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ANALYSIS OF E-GOVERNMENT SERVICES IN SOUTH AFRICA – WHAT ARE THE REASONS FOR POOR IMPLEMENTATION UNDER FAVORABLE CONDITIONS

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Abstract:

Many governments worldwide are increasingly using developments in information and communication technologies (ICT) to provide online services to their citizens. This process is commonly referred to as e-government. South Africa is one of the leading nations in technology and overall development in the Sub-Saharan-African region. Nevertheless, South Africa has failed to successfully implement a wide range of e-Government services for its population over the past years. This paper focuses on analyzing the success factors for a seamless implementation of e-Government systems and how countries such as Kenya, which are not a developed as South Africa, were able to adapt and successfully implement functioning systems for their citizens. The theoretical research results have indicated what the main success factors are in e-government implementation. Further analysis has been conducted to find out what the reasons are that South Africa has a non-functioning e-government system. An embedded case study approach has been selected to focus on selected aspects of the case study. The paper provides a comprehensive overview of the current state of e-government services in South Africa and compares it with other Sub-Saharan countries with similar economic conditions. This comparison allows for a better understanding of the challenges and opportunities faced by South Africa in improving its e-government services.

Key words: e-Government, ICT, South Africa, Kenya, poor implementation

JEL classification: H11, H70

1. INTRODUCTION

In the past few years, there has been increasing pressure on the government to convey administrations more competently. The facilitation of such services has been referred to as e-Government (Thakur & Singh, 2013, p. 41). E-Government refers to the extensive utilization of information and communication technology (ICT) and its applications by the government to deliver services and disseminate information to diverse stakeholders and businesses (Lavanya & Gayatri, 2015; Padmapriya, 2013). It is known that e-government offers citizens in particular considerable advantages (Dwivedi et al., 2017). As a result, many researchers and practitioners have become increasingly interested in understanding the public acceptance of available e-government systems (Verkijika & De Wet, 2018). South Africa is one of the leading nations in technology and overall development in the Sub-Saharan-African region (Andrzejczak Świerczyńska, 2015).

After apartheid, the South African government adopted a customer-orientation philosophy, which was called Batho Pele. Batho Pele is a traditional Sotho word which has the meaning 'People

First.' Batho Pele principles are seen as the operational culture in municipalities. This mindset requires a change in delivering modality that is fair, transparent, economical, realistic, reasonable, and transformative (Mofolo & Smith, 2009; Thakur & Singh, 2013).

The overall e-government strategy falls under the Department of Public Service and Administration (DPSA). The DPSA is responsible for the development and coordination of the strategy. The Public Service Act of 1994 and its subsequent amendments is one of the primary legislation for e-government. This Act provides for, amongst others, the establishment of norms and standards relating to e-government and information management in the public service (Department: Communications RSA, n.d.). Prior to the DPSA's endeavor to coordinate e-Government in South Africa, multiple national, provincial, and local government e-Government initiatives had been implemented (Matavire et al., 2010).

The concept of e-Government in South Africa is put together in the following frameworks which try to promote transparency, accountability, good governance, information security, and freedom in the acquisition and use of IT (Department: Communications RSA, n.d.):

- The White Papers on Transforming Public Service Delivery (WPTPSD)
- Promotion of Access to Information Act
- Electronic Communication and Transaction Act
- Electronic Government Policy Framework
- Minimum Information Security Standards (MISS)
- Minimum Interoperability Standards (MIOS)
- Policy on Free and Open Source Software (FOSS).

Advances in innovation offer tremendous potential to help the South African government respond to its difficulties, namely, providing better service, better sourcing, working efficiently, and better correspondence with residents and organizations. The use of e-government activities in South Africa takes place on numerous fronts and from different perspectives. By carrying out e-government activities, the South African government intends to serve people in general (Naidoo, 2012).

The Government of South Africa has set up empowering policies, poverty reduction programs, information, communications technology infrastructures, and administrative frameworks that have not been adequately utilized to improve administration conveyance to its residents (Mutula & Mostert, 2010).

The problematic nature of e-government frameworks is summarized in this announcement made by the Auditor-General South Africa (Singh & Travica, 2018):

"*The majority of departments and public entities experienced challenges with the design and implementation of information technology (IT) controls that assure the confidentiality, integrity, and availability of financial information."*

A report published by the World Bank discovered that the residents' voice seems to have been lost because of the government's attention on incorporated planning and meeting targets without thinking about how residents would lean toward the services that would be conveyed (Mawela et al., 2017).

This paper's overall target is to research how South Africa can improve its e-Government services based on successful e-Government service implementation in other Sub-Saharan countries. The first step to achieve this aim is to conduct a literature review about the current state of e-government services in South Africa and then compare it with other countries in Sub-Saharan Africa with similar economic conditions.

This theoretical research results in a framework that will indicate the main success factors in e-government implementation and, therefore, answer the first research question: RQ1 - What are the main factors for a successful e-Government implementation?

