

An Assessment of Ghana's global E-government UN ranking

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ABSTRACT

E-Government (Electronic government) can be defined as the use of information and communication technologies to enable citizens and businesses to interact and conduct business with government agencies via different electronic media such as telephone touch pad, fax, smart cards, self-service kiosks, e-mail / the Internet, and Electronic Data Interchange.

E-government is now being adopted by many countries and governments around the world including the Sub-Saharan country of Ghana in West Africa to provide services between government agencies and citizens, businesses, employees and other nongovernmental agencies. A leading African economic think tank expects Ghana to have economic growth of 8.7 percent in 2017, the fastest of 54 countries ranked on the continent. Ghana initiated its e-government strategy in the year 2005 and is the fastest growing telecommunications, Information, and Communications Technology (ICT) market in Africa. Despite this significant progress, Ghana is still being ranked relatively low in e-government provision to its citizen by the UN.

The objective of this paper is to assess Ghana's global e-government ranking, review the objectives and procedures that were applied by the UN in the ranking, review Ghana's performance in global e-government surveys, review some causes of the low e-service delivery ranking, and recommend solutions to improving future rankings.

Keywords: E-government, information and communications technology (ICT), ranking, Ghana.

INTRODUCTION

Government service offices are the locations of government agencies, departments, or other branches of government for the administration of any of the various services for the benefit of the citizenry, businesses, and other government agencies.

Although there is no universally agreed definition of E-government, it could be defined in different ways based on the different perspectives they represent. E-government (Electronic government) can be defined as the “use of information and communication technologies (ICTs) to enable citizens and businesses to interact and conduct business with government agencies via different electronic media such as telephone touch pad, fax, smart cards, self-service kiosks, e-mail / Internet, and Electronic Data Interchange (EDI) (Almarabeh and AbuAli, 2010: 30). As a result, e-government can be seen as “the administration, rules, regulations, and frameworks organized by a government for the delivery of services and to communicate, coordinate and integrate processes within itself “(Almarabeh and AbuAli, 2010).

With the growth of ICTs, governments worldwide, including developed and developing countries, have increasingly adopted ICTs to deliver cost effective and efficient public services to stakeholders. The majority of developing countries have been initiating E-Government strategies and projects typically with support from donor organizations such as the World Bank or bilateral donor organizations (Schuppan, 2009).

The literature shows that many governments have come to realize the benefits of e-government and how its utilization could improve service delivery to its citizenry (OECD, 2003). Service delivery refers to level and quality, capacity, service continuity, availability, general management and financial management. Service delivery generally describes the method and the degree at which customer requirements are satisfied. Bringing citizens and businesses closer to their governments is one of the most important features of e-government.

Ghana is a developing country in Africa with Accra as the capital and largest city. A leading African economic think tank expects Ghana to have economic growth of 8.7 percent in 2017, the fastest of 54 countries ranked on the continent (WestAfricawire, 2016). According to Frempong (2012), Ghana is also among the fastest growing telecommunications and ICT market in Africa.

Ghana has, therefore, come to realize the fact that with the growing economy, it is an imperative to continue to integrate ICTs with its development strategy and therefore, has implemented technology aimed at enhancing the growth of her economy.

The Government realized the need to participate in the race to becoming a digital society and the role of ICT in empowering the citizens in 2003. As a result, the government designed the Ghana ICT for Accelerated Development (ICT4AD) policy and was approved by parliament in 2004. The ICT4AD Policy (Ghana ICT4AD, 2003), symbolizes the vision of Ghana in the information age. It is based on the framework document: “An Integrated ICT-led Socio-economic Development Policy and Plan Development Framework for Ghana”. The development of this policy was based on a nation-wide consultative process involving all key stakeholders in the public sector, private sector and civil society of Ghana (Ghana ICT4AD, 2003).

In July 2006, a \$40 Million loan was approved by the World Bank for the Government of Ghana through the Ministry of Communications, with the objective of assisting the Ghana to generate growth and employment by leveraging Information and Communications Technology (ICT) and public-private partnerships to; 1. Develop the IT Enabled Services industry, and 2.

Contribute to improved efficiency and transparency of selected government functions through e-government applications (NITA, Ghana. 2017). The entire project consisted of four components and was completed by the end of December 2014.

Ghana currently has 23 ministries (www.ghana.gov.gh). Each ministry has agencies and departments that carry out various functions in 10 administrative regions. Each region has a metropolitan, municipal and district administrations. There are 216 administrative districts in Ghana (www.ghana.gov.gh).

Over the decade, Ghana has increasingly used internet technologies to provide various public services to her citizenry. Despite all these developments and progress, Ghana is still ranked relatively low in e-government provision to its citizen in Africa (UN survey, 2016).

Low productive capacity and structural challenges, such as lack of ICT infrastructure and limited access to technologies and related know-how, continue to challenge e-government advancement in the LDCs and Ghana in particular (United Nations, 2011).

The primary objective of this paper is to assess Ghana's global e-government ranking, review the concept of e-government and to examine the United Nations (UN) model of e-government implementation used for the ranking of the 193 UN member nations in its global e-government surveys. Furthermore, it examines the basis and methodology applied by the UN global surveys.

The remainder of this paper is organized as follows. First, a brief overview of e-government and models are presented. Second, a literature review of related research is presented. Third, the research methodology is presented. In the fourth section, the UN e-government survey indicators are reviewed. The fifth part is data analysis and discussions. Finally, the summary, findings, and recommendations conclude the research.

