

The Challenges of Implementing E-government in the Public Sector: A Case Study on The Gambia

Musa M Juwara^{1*}, Kerkulah P Nyeleker²

^{1,2,3}International Program of Government Affairs & Administration, Faculty of Social & Political Sciences, Universitas Muhammadiyah Yogyakarta, Indonesia

^{1,2,3}Email: musa.m.isip24@mail.umy.ac.id¹, kerkulah.p.isip22@mail.umy.ac.id², author³

*Corresponding author: musa.m.isip24@mail.umy.ac.id

Abstract

In recent years, e-government has emerged in public sectors as a tool between governments and citizens for efficient service delivery and governance transparency. However, there are still challenges, especially in developing countries with limited human and financial resources. This study examines the challenges of implementing e-government in developing countries using The Gambia as a case, where e-government is still at its early stage of development. The research applied a qualitative case study approach and relied heavily on secondary data from journals, newspapers, reports from government agencies, etc. The data were analysed interactively using the NVivo 15 software, guided by the Challenges Framework of E-government Implementation theory developed by Odat. The findings of this study revealed that e-government enhances effective service delivery, improves transparency and accountability, reduces corruption, promotes inclusivity, and fosters citizens' participation. However, with all these benefits, implementation still faces massive challenges such as (a) IT infrastructure with high skill shortage among government employees and citizens; (b) managerial issues, where there is limited internal collaboration with the relevant stakeholders; and (c) digital culture characterised by limited awareness, unequal internet accessibility and affordability, and with little confidence or trust in government services. This study will contribute to the existing academic knowledge on e-government implementation in developing countries and public service innovation in general.

Keywords: E-government; challenges; implementation; developing countries; The Gambia

Abstrak

Dalam beberapa tahun terakhir, e-government telah muncul di sektor publik sebagai alat antara pemerintah dan warga negara untuk penyediaan layanan yang efisien dan transparansi tata kelola. Namun, masih ada tantangan, terutama di negara-negara berkembang dengan sumber daya manusia dan keuangan yang terbatas. Studi ini mengkaji tantangan penerapan e-government di negara-negara berkembang dengan menggunakan Gambia sebagai kasus, di mana e-government masih dalam tahap awal pengembangan. Penelitian ini menerapkan kualitatif dengan pendekatan studi kasus dan sangat bergantung pada data sekunder dari jurnal, surat kabar, laporan dari lembaga pemerintah, dll. Data dianalisis secara interaktif menggunakan perangkat lunak NVivo 15, dipandu oleh teori Kerangka Tantangan Implementasi E-government yang dikembangkan oleh Odat. Temuan studi ini mengungkapkan bahwa e-government meningkatkan penyediaan layanan yang efektif, meningkatkan transparansi dan akuntabilitas, mengurangi korupsi, mempromosikan inklusivitas, dan mendorong partisipasi warga negara. Namun, dengan semua manfaat ini, implementasi masih menghadapi tantangan besar seperti (a) infrastruktur TI dengan kekurangan keterampilan yang tinggi di antara pegawai pemerintah dan warga negara; (b) masalah manajerial, di mana terdapat kolaborasi internal yang terbatas dengan pemangku kepentingan terkait; dan (c) budaya digital yang dicirikan oleh kesadaran yang terbatas, aksesibilitas dan keterjangkauan internet yang tidak merata, dan rendahnya kepercayaan terhadap layanan pemerintah. Studi ini akan memberikan kontribusi terhadap pengetahuan akademis yang ada tentang implementasi e-government di negara-negara berkembang dan inovasi layanan publik secara umum.

Kata kunci: E-government; tantangan; implementasi; negara-negara berkembang; Gambia

Introduction

In the last few decades, e-government has become a great tool for governments worldwide to enhance service delivery and operations using Information and Communication Technologies (ICTs) (Mensah et al., 2022). Furthermore, the concept of e-government has gained critical research attention, driven by the need to understand how ICTs impact public perception and engagement fully (Jopang et al., 2024; Madaki et al., 2024). Additionally, the initiatives of e-government have emerged as revolutionary forces in public administration, especially in Less Developed Countries (LDC), where the customary government system struggles with inefficiencies and a lack of transparency (Bojang, 2021; Jopang et al., 2024). As a comprehensive program, e-government aims to boost government efficiency and effectiveness by enhancing service performance for various beneficiaries, including institutions, businesses, and individuals (S & Thimmaiah, 2024). Through leveraging digital technologies, data-oriented decision-making, and streamlined procedures, e-government also seeks to offer citizens efficient and accessible services (Madaki et al., 2024).

The role of information technology cannot be overemphasised, particularly in the context of modern government. The literature has revealed the immense significance of technology, which is a prerequisite for ensuring the successful implementation of e-government programs (Ceesay & Bojang, 2020). Hazineh et al., 2022 highlighted that technology adoption is the most effective systematic way to integrate the public and private sectors. There are numerous factors that not only demand but require the adoption of e-government in developing countries,

including corruption reduction, mitigation of inefficient bureaucracy, narrowing of the gap between citizens and the government, etc (Jopang et al., 2024). Thus, this has either made governments eager or put enormous pressure on them to offer services digitally (Chen & Aklikokou, 2021; Oluwashina et al., 2024). Moreover, recent statistics on global e-government ranking revealed African countries' willingness to adopt e-government initiatives despite the unwavering hurdles (Oluwashina et al., 2024). Like many other developing nations, The Gambia is in the process of digitalisation and using technology to propel development. The Gambia began its digital transformation journey in the mid-2000s, focusing on harnessing digital technologies for public sector modernisation (MCDE, 2023). The Gambia's digital master plan emphasises the importance of leveraging new technologies and aspires to implement over five hundred services digitally (Jobe et al., 2024). However, there has been a significant drop in the country's e-government index between 2022 and 2024, from 0.3088 to 0.2552 (UN, 2024), making it relatively low compared to other West African countries.

The Gambia is in the early stages of leveraging digital identity and digital transformation. (E. C. for Africa, 2024) To achieve this, data safety, security, and interoperability must be brought to the ground while navigating government platforms (MCDE, 2023). Additionally, ensuring ICT components operate flawlessly requires efficient data and utility sharing across government departments (Madaki et al., 2024). Further, institutional and legal requirements highlight that citizens have the right to access their data, which the law shall determine (U. N. E. C. for Africa, 2023). For instance, Morocco's substantial e-government improvements in service

delivery are coupled with legal amendments, including laws on personal data protection and digital trust (Omweri, 2023). This underscores the significance of data protection through a strong cybersecurity system and robust legal framework and procedures in e-government initiatives, as it contains essential information about citizens, which goes a long way in building trust in e-government services besides data protection (Abdulnabi, 2024; Estonia, 2023).