The following two hypotheses are formulated regarding the RQ1:

- Hypothesis 1 (H1): The presence of strong and supportive government leadership and commitment to e-government initiatives positively influences the success of e-government implementation.

- Hypothesis 2 (H2): Access to and utilization of modern information and communication technology (ICT) infrastructure are essential factors contributing to successful e-government implementation.

The existing literature has not yet fully embraced a multidimensional and multi-level framework for conceptualizing e-government, as suggested by recent studies (Bannister & Connolly, 2015; Khanra & Joseph, 2019). The need for such a comprehensive conceptualization is crucial to grasp the complexity of e-government, facilitate generalizations, and advance theoretical understanding in the realm of e-government. Further analysis will be conducted to find out what the reasons are that South Africa has a non-functioning e-government system. This shall be analyzed by reviewing case studies where it is possible to examine the phenomena within its context. For this paper, an embedded case study approach will be selected to focus on only some aspects of the case study. An embedded case study approach is a research design that involves conducting a case study within the context of a larger study or investigation. It integrates a specific case study within a broader research project to provide in-depth insights into a particular phenomenon, organization, or situation while considering its connection to the larger context. The embedded case study approach is particularly useful when researchers aim to explore a specific case in great detail while also understanding how that case relates to or interacts with other aspects of the broader research context. This research method allows for a more nuanced understanding of the case under study and how it fits within the larger framework.

Key characteristics of an embedded case study approach:

- Focus on Specific Cases: The research design involves selecting one or more specific cases (individuals, organizations, events, etc.) as the primary subjects of study.
- Larger Research Context: The selected cases are studied in relation to a larger research context. This context may involve other cases, multiple levels of analysis, or broader social, political, or economic factors.
- Depth and Richness: The embedded case study approach allows researchers to investigate the chosen cases in-depth, enabling a comprehensive exploration of the phenomena under consideration.
- Holistic Perspective: The research takes into account both the unique characteristics of the selected cases and their interplay with the broader research context. This holistic perspective provides a more comprehensive understanding of the subject matter.
- Qualitative Research Methods: Embedded case studies often employ qualitative research methods, such as interviews, observations, and document analysis, to gather rich, detailed data from the selected cases and their context.
- Theory Building: The insights gained from the embedded case study can contribute to theory-building efforts, providing a basis for formulating hypotheses or refining existing theories.

The case study analysis is conducted in the second part of this paper and aims to answer the second research question: RQ2 - What are the reasons South Africa has a non-functioning e-Government system nationwide? The following hypothesis is formulated regarding the RQ1:

- Hypothesis 3 (H3): Inadequate ICT infrastructure and limited access to digital technologies contribute to the non-functioning of e-government services in South Africa.

Research in the e-government domain emphasized technology as a means to drive public administrative reforms and improve the convenience of delivering government services and sharing information (Doty & Erdelez, 2002; Halchin, 2004; Seifert & Relyea, 2004).

For the first, theoretical part of this paper, namely the definition of critical terms and examination of theoretical factors, secondary data is used. This data is generated through a review of relevant scientific articles and books. As a first step, this review is used to define the most important terms for this paper to clarify what is meant by them, and then, in the next step, it gives an overview of the critical success factors of e-government. As the conclusion of the first part, these factors are compared to find similarities or dissimilarities and answer RQ1.

With the findings of the previous literature review in mind, empirical research in the form of a case study analysis is conducted to answer RQ2.

2. LITERATURE REVIEW

Before proper research on any topic can be conducted, it is necessary to define the key terms essential to the research subject to avoid misunderstandings and ensure that all terms are understood correctly and coherently.

E-service generally refers to the provision of services over the Internet. Hence, e-services encompass various activities, including e-commerce and e-government. As defined by the OECD, e-commerce involves buying or selling goods and services over computer networks, utilizing methods tailored for order placement and receipt. On the other hand, e-government pertains to the government's provision of public services via the Internet. According to Grant & Chau (2005, p. 9), the definition of e-Government is as follows:

"*A broad-based transformation initiative, enabled by leveraging the capabilities [of] information and communication technology; to develop and deliver high quality, seamless, and integrated public services; to enable effective constituent relationship management; and to support the economic and social development goals of citizens, businesses, and civil society at local, state, national, and international levels*."

The electronic delivery of government services and information to the public enables the government to provide citizens with services. The quality of such services can also be improved by implementing e-government services. In South Africa, e-government has grown in importance, and the use of e-government has improved significantly to simplify governance processes, improve citizens' access to information and the provision of services, and increase accountability and transparency (Department of Communications RSA, n.d.).

The term e-government (e-Gov) appeared in the late 1990s, but the history of computing in government organizations can be traced back to the dawn of computing. The literature on "IT in Government" goes back to the 1970s (Danziger & Andersen, 2002; Kraemer et al., 1978). This literature deals with IT usage within the government, while the more recent e-Gov literature deals more often with external users, such as services to citizens (Ho, 2002). While some previous problems with e- Gov computers, such as: For example, office automation, for which today's research may not be of high relevance, many problems are, e.g., decision-making, service processes, and values.