A BRIEF E-GOVERNMENT OVERVIEW

Various definitions of e-government exist but resulting with the same meaning and focus. One such definition is "the use of technology to enhance the access to and delivery of government services to citizens, business partners and employees" (Silcock, 2001). E-government can also be defined as the "use of information and communication technologies (ICTs) to offer citizens and businesses the opportunity to interact and conduct business with government by using different electronic media such as telephone touch pad, fax, smart cards, self-service kiosks, e-mail / Internet, and EDI" (Almarabeh and AbuAli, 2010: 30).

The three main domains of e-government are as indicated in Figure 1(Appendix) (Ntiro, S., 2000). 1. Improving government processes: e-Administration, 2. Connecting citizens: e-Citizens and e-Services, and 3. Building external interactions: e-Society.

E-Administration is a part of e-Government which deals with internal administration within the government as opposed to citizens and businesses. The European Commission (2007) defines e-administration as the application of ICTs to support back-office administrative tasks. Sánchez (2006) stated that e-administration is the application of communication technology to support the flow of information within or outside the public authority. According to Heeks (2010), e-Administration covers G2G relation to improve administrative processes in the hierarchical organization.

E-Citizen is an electronic service delivery system for the participation of the citizen in decision-making . It enables swift and user-friendly on-line access to the bodies falling within the Government's area of administration. It allows the applicant to follow the progress of

application processing; to receive responses electronically in a centralized fashion; to take part in public consultations and surveys, and to submit petitions. Citizens may participate in public consultations and opinion surveys initiated by the Government. Upon completion of a public consultation or survey, the public may verify the results from the portal as to whether or not citizens' suggestions had any impact on the specific decisions taken (E.Citizen, 2015).

e-Society consists of one or more e-Communities involving the areas from e-Government, e-Democracy, e-Commerce, E-Networking to e-Learning and e-Health, that use ICT to achieve common interests and goals (Wikipedia 2016).

E-Governments Models

E-government is not a one-step process but it is rather evolutionary and comprising of multiple stages of implementation (Jayashree and Marthandan, 2010). Various models have been developed to describe the stages of e-government implementation. Some of these models have overlapping stages, and others differ.

Models are usually identified as either three, four or five stages in e-government development. Some of the confirmed and reliable models include: the World Bank's three stage model (Jayashree and Marthandan, 2010), the Gartner's four stage model (Baum and Di Maio, 2000), Layne and Lee's four-stage model (Layne and Lee, 2001), United Nation's five stage model (UNASPA, 2001) and the Jayashree and Marthandan's five stage Model (Jayashree and Marthandan, 2010). The UN's model adopted in various e-government reports (UN e-government survey, 2012, 2014, and 2016).

The e-government development stages are (Adeyemo, 2011):

Stage 1 - Emerging presence: Here, a government makes its online presence with an official website which includes links to ministries or departments. Information is majorly inactive and there is little or no interaction with citizens.

Stage 2 - Enhanced presence: Governments provide more information on public policy and governance and make them easily accessible to citizens. Links are made to record information such as newsletters, documents, reports, laws etc.

Stage 3 - Interactive presence: Governments provide online services like downloadable forms for applications and an interactive portal with services to ease their use by citizens

Stage 4 - Transactional presence: This stage enables a two-way contact between 'citizen and government'. It includes options for paying taxes, applying for ID cards or passports and other functions similar to G2C interactions.

Stage 5 - Networked (or fully integrated) presence: This is the most sophisticated level of e-government implementation. It integrates all e-government service dimensions Government to Government (G2G), Government to Citizens (G2C) and Government to Business (G2B). At this stage, government, through technology, becomes proactive in connecting with and answering citizens' needs.

E-government Delivery Models

Government identifies and drives implementation of eight types of E-government delivery models which may result in significant benefits to the Government, citizens, business, employees and other nonprofit organizations and political and social organizations. E-

Government types are summarized and classified into eight categories, are as follows (Fang, 2002), and (Sindue, 2013):

1. Government to Citizens (G2C) provides the momentum for placing public services online through the electronic service delivery for offering information and communications to the citizens.
2. Government to Businesses (G2B) drives E-transactions initiatives such as e-procurement and the development of an electronic marketplace for government purchases, and to carry out Government procurement tenders through electronic means for exchange of information and commodities;
3. Government to Employees (G2E) embarks on initiatives that will facilitate the management of the civil service and internal communication with governmental employees in order to make e-career applications and processing system paperless in E-office.
4. Government to Governments (G2G) provides the Government's departments or agencies cooperation and communication online base on a mega database of government to impact efficiency and effectiveness. It also includes the internal exchange of information and commodities.
5. Citizens to Governments (C2G) describes as digital interactions between a citizen and his or her government .
6. Nonprofit-to-Government (N2G) is the exchange of information and communication between government and nonprofit organizations, political parties and social organizations, Legislature, etc.
7. Government-to-Nonprofit (G2N). Here, government provides information and communication to nonprofit organizations, political parties, and social organizations, Legislature, etc.
8. Business -to-Government (B2G) is a model that actively drives E-transactions initiatives such as e-procurement and the development of an electronic marketplace for government purchases; and carry out government procurement tenders through electronic means for sale of goods and services.