Scholarly discussions on e-government implementation have drawn the attention of scholars in recent years, especially in developing countries. Despite the countless benefits and opportunities offered by adopting e-government initiatives, it is faced many hurdles. The literature has shown that there has not been an equitable distribution of ITC benefits among states, often with the LDCs lagging (Oluwashina et al., 2024). While these previous studies are significant, there remains a gap in the literature. For instance, the previous studies mainly focus on the benefits of e-government in developing countries and the implementation challenges from a general perspective. Theoretically, while most early studies used the Technology Acceptance Model (TAM), most recent studies used implementation theories and frameworks such as the Public Value E-Government Adoption Model (PVEGAM) and many others, which are continuously modified over time. However, no recent study explored the specific implementation challenges of e-government in the Gambia using the Challenges Framework in E-government Implementation by Odat, (2012)

This study will contribute to the existing literature by identifying and analysing the challenges hindering the effective implementation of e-government

initiatives in the LDCs, in the specific context of The Gambia. Understanding these critical challenges, the research aims to provide practical strategies and recommendations to overcome these obstacles and enhance the overall effectiveness of e-government in The Gambia. In this regard, the analyses of this study will be guided by the Challenges of the E-government theory, Ahmad Mousa (Odat, 2012). The theory identifies major challenges that governments and policymakers face in operating e-government. The theory consists of six indicators: IT/ICT infrastructure, managerial issues, digital culture, budgeting, laws and legislation, and human resources/skills. This theory and these indicators are suitable for this study and will help the results identify the specific challenges associated with e-government in the Gambia, which will lead to policy recommendations.

Literature Review

As e-government is becoming more and more relevant and transformative, particularly in the public administration sector, it's gaining intensive and extensive research attention from many scholars worldwide. Thus, it is defined and described slightly differently depending on the specific topic in question (e.g. e-participation, e-democracy, etc.); hence, there is no consensus definition. Meanwhile, the United Nations views e-government as utilising the internet and the World Wide Web for delivering government information and services to citizens (United Nations, 2020). On the other hand, e-government, according to the World Bank, is the application of information technology (including mobile computing, the Internet, and wide area networks) by government organisations that have the power to change how they interact with businesses, citizens, and other branches

of government (World Bank, 2009). Odat, (2012) defined e-government as the ability of governments to deliver services and information electronically to the citizens.

There are thorough discussions on the benefits that could be reaped from the successful implementation of e-government initiatives. Chen & Aklikokou, (2021) showed a substantial correlation across 191 nations on e-government improving government efficacy and fostering good governance, which benefits citizens and the government. Abdulnabi, (2024) indicated that e-government is essential to address past, present, and future problems and to boost public confidence. Another study by Castro & Lopes, (2022) revealed that e-government can significantly mitigate corruption, which is the most significant barrier to development in almost all developing countries. Al-Rzoky et al., (2019) showed that the advancement of any nation relies on integrating new services and administration, especially in the astute age of electronic government in every district. Hazineh et al., (2022) emphasised that e-government is crucial for global governments and economic development, addressing rapid globalisation, fiscal, social, and technological changes, and ensuring citizen-centric, efficient, transparent, and effective services. However, Al Mudawi et al., (2020) revealed that adopting e-government services is still hampered by organisational readiness levels such as IT infrastructure, internet accessibility, and social trust.

Researchers have classified e-government into different categories. These include Government-to-Citizens (G2C or C2G), Government-to-Businesses (G2B or B2G), Government-to-Employees (G2E), and Government-to-Government (G2G). G2C or C2G is one of the most significant

components. This is because it directly impacts a larger range of people and enhances citizen engagement, transparency, accessibility, and service delivery. Additionally, it lays the foundation for the other categories of e-government because if citizens are willing to utilise digital services actively, others will also benefit. However, the literature has revealed that numerous challenges persist, impeding the successful implementation of e-government initiatives, particularly in LDCs. For instance, resource limitations, resistance to change, interoperability regulatory complexities, cybersecurity threats and the digital divide are substantial obstacles (Jopang et al., 2024; Madaki et al., 2024). Additionally, poor ICT infrastructure and inadequate Information Technology (IT) with a Low Human Development Index (HDI), inadequate organisational skills, lack of awareness of e-government programs and poor economic situations (Apleni & Smuts, 2020; Bojang, 2021).

Several theories, frameworks, and models have been developed and utilised in various studies on e-government. These include the TAM (Lin et al., 2011), Diffusion of Innovation (DOI) theory (Apleni & Smuts, 2020), and DeLone and McLean Information System success model, PVEGAM (Mensah et al., 2022), etc. However, the current study utilises the “Challenges Framework in E-government Implementation” (Odat, 2012) as it aligns the most with the objective of this study. This study will contribute to the literature from two angles. First, the study will conduct an in-depth analysis assessing the key challenges impeding the successful implementation of e-government programs, using The Gambia as a case study, where government services are still primarily delivered through face-to-face, paper-based and bureaucratic processes. Second, the study

is based on the “Challenges Framework in E-government Implementation”, which was proposed by Odat, (2012). This framework consisted of five indicators. However, this framework was further developed by

Meiyanti et al., (2019) by adding an indicator and calling it “The New Challenges Framework in E-government Implementation”, as shown below.

Figure 1: The New Challenges Framework of E-government Implementation



Methods

The research method is qualitative with a case study approach. Creswell, (2014) defined a qualitative research method that uses a variety of designs, has distinct data analysis steps, and relies on text and image data. Creswell, (2014) also described a case study approach as a method that thoroughly analyses a single entity or multiple entities in

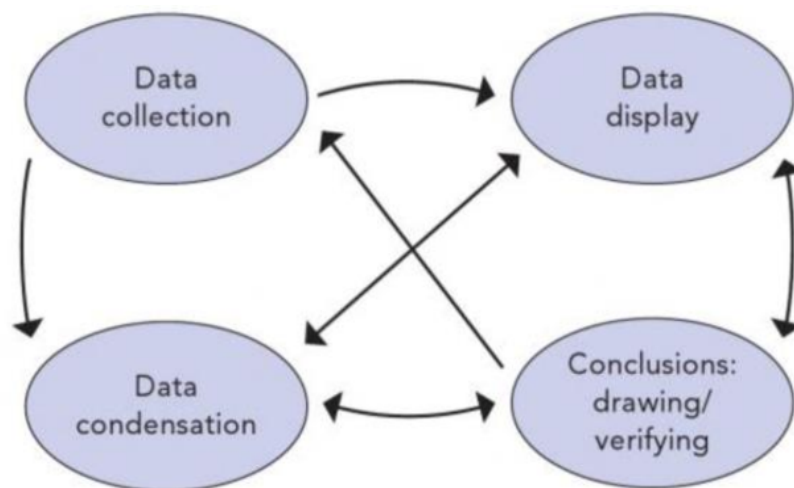
This study used this metnoda and approach because it is pertinent to pinpoint implementation challenges of e-government in the context of The Gambia. Due to the complexity of the topic, time and resource constraints and unavailability of informants, the results rely on secondary instead of primary data. Creswell (2014) defined secondary data as a piece of information gathered for a different reason by a party other than the researcher. The secondary data was collected from newspapers from reliable news agencies in

The Gambia, the United Nations, the World Bank, government agency reports such as the Ministry of Communications and Digital Affairs, National Development Plan, E-government Strategy 2021-2024, conferences, etc.

