Journal of Governance and Accountability Studies (JGAS)
ISSN 2774-6739, Vol 2, No 1, 2022, 79-92 https://doi.org/10.35912/jgas.v2i1.1157

The role of e-Government in overcoming the consequences of the COVID-19 pandemic in Nigeria

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Article History
Received on 6 June 2022
1st Revision on 17 June 2022
2nd Revision on 2 July 2022
3rd Revision on 5 July 2022
Accepted on 7 July 2022

Abstract
Purpose: The article aims at identifying the challenges of e-government amid the COVID-19 pandemic in Nigeria and proffered recommendations to arrest the identified challenges. This paper also examined e-Governance in selected countries such as the United States of America, the United Kingdom, and Canada and how it has fared including Nigeria revealing its implications for Nigeria as a developing nation.
Research Methodology: The article adopts a review study approach in analyzing the subject.
Results: Some of the challenges identified by the study include but are not limited to inadequate technical know-how and ICT skills to drive and sustain e-government. Recommendations from the study include, the Ministry of Communications Technology and Digital Economy to build a backbone that will connect all States of the country and the upskilling of the workforce through the Ministry of Labour and Employment amongst others.
Limitations: Insufficient quantitative data based on the subject under discourse
Contributions: Identified possible areas that the Nigerian government could look into to improve e-government in order to promote inclusivity, awareness, and most importantly reduce the cost of governance.
Keywords: COVID-19, Digital Solutions, e-Governance, ICT
How to cite: Ukwuoma, H. C., Elisha, N. C., & Oye, P. O. (2022). The role of e-Government in overcoming the consequences of the COVID-19 pandemic in Nigeria. *Journal of Governance and Accountability Studies*, 2(1), 79-92.

1. Introduction

The coronavirus pandemic which recorded its first case in Wuhan, China, in December 2019 has caused havoc on the world economy (Maqsood et al, 2021). United States, Spain, United Kingdom are some of the countries which have been most hit by the virus (WHO, 2022). The Spanish flu of 1918, killed about 50-100 million persons but the Coronavirus has killed over 6.06 million persons in the world (WHO, 2022).

The physical and social distancing health precautions recommended by WHO have necessitated the reduction in the number of gatherings in most countries, with the legislative and executive arms of governments relying on virtual/digital means of communication (Kooli, 2022). For example, Emmanuel Macron, the President of France had a series of meetings with his cabinet members via teleconferencing and the European Union President during the Coronavirus pandemic in 2020. Boris Johnson, the current

Prime Minister of the United Kingdom (UK) also used the teleconferencing medium to address the people of the UK and her parliament on issues affecting the nation as the number of COVID patients/deaths increased in the same year of 2020. In Nigeria, President Muhammadu Buhari had a series of Federal Executive Council meetings via video conferencing in 2020.

The COVID-19 pandemic has necessitated libraries all over the world to use cyberspace more than ever to publicize information about COVID-19 and also as a means to meet the needs of library users. The banking sector has relied on cyberspace to carry out most of its services, ensuring that most of its customers either used mobile banking apps, Internet Banking platforms, and the Automated Teller Machine (ATM), so as to fully observe the social and physical distancing criteria suggested by World Health Organisation (WHO). In the education sector, institutions (Primary, Secondary, and Tertiary) have encouraged students to use the eLearning platform where it exists and video conferencing applications to teach/supervise students (Helmi et al., 2021). The Federal Civil Service of Nigeria also advised workers to work from home using the internet. The COVID-19 pandemic necessitated the need for public and private institutions to embrace digital means of communication, but the question remains, to what level is e-governance practiced in Nigeria, and how secured are the e-governance platforms?

In 2011, the Nigerian State created a Ministry of Digital Economy and Communication for the achievement of having a digital economy in Nigeria. Every nation that has a digital economy relies on the broadband penetration in that country and the level of ICT literacy of such nation. Nigerians currently have over 122 million Internet users and 33.13 percent broadband penetration (NCC, 2019). To achieve a digital economy, Nigeria needs a very high rate of broadband penetration and internet users, that way, it will be easy to communicate digitally with her citizens. E-governance which is part of the digital economy has been said to be more than a government website in cyberspace (Basu, 2004).

E-governance is also known as the use of Information and Communication Technology (ICT) to improve citizens' access to and delivery of government services (Deloitte and Touche, 2000). The aim of e-governance is to simplify governance for government representatives, businesses and citizens, thus stimulating and promoting good governance, implying that economic, political, and administration of government affairs are managed effectively. E-governance encourages lesser corruption, increased transparency, improved transparency, and a reduction in the cost of governance.