This digital interaction consists of governance, ICT, business process re-engineering (BPR), and e-citizen at all levels of government (city, state/regional, national, and international).

A Brief Profile of Electronic-Government in Ghana

The Ghanaian government recognized the potential of ICT to empower citizens especially youths, women and disableds, and the need to participate in the race to becoming a digitized society. To this end, ICT was declared a national priority, resulting in the formulation of a policy for Information Technology in 2001.

The growth of technological trends in Africa remains relatively slow and uneven across the continent (United Nations, 2014). The Ghanaian Ministry of Communication's mission is to develop projects that facilitate effective and transparent policy by integrating communication technologies and government information (Ghana NICH, 2000), and like many other African countries has implemented various policies and projects with the goal of advancing e-government. Ghana initiated its e-government project in 2005 and launched officially launched the Eastern Corridor fiber optic project to support the e-government network.

The Ghana Government, in collaboration with the Danish International Development Agency (DANIDA) and Alcatel-Lucent, facilitated the development of a fiber-optic backbone infrastructure on the country's Eastern Corridor to support the deployment of the national e-Government Network (Biztech Africa, 2012).

Ghana launched her official government web portal in 2012 for the dissemination of information and provision of online services, which includes Government-to-Citizens (G2C), Government-to-Business (G2B), and Government-to-Government (G2G).

Evidence from recent United Nations (UN) survey shows that the growth of technological trends in Africa is relatively slow and uneven across the continent (United Nations, 2016).

The UN E-Government Survey is produced every two years by the UN Department of Economic and Social Affairs. It is the only global report that assesses the e-government development status of the 193 UN Member States. It serves as a tool for decision-makers to identify their areas of strength and challenges in e-government and to guide e-government policies and strategies. Ghana occupies the 120th position out of the 193 countries surveyed.

The UN e-government 2016 evaluation measures how well ICT is used to reform and develop the public sector in the states, by enhancing efficiency, effectiveness, transparency, accountability and accessibility to public services. It also measures the participation of the populations in each member country of the UN, in all developmental levels.

In Ghana, the commitment of past governments resulted in the improvement and development of ICT and telecommunication infrastructure. In their survey, the United Nations (2016) groups countries into four categories: Very High e-government development (index > 0.75), High e-government development (index of 0.5–0.75), Middle e-government development (index of 0.25–0.5) and Low e-government development (index < 0.25). Ghana is categorized as having middle e-government development with an index of 0.42 below several African countries.

Ghana has performed well on the E-government Development Index (EGDI) for 2016. Ghana improved on her ranking from 123 in 2014 to 120 in 2016 (UN, 2016). The nation previously ranked 123 in 2014, 145 in 2012, 147 in 2010, and 138 in 2008 (UN, 2016). The dramatic jump in rankings indicates some level of improvement in the performance of Ghana on the EGDI. Ghana launched her official government web portal in 2012 for the dissemination of information and provision of online services, which includes Government-to-Citizens (G2C), Government-to-Business (G2B), and Government-to-Government (G2G).

It is important to note that this index is below the world's benchmark index of 0.4922 (UN e-government survey, 2016). The benefit of implementing e-government in a developing country such as Ghana include among others, improved efficiency, convenient and faster access to government services, increased transparency, accountability of government functionaries, reduced costs of administrative services, and improved democracy (Kamar and Ongo'ndo, 2007). Ghana is, however, far from achieving these practices.

LITERATURE REVIEW

With the increased growth of ICTs worldwide, governments in the developing countries are employing eGovernment as an instrument for improving communication, increasing efficiency for the delivery of services, and to improve transparency and accountability. Several types of research with reference to E-Government implementation in Africa have been discussed and presented in the literature. Some discussed the challenges of E-Government implementation

or elaborated on the reasons for failure in E-Government implementation. Others addressed the effective implementation of E-Government various countries to enhance information and service delivery. This section of the paper reviews related studies of E-Government applications in Ghana.

Asorwoe and Yankson (2015) examined the readiness of Government of Ghana websites towards the implementation of e-government in public sector institutions on the five-stage e-government model. They discovered that the public administration in Ghana is at the lower stages of the e-government model (interactive presence – stage III).

Oni, A., Okunoye, A., and Mbarika (2016) examined the extent to which the current status of e-government implementation in Nigeria conforms to the national IT policy. They examined how government institutions at the state level have responded to the National IT policy strategy to use technology to bring government closer to the people, promote transparency, accountability and strengthen democracy. The research further evaluated the provisions on state governments' portal websites towards achieving the e-government objectives. Suggestions were proffered to enhance the achievement of e-government objectives in Nigeria.

In his paper, Mensah (2016) examined the empirical evidence of government of Ghana's adoption and implementation of e-government and its usage within the ministries, Departments and its agencies as well as in other public services to the general public.

By utilizing the local government system in Ghana and relevant literature, Torgby and Asabere (2014) outlined and addressed the cultural and different institutional contexts which are taken into account when implementing E-Government in Ghana. The research further discussed some key research challenges and open issues involving E-Government implementation in Ghana.

A study of the e-government key ICT indicators was conducted by Isaac Mensah Mensah, I. K. (2016b). The study presented the key ICT indicators and their role in assisting nations worldwide on how to formulate and strategize their e-government policies. It further identified poor infrastructure as the leading cause of e-government development failure.