Similar to e-commerce, the term e-government originated during the Internet boom, but it encompasses more than just internet use or publicly accessible systems for direct interaction with customers or citizens. E-government began as an experimental field, bringing together practitioners who faced the challenges of the internet medium and creatively implemented innovative systems. For instance, in the US, Vice President Gore led the National Performance

Review, emphasizing the role of e-government in federal services (Gore, 1993; Salem, 2003).

Some of the most common applications of e-government services include (Kolachalam, 2012): •

- Online delivery of public services, including transactional services through e-portals, such as applying for certificates and making tax payments.
- Tele-consulting, offering e-assistance services.
- Tele-voting, enabling e-voting procedures.
- E-forums, providing platforms like message boards for online discussions.
- Conducting online opinion polls and advertising job vacancies.
- Sharing online statistical data and GIS traffic information.
- Utilizing ICT to support voluntary work and charities through online communities.
- Implementing ICT in police, courts, and policymaking processes.

E-government, the utilization of information and communication technology (ICT) applications to deliver government services, has presented promising prospects for enhancing service quality, accountability, and efficiency (Alshehri et al., 2012; Dawes, 2009). However, its impact on developing countries has been varied, yielding mixed results (Bélanger & Carter, 2012; Welch, Hinnant & Moon, 2005; Wirtz & Daiser, 2018). Particularly in developing nations, the success of e-government initiatives has been limited (Elkadi, 2013; Heeks, 2003). Research by Furuholt and Wahid (2008) revealed that over 60% of e-government projects in developing countries failed to achieve their desired outcomes. Among the failures, 35% were complete, while 50% only partially met expectations (Furuholt & Wahid, 2008).

Such failures in e-government implementation lead to severe consequences, including the depletion of already scarce resources and subsequent cascading effects, such as financial debts, reputational damage, and political setbacks for the governing authorities (Elkadi, 2013). The burden of these losses and costs becomes particularly challenging for most developing nations. To overcome these challenges, governments in the developing world must take a comprehensive approach, acknowledging and addressing the complexities involved in the successful implementation of e-government projects (Glyptis et al., 2020).

The process of transforming conventional government service delivery into digital e-government can encounter various obstacles, which can be categorized into five dimensions:

1. Organizational Dimension: This dimension involves fostering effective collaboration among employees across different levels and departments, promoting a culture of teamwork. The integration of Information and Communication Technology (ICT) and New Public Management (NPM) requires a shift in work attitudes and culture. Providing necessary training and upskilling the workforce may also be necessary.
2. Socio-economic Dimension: Addressing the socio-economic dimension involves integrating existing services, enhancing user interfaces, and expanding service offerings to their full potential. Additionally, it requires careful attention to prevent social exclusion and active efforts to bridge the digital divide.
3. Democratic Dimension: In the democratic dimension, it is crucial to establish a consensus among political parties to plan reforms for the long term, ensuring that e-government initiatives continue irrespective of changes in leadership or political power.
4. Legal Dimension: The legal dimension involves the need for the executive and judiciary to develop evolutionary measures that support public reforms. This includes the implementation of new directives with appropriate legal backing.
5. Technological Dimension: While technology plays a significant role, it finds less importance in certain aspects. However, technologies such as digital signatures, data protection, and secure electronic transactions remain critical. Emphasizing open standards and free source software can facilitate seamless integration of applications and reduce application development costs.

3. E-GOVERNMENT IN SUB-SAHARAN AFRICA

After the key terms have been defined in the previous section, this section is now concerned with examining e-government services in Sub-Saharan Africa and the challenges this region faces.

Broadly speaking, Sub-Saharan Africa faces a significant deficit in computer literacy across various domains, encompassing systems analysis, programming, maintenance, consulting, and operational levels – ranging from basic usage to managerial roles. The majority of countries in the region lack sufficient education and training infrastructure to effectively equip their populations with the necessary skills in these areas. This is because deficiencies in information technology are the slightest problem on a continent plagued by a history of exploitation, post-colonial political problems, bloody civil conflicts, and widespread health, educational,

demographic, and economic problems. However, care should be taken that more than 500 million people have been largely excluded from the global information society (Odedra et al., n.d.).

Moreover, there exists an assumption that ICT implementation takes place without adequately addressing cultural and institutional barriers, leading to the misguided notion that a post-industrial society will effortlessly materialize by merely acquiring a few computers and modems. Obijiofor et al. (n.d.) highlighted in their study on the impact of new information and communication technologies (ICT) on socio-economic and educational development in Africa and the Asia-Pacific region that individuals in these regions, particularly Africans and those in the Asia-Pacific, primarily assume the role of consumers, lacking the agency to define and shape media on their own terms.