The current COVID 19 ravaging the world and Nigeria inclusive has informed the Federal Government of Nigeria on the need to embrace the notion of digital economy viz-a-viz e-governance. The COVID 19 pandemic has exposed the country's (Nigeria) ineffectiveness in times of crises management in most sectors of the economy, tertiary intuitions do not have e-Learning tools hence the partial shutdown of that sector, and the health sector does not have supportive Artificial Intelligence (Kooli& Muftah, 2022) driven gadget (drones and robots) to assist in reducing the pressure on the health workers which led to the over-stretching of the health workers and an increased number of coronavirus patients (Kooli, 2021).

With the COVID-19 pandemic forcing States to embrace digital technologies, e-governance is pivotal to the management of the pandemic in terms of dissemination of information to the public, provision of consistent information on national and global COVID-19 developments, the use of digital means to communicate with all arms of government and also the intra- communication of MDAs within a State. Additionally, consistent information from national governments assists her citizens in making informed decisions on their daily routines, promotes public trust, and enables the policy arm of government to make decisions on how best to flatten the curve during pandemics. Amid the coronavirus pandemic, out of the 193-member states of the United Nation, 167 countries had governments providing information on COVID-19 on social media platforms, mobile apps, and national portals (UN, 2020), which implies the adoption and application of e-governance. E-governance is achievable based on the investment made in the ICTs for a country, the Nigerian State has invested little in the ICT sector of the country which also yielded very minimal results to its rank of 76 (GCI, 2020). This has affected the capability of the Nigerian Government to manage the COVID-19 pandemic which has resulted in an uncoordinated structure in managing the pandemic.

The paper intends to investigate how e-government has fared in nations amid the COVID-19 pandemic with Nigeria in perspective, identifying the challenges, its implication, and proffered recommendations to arrest these challenges.

Conceptual framework

UNESCO (2011) upholds e-governance as the government's use of ICTs with the goal of improving information and service delivery, reassuring citizens of participation in the decision-making processes, thus resulting in government accountability, transparency, and effectiveness. According to Basu (2004), e-government is defined as the application of information and communication technology to enhance the free flow of information in order to overcome the physical constraints of traditional paper-based systems. For the purpose of this article, the definition by UNESCO will be adopted.

Theoretical framework

The paper proposes and adopts two theories, which include the Technology Acceptance Model (TAM) and the Theory of Planned Behavior (TPB). TAM is generally applied for the evaluation of how people make decisions regarding new technology adoption and is an appropriate model for addressing consumer acceptance of various technologies (Koul and Eydgahi, 2017). Additionally, TAM and TAB are adequate when research focuses on the potential adoption of emerging technology.

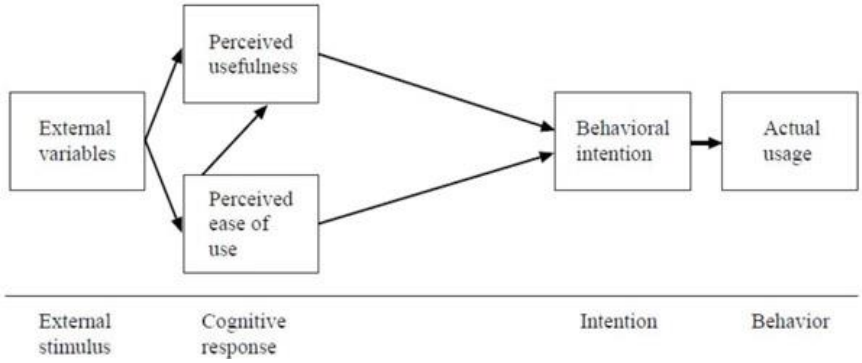

Figure 1. Technology Acceptance Model
Source: Koul and Eydgahi (2017)

Theory of Planned Behaviour, TPB, focuses essentially on envisaging organized human behavior and includes the concept of perceived behavioral control. The knowledge domain has presented abundant proof that TPB has a superior capability of forecasting behavioral purpose by including the observed behavioral control construct (Montano and Kasprzyk, 2015).

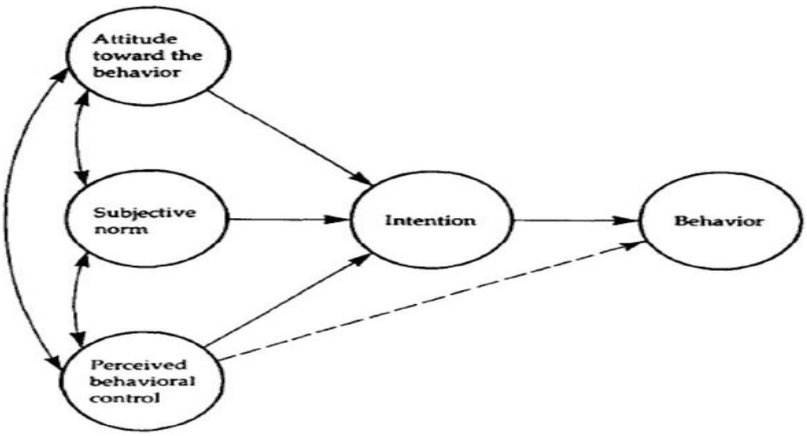

Figure 2. Theory of Planned Behaviour Model
Source: Koul and Eydgahi (2017)