RESEARCH METHODOLOGY

This section describes the method of information gathering for this paper. The study was prepared from secondary sources of data from government policy documents, national and international published reports, national and international published reports, journal articles, and online resources. Primary data were obtained from the 2016 UN E-government survey. The study adopted a basic qualitative approach.

UN E-GOVERNMENT SURVEY INDICATORS

There is a growing recognition worldwide that effective public sector governance requires the use of ICT in making the functioning of government more efficient and in improving the delivery of government services for organizations and individuals.

In order to measure and compare the incidence of e-government, a set of feasible, relevant and comparable indicators is required. Such indicators are useful inputs to the formulation of policies and strategies for effective government (UNECA, 2014).

For the assessment of e-government, individual indicators and composite indices have been developed by international organizations, academic establishments, and individual

countries. The scope of interest includes single countries, regions and global measurement. Some studies assess the use of ICT alone; others measure customer services through services offered through government websites. The latter ranges from simple services to more sophisticated issues of privacy and electronic voting.

Methodologies range from country-level surveys of government organizations to highly complex web-based surveys. The most comprehensive example of the latter is the United Nations e-Government Survey, which covers all of the United Nations Member States and is carried out by the Division for Public Administration and Development Management of DESA (UNECA, 2014).

UN E-Government Development Index (EGDI)

Biennially, the United Nations Department of Economic and Social Affairs (UNDESA) through its Division of Public Administration and Development Management (DPADM) publishes the UN E-Government Survey. The Survey delivers the relative rankings of e-government development of all Member States of the United Nations (Knoema, 2014).

The ranking of the performance of countries on a relative scale in the Survey provides relevant information to support policy-makers in shaping their e-government programs for development. As a composite indicator, the EGDI measures the willingness and capacities of national administrations to utilize ICTs deliver public services. This index is useful for government officials, policy makers, researchers and representatives of civil society and the private sector to obtain a deeper understanding of the comparative benchmarking of the relative position of a country in utilizing e-government for the delivery of inclusive, accountable and citizen-centric services.

The EGDI is constructed from an assessment of experts who survey the online presence the 193 United Nations Member States. It assesses national websites and the application of e-government policies and strategies in general and in specific sectors of government for delivery of essential services. It rates the e-government performance of countries relative to each other rather than being an absolute measurement.

The EGDI is a weighted average of normalized scores on the three most important dimensions of e-government, which are 1. Scope and quality of online services (Online Service Index, OSI), 2. Status of the development of telecommunication infrastructure (Telecommunication Infrastructure Index, TII) and 3. Inherent human capital (Human Capital Index, HCI). Each of these sets of indices is in itself a composite measure that can be extracted and analyzed independently (UN 2016).

A description of the parameters that make up the index as presented in the UN e-government survey (2016) is presented here.

Human Capital Index The data for the Human Capital Index relies on the UNDP 'education index' which is a composite of the adult literacy rate and the combined primary, secondary and tertiary gross enrollment ratio with two third weight given to adult literacy and one third to gross enrollment ratio.

The Telecommunications Infrastructure Index is a composite weighted average index of six primary measures of a country's ICT infrastructure capacity. These are: PCs/1000 persons; Internet users/1000 persons; Telephone Lines/1000 persons; online population; Mobile phones/1000 persons; and TV's/1000 persons.

The Online Service Index (OSI) assesses the national online presence and service delivery level of all 193 United Nations Member States. It is basically the use of digital technologies such as the Internet, mobile phones, and all the other tools to collect, store, analyze, and share information digitally.

E-Participation Index (EPI)

While e-participation is still an evolving concept, there is vast evidence that e-participation technologies expand opportunities for civic engagement, including increased possibilities for people to participate in decision-making processes and service delivery to make societies more inclusive. It helps connect “citizens with one another and with their elected representatives” (UN 2016; Macintosh, 2006). E-participation can be defined “as the process of engaging citizens through ICTs in policy, decision-making, and service design and delivery in order to make it participatory, inclusive, and deliberative” (UNDESA, 2013).

The 2016 Survey of E-Participation Index (EPI) measures e-participation according to a three-level model of participation that includes: (i) e-information – provision of information on the Internet, (ii) e-consultation – organizing public consultations online, and (iii) e-decision-making – involving citizens directly in decision processes. The Survey assesses the availability of e-participation tools on national government portals for each of the above uses (UN 2016).

DAT ANALYSIS AND DISCUSSION

This section presents an analysis of Ghana’s scores on UN E-government indicators of the past several years and comparison to other top African countries.

The United Nations started assessing the global e-government development through the initiative “Benchmarking E-government: Assessing the United Nations Member States” in 2001. In the course of fifteen years, there has been increasing evidence through public policy formulation and implementation that e-government, among others, has played an effective enabling role in advancing national development worldwide. Over this period, the United Nations E-Government Survey has gained widespread acceptance as a global authoritative measure of how public administrations provide electronic and mobile public services. The biennial edition of the United Nations E-Government Survey aims to exemplify successful e-government strategies, pioneering practices with a view towards administrative reform and sustainable development (UN 2014).

The survey indicates that a sharp rise has been noted in the number of countries that are using e-government to provide public services online through one-stop-platform – an approach that makes it easier to access public services. More countries are implementing e-government to ensure that public institutions are more inclusive, effective, accountable and transparent (UN Survey, 2016).