Accurately ranking sub-Saharan African countries based on their e-government implementation proves challenging due to their limited inclusion in relevant studies, with the exception of South Africa. Sub-Saharan Africa remains relatively absent from the e-government radar, resulting in scarce measurable e-government data. Studies by prominent consulting firms like Accenture and Capgemini, international organizations such as the United Nations Ministry of Economic Affairs and Social Affairs (UNDESA), and some universities, including Nkohkwo & Sirajul Islam (2013), offer some insights. However, these studies often suffer from methodological deficiencies and focus primarily on online execution of public law processes rather than evaluating the actual usage and impact of electronic services. Organizational changes pertinent to e-government are seldom explored as a central topic, and only a few randomly selected best practice cases are highlighted (Publications Office of the European Union, 2014).

In the absence of comprehensive benchmarks concentrating solely on internet services, estimating the extent of e-government implementation in sub-Saharan countries remains challenging. The United Nations' global e-Government Readiness Report's Web Measure Index places countries like Mauritius, South Africa, Uganda, and Ghana in the top third, while countries like Zambia and the Central African Republic show minimal statistical presence (United Nations, 2005). Similar observations are supported by the number of projects mentioned on the Institute for E-Government's website (www.ifg.cc), which provides global E-Government project news.

Lessons learned from transferring public administration instruments emphasize the crucial consideration of environmental factors. For instance, outsourcing public tasks, a fundamental element of the new public administration (NPM), is often impractical in many developing countries due to poorly formalized and functioning market, economic, and judicial systems (Schick, 1998).

Furthermore, experiences in the collaboration of various public administrations have shown that a straightforward transfer of concepts in the field of e-government is inadequate. The success or failure of e-government reforms is heavily influenced by the existing institutional situation, specific organizational culture, and other environmental factors, such as economic, social, or political-administrative aspects (Schick, 1998). In assessing the suitability of e-government for the challenges faced by African administrations, careful consideration of these factors is essential.

4. E-GOVERNMENT SUCCESS FACTORS IN SOUTH AFRICA

To determine the success factors for e-Government in South Africa, several interviews were conducted by Mbasane (2018). The following paragraphs will explain the main findings and highlight the main success factors.

These results are drawn from interviews with respondents from six government and private sector organizations. Some of the interview partners come from executive levels in the public sector, and some have an ICT background in the public sector, and consultants from consulting firms who work closely with the government (Mbasane, 2018). The respondents identified unitedly eleven key success factors that are required to be put in place to support the successful implementation of e-government in South Africa (Mbasane, 2018, pp. 68-80):

- Infrastructure. For e-government to be successful, one needs the latest and faster technology with more significant bandwidth. One needs to conduct an infrastructure maturity assessment to determine where the users are in terms of infrastructure maturity. One needs to work with analysts such as Gartner. After the maturity assessment, work on the recommendations.
- Skills. The interview partners suggested roles such as project management, system development, security, and data management as some of the critical skills required to support the implementation of e-government services in South Africa. A fundamental view was also wildly shared amongst the respondents, and that was that the public sector has to effectively use the private sector to source skills that are essentially required.
- Digital Divide. The digital divide is becoming less of an issue due to the fast-rising number of technology devices, such as tablets and smartphones. However, the topic that raises a problem is that data costs are still relatively high and inaccessible for some citizens, and therefore, the government needs to put measures in place to reduce data costs.
- Governance and oversight. The most crucial aspect concerning governance and oversight is that government entities need to adopt the proper methodology to implement e-government services.
- Leadership and Change Management. According to the respondents, leadership and change management should be implanted into every e-government project with a higher focus on leadership, seeing that as a critical driver for any project.
- Regulatory and legal environment. The regulatory and legal environmental plays a critical role in the implementation of e-government systems. However, the legal environment must not be used as an excuse for not implementing e-government systems. Thus, the regulatory environment acts as an enabler rather than a hindrance when it comes to the implementation of e-government.
- Modernization. Centralizing e-government systems and the development of ICT will enable the implementation of ICT systems to be better managed.
- Integration. A government comprehensive enterprise architecture has been adopted since the year 2016, which addressed the issues related to integration. The adaptation was made to simplify integration so that departments can plug and play the architecture.
- Complexity. Themes concerning reducing the complexity include investing more effort in defining the requirements and specifications. Here the main objective should be keeping it simple.
- Data Fragmentation. Government entities should have the possibility to swap data. Data may go through many iterations before being committed to the final endpoint.
- Issues raised by end-users/citizens. The concerns of the citizens mainly revolve around the reliability factor of the e-government systems and the security of the system. Furthermore, without the proper consultation and communication to the citizens, it becomes almost impossible to convince them to use the system.

5. CASE STUDY: KENYA

This paper has adopted a case study method to compare a nation that has successfully implemented an e-Government system despite having similar economic challenges like South Africa. The aim of this analysis in this paper is to answer the RQ2: What is the reasons South Africa has a non-functioning e-Government system nationwide.

According to the United Nations global e-government survey (2014), Kenya ranked 119th out of 193 United Nations member countries, with an e-readiness index of 0.38, below the world average of 0.47 (United Nations, 2014). The e-government index often mirrors a country's economic, social, and democratic development levels (Reffat, 2006).