2. Literature review

Malik et al., (2014) highlight the goal and potential of ICTs in promoting good governance programs for developing countries. The authors also stated that e-governance benefits the citizens through enhanced efficiency and effectiveness. They also posited that e-governance promotes government processes, connects citizens, and builds external interactions. However, they established major challenges facing developing nations to include electronic readiness, which includes preparing the six standard pre-conditions for e-governance and the issue of closing design which entails applying best practices in governance tasks in order to achieve success and avoid failure. Additionally, the authors discussed factors of good governance with respect to India.

Burlacuet al. (2019), suggests that information sourced from the knowledge domain indicates that employees resist all forms of organizational change which usually results in its failure and can be attributed to personal fears of employees towards a change in comfortable social dynamics and undesirable or additional difficult tasks, the authors added that the rapid increase of new technologies could lead to worries of employees about the job stability. Their study focused on human resource development derived from the e-government view. Furthermore, the study established that there are significant disparities in both the size of human resources and their renewal due to birth, migration, retirement age, adaptation, and flexibility of work environments. However, in the globalization period, the common denominator that today's countries share can be represented by the incredible proliferation of computer and communication technologies in practically all domains.

Singh and Sahu (2018), present a classification-based literature evaluation in the area of e-governance. Findings from their study revealed that a large volume of e-governance research has been conducted in a variety of sectors. The authors adopted a classification method that yielded five distinct e-government sub-areas. They include awareness, literacy level, acceptability of users, Legal, and Digitalization.

Aljarallah and Lock (2020), researched Sustainable e-Government in Saudi Arabia, stating that literature in the area was scarce. The author employed a survey method for data gathering with the aim to identify the attributes of sustainable e-government and the ability of policymakers to design and apply sustainable e-governments systems. Findings from the study revealed that perceived attributes include security, usability, flexibility, performance, and transparency. It further revealed the good working relationship between software developers and government agencies in applying sustainable e-government.

The literature reviewed suggests that Nigeria is yet to fully adopt e-government and subsequently adopt models of sustainable e-government.

3. Methodology

The article adopts a review study approach on e-governance for selected countries. Data was sourced from secondary sources mainly through the internet, books, and journals. The operation of e-governance was discussed in some selected countries amid the covid 19 pandemic and the Nigeria scenario was also discussed.

4. Discussion

E-Governance in selected countries

E-governance is widely practiced in developed and developing countries and has enhanced accountability, transparency, and reduction in the cost of governance. Countries such as the USA, UK, Germany, China, Japan, etc. that practice e-governance were able to manage the coronavirus pandemic and were also able to access their citizens without much difficulty, this helped in the reduction of the spread of the virus and dissemination of accurate and reliable information to its citizens. Although, the United Nations (2016), methodology towards achieving e-governance has three objectives, which comprise the promotion of public institutions through enhanced efficiency, accountability, and transparency, the provision of primary services with enhanced information access to the poor and

vulnerable; and encouraging citizen participation most especially the youth, women and the poor in the processes of decision and policy-making. E-government is defined as the ability of the government to use web-based technologies and applications or e-services, to promote the accessibility and delivery of government services. It is also perceived as a means to provide information to the government's citizens, businesses, residents, government, and other entities (Layne and Lee, 2001).

There have been global shifts towards increased deployment of ICTs by governments since the nineties, especially with the advent of the World Wide Web (www). E-governance is often used synonymously with e-government, meaning electronic governance (Marshe and McNiven, 2003). Dawes (2009) avers that e-governance encompasses the usage of ICTs to promote public services, administration of government, democratic processes, and interactions among citizens, civil society, and the private sector. This invariably implies that e-governance refers to technology-mediated services, that is, the use of ICTs in executing government and its services. The greatest advantage of e-governance is that it has brought the improved quality of government services in terms of efficient and effective service delivery, including probity, accountability, transparency, and inclusiveness.

Oakley (2002), buttressed the preceding assertion by claiming that e-governance is a technology-driven service that facilitates transformation in the association between citizens and government. Other authors including recognized international agencies also concur with the above notions of e-governance. The UNPAN, (2011) stressed that e-governance is the application of ICTs for the communication between government, citizens, and business; and also, in internal operations of government to shorten and improve democratic governance. Similarly, UNESCO (2011) upholds e-governance as the government's use of ICTs with the goal of improving information and service delivery, reassuring citizens of participation in the decision-making processes, thus resulting in government accountability, transparency, and effectiveness.