The data was analysed using the interactive model of qualitative data analysis developed by Miles et al., (2014). The model consists of four stages, namely, (1) data reduction: the researchers scrutinized, complied,

categorized the items required to answer the research question; (2) data collection: the researchers collected data through content analysis and literature review; (3) data display: the researchers coded the data according to key themes using the NVivo 12 plus software guided by the research's framework, and used figures to show the results; (4) verification and conclusions: the researchers validated the study by drawing valid conclusions from the data. Below is the interactive model.

Figure 2. Interactive Analysis Model for Qualitative Data



Source: Miles, Huberman and Saldaña, (2014)

Results and Discussion

IT Infrastructure

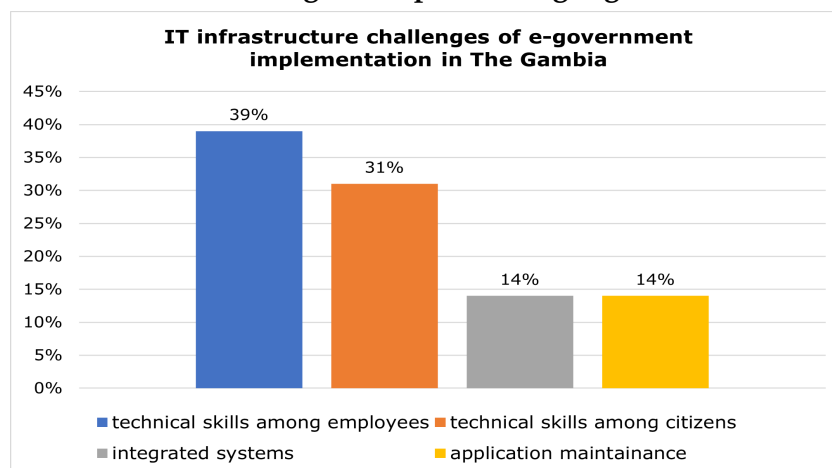
Odat, (2012), framework identified IT infrastructure as the most significant challenge of implementing e-government in LDCs. This is because it is considered the foundation on which e-government

initiatives can thrive, ensuring the effectiveness and efficiency of government services. Additionally, Odat, (2012) emphasised that sufficient or modern IT infrastructure enhances the efficiency of digital services delivery. This section of the study aims to explore IT infrastructure

challenges to e-government implementation in The Gambia. To achieve this, the researchers carried out a crosstab analysis of NVivo 15 by dividing the IT infrastructure

into four parameters: technical skills among employees, citizens, integrated systems, and application maintenance, as shown in the figure below.

Figure 3. Infrastructure as a Challenge of Implementing E-government in The Gambia



Source: Processed in NVivo 15 by the authors

Based on Figure 3, a lack of technical skills among employees (39%) represents a significant barrier to the effective implementation of e-government systems, particularly in The Gambia. Technical skills among employees refer to the ability to manage, operate, and improve digital platforms. Although the ministers, departments, and agencies are moderately equipped with ITC systems that assist in delivering their services, The Gambia still faces specific IT infrastructure issues (The Gambia, 2024). The government's ongoing digital transformation efforts, led by institutions such as the Ministry of Communication and Digital Economy (MCDE) and the Gambia Information and

Communications Technology Agency (GICTA), depend on IT infrastructure and the workforce's competencies to handle the technical demands of e-government systems. There are commitments in the Broadband Strategy 2020-2024 to achieve 90% digital literacy among the government workforce (Broadband, 2024); however, only 60% have been achieved (Jobe et al., 2024). Samsor, (2020), highlighted the lack of technical resources that hinder e-government coordination and implementation. Al-Shboul et al., (2014), also identified human expertise as a critical factor influencing e-government services adoption, noting that limited technical skills pose challenges to successful implementation. This skill deficit risks luring

reliance on costly external expertise, undermining the sustainability of e-government projects.

Subsequently, technical skills among citizens (31%), as shown in Figure 3, also represent a good portion that poses a challenge to e-government implementation, particularly in the context of infrastructure. While the government has made strides to develop IT infrastructure, such as deploying online platforms like the Gamlumo and expanding internet connectivity, the effectiveness depends heavily on the users' technical proficiency (Commonwealth, 2024b; Islam & Okuda, 2020). Odat, (2012) highlighted that the success of e-government relies heavily on citizens' participation and their ability to navigate e-platforms, thereby enhancing efficiency, transparency, and effective service delivery. The Commonwealth Secretariat conducted a *'Train the Trainers'* workshop at the University of The Gambia, aiming to equip the citizens with Python Programming and Artificial Intelligence (Commonwealth, 2024a). The government envisioned expanding broadband to all areas and districts by 65% of the digital literacy of the total national workforce (AfDB, 2022). However, customers' prices are high due to the taxes it implemented on mobile network operators, which decreases access to the Internet.

Additionally, the labour market demand of the government and companies surpasses the current skillset (MCDE, 2023). Lack of technical skills among citizens widens the digital divide, limiting trust and adoption of e-government. It can also lead to increased administration costs, reduced efficiency, and innovation.

Integrated system and application maintenance indicated an equal percentage (14%) under infrastructure as a challenge to e-government implementation. There have been some digital platforms and services, such as the Civil Registration and Vital Statistics (eCRVS), Integrated Financial Management System (IFMIS), etc (Estonia, 2023). However, having an integrated and interoperable structure to streamline services more efficiently is yet to be achieved. Islam & Okuda, (2020) revealed that the Gambian government agencies frequently lack computer networks, which hinders the exchange of data and information, and due to a lack of expertise, Internet Service Providers (ISPs) are rarely used for public services (Secka et al., 2023). Additionally, the 2023 income and expense estimates do not include any costs for application software and licensing (MCDE, 2023). Integrating various applications into a single entity is a crucial component of IT infrastructure. It ensures efficient service delivery, data sharing, and