In response, the Kenyan government has undertaken an ambitious mission to embrace technology and digitize its services. To streamline and manage all functions related to ICT, a state corporation known as the ICT Authority was established (ICT Authority, 2014). The ICT Authority enforces ICT standards in government and enhances the supervision of electronic communication.

Among the government's digital initiatives is the issuance of new generation digital identity cards. These cards integrate personal information from various government departments, such as the tax office, registrar of motor vehicles, and persons' registrar (Mutegi, 2014). The cards serve as a foundation for a national identity platform built on robust security measures. To address issues like ghost workers earning double salaries from different ministries and civil servants drawing salaries despite not working, the government introduced a biometric registration system for civil servants, aimed at identifying and eliminating such discrepancies (Obwocha, 2014). This move is expected to save significant funds for both county and national governments by reducing the wage bill.

The government also launched an e-procurement system, which is anticipated to improve supplier relationships by providing easy access to documentation and simplifying the bidding process while ensuring transparent audit trails and identifying transaction originators (PSCU, 2014).

The Huduma centers, operated by the government, act as one-stop shops for services and information, leveraging integrated technology platforms. These centers allow the public to access various services, such as obtaining birth certificates, national identity cards, passports, business name registrations, marriage certificates, drivers' licenses, police abstracts, EACC clearance certificates, NHIF registration, NSSF member statements, welfare group registrations, pension claim status, student loan applications, and more (MyGov, 2015).

Under the Ministry of Education, the government has initiated several programs to enhance service delivery. The laptop project is a significant initiative aiming to introduce laptops as tools for teaching and learning in the public school system. Through this project, ICT is incorporated to support and enhance curriculum objectives, develop essential competencies like skills, knowledge, attitudes, and values, and effectively manage education at all levels, ultimately creating adept and productive citizens in a hi-tech world (Denvir, 2014).

In the health sector, the government has collaborated with various institutions to implement initiatives that enhance healthcare accessibility. For instance, an e-diagnostic and consultation solution has been established for Kenyatta National Hospital and Machakos Level 5 Hospital. This e-health platform enables patients and healthcare providers in remote areas to interact with specialists at Kenyatta Hospital via IP and video conferencing, effectively extending healthcare reach into underserved regions (Ogara & Odhiambo-Otieno, 2003).

6. COMPARISON: KENYA VS. SOUTH AFRICA

In this section, South Africa and Kenya will be directly compared to 2014 until 2020. Due to the scope of this paper, five indices were chosen for this comparison.

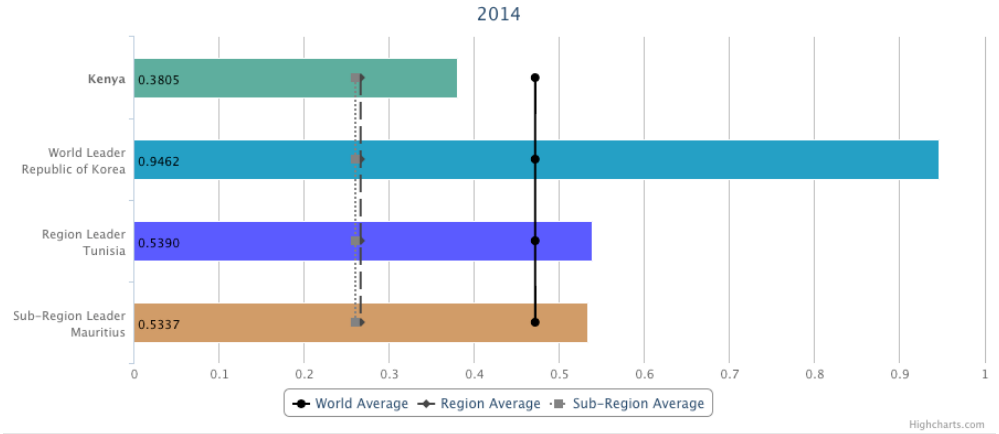
E-Government Development Index (EGDI) is biannually presented by the United Nations Department of Economic and Social Affairs (UN DESA). The EGDI is a composite indicator that consists of three indices

1. Online Service Index
2. Telecommunication Index
3. Human Capital Index
   that are equally weighted and cover a broad range of relevant topics for e-government (*2020 United Nations E-Government Survey | Multimedia Library - United Nations Department of Economic and Social Affairs*, n.d.). Furthermore, the
4. Corruption Perceptions Index and the
5. Government Effectiveness Index

South Africa and Kenya will be compared to answer the RQ2: What are the reasons South Africa has a non-functioning e-Government system nationwide.

e-Government Development Index

According to the 2014 E-Government Development Index (EGDI), Kenya had an EGDI of 0.3805. This placed Kenya on the 119th spot in the world. The world average of 0.4712 was slightly higher than the EGDI of Kenya. Figure 1 shows that Kenya has improved its EGDI to 0.53260 in 2020 and gained two positions up the rank to 116th (figure no. 1).