From all indications, the above definitions allude to the fact that e-governance is the use of ICTs for an improvement in delivering government services. Such services according to Saugata and Masud, (2007) include the exchange of information, communication transactions, integration of numerous standalone systems between government-to-business (G2B), government-to-government (G2G), government-to-employees (G2E), as well as back-office processes and interactions within the entire government framework". This suggests that the primary goal of e-governance is to make procedures easier for everyone, including government, residents, enterprises, and other stakeholders at the national, state, and local levels. The following subsection presents the practice of e-governance in a few nations:

E-governance in the United Kingdom

In the UK, there exist an e-government division in the Cabinet Office in charge of the overall coordination and implementation of e-government. The mission is to ensure that Information Technology supports the government's business transformation so as to bring about better and more reliable public services (Bennett, 2009). The divisions' functions include: formulating policies and IT strategies; developing IT components for use across government; promoting standard practices across government; delivering online citizen-centered services. According to the National Audit Office (NOA), evaluation of the growth of the management of IT projects across the public sector are the benefits of electronic-driven service delivery. The main departments of the Cabinet have well-established websites.

However, several obstacles, such as the lack of a system for calculating the financial costs and advantages of online services, make e-governance in the UK difficult to implement. There is no common database of website usage statistics; such information would be useful in determining what works – and what doesn't – for citizens accessing online government services. The UK government must prioritize increasing the use of electronic services as part of its e-government goal.

The UK government has an e-government strategic plan that spanned for six years. The strategy is aimed to provide more public services that were tailored to the requirements of citizens. The flagship digital service was identified as Directgov. According to a command paper produced by the UK

transformative government, IT-enabled services must be developed around the citizen or business, not the provider. It also advocated for a shift to a shared-service culture, unleashing efficiencies in IT provision, and improving the government's IT function's professionalism. The e-Government Unit, which was later made part of the Cabinet Office's Delivery and Transformation Group, established a methodology for achieving service transformation,' complete with yearly reporting and monitoring. (Bennett, 2009) Concerns about the acquisition and use of personal data by government entities have grown in recent years. The National DNA Database is the focus of most concerns, however, these concerns apply to all personal data stored by the government.

The COVID-19 pandemic brought along a need for the UK government to fully rely on the governance structure to run the country. Borris Johnson, the prime Minister of the United Kingdom, on various occasions used e-platform such as Zoom and Twitter to relate vital information to the inhabitants of the United Kingdom, and further encouraged government officials to use digital means for communication. More so, directed schools at all levels to use digital platforms for tutoring referred to as eLearning. This enabled schools not to break sessions and enhanced electronic communications and the continuation of governance amid the coronavirus pandemic. These achievements are anchored on Prime Minister Tony Blair who thought it wise to establish the e-Government Unit in 2004 to assist various government establishments to use IT to promote the effectiveness of digital access to services of government. Additionally, in 2017, the UK's Department of Digital, Culture, Media, and Sports announced the UK digital strategy which was aimed to develop a digital economy although, this strategy was aligned with the transformation strategy of the UK. The growth of digital transformation in the UK was achieved based on the UK's Digital Infrastructure that was able to drive the actualization of e-Governance (Digital Government Fact Sheet, 2019).

E-governance in the United States of America

The United States of America was one of the first nations in the world that introduced and implemented e-government by taking initial steps to reform the public administration system through the application of modern technologies in the early 1990s. Today, the US is a global powerhouse in the sphere of ICTs and continues to be the leading nation in e-governance. Twenty years later, a unique program initiative dubbed "Technology for America's Economic Growth, a New Direction to Build Economic Strength" was born out of the idea of regulating the use of information technologies in many domains of government administration. The aim of the initiative was to achieve the following objectives: long-term economic growth that would provide the basis for creating new jobs and help protect the environment; creating a government that would be more effective and responsive to the needs of the people and ensuring the nation's further world leadership in applied sciences, mathematics and technology development.

One of the expected gains of the policy initiative is to create an atmosphere where competition and even entrepreneurial spirit within federal government agencies exist, the main goal was to establish an ideal principle for the revolution of traditional large government organizations. In this regard, related successful mechanisms of many large business organizations that had been developed and comprehensively tested in the corporate world were taken as an interesting model to follow. As a result, many bureaucratic procedures were significantly reduced within many federal government agencies and departments (Kassen, 2015). Public officials were also granted some decision-making autonomy, even at the lowest levels of government. In addition, the public administration reforms took place at several levels of governance; however, it was the federal agencies that experienced the greatest changes through the introduction of new information technologies. In this regard, any innovative ideas that could potentially help to achieve the goal were welcomed by the officials at all levels. Additionally, the new idea to create a favorable atmosphere for a specific public-private partnership was proposed in order to solve many challenges of the federal government through the use of new technologies, particularly in the development of e-commerce and e-procurement. The private sector was given a significant role in this regard. Many innovative ideas to reform public administration were very ambitious at that time but often unfeasible to implement as the subsequent practice showed later. As a result, the initial sense of euphoria among policymakers was quickly replaced by a realization that the development of information technology does not always correspond to current reality, and that it is necessary to

judiciously assess innovation capabilities in order to improve government by judiciously utilizing the existing potential for growth and improvement in public sector reforms. Close collaboration with the corporate world of big business has helped to popularize and improve the concept of e-government, It could help cut the cost of establishing the necessary communication and computer systems, as well as methods to assure information security in government agencies, by a significant amount.