The UN e-Government Survey 2016 underscores that one of the most important new trends is the advancement of people-driven services that reflect people’s needs and are driven by them. At the same time, disparities remain within and among countries. Lack of access to technology, poverty, and inequality prevent people from fully taking advantage of the potential of ICTs and e-government for sustainable development (UN Survey, 2016).

E-Government adoption and implementation are not without challenges. Ghana and other developed and developing countries continue to face challenges. Poor ICT infrastructure has

been identified as a major challenge in implementing in e-government initiatives in Ghana. Next are human resources, legal structure, internet access and connectivity, language, illiteracy, awareness and the digital divide. For Ghana, the challenges could be categorized into six main factors; financial, organizational, political, socioeconomic, human and infrastructural factors (Mensah, 2016a).

However, the benefits of e-government implementation in a developing country like Ghana cannot be overemphasized. They include among others, improved efficiency, cost effectiveness in administrative services, a convenient and better access to government services, more transparency, government accountability, and improved democracy (Kamar and Ongo'ndo, 2007).

E-government Indicators (Ghana)

As indicated in Table1 (Appendix), the data for the combined E-government UN survey indicators for Ghana from 2003 to 2016 are displayed. The table displays Ghana's performance for each indicator over from 2003 to 2016. The graphical display for each indicator is discussed in the paragraphs that follow.

The E-participation index for Ghana for the years 2003 through 2016 is as indicated in Figure 2(Appendix). Overall, it shows a steady growth in e-participation over the last decade. The participation index is 0.46 for 2016. The country was also ranked 98 in the e-Participation index which is an improvement of 70 points up from 168 in 2012. It is the second best performance behind Cape Verde in the West African region.

The 2016 E-government development ranking for Ghana showed an upward improvement by 25 points. As indicated in Figure 3 (Appendix), Ghana rose from 145 in 2014 to 120 in 2016 out of 193 countries rated in the UN Global e-government Development Index for 2016. The nation previously ranked 147 in 2010, 138 in 2008, 133 in 2005, and 143 in 2004 (UN, 2014). The dramatic rise of Ghana in the 2016 ranking is impressive and could be an indication that progress is being made in the efforts of the Government through the Ministry of Communication Technology to enable it to promote e-governance.

Ghana has performed well on the E-government Development Index (EGDI) for 2016. Ghana improved from 0.374 in 2014 to an EGDI of 0.42 in 2016 (UN, 2016). The rankings indicate some level of improvement in the performance of Ghana on the EGDI. The EDGI index growth from 2003 to 2016 is as indicated in Figure 4 (Appendix).

The Online Service Index for Ghana from 2003 to 2016 is as indicated in Figure 5 (Appendix). The graph indicates a steady but dramatic improvement over the years. The index jumped from 0.315 in 2014 to 0.45 in 2016 which is close to the global average of 0.4623. Ghana is ranked 98 globally in the 2016 UN survey.

As indicated in Figure 6 (Appendix), Ghana's Telecommunication Infrastructure Index score in 2016 is 0.26 compared to the global average of 0.3711. It shows a dramatic improvement from 0.111 in 2012 to 0.26 in 2016. Although this score relatively, the graph shows a remarkable increase over the last decade when the index was as low as 0.021. Ghana is ranked 114 in 2016. The index although improving, hampers the ability of governments to implement e-government programs and e-services as well as the adoption of any online services by citizens, even if available.

As indicated in Figure 7 (Appendix), it is clear that Ghana's Human Capital Index has been declining over the years from the highest point of 0.65 in 2005 to 0.55 in 2016. The global

average is currently 0.6433. Ghana ranked 135 globally in Human Capital Index in 2016 but is ranked second best to Mauritius in Sub-Saharan Africa. Although the data used for computing these metrics are from International agencies, they show that the government needs to increase its efforts in developing education to improve the index. This is the only area among all indicators that is not showing improvement but rather declining over the years.

Comparative e-readiness

The e-readiness profile of the top eleven nations in Africa based on the UN e-Government surveys from 2003 to 2016 is as indicated in Table 2 (Appendix). The ranking shows that country of Mauritius has the highest e-readiness score on the list, with Ghana appearing as the least ready in 2016.

As indicated in Table 3 (Appendix), is the Top Eleven EGDI Index ranking in Africa with Ghana at the bottom of the list. Ghana ranks second to Cape Verde in West Africa.

SUMMARY, FINDINGS, AND RECOMMENDATIONS

The research presented an assessment of Ghana's global e-government rankings over the years from the UN surveys. It reviewed the concept of e-government and examined the United Nations (UN) model of e-government implementation used for the ranking of the 193 UN member nations in its global e-government surveys.

Judging from the indicators and rankings, Ghana has improved her basic online presence, in most cases restricted to providing a limited amount of information and links online; however, there is progress in moving to the more advanced stages of e-government development, including the provision of e-services, e-participation, and open government data.

While there is progress in Ghana regarding e-participation activities, more resources, technologies, capacities, and robust national policies encouraging the use of public engagement e-tools would be needed to accelerate progress (UN 2016).

Even though infrastructure has been identified as the major bottleneck for e-government development in a developing nation like Ghana, governments should not lose sight of the importance of investing in people through education and ICT-literacy programs, as well as enhancing their online presence by providing improved online services.