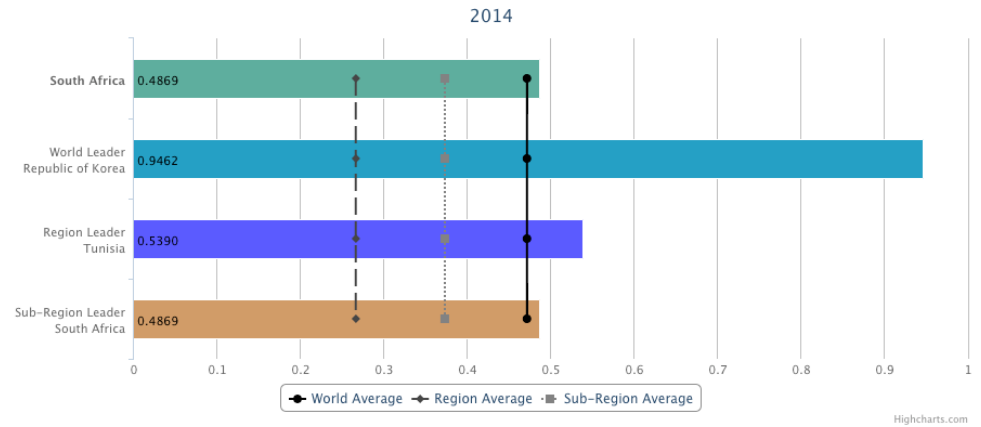


EGDI	2020	2018	2016	2014	2012	2010	2008	2005	2004	2003
Kenya (Rank)	116	122	119	119	119	124	122	122	126	118
Kenya (Value)	0.53260	0.45410	0.41855	0.38054	0.42117	0.33384	0.34740	0.32981	0.29591	0.29924

Figure no. 1. E-Government Development Index Kenya

Source: https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/88-Kenya/dataYear/2014

Figure 2 shows that the EGDI of South Africa is slightly higher than the one from Kenya at 0.4869 and is just over the world average. In the year 2014, South Africa ranked 93rd. In the years, they have managed to improve their position up to the 78th rank.



EGDI	2020	2018	2016	2014	2012	2010	2008	2005	2004	2003
South Africa (Rank)	78	68	76	93	101	97	61	58	55	45
South Africa (Value)	0.68910	0.66180	0.55463	0.48688	0.48687	0.43057	0.51150	0.50754	0.49021	0.51503

Figure no. 2. E-Government Development Index South Africa

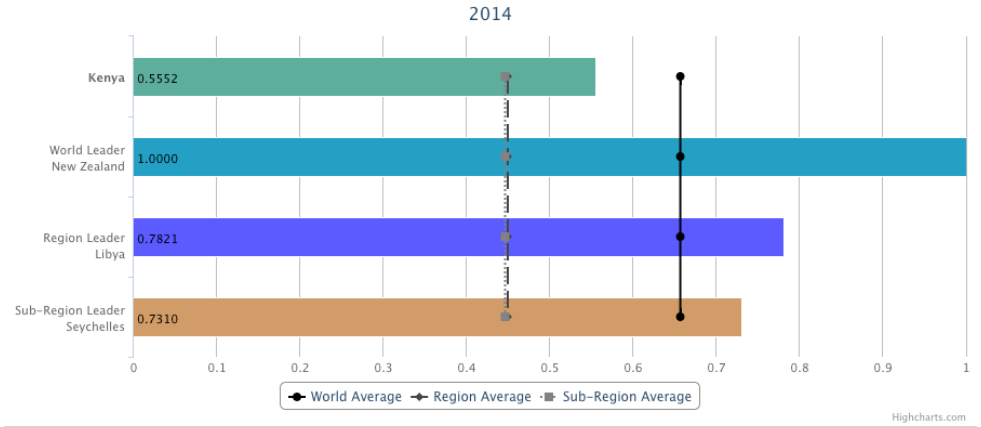
Source: https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/159-South-Africa/dataYear/2014

The Human Capital Index (HCI)

The Human Capital Index consists of the following components (Chung, 2020; United Nations, n.d.):

1. The adult literacy rate is defined as the proportion of individuals aged 15 years and above who possess the ability to read and write a simple statement about their daily life with comprehension.
2. The gross enrolment ratio is calculated as the total enrollment of students in primary, secondary, and tertiary education levels, irrespective of age, expressed as a percentage of the school-age population for each corresponding level.
3. Expected years of schooling represent the total number of years a child of a certain age is anticipated to receive in education in the future. This estimation assumes that the probability of their enrollment at any given age is equivalent to the current enrollment ratio for that age.
4. Average years of schooling refer to the mean number of years of education completed by the adult population (aged 25 years and older) of a country, excluding any years spent repeating grades.

The Human Capital Index (HCI) in Kenya by 2014 was 0.5552, and as time went on, the HCI improved to 0.58120 in 2020. Even though there was an improvement, Kenya's HCI is still under the world average, at 0.6566 (figure no. 3).