Bach & Kolins (2011), for example, said that using technology that had previously been launched and widely used in many large private companies, they were able to gain a lot of expertise in developing autonomous electronic document control systems and telecommunication corporations. In addition, as a result of the efforts to decrease the cost of governance, the outsourcing of public services to the private sector became really widespread across many federal agencies (Bach & Kollins, 2011) while further decentralization of public administration was regarded as a public value.

Regarding electronic services and information security, the analysis of the American model of the e-government realization allows noting such a unique feature as the provision of business services on a fee basis. In this case, they used the mechanism that had long been practiced in the field of e-commerce. However, the transaction costs are much lower than traditional e-commerce services. Payments are made through special electronic cards, debit or credit cards, or online banking systems. The interactions with public authorities via email or social media, distribution of information services, various online political debates and interviews, development of interactive boards, etc. can be mentioned as the most popular types of transactions carried out between citizens and e-government portals in the United States.

After September 11, 2001, the e-government concept was redefined as another mechanism to fight corruption and terrorism. Any citizen can anonymously contact through various e-government portals the relevant authorities with information on suspected criminals. Strengthening of interactive communication between citizens and the state, though e-government has raised some questions of security of transmissions and storage of confidential information and personal data. Therefore, more money is invested in developing new ways to protect information. Moreover, this aspect of e-government becomes more and more important, considering the fact that the rapid development of information technology makes it easy to centrally compile and query different databases containing sometimes confidential or proprietary information. Without the provision of information security systems in this area, such information may fall into the hands of criminals. This is probably one of the most notorious technological challenges of the electronic age, which many large corporations and governments constantly face today worldwide in their daily activities.

The United States, regarded as one of the countries most hit by the coronavirus requested most of its workers excluding those on essential services to work from home using ICT, in addition, directed all schools to adopt digital means of communication and government using digital means for communication to reduce the face-to-face contact and the spread of the virus. This further, generated to an increased number of cyber threats and cyberattacks mot especially on financial institutions (Ukwuoma, 2020). Although, with the existing structure of ICT in the State, it was easier for people for the digital platform to operate/govern.

E-governance in Canada

Many e-government implementation models emphasize technology solutions and policy implementation, and they frequently employ linear development stages. Scholars suggest that e-government is evolutionary in nature and that as a result, e-government initiatives should be developed and implemented in stages. Through this approach, Canada's acceptance of 'New Public Management' is an administrative method based on the assumption that public-sector management will improve to the extent that private-sector management principles are adopted. Networked technologies are advocated as remedies to existing policy problems and public sector reforms utilizing this strategy, which often focuses on marketing solutions and business-driven design models.

As a result of this goal, e-government models emerge that use networked technology to promote the internal restructuring of service delivery and information management, with little regard for democratic

opportunities or bridging the digital divide. The federal government has established an extensive information infrastructure by integrating numerous integrated service delivery projects across jurisdictions to give complete information online, establishing itself as Canada's digital government policy leader. The Canadian Government On-Line (GOL) agenda aims to provide front-end seamless service to Canadians, including better horizontal integration to improve harmonization and organizational integration across the federal government. In layman's words, the Canadian government's principal policy goal is to use ICTs to deliver public services through a single interface (the front end) and to improve data collecting, storage, integration, and sharing among governments, departments, the business sector, and non-profit organizations (the back end). To avert a total economic shutdown during the coronavirus pandemic, the Canadian government used all sorts of technology to manage the country. As the rate of infection rose, the government encouraged schools, libraries, and other public service agencies to use digital technology.

The COVID-19 Pandemic

Since cases were first reported in China in December of 2019, the COVID-19 epidemic has escalated. Globally, around 499 million COVID-19 cases caused by severe acute respiratory syndrome coronavirus 2 (SARS-COV-2) infection have been reported, with over 6.18 million deaths. More than 180 nations, including Nigeria, have recorded cases (WHO, 2022). Infections can affect people of all ages, but the risk of severe COVID-19 disease is higher in people over 60, those in nursing homes or long-term care facilities, and those with chronic medical issues.