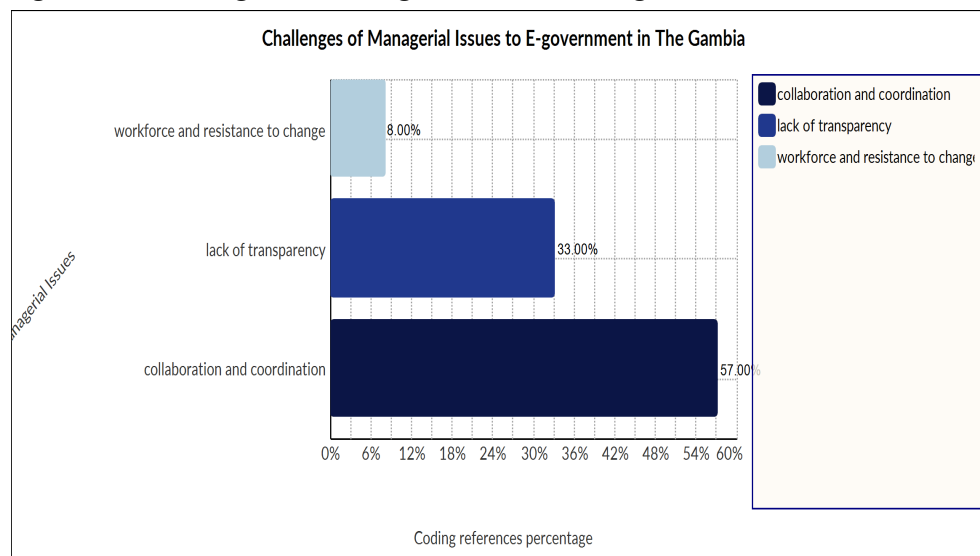
interoperability across government agencies. The E-Government Strategy 2021-2024 highlighted that the digital divide must be eliminated to successfully implement e-government, ensuring equal opportunity for all individuals to use ICT resources regardless of their citizenship or residency (Gambia, 2024).

Managerial Issues

The second indicator identified by Odat, (2012) is a managerial issue. This means that the absence of strategic planning, leadership commitment, and a clear vision in an organisation is the main cause of

managerial difficulties. Gharaibeh et al., (2023) highlighted that the chances of executing an innovative initiative depend on top-level managers, who can either enhance or impede the feasibility. This research seeks to identify the specific managerial issues that confront the effective implementation of smart government. To accomplish this objective, the researchers conducted a comprehensive NVivo 15 analysis using three criteria, namely, workforce and resistance to change, lack of transparency, and collaboration and coordination, as shown in Figure 4.

Figure 4: Challenges of Managerial Issues to E-government in The Gambia



Source: Processed in NVivo 15 by the authors

Figure 4 shows inadequate collaboration and coordination to be the most impeding challenge at 57%. The Digital Readiness Assessment revealed that the MCDE is eager to collaborate with the

private sector and use its ability to implement innovative strategies (MCDE, 2023). This indicates insufficient internal collaboration and coordination with the relevant stakeholders despite its willingness.

Moreover, emphasised that the government finds it formidable to reach its e-government objectives as there are individual digitalisation efforts among the government institutions. Thus, ineffective collaboration and coordination result in disjointed systems and programs and underutilisation of resources.

Lack of transparency, illustrated in Figure 4, accounts for 33% and poses an immense challenge in managerial affairs. Making information, decision-making, and government procedures publicly available is a key component of transparency. Lack of transparency has caused the failure of several projects, and one of them was the project of digitalising aluminium number plates to detect licensed cars using QR codes containing the personal data of car owners while encrypted. Moreover, a study (Deen, 2024) identified that these number plates could be read by anyone using a smartphone. Cham, (2022) noted that transparency is a critical criterion when considering e-government services. A study (Jopang et al., 2024) emphasised that citizens are more likely to interact with and use government services when they believe their government is open and responsible, which promotes collaboration and community cohesiveness. Lack of transparency may cause stakeholders and citizens to regard the government as

unreliable, which could hinder the adoption of e-government.

On a related note, workforce and resistance to change (8%) among government employees and citizens act as a barrier to effective implementation. Change in organisational management is easier said than done. Many people in The Gambia resist change due to fear, unwillingness, lack of trust in change advocates, or past unsuccessful change initiatives (MCDE, 2023). This is because employees and citizens regard it as a threat to their jobs, ultimately increasing the unemployment rates. Additionally, it is seen as an impediment to long-standing ill practices such as bribery and corruption, which disrupt the legacy system (Samsor, 2020). Moreover, the E-Government Strategy 2021-2024 acknowledges resistance to change and system breakdown as a major implementation concern, highlighting the necessity of successful management techniques to guarantee the uptake of digital services (Gambia, 2024).

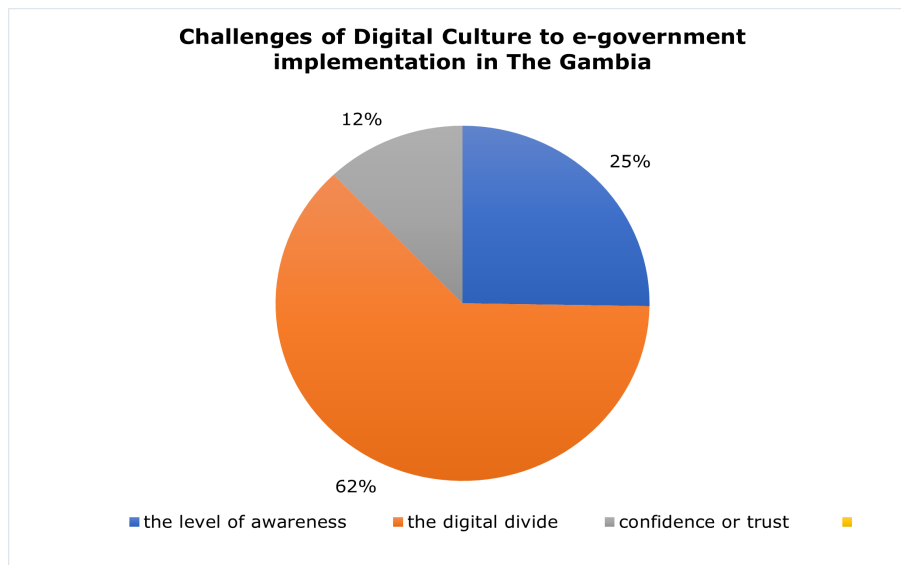
Digital Culture

The digital culture is the third main challenge identified in the theory of the Challenges Framework in E-government Implementation by Odat, (2012). This refers to the readiness and behaviour of society

towards utilising and adopting digital technologies in government systems. There is a significant level of willingness to use of digital technologies in The Gambia. A survey conducted by Bojang, (2021) revealed that 42% and 34.8% of respondents agree and strongly agree respectively, that e-government services are more confidential to

engage with than traditional systems. However, it remains a challenge. In this section, the study aims to determine the specific challenges of digital culture to e-government implementation. NVivo 15 was used to examine three parameters: the digital divide, the level of awareness, and confidence or trust.