Without significant changes the nation's e-government development, the distance of e-government development between her and the rest of the world will increase further. As Ghana continues to face multiple severe socio-economic challenges, apparently e-government may not top the list of the national development agenda. Without sufficient investment in infrastructure and long-term e-government planning, Ghana will lose out on the crucial benefits of e-government in making public administrations more cost-effective, efficient, citizen-centric, transparent and accountable, which play a key role in poverty elimination and promoting sustainable development.

The Government of Ghana must integrate e-government into her broader policy goals, service delivery objectives, and broader public engagement with citizens, and activities related to the information society. Information is a substantial component of public administration and the need for e-government for the promotion of democratic values and effective public services cannot be overlooked.

Along with developing ICT infrastructure, it is important to improve access to knowledge and technologies and build the related capacities in the nation. This was recognized in the Addis Ababa Action Agenda (UN DESA, 2015c) and in the Istanbul Declaration and the Program of Action for the Least Developed Countries for the Decade 2011-2020. The technology facilitation mechanism launched at the September summit on the 2030 Agenda can make an important contribution in this regard.

It is crucial for the country to take necessary measures to establish mid and long-term e-government strategies and to improve her infrastructure. The full support of the international community through partnerships and knowledge sharing would be beneficial in this endeavor.

Besides effective planning and deployment of e-services, Ghana may consider enhancing raising the level of human capital, including improvement of the ICT literacy of citizens, to make use of the new technologies so as to realize the full benefits of online and mobile services. This should go hand in hand with the capacity development of leadership in e-government and public servants as facilitators of online public services.