Cancer, kidney disease, obesity, sickle-cell disease, transplant recipients, and other immunocompromising disorders can all increase the chance of severe COVID-19 (WHO, 2022). SARS-COV-2 is transmitted largely by respiratory secretions and contact with contaminated surfaces through droplets. Coughs and sneezes should be covered and kept at a distance of six feet from others to reduce the risk of transmission. When regular separation isn't achievable, face coverings can help prevent infectious droplets from spreading to others. Hand washing on a regular basis might also help to reduce acquisition. COVID-19 has an incubation period of up to 14 days after exposure, with a median incubation period of 4 to 5 days (NCDC, 2020). The severity and alarming levels of spread have prompted the WHO to declare the coronavirus outbreak a pandemic (Baburajan, 2021). The global epidemiological situation reveals that in the recent past, cases of COVID-19 have continued to surge in China (WHO, 2022)

Out of 4,977,858 samples analyzed, Nigeria has 255,633 confirmed cases, 2,671 active cases, 249,820 discharged cases, and 3,142 deaths as of April 13, 2022. (NCDC, 2022). To avoid an exponential growth in the number of confirmed cases, the NCDC is working hard with other authorities and partners. The COVID-19 pandemic has changed the status quo by affecting the global economy, with far-reaching implications that Nigeria is not immune to. The COVID-19 pandemic has impacted "global travel firms, national healthcare systems, food industry, events industry, education, and global trade" (Ozili, 2020).

The pandemic impacted Nigeria's banking industry in the sense that it affected borrowers' ability to service their loans, reducing banks' stability, which resulted in a drop in oil price from $60 per barrel to $30 per barrel as of March 2020 (Jefferson, 2021). This had a detrimental impact on Nigeria's foreign exchange reserves. As a result, pharmaceutical supplies, spare parts, and finished goods were in limited supply in Nigeria. The country's budget was further affected because the initial budget was based on an oil price of US$57 per barrel. The budget became obsolete when the price of oil fell to $30 per barrel during the epidemic, and a new budget was created to reflect the low price of oil.

Investors withdrew their money from the stock market, causing it to plummet. Only three weeks after the first incidence of coronavirus was diagnosed and publicized in Nigeria on January 28, 2020, stock market investors lost almost N2.3 trillion (US$59 billion). All of these variables, as well as structural ones such as poor public health infrastructure, a weak and underdeveloped digital economy, and a lack of social welfare programs, contributed to Nigeria's economic crisis during the epidemic (Ozili, 2020).

In terms of education, COVID-19 has wreaked untold damage on Nigeria's educational system. Pupils and students missed out on learning opportunities since schools were closed. The impact of the COVID-19 pandemic on the country's security situation might be disastrous, thereby further weakening an already frail social fabric and, as a result, undoing advances gained in strengthening foundations for peace and stability (Kums, 2020).

The novel coronavirus disease (COVID-19) has spread over the world, posing a serious health hazard with several consequences, including security. With a population of 200 million people, Nigeria will require good leadership to deal with the hard reality of COVID-19's aftermath in terms of socio-economic aspects, particularly security.

Global e-Government Ranking

According to UN, (2020), in its report titled "United Nations-Government Survey 2020", it was revealed that its (e-government Digital Index, EGDI) carried out its ranking based on three parameters which include Online Service Index (OSI), Telecommunications Infrastructure Index (TII) and Human Capacity Index (HCI). The survey established that many countries are buying in into digital government strategies by deploying e-government through a platform, incorporating offline and online multipath delivery, application of data-centric approaches in delivering people-centric services, and the application of blockchain and Artificial intelligence technologies. The report further revealed that e-government renders digital services directly to the people in the most remote of areas, with a key role in the fortification of digital literacy, digital inclusion, digital connectivity, and digital identity.

The advent of the global COVID-19 pandemic has strengthened the role of e-government in our countries. In an effort to achieve inclusivity, persons living with disabilities, women, migrants, and children have benefited from the digital government in the year 2020. More so, it was established that in a bid to achieve transparency and accountability, governments now use digital platforms for recruitment and procurement. More so, some of the countries that had the highest ranking are included; Denmark which was rated the highest then, the Republic of Korea, Estonia, and Finland amongst others.

Denmark prevailed as the best country with an e-government development plan both in Europe and in the world with increasing indicators of HCI, TII, and OSI. This can simply be translated as that the Government of Denmark has invested in technology, human capital, and infrastructure. More so, inhabitants of the country have also embraced digitalization as a way of promoting accountability, inclusivity, and transparency in governance. The Republic of Korea is also dominant in Asia and the United States of America best in North America with improved indices compared to the year 2018.

It is evident from the indices presented above that there is a strong relationship between EGDI ranking and the level of income for a country and finances, political will, and strategic leadership are key factors in e-government development.