Figure 5: Challenges of Digital Culture to E-government in The Gambia



Source: Processed in NVivo 15 by the authors

The figure above shows that the digital culture is largely hampered by the digital divide, which accounts for 62%. Odat, (2012), described this as the gap between places, groups, and individuals with access to ICTs and those without. Gharaibeh et al., (2023) also described the digital divide as an inequality or disparity of chances in accessing the internet between people. In short, it refers to computer and internet

accessibility among people. This is driven by factors such as ICT literacy, education, training, and financial means, among others. There is limited Internet penetration in The Gambia. With a population of approximately 2.81 million, it has 54.2% internet penetration. Additionally, there is a significant gap in access to electricity. Further, the country's average installed capacity of 102MW is inadequate and is

among the highest electricity tariffs in the world (AfDB, 2022). In addition, limited access to ICT services in rural areas has widened the gap, with poverty rates at 76% and 34% in rural and urban areas, respectively (Bank, 2023b). This digital divide impedes the effective realisation of e-government participation (Nyeleker et al., 2024). Adversely, it is reported that the government is yet to prioritise any investment related to expanding the network reach of the rural areas (MCDE, 2023).

Also, it is found that a low level of awareness, at 25%, can cause a substantial fragmentation in digital culture. Bojang, (2021) found that 59.7% of respondents were unaware of e-government, and 55.1% argued that the government is not making enough efforts to sensitise the public. Another recent study by Cham, (2022) showed that 76.2% were not aware of The Gambia's e-government programs. This indicates a very low level of awareness among citizens and employees, which could torpedo smart government initiatives (Al Mudawi et al., 2020). Some researchers argued that awareness campaigns are prerequisites for the successful implementation of e-government programs, as it had caused e-projects to fail through the experience of countries like Botswana (Samsor, 2020). Confidence or trust (12%) is also found to

pose a considerable challenge to e-government in The Gambia. Odat, (2012) highlighted that trust is a critical aspect of successful e-government implementation, as it determines the readiness of the citizenry to use and engage with it. However, this study has found that, relatively, Gambian citizens are not adequately confident and have little or no trust in e-government services. For instance, Bojang, (2021) revealed that 43.5% of respondents were neutral and 34.8% strongly disagreed regarding the trust in e-government services. Additionally, citizens doubt the reliability and security of the e-government services, as they have been delayed for so long (Bank, 2019). Moreover, citizens hold the view that e-government can reduce corruption and is more error-free and transparent compared to traditional systems Cham, 2(022).

Laws and Legislation

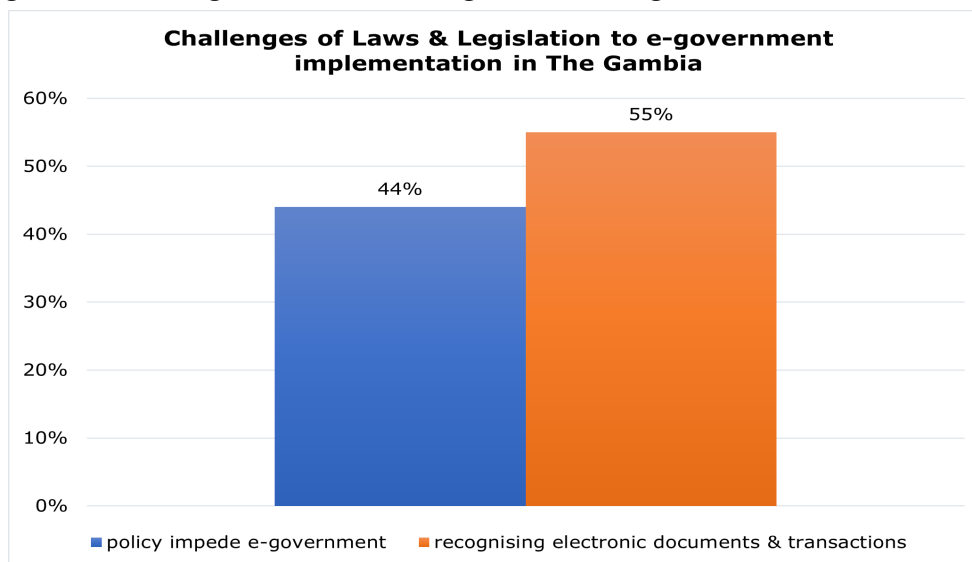
Laws and Legislation were the fourth indicators identified by Odat, (2012). These barriers comprise the lack of supportive policies and regulatory frameworks that would enable the smooth implementation of e-government programs. This section seeks to identify the specific obstacles related to laws and legislation in the context of The Gambia. The study found two parameters under this indicator: recognising electronic

documents and transactions, and policy support rather than impeding e-government.

The researchers used NVivo 15 to analyse

these parameters, as shown in the Figure below.

Figure 6: Challenges of Laws and Legislation of E-government in The Gambia



Source: Processed in NVivo 15 by the authors

Based on Figure 6, policy support, rather than impeding e-government at 55% was found to pose significant challenges to smart government implementation in The Gambia, suggesting there is little policy support in general. It cannot be denied that the government of The Gambia has successfully established several policies to support e-government development and implementation, such as the Government Cloud Policy and National Digital Addressing Policy, etc. After all, it was based on digitally transforming government services, which led to the creation of the Ministry of Communications and Digital Economy (MCDE) in 2021. However, it is highlighted that there is a rigorous need for a

deeper understanding and capacity of ICT among ministries (MCDE, 2023). Additionally, the NGOs and the private sectors have limited methods to contribute to the formation of regulations and policies, and their involvement in policymaking is still unsatisfactory. Presently, there is a national ID card containing all the necessary legal frameworks, but it is not complemented by digital legalities (MCDE, 2023). A study by Cham, (2022) revealed that The Gambia's present approach to e-government needs to be redesigned. The existence of legislation creates confidence and trust in e-government services among citizens and stakeholders.

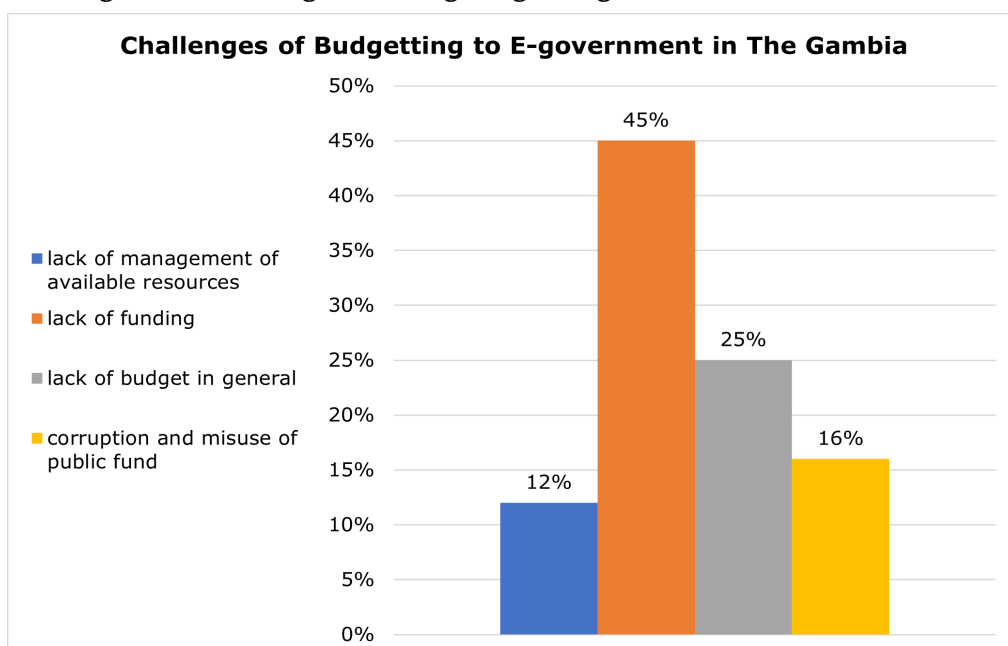
The second parameter, as shown in Figure 6, at 44% is recognising electronic documents and transactions. Odat, (2012) emphasised that successful e-government requires laws and policies that spell out, authenticate, and guide the entire project to ensure a sense of purpose, trust, and confidence. This ensures error-free transactions, particularly between the government and businesses. In the context of The Gambia, a survey conducted by Cham, (2022) 54.8% of respondents agree that e-government is error-free during transactions, which is relatively low to enhance participation, at least in the short term. Additionally, to make e-government recognisable to citizens Cham, (2022) highlighted that the government must be able to prove its values and efficiencies through initiatives and strategic programs over the traditional ways of service delivery.