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APPENDIX

Figure1: Focal Domains for e-Government Initiatives

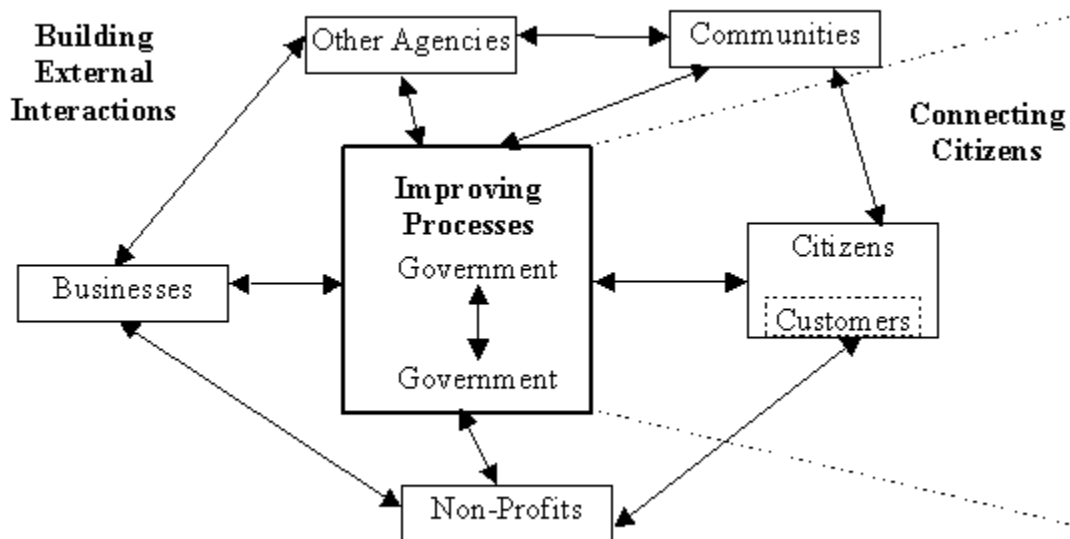


Figure 2. E-Participation Index

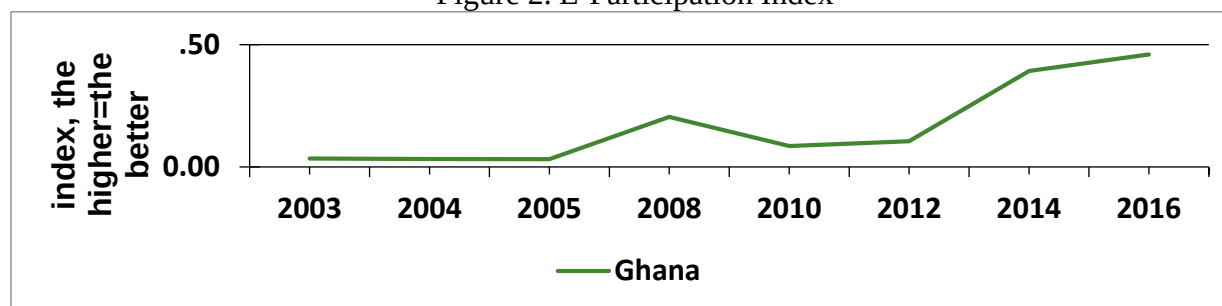


Figure 3. UN E-Government Rankings

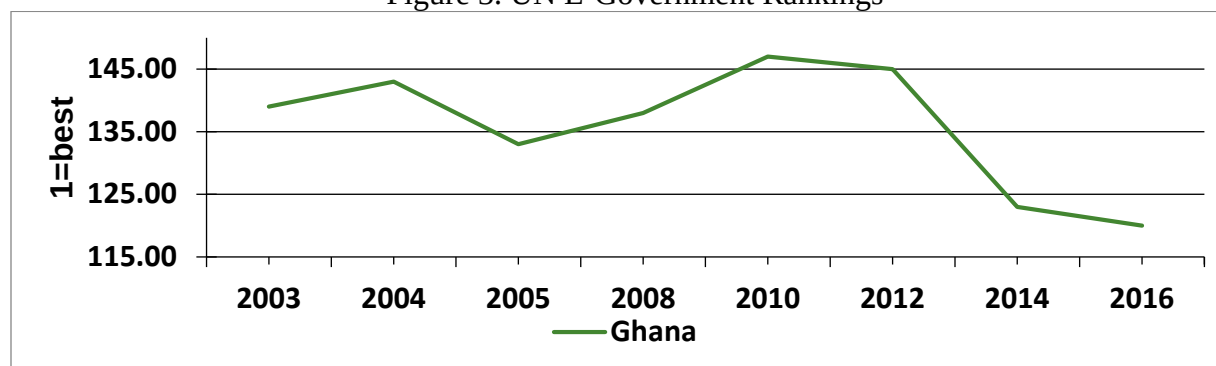


Figure 4. E-Government Index

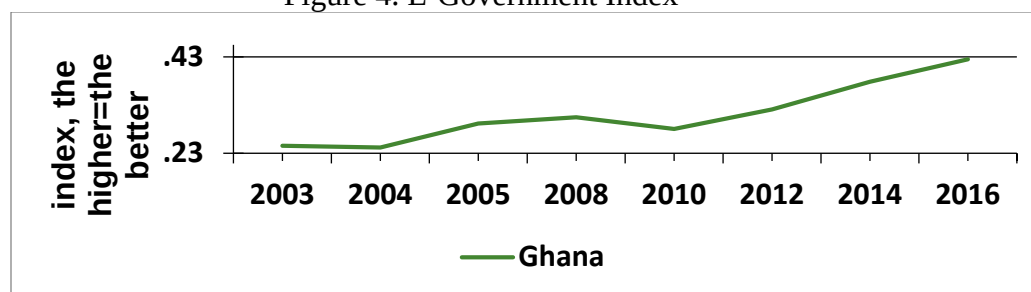


Figure 5. Online Service Index

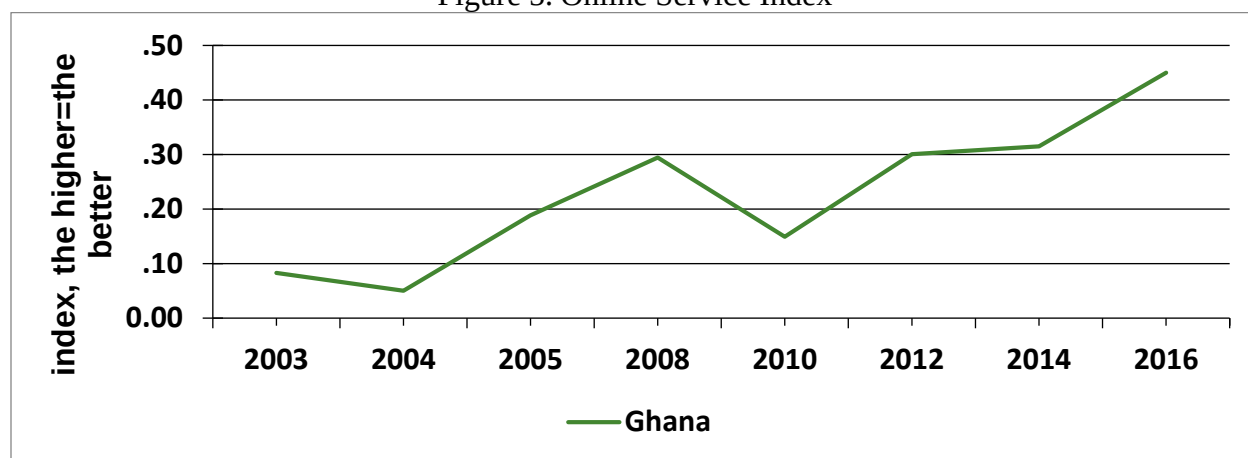


Figure 6. Telecommunication Infrastructure Index

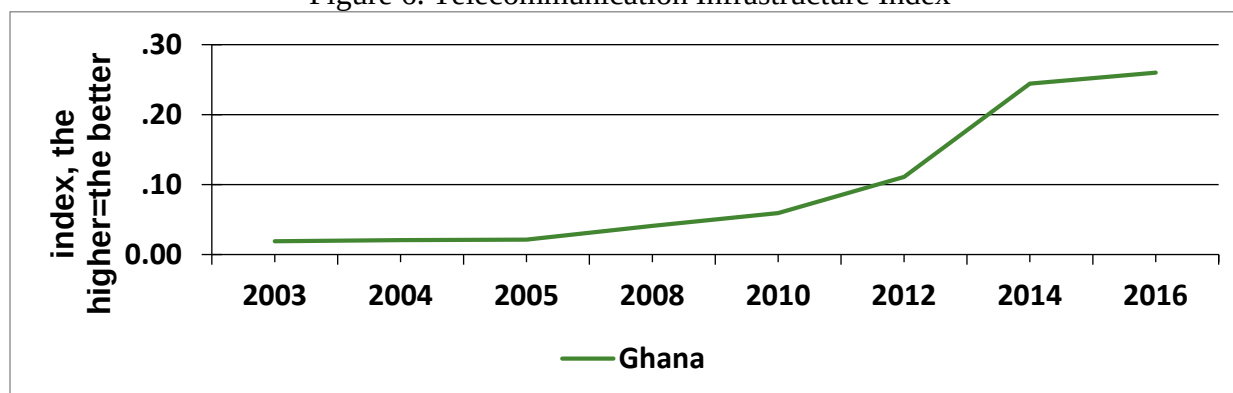


Figure 7. Human Capital Index

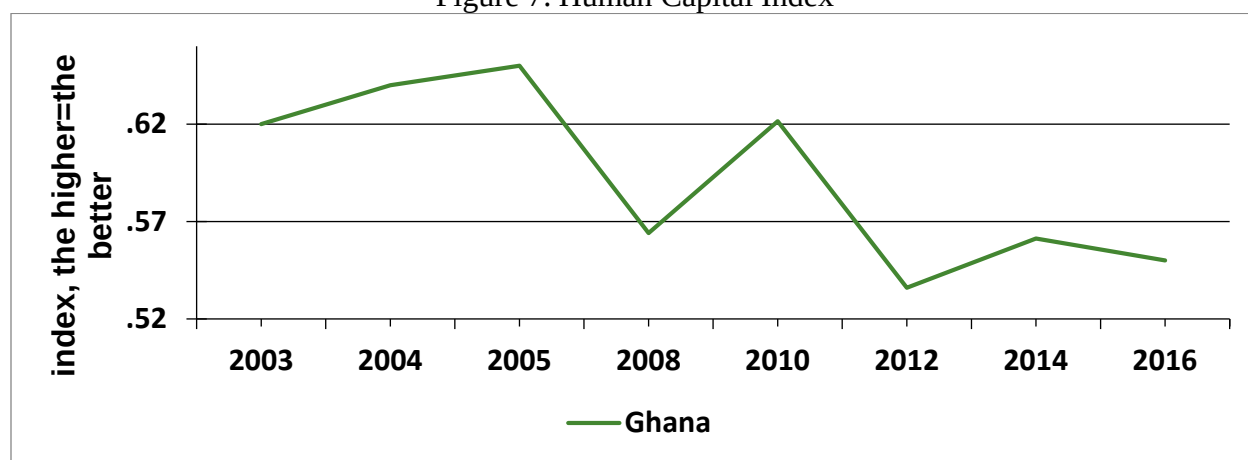


Table1. UN E-government Indicators.

Indicator	Units	Scale	2003	2004	2005	2008	2010	2012	2014	2016
E-Government Rank	1=best	units	139.000	143.000	133.000	138.000	147.000	145.000	123.000	120.000
E-Government Index	index, the higher=the better	units	0.241	0.237	0.287	0.300	0.275	0.316	0.374	0.420
E-Participation Index	index, the higher=the better	units	0.035	0.033	0.032	0.205	0.086	0.105	0.392	0.460
Online Service Index	index, the higher=the better	units	0.083	0.050	0.188	0.294	0.149	0.301	0.315	0.450
Human Capital Index	index, the higher=the better	units	0.620	0.640	0.650	0.564	0.622	0.536	0.561	0.550
Telecommunication Infrastructure Index	index, the higher=the better	units	0.019	0.021	0.021	0.041	0.059	0.111	0.244	0.260

Ghana (2003 – 2016)

Table 2. Top Eleven UN E-Government ranking in Africa (2003-2016)