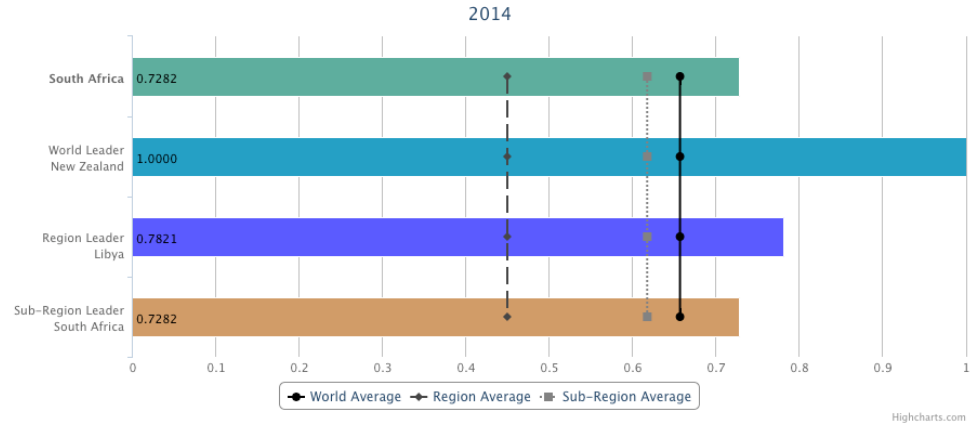


HCI	2020	2018	2016	2014	2012	2010	2008	2005	2004	2003
Kenya (Rank)										
Kenya (Value)	0.58120	0.54720	0.51688	0.55520	0.71093	0.70266	0.69263	0.74000	0.73000	0.72000

Figure no. 3. Human Capital Index Kenya

Source: https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/88-Kenya/dataYear/2014

The Human Capital Index (HCI) in South Africa by the time of 2014 was at 0.7282, and as time went on, the HCI improved to 0.73710 in the year 2020 (figure no. 4). South Africa has managed to stay above the world average over the years.



HCI	2020	2018	2016	2014	2012	2010	2008	2005	2004	2003
South Africa (Rank)										
South Africa (Value)	0.73710	0.72910	0.72526	0.72820	0.78173	0.84320	0.80612	0.83000	0.83000	0.88000

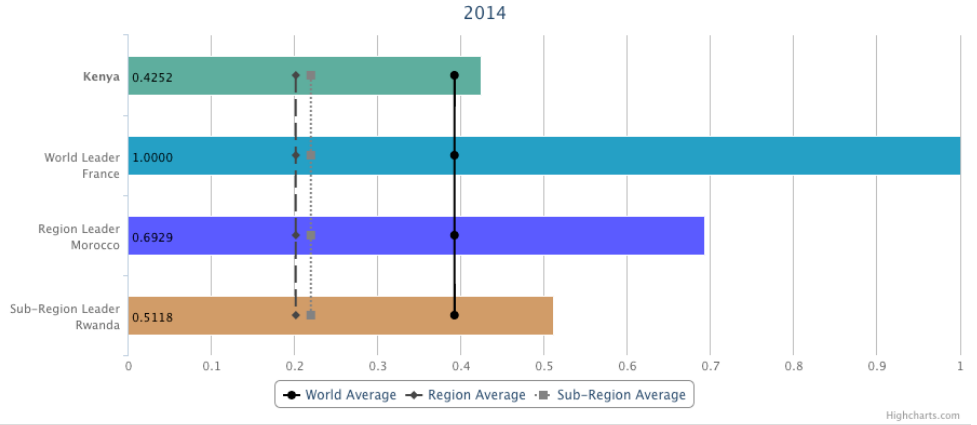
Figure no. 4. Human Capital Index South Africa

Source: https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/159-South-Africa/dataYear/2014

Online Services Index

The 2020 Online Services Questionnaire (OSQ) comprises a total of 148 questions, each requiring a binary response. When a positive answer is provided, it leads to the generation of "more in-depth questions" within and across various patterns. As a result, the OSQ yields an improved quantitative survey that offers a broader spectrum of point distributions, thereby capturing the variations in e-government development levels among the Member States (Chung, 2020; United Nations, n.d.).

Regarding Online services in the year 2014, Kenya was above the world average with 0.4252. Kenya improved its world ranking by three positions in 2020, thus showing a positive trend (figure no. 5).

