacker (Furuholt & Wahid, 2008).

## **8. ICT policy and law**

Policy is used to set a performance standard. It offers a foundation for consistent activities irrespective of nation. Federal, provincial and local legislation establishes a policy framework for technological usage across the country (Heeks, 2003)

IT legislation or cyber law is a law that has a wide range of difficulties with the web and various communication techniques and management of cyberspace (Lallmahomed et al., 2017; Mainali, 2010) as well as of property and jurisdiction. Cyber law is the legislation that governs facts such as the legal status of immaterial information in the cyber industry in the digital intangible environment (Ndou, 2004). The domain of cyber legislation is a unit that is essential and valid for cyber control (Nkwe, 2012). In its functions and for the same (Rowley, 2011), the Government must be open. State responsibility for bringing into force legislation to prevent cybercrime, threats, Internet abuse, and other cyber media from any unlawful activity is in the state's responsibility (Okunola et al., 2017).

## **9. Issues of data security**

Information security based procedures are needed to secure e-governance initiatives. Security policies and plans necessary for aid and protection against threats and attacks on e-government systems and for the detection of services of anomalous activities (Sarrayrih & Sriram, 2015).

The security of data should be protected from unauthorized use, divulgation, access, destruction, alteration and data loss. Confidential security software and frequent password monitoring are highly important. The security of the user and password has not been kept to a sufficient standard. One of the first phases in the evaluation is the classification of data by risk factor. The system of e-government

should be dependable and the presence and appropriate execution of e-government legislation should ensure dependability (Savoldelli et al., 2014). Best practices are needed to secure electronic government initiatives for information security. Security policies, practices and processes and the use of security technologies must be in place. It helps defend the system of e-government from attacks, detects anomalous services and establishes a verified contingency plan (Twizeyimana & Andersson, 2019).

## 10. Conclusion

In conclusion, this research has provided a comprehensive analysis of the challenges and issues associated with implementing e-governance in developing countries, with a particular focus on civil service models. Employing a case study approach and utilizing content analysis and survey methods, we aimed to unravel the intricate interplay between ICT, e-governance, and public service in these regions. The study commenced by examining the evolving landscape of e-governance, emphasizing its transformative impact on government practices and relationships with society. The adoption of Information and Communication Technology (ICT) has become imperative for governments globally, aiming to enhance transparency, work efficiency, accountability, and public participation. However, the implementation of e-governance in developing countries is riddled with challenges, including undue influences, bureaucratic expansion, and process-oriented service delivery.

Delving into the theoretical underpinnings, the research explored civil service models in French, Portuguese, and Anglo-Saxon contexts, offering a nuanced understanding of their unique characteristics and influences on administrative structures.

The study highlighted the role of the civil service in developing countries, emphasizing its importance in ensuring the effectiveness, transparency, and accountability of government functions. Challenges such as politicization, lack of professional values, and the impact of political instability were identified as barriers to the development of a strong and result-oriented civil service. The analysis of the Administration Reform Commission's recommendations in 1992 shed light on the challenges in implementing improvements in service delivery. Despite significant suggestions, challenges in execution hindered the transformative potential outlined by the commission. Examining the current scenario, the study proposed a Service Delivery Framework (SDF) to address challenges in service delivery effectively. Emphasizing the importance of monitoring by civil society organizations, the establishment of tele-centers, and simplification of government processes, the research presented a comprehensive approach to enhance service delivery.

The research also discussed recent trends in Information and Communication Technology (ICT), highlighting the role of the ICT master plan in a country's development. Attention was drawn to the importance of policy and legal frameworks, emphasizing the need for consistent regulations and legislation to govern technological usage across different government levels. Addressing data security concerns, the study stressed the necessity of robust information security procedures, policies, and plans to safeguard e-government initiatives from threats and attacks.

Despite these valuable findings from content analysis and survey methods, we acknowledge that the conclusion lacks a detailed discussion of the specific content analysis and survey results. In future research, we recommend a more explicit integration of these findings within the conclusion to provide a more thorough and impactful summary of the research outcomes. The insights gathered from the analysis and survey have significant implications for policymaking and future e-governance initiatives, and a more detailed discussion of these findings would enhance the overall contribution of this research to the field.

## Disclosure statement

No potential conflict of interest was reported by the author(s).