Country	Units	Scale	2003	2004	2005	2008	2010	2012	2014	2016
Mauritius	1=best	units	52	51	52	63	77	93	76	58
Tunisia	1=best	units	108	120	121	124	66	103	75	72
South Africa	1=best	units	45	55	58	61	97	101	93	76
Morocco	1=best	units	131	138	138	140	126	120	82	85
Seychelles	1=best	units	73	70	63	69	104	84	81	86
Cape Verde	1=best	units	113	107	116	104	108	118	127	103
Egypt	1=best	units	140	136	99	79	86	107	80	108
Botswana	1=best	units	101	91	90	118	117	121	112	113
Libya	1=best	units	174	179	180	120	114	191	121	118
Kenya	1=best	units	118	126	122	122	124	119	119	119
Ghana	1=best	units	139	143	133	138	147	145	123	120

Table 3. Top Eleven E-Government Development Index (EGDI) by region – AFRICA (2016)

Rank	Country	Sub-region	EGDI	Online Service Component	Telecomm. Infrastructure Component	Human Capital Component
58	Mauritius	Eastern Africa	0.6231	0.7029	0.4596	0.7067
72	Tunisia	Northern Africa	0.5682	0.7174	0.3476	0.6397
76	South Africa	Southern Africa	0.5546	0.5580	0.3807	0.7253
85	Morocco	Northern Africa	0.5186	0.7391	0.3429	0.4737
86	Seychelles	Eastern Africa	0.5181	0.4058	0.4624	0.6861
103	Cape Verde	West Africa	0.4742	0.4565	0.3629	0.6031
108	Egypt	Northern Africa	0.4594	0.4710	0.3025	0.6048
113	Botswana	Southern Africa	0.4531	0.2826	0.4215	0.6553
118	Libya	Northern Africa	0.4322	0.1087	0.4291	0.7588
119	Kenya	Eastern Africa	0.4186	0.5580	0.1808	0.5169
120	Ghana	West Africa	0.4181	0.4493	0.2594	0.5458

Source: UN Survey 2016