Moreover, the government, through the NDP, recognised ICTs as an essential factor in good governance and accountability.

Budgeting

According to Odat, (2012), budgeting is the fifth main hurdle developing countries face in their quest to implement e-government. Odat, (2012) emphasised that allocating specific funds to smoothly carry out e-government programs and activities is an essential pillar of support. This indicator consists of four parameters, namely, lack of budget in general, lack of funding, lack of management of available resources, and corruption and misuse of funds. This section focuses on identifying the main challenges of budgeting for e-government in The Gambia. The researchers used NVivo 15 software for analysis, as shown in the Figure below.

Figure 7: Challenges of Budgeting to E-government in The Gambia



Source: Processed in NVivo 15 by the authors

From Figure 7, it was found that lack of funding (45%) and lack of budget in general (25%) posed a huge threat to e-government initiatives in The Gambia. The government is yet to have an independent budget for digital governance. There should be an independent budget for digital government. However, most of the government's budget is allocated to administrative costs (MCDE, 2023). In 2023, the government of The Gambia proposed a \$138,214.73 budget for the fiscal year 2024 to MCDE, while the estimated amount accounts for \$162,998.64, as reported by the Ministry of Finance and Economic Affairs (MFEA, 2023). Moreover, considering the country's state of e-government, where there is a high need for awareness campaigns, adequate training, technical skills among citizens and employees, and application or software maintenance, among others, this budget is not largely sufficient. This insufficient funding has the potential to stagnate interoperability and affect the reliability and sustainability of e-projects (Secka et al., 2023). Additionally, it is reported that a significant portion of implementing most development projects are funded externally (MCDE, 2023). For e-

projects to succeed, there must be independent and adequate funding.

Other challenges to budgeting are corruption and misuse of public funds (16%) and lack of management of available resources (12%). Corruption is identified as one of the greatest threats to societal progress, which is a serious concern in The Gambia. Researchers have revealed that e-government can immensely reduce the chances for corruption, yet governments fail to invest in it as they ought to, particularly in developing countries. For instance, a study by Castro & Lopes, (2022) showed that e-government is a crucial tool in curbing corruption, provided it reaches the threshold of 0.39 per the E-government Development Index (EDI). Although The Gambia is yet to reach that threshold, the citizens are confident about the positive impact as Cham, (2022) indicated that 58.9% concurred that e-government can reduce corruption.

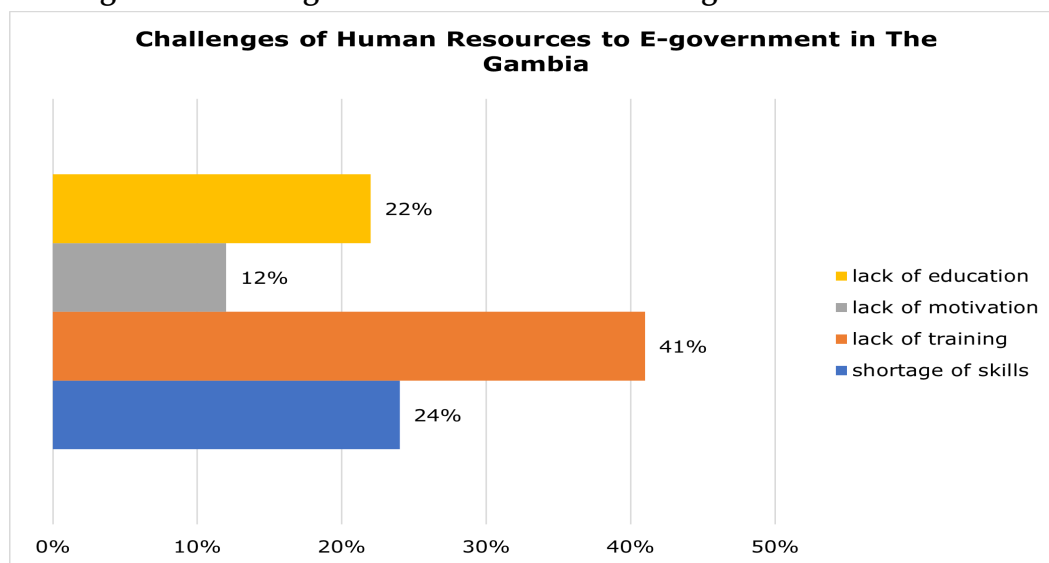
Human Resources

The last indicator is an addition to Odat's "Challenges Framework in E-government Implementation". This addition was made by Meiyanti et al., (2019) and is referred to as Human Resources. Meiyanti et

al., (2019) pinpointed human resources as a critical challenge to e-projects, highlighting the lack of trained personnel and the lack of human resources infrastructure as formidable obstacles. It is important to note that the country's Human Capital Index (HCI) stood at 42.4%, which is below the average in the

Sub-Saharan region (World Bank Group, 2024). The researchers aim to identify the challenges related to human resources in this section. NVivo 15 was used to critically analyse these specific challenges, and the result is shown in the figure below.

Figure 8: Challenges of Human Resources to E-government in The Gambia



Source: Processed in NVivo 15 by the authors

From Figure 8, it was found that the lack of training impedes the effectiveness of e-government initiatives at 41%. This indicates that for an e-project to succeed, there must be human capacity to handle all of its activities. It cannot be denied that some initiatives have been implemented to enhance the digital literacy of government employees, at least at ministerial levels. There are immense skills shortage that could run the digital services in The Gambia. However, there are some staff with low digital literacy, even among the ministries, which ultimately

affects the efficiency and timely delivery of public services (AfDB, 2022). Public sectors like the Gambia Revenue Authority regularly conduct training for its employees, and that is why perhaps it is one of the best-performing institutions (Point, 2024). Ultimately, lack of training leads to a skills shortage, which accounts for 24%. Eleyan et al., (2022) highlighted that the lack of training and the lack of expertise among managers and employees have the potential to affect e-government implementation. Therefore, this underscores the importance of conducting

enough training to meet the skill demand of effective e-government projects.