Table 1. Ranking of Countries for top performers in e-government development plan 2020

Country	Rating class	Region	OSI value	HCI value	TII value	EGDI Value (2020)	EGDI Value (2018)
Denmark	VH	Europe	0.9706	0.9588	0.9979	0.9758	0.9150
Republic of Korea	VH	Asia	1.0000	0.8997	0.9684	0.9560	0.9010
Estonia	VH	Europe	0.9941	0.9266	0.9212	0.9473	0.8486
Finland	VH	Europe	0.9706	0.9549	0.9101	0.9452	0.8815
Australia	VH	Oceania	0.9471	1.0000	0.8825	0.9432	0.9053
Sweden	VH	Europe	0.9000	0.9471	0.9625	0.9365	0.8882
United Kingdom of Great Britain	VH	Europe	0.9588	0.9292	0.9195	0.9358	0.8999

and Northern Ireland							
New Zealand	VH	Oceania	0.9294	0.9516	0.9207	0.9339	0.8806
United States of America	VH	America	0.9471	0.9239	0.9182	0.9297	0.8769
Netherlands	VH	Europe	0.9059	0.9349	0.9276	0.9228	0.8757
Singapore	VH	Asia	0.9647	0.8904	0.8899	0.9150	0.8812
Iceland	VH	Europe	0.7941	0.9525	0.9838	0.9101	0.8316
Norway	VH	Europe	0.8765	0.9392	0.9034	0.9064	0.8557
Japan	VH	Asia	0.9059	0.8684	0.9223	0.8989	0.8783

In Africa, Mauritius (East Africa) clinched the best in e-government, this can be attributed to the investments in ICT infrastructure, human capital development, and improved collaboration with more advanced tech nations for achieving improved e-government. Additionally, in West Africa, Nigeria clinched the best country in e-government, with improving indices in online services, telecommunication infrastructure, and human capital. Though not convincing, based on the investments made and the political portrayed towards achieving improved e-government.

Table 2. Africa's e-Government Development Index (EGDI)

Rank	Country	Sub-Region	EGDI	Online Service Index	Telecommunications Infrastructure Index	Human Capital Index
63	Mauritius	Eastern Africa	0.7196	0.7	0.6677	0.7911
76	Seychelles	Eastern Africa	0.692	0.6176	0.6925	0.766
78	South Africa	Southern Africa	0.6891	0.7471	0.5832	0.7371
91	Tunisia	Northern Africa	0.6526	0.6235	0.6369	0.6974
104	Namibia	Southern Africa	0.5747	0.5235	0.5447	0.6558
106	Morocco	Northern Africa	0.5729	0.5235	0.58	0.6152
126	Zimbabwe	Eastern Africa	0.5019	0.5235	0.3688	0.6135
130	Rwanda	Eastern Africa	0.4789	0.6176	0.2931	0.5261
137	Uganda	Eastern Africa	0.4499	0.5824	0.2278	0.5395
141	Nigeria	Western Africa	0.4406	0.5176	0.3534	0.4507
147	Togo	Western Africa	0.4302	0.5	0.2532	0.5373
148	Zambia	Eastern Africa	0.4242	0.2588	0.3394	0.6745
150	Senegal	Western Africa	0.421	0.4941	0.4358	0.3332
152	United Republic of Tanzania	Eastern Africa	0.4206	0.5529	0.243	0.4659
155	Sao Tome and Principe	Middle Africa	0.4074	0.2471	0.3015	0.6736
163	Mozambique	Eastern Africa	0.3564	0.5176	0.1293	0.4222
165	Malawi	Eastern Africa	0.348	0.4235	0.1394	0.4812
170	Sudan	Northern Africa	0.3154	0.3059	0.2844	0.3559
171	Mali	Western Africa	0.3097	0.3471	0.3546	0.2274
174	Sierra Leone	Western	0.2931	0.3059	0.259	0.3144

		Africa				
176	Mauritania	Western Africa	0.282	0.1	0.3886	0.3575
188	Niger	Western Africa	0.1661	0.2941	0.0737	0.1304
191	Somalia	Eastern Africa	0.1293	0.2941	0.0939	0
193	South Sudan	Eastern Africa	0.0875	0	0.0652	0.1973

However, Africa has struggled to penetrate the top performers in the ranking, due to a lack of human capital development and infrastructure. Although Nigeria ranked 141 in the survey, this could be attributed to poor human capital development and infrastructure to drive e-government. The present state of ICT infrastructure in Nigeria also affected the way the Nigerian government managed the covid-19 pandemic, which resulted in a high rate of poverty and contributed to the high rate of inflation currently experienced in the country.

E-governance in the face of COVID-19

COVID-19 is posing unprecedented issues to many of our countries; the burden on the Nigerian government is immense, and the impact on individuals all over the world is growing (Open Government Partnership, 2020). The fundamental causes of the virus's spread are numerous, interconnected, and complex. However, if we are to learn from this experience about how to improve governance, we must first take a step back to identify the various causes that are preventing the epidemic from being contained (Camargo, 2020). In a major effort to speed up a slow-moving bureaucracy and help with a smooth reopening of its economy in the post-COVID-19 era, the government of Greece has announced plans to rapidly expand its digital services in 2020. Greece is forecast to suffer the worst recession in the European Union (EU) as a result of the impact of COVID-19, mostly due to the reliance of its economy on tourism, a market that has been devastated by the travel restrictions placed on people everywhere as a way of slowing the spread of the virus.