## About the author

**Shuaib M. Abdulnabi** got his Ph.D. in Hospital Management since 2023, he is a lecturer at department of medical equipment technology engineering of Al-Hadba University College, Mosul, Iraq.

## References

- Almarabeh, T. (2011). E-government in Jordan: Strengths, weakness, opportunities, and challenges. *2011 IEEE Jordan Conference on Applied Electrical Engineering and Computing Technologies (AEECT)* (pp. 1–10). IEEE. <https://doi.org/10.1109/AEECT.2011.6132528>
- Al-Rashidi, H. (2010). Examining internal challenges to e-government implementation from system users perspective. *European and Mediterranean Conference on Information Systems* (pp. 12–3).
- Asogwa, B. E. (2013). Electronic government as a paradigm shift for efficient public services: Opportunities and challenges for Nigerian government. *Library Hi Tech*, 31(1), 141–159. <https://doi.org/10.1108/07378831311303985>
- Bhuiyan, S. H. (2010). E-government in Kazakhstan: Challenges and its role to development. *Public Organization Review*, 10(1), 31–47. <https://doi.org/10.1007/s11115-009-0087-6>
- Central Intelligence Agency. (2009). *The CIA world factbook 2010*. Skyhorse Publishing Inc. Retrieved March 8, 2023, from <https://www.cia.gov/the-world-factbook/>
- Corte-Real, I. (2008). Public management reform in Portugal: successes and failures. *International Journal of Public Sector Management*, 21(2), 205–229. <https://doi.org/10.1108/09513550810855663>
- Dada, D. (2006). The failure of E-government in developing countries: A literature review. *The Electronic Journal of Information Systems in Developing Countries*, 26(1), 1–10. <https://doi.org/10.1002/j.1681-4835.2006.tb00176.x>
- Dwivedi, Y. K., Weerakkody, V., & Janssen, M. (2012). Moving towards maturity: Challenges to successful e-government implementation and diffusion. *ACM SIGMIS Database*, 42(4), 11–22. <https://doi.org/10.1145/2096140.2096142>
- El-Sofany, H. F., Al-Tourki, T., Al-Howimel, H., & Al-Sadoon, A. (2012). E-Government in Saudi Arabia: Barriers, challenges and its role of development. *International Journal of Computer Applications*, 48(5), 16–22. <https://doi.org/10.5120/7344-0119>
- Faroqi, M. G., & Siddiquee, N. A. (2011). Limping into the information age: Challenges of e-government in Bangladesh. *The Journal of Comparative Asian Development*, 10(1), 33–61. <https://doi.org/10.1080/15339114.2011.578473>
- Furuholt, B., & Wahid, F. (2008). E-government Challenges and the Role of Political Leadership in Indonesia: the case of Sragen. *Proceedings of the 41st Annual Hawaii International Conference on System Sciences (HICSS 2008)* (pp. 411–411). IEEE.
- Heeks, R. (2003). *Most eGovernment-for-development projects fail: How can risks be reduced?, iGovernment working paper series*. IDPM, University of Manchester.
- InfoDev. (2008). *The e-government handbook for developing countries – A project of InfoDev and the centre for democracy and technology*. Centre for Democracy Technology. The WorldBank.
- Kabir, A. H. (2015). *Data centric security* (pp. 21–33). National Security Institute J.
- Khan, F., Khan, S., & Zhang, B. (2010). *E-government challenges in developing countries: a case study of Pakistan*. 2010 *International Conference on Management of e-Commerce and e-Government* (pp. 200–203). IEEE.
- Kickert, W. (2007). Public management reforms in countries with a Napoleonic state model: France, Italy and Spain. In *New public management in Europe: Adaptation and alternatives* (pp. 26–51). Palgrave Macmillan UK.
- Kumar, D., & Panchanatham, N. (2014). Strategies for rebooting the government in e-mode. *Global Journal for Research Analysis*, 3(8), 129–130.
- Kumar, D., & Panchanatham, N. (2015). A case study on Cyber security in E-governance. *International Research Journal of Engineering and Technology*, 2(8), 272–275.
- Kwon, G. H. (2015). *Electronic government, E-government and E-policy, graduate school of governance*. Sungkungkwan University.
- Lallmahomed, M. Z., Lallmahomed, N., & Lallmahomed, G. M. (2017). Factors influencing the adoption of e-Government services in Mauritius. *Telematics and Informatics*, 34(4), 57–72. <https://doi.org/10.1016/j.tele.2017.01.003>
- Liu, L., Yu, E., & Mylopoulos, J. (2003). Security and privacy requirements analysis within a social setting. In *Proceedings. 11th IEEE International Requirements Engineering Conference* (pp. 151–161). IEEE. <https://doi.org/10.1109/ICRE.2003.1232746>
- Mainali, G. (2010). Administration reform: Theory, practice and train. *Civil Service Journal, Public Service Commission*, 31(1), 20–30.
- Mohammed, M. A., Aboobaidar, B. M., Ibrahim, H., Abdullah, H. A., Ali, M. H., Jaber, M. M., & Shawkat, A. (2016). E-government and its challenges in developing countries: Case study Iraqi e-government. *Soc. Sci*, 11(17), 4310–4319.
- Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *Annals of Internal Medicine*, 151(4), 264–269. <https://doi.org/10.7326/0003-4819-151-4-200908180-00135>
- Mutula, S. M., & Mostert, J. (2010). Challenges and opportunities of e-government in South Africa. *The Electronic Library*, 28(1), 38–53. <https://doi.org/10.1108/02640471011023360>
- Ndou, D. V. (. (2004). E-government for developing countries: Challenges and opportunities. *The Electronic Journal of Information Systems in Developing Countries*, 18(1), 1–24. <https://doi.org/10.1002/j.1681-4835.2004.tb00117.x>
- Nkohkwo, Q. N. A., & Islam, M. S. (2013). Challenges to the successful implementation of e-government initiatives in Sub-Saharan Africa: A literature review. *Electronic Journal of e-Government*, 11(1), pp252–266.
- Nkwe, N. (2012). E-government: challenges and opportunities in Botswana. *International Journal of Humanities and Social Science*, 2(17), 39–48.