Education is at the very heart of the development of any kind, including e-government endeavours. Like in many countries, the 1997 constitution of The Gambia, chapter four (4) 30(a) enshrines the right to basic education, which shall be made free, compulsory, and available to all (Gambia Constitution, 1997). Accordingly, the adult literacy rate was 58.67%, of which males rated at 65.31% and females rated at 52.25% (Countryeconomy, 2022). Overall, there has been a notable increase in educational attainment in The Gambia in recent years. From 2022 to 2023, an increase from 3.204% to 11.797% and 0.867% to 6.753% in the education of males and females at 25 years and above, respectively (Bank, 2023a). This gap, even among genders, broadens the digital divide. Factors that affect education include culture, socioeconomic status, and other relevant factors.

Lastly, a lack of motivation at 12% was found to be a significant challenge. People must be made to understand the rewards before they can feel motivated to embark on anything related to e-government. Lack of motivation can lead to the delay of e-government projects and render them less useful. In the context of The Gambia, there is

a significant lack of motivation among critical parties. Lack of incentives in the form of promotion and financial rewards, with unfavourable working conditions, makes staff demotivated to participate actively in e-project-related initiatives. Bojang, (2021), emphasised the significance of bureaucratic and political support, highlighting that the lack of such can lead to low motivation among employees. Thus, poverty, lack of education, lack of training, and lack of technical skills to navigate e-platforms render the population a sense of less importance to e-projects.

Critical Analysis

The challenges of e-government implementation identified in this study- IT infrastructure, managerial issues, digital culture, laws and legislation, budgeting, and human resources are closely dependent on each other, yet each serves as a fundamental pillar. Further, IT infrastructure, digital culture, and budgeting were the most devastating challenges and therefore must be prioritised the most in addressing e-government implementation challenges in The Gambia. Of these three, the digital culture stands out, particularly, the digital gap between the urban and rural areas in awareness, trust, access to the internet and computer devices, etc. Unfortunately, this

applies to nearly all the indicators. It is the foundation as it shapes how individuals, organisations, and society generally want to interact with ICTs and embrace digital transformation. Without influencing the digital culture to a stage where the population is convinced of its benefits and reliability, thereby enhancing their willingness to participate in e-projects actively and ultimately enabling them to navigate e-platforms, successful implementation will be almost impossible. Subsequently, as much as the readiness of the citizen to adapt to digitalised government services, there must be an IT infrastructure hub to accommodate it. This leads to the need for an established budget for e-government initiatives. These are the most important challenges to address in building e-government in The Gambia.

Conclusion

This study revealed that while technological advancements have made e-government systems feasible for service delivery, there remain critical barriers to realising effective e-government in the public sector, especially for developing countries. Examining the case of The Gambia's public sector, this study found several challenges making e-government realisation difficult. First, the poor infrastructural host of e-projects, the inadequate internet penetration,

and the low voltage and erratic power supply are significant issues in The Gambia. Second, management is hampered by the lack of a clear roadmap, weak coordination between departments and agencies, and the workforce resisting change stagnates e-initiatives. Third, the digital culture with little or no IT literacy, preferences for the traditional method of accessing government services, and the concern for privacy and security undermines e-projects. Fourth, there are outdated frameworks, the absence of comprehensive policies, and little or no efforts to enforce the existing policies, creating uncertainty in implementation. Fifth, misallocation or insufficiently prioritised projects, inadequate funding for development and maintenance, and over-reliance on external donors hinder e-government effectiveness. Lastly, inadequate rewards for IT professionals and insufficient training programs create skill shortages, leading to the underutilisation of e-government systems. This study's recommendations include investing in modern IT infrastructure, expanding internet coverage, developing strategic planning, building public trust, redesigning e-government legal frameworks, creating a separate budget for e-projects, and establishing e-government training programs for IT capacity enhancement in The Gambia's public sector. The limitations of

this study lie in its heavy reliance on secondary data, limited data on e-government, financial constraints, and the unavailability of interview participants. Therefore, future studies could try adopting a qualitative or quantitative method, conducting in-depth interviews, making observations, etc., to thoroughly assess the deeper challenges of e-government initiatives in The Gambia.

Acknowledgement

I first want to express my gratitude to Almighty God (Allah) for everything, my family, co-authors, lecturers, staff and the entire community of UMY, particularly the International Program of Government Affairs and Administration at the Faculty of Social and Political Sciences for their valuable support during the preparation of this paper. Lastly, I want to thank the research community for their extensive contribution.

References

- Abdulnabi, S. M. (2024). Issues and challenges of implementing e-governance in developing countries: a comprehensive analysis of civil service models. *Cogent Business and Management*.
<https://doi.org/10.1080/23311975.2024.2340579>
- AfDB. (2022). African Development Bank Group (AfDB). In *Evaluation Systems in Development Co-operation* (Issue May).
<https://doi.org/10.1787/9789264262065>
- 8-en
- Africa, E. C. for. (2024). *Validation of The Gambia ' s National Digital ID and Digital Transformation Strategy*.
- Africa, U. N. E. C. for. (2023). *GAMBIA NATIONAL DIGITAL IDENTITY STRATEGY*.
- Al-Rzoky, H. M. M., Al Mahdi, S. K. A. R., & Al-Samariy, P. H. H. (2019). E-governance applications and usage patterns in developing countries. *Periodicals of Engineering and Natural Sciences*, 7(3), 1308–1317.
<https://doi.org/10.21533/pen.v7i3.719>
- Al-Shboul, M., Rababah, O., Al-Shboul, M., Ghnemat, R., & Al-Saqq, S. (2014). Challenges and Factors Affecting the Implementation of E-Government in Jordan. *Journal of Software Engineering and Applications*, 07(13), 1111–1127.
<https://doi.org/10.4236/jsea.2014.71309>
- 8
- Al Mudawi, N., Beloff, N., & White, M. (2020). Issues and challenges: Cloud computing e-government in developing countries. *International Journal of Advanced Computer Science and Applications*, 11(4), 7–11.
<https://doi.org/10.14569/IJACSA.2020.0110402>
- Apleni, A., & Smuts, H. (2020). An e-Government Implementation Framework: A Developing Country Case Study. In *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*. Springer International Publishing.
https://doi.org/10.1007/978-3-030-45002-1_2
- Bank, W. (2019). *Cybersecurity Capacity Review*.
- Bank, W. (2023a). *Gambia Educational Attainment At Least Bachelor's or Equivalent Population 25+ Years*.
- Bank, W. (2023b). The Gambia World Bank. *Africa Yearbook*, 14(April), 79–84.