The primary governance issue in our current circumstance with the ongoing COVID-19 pandemic is convincing people to deviate from their typical habits in the service of public health goals. They are sometimes even requested to refrain from participating in activities that provide them with daily nutrition. To say the least, it's a tall order. This emphasizes the necessity of evaluating the strengths and limitations of various governance models that are being put to the test by leaders as they face incredibly tough choices in containing the coronavirus's spread. On the one side, there is the Chinese government's governance approach to dealing with the outbreak. It appears to have succeeded in slowing the spread of the virus for the time being, but it is certainly problematic from a human rights standpoint. Democracies in Europe and elsewhere, on the other hand, face significant difficulty in attempting to control an emergency situation using all available measures while safeguarding democratic rights and freedoms.

Implications of e-Governance in Nigeria

Many developing countries, like Nigeria, are recognizing the need for e-governance, which is aimed at providing residents and businesses with customer-focused, cost-effective, and easy-to-use services while also improving government operations. Nigeria is persuaded that enhancing e-governance is necessary to offer value to both the public and commercial sectors.

The Federal Government of Nigeria (FGN) implemented a policy framework known as the Government-Wide Information System (GWIS) at all levels of government to improve governance (national, state, and local). The goal is to increase citizen involvement in decision-making and improve citizen-government engagement while maintaining transparency and accountability.

The digitalization of important tasks in the public sector, such as the usage of the Bank Verification Number (BVN), Treasury Single Account (TSA), and the Integrated Payroll and Personnel Information System (IPPIS), has allowed the government to save money while fighting corruption. Nigeria is well-

positioned to protect lives and property thanks to the Subscribers Identification Module (SIM) card registration policy and the National Identification Number (NIN) project. The National Information Technology Development Agency (NITDA) initiative to improve the efficiency and efficacy of government procurement processes have saved the government about 16.8 billion nairas.

The Nigerian e-government master plan, which was recently introduced, is projected to further solidify e-governance successes by increasing interoperability among government ministries, departments, and agencies. The creation of a Digital Transformation Technical Working Group, which will work with the Ministry of Communications and Digital Economy to enable seamless and coordinated execution of projects, programs, and policies, is a crucial need of the e-government master plan.

Nigeria's e-governance has gotten a boost since the Ministry of Communications Technology and Digital Economy was established in 2011. Its goal is to help Nigeria create a Knowledge-Based Economy (KBE) and an Informational Society, with a focus on leveraging digital technology for natural economic development. The Ministry was also established to enable the use of ICT as a vital element in Nigeria's Transformation Agenda in the areas of job creation, economic growth, and governance transparency. The ministry's mission statement emphasized e-governance in the following way: "to promote universal, omnipresent, and cost-effective access to communications infrastructure throughout the country." Encourage the use of ICT in all aspects of life to improve communications infrastructure—digital content creation, home software applications, and Internet delivery of private and public services. Increase the contribution of the ICT industry to GDP through promoting and facilitating its development. Use ICT to increase government transparency and improve the quality and efficiency of public service delivery in Nigeria.

5. Conclusion

This paper has revealed the Nigerian Government needs to do more towards achieving a digital Nigeria. While e-government promotes an easier way of running a government, it also promotes inclusivity, transparency, and accountability. The Nigerian government also needs to collaborate with advanced tech nations for her to be able to adapt skills from these nations. Additionally, develop a short-term, medium-term, and long-term plan for improving e-government. As regards sustainability, the government also needs to invest heavily in science, technology, engineering, and mathematics both in-country and out-country training to come up with capable hands that can manage and improve the e-government project.

The article set out to explore e-government and how it assisted in managing COVID-19. The paper established the concept of e-Government and how it assisted in managing COVID 19 in countries such as the UK, USA, and China. More so, the paper analyses the e-Government cum COVID 19 pandemic with emphasis on Nigeria revealing its implications and proffering recommendations on how best to improve the existing structure. This paper achieved the above-mentioned objectives.

Recommendations

The recommendations for Nigeria include but are not limited to:

1) The Ministry of Communications Technology and Digital Economy to build a backbone that will connect all States of the country.
2) The upskilling of the workforce through the Ministry of Labour and Employment
3) Data availability, data confidentiality, and data integrity are to be guaranteed through the provision of adequate controls to promote e-Governance.
4) Cybersecurity features to be improved to guarantee the safety of users of the e-Governance platform cum government information.

Limitations and future study

In an attempt to dissect the Nigeria scenario on e-governance, it was observed from the knowledge domain that limited works have been carried out on the subject. This posed a challenge, which can be attributed to Nigeria‘s government's attempt to fully adopt the concept of e-government. In the future,

it is expected that there would be sufficient indices for measuring the sustainability of e-governance for nations, thus an area of future research.

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