- Odat, A. M. (2012). E-government in developing countries: Framework of challenges and opportunities. In *2012 International Conference for Internet Technology and Secured Transactions* (pp. 578–582). IEEE.
- Okunola, O. M., Rowley, J., & Johnson, F. (2017). The multi-dimensional digital divide: Perspectives from an e-government portal in Nigeria. *Government Information Quarterly*, 34(2), 329–339. <https://doi.org/10.1016/j.giq.2017.02.002>
- Pidgeon, T. E., Wellstead, G., Sagoo, H., Jafree, D. J., Fowler, A. J., & Agha, R. A. (2016). An assessment of the compliance of systematic review articles published in craniofacial surgery with the PRISMA statement guidelines: a systematic review. *Journal of Cranio-Maxillo-Facial Surgery*, 44(10), 1522–1530. <https://doi.org/10.1016/j.jcms.2016.07.018>
- Rowley, J. (2011). E-Government stakeholders—Who are they and what do they want? *International Journal of Information Management*, 31(1), 53–62. <https://doi.org/10.1016/j.ijinfomgt.2010.05.005>
- Sang, S., Lee, J. D., & Lee, J. (2009). E-Government challenges in least developed countries (LDCs): a case of Cambodia. In *2009 11th International Conference on Advanced Communication Technology* (Vol. 3, pp. 2169–2175). IEEE.
- Sarrayrih, M. A., & Sriram, B. (2015). Major challenges in developing a successful e-government: A review on the Sultanate of Oman. *Journal of King Saud University – Computer and Information Sciences*, 27(2), 230–235. <https://doi.org/10.1016/j.jksuci.2014.04.004>
- Savoldelli, A., Codagnone, C., & Misuraca, G. (2014). Understanding the e-government paradox: Learning from literature and practice on barriers to adoption. *Government Information Quarterly*, 31, S63–S71. <https://doi.org/10.1016/j.giq.2014.01.008>
- Twizeyimana, J. D., & Andersson, A. (2019). The public value of E-Government—A literature review. *Government Information Quarterly*, 36(2), 167–178. <https://doi.org/10.1016/j.giq.2019.01.001>
- Yanqing, G. (2011). The potential opportunities and challenges of. In *International Conference on Management and Service Science* (pp. 1999–2002).