- https://doi.org/10.1163/9789004367630_009
- Bojang, M. B. S. (2021). Critical Factors Influencing E-Government Adoption in The Gambia. *Journal of Information Technology Research*. <https://doi.org/10.4018/jitr.2016100103>
- Castro, C., & Lopes, I. C. (2022). E-Government as a Tool in Controlling Corruption. *International Journal of Public Administration*. <https://doi.org/10.1080/01900692.2022.2076695>
- Ceesay, L. B., & Bojang, M. B. S. (2020). Embracing E-Government during the Covid-19 Pandemic and Beyond: Insights from the Gambia. *Global Journal of Management and Business Research: Administration and Management*, 20(13). <https://www.researchgate.net/publication/n/344172538>
- Cham, D. (2022). Exploring the efficacy of e-government models through information systems management-case of The Gambia. *Munich Personal RePEc Archive*.
- 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>
- Commonwealth, T. (2024a). *Commonwealth empowers educators in The Gambia with artificial intelligence training*.
- Commonwealth, T. (2024b). *Commonwealth Secretariat Celebrates Launch of The Gambia 's New Digital Trade and Tourism Platforms*.
- Countryeconomy. (2022). *The Gambia - Literacy rate*.
- Creswell, J. W. (2014). A Mixed-Method Approach. In *Writing Center Talk over Time*. <https://doi.org/10.4324/9780429469237-3>
- Deen, N. (2024). *Information privacy and data protection in e-government services in The Gambia: A human rights perspective*. May.
- Estonia, e-G. A. (eGA) of. (2023). *National Digital Economy Master Plan*. www.ega.ee
- Gambia Constitution. (1997). *Constitution of the Republic of the Gambia*, 1997 Reprinted 2002.
- Gambia, T. E.-G. S. (2024). *E-GOVERNMENT STRATEGY 2021-2024 THE GAMBIA [A Pillar of The Information and Communication Technology for Development Policy Statement 2018-2028] Commissioned By The Ministry of Information and Communication Infrastructure OCTOBER 2020*. 1–149.
- Gharaibeh, Y. I. Z., Alazzam, F. A. F., Salih, J. A., & Aldrou, R. A. K. K. (2023). Examining Challenges and Prospects Associated with Implementing Legal Protections for Electronic Governances: A Generic Perspective from Developing Country. *Brazilian Business Review*. <https://doi.org/10.15728/bbr.2023.1773.en>
- Hazineh, S. A. S., Eleyan, D., & Alkhateeb, M. (2022). E-Government: Limitations And Challenges: A General Framework For To Consider In Both Developed And Developing Countries. *International Journal of Scientific & Technology Research*, 11(January), 1. www.ijstr.org
- Islam, K. M. B., & Okuda, A. (2020). *E-Government: The Case of the Gambia*. June. <https://doi.org/10.2139/ssrn.3641065>
- Jobe, P. S., Yilmaz, M., & Ilgin, H. seyin E. (2024). *A roadmap for a Metaverse-based digital governance : A case of the Gambia*. <https://doi.org/10.1371/journal.pone.0314388>
- Jopang, J., Aryatama, S., Muazzinah, M., Qamal, Q., & Ansar, A. (2024).

- Exploring the Relationship Between E-Government, Transparency, and Citizen Trust in Government Services. *Global International Journal of Innovative Research*, 2(6), 1354–1363. <https://doi.org/10.59613/global.v2i6.206>
- Lin, F., Fofanah, S. S., & Liang, D. (2011). Assessing citizen adoption of e-Government initiatives in Gambia: A validation of the technology acceptance model in information systems success. *Government Information Quarterly*, 28(2), 271–279. <https://doi.org/10.1016/j.giq.2010.09.004>
- Madaki, A. S. ad, Ahmad, K., & Singh, D. (2024). IT integration implementation in e-government public sector in developing countries: a systematic literature review and model development. *Transforming Government: People, Process and Policy*, 18(3), 451–472. <https://doi.org/10.1108/TG-02-2024-0043>
- MCDE. (2023). *DIGITAL READINESS ASSESSMENT REPORT 2023*.
- Meiyanti, R., Utomo, B., Sensuse, D. I., & Wahyuni, R. (2019). *E-Government Challenges in Developing Countries: A Literature Review*. April 2019. <https://doi.org/10.1109/CITSM.2018.8674245>
- Mensah, I. K., Zeng, G., & Mwakapesa, D. S. (2022). Understanding the drivers of the public value of e-government: Validation of a public value e-government adoption model. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.962615>
- MFEA. (2023). *ESTIMATES-OF-REVENUE-AND-EXPENDITURE*.
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative Data Analysis A Methods Sourcebook Edition*.
- Nyeleker, K. P., Rahmawati, D. E., & Yogyakarta, U. M. (2024). *DIGITAL DEMOCRACY IN LIBERIA: The Challenges of Advancing Inclusive and Meaningful Citizen Participation*. <https://doi.org/10.24198/cosmogov.v9i2.45740>
- Odat, A. M. (2012). E-Government in Developing Countries: Framework of Challenges and Opportunities Ahmad Mousa Odat. *Journal of Theoretical and Applied Information Technology*, 31(2), 1013–1021. www.jatit.org
- Oluwashina, A., Olalekan, O., Noah, & David. (2024). An Empirical Analysis of an E-government System for Economic Growth in ECOWAS Countries. *Journal of Social Sciences and Humanities*.
- Omweri, F. S. (2023). *A Systematic Literature Review of E-Government Implementation in Developing Countries*. VII(2454), 1175–1189. <https://doi.org/10.47772/IJRISS>
- Point, T. (2024). *CG Darboe addresses 12th WCO-WCA Meeting of HR Managers*. 1–2.
- S, R. B., & Thimmaiah, N. (2024). *BRIDGING DIGITAL AND GOOD GOVERNANCE: A REVIEW OF E-GOVERNANCE FRAMEWORKS AND*. September, 64–72. <https://doi.org/10.36713/epra2012>
- Samsor, A. M. (2020). Challenges and Prospects of e-Government implementation in Afghanistan. *International Trade, Politics and Development*. <https://doi.org/10.1108/itpd-01-2020-0001>
- Secka, J., Wisniewska, J., & Ismailov, I. (2023). Digitizing Public Institutions on the Example of the National Water and Electricity Company (NAWEC) of Gambia. *European Research Studies Journal*. <https://doi.org/10.35808/ersj/3340>
- UN. (2024). *UN E-Government for The Gambia*.

- United Nations. (2020). E-Government Survey 2020 - Digital Government in the Decade of Action for Sustainable Development. In *United Nations E-Government Surveys*.
- World Bank. (2009). *PUBLIC-PRIVATE*.
- World Bank Group. (2024). *New Report on Human Capital as a Driving Force for Economic Development in The Gambia*. 1–5.