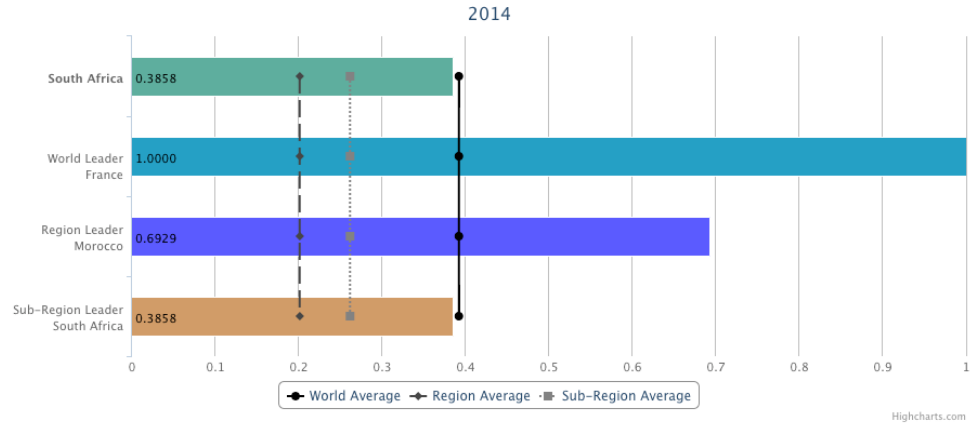


OSI	2020	2018	2016	2014	2012	2010	2008	2005	2004	2003
Kenya (Rank)	76			79	90	104	100	110	125	105
Kenya (Value)	0.67650	0.62500	0.55797	0.42519	0.43137	0.23809	0.30434	0.23076	0.13899	0.15720

Figure no. 5. Online Service Index Kenya

Source: https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/88-Kenya/dataYear/2014

In 2014, South Africa was, on the contrary to Kenya, beneath the world average with 0.3858, thus placing South Africa at 88th. South Africa managed to improve its online services over the past years and have made it to the 55th position (figure no. 6).



OSI	2020	2018	2016	2014	2012	2010	2008	2005	2004	2003
South Africa (Rank)	55			88	84	77	39	42	43	27
South Africa (Value)	0.74710	0.83330	0.55797	0.38582	0.45751	0.30793	0.55183	0.56923	0.51544	0.53930

Figure no. 6. Online Service Index South Africa

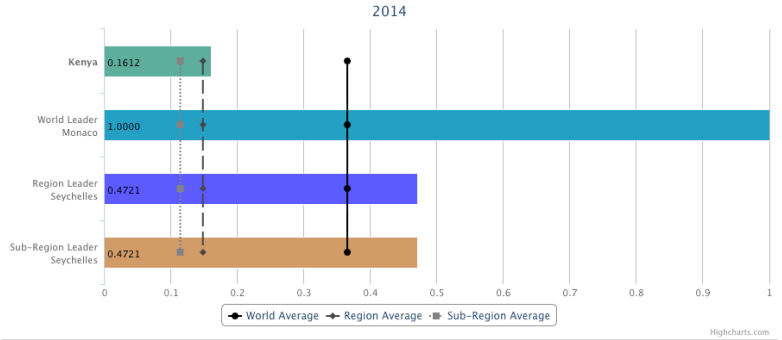
Source: https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/159-South-Africa/dataYear/2014

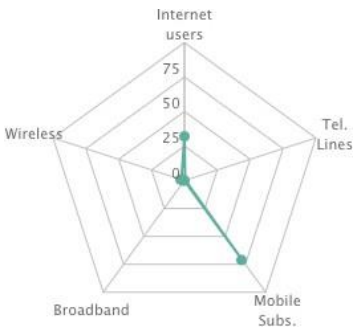
Telecommunications Infrastructure Index (TII)

This index is based on data provided by the International Telecommunications Union (ITU). This data contains information regarding (Chung, 2020; United Nations, n.d.):

- Broadband
- Wireless
- Internet users
- Telephone lines
- Mobile Subscriptions

Regarding telecommunication infrastructure, Kenya is tracing far behind the world average due to a complete lack of wireless and broadband internet access infrastructure. Most Kenyans access the Internet via their mobile devices. Even though Kenya improved its rating to 0.34020 in 2020, this is still under the world average (figure no. 7).



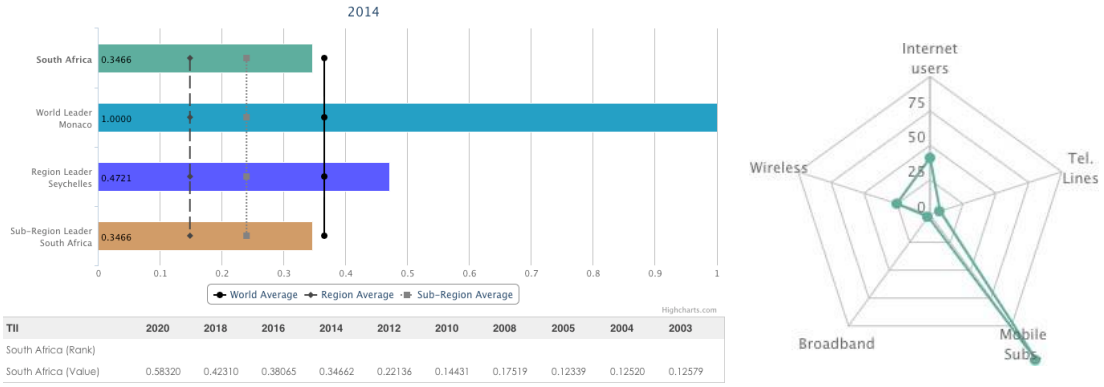


TII	2020	2018	2016	2014	2012	2010	2008	2005	2004	2003
Kenya (Rank)										
Kenya (Value)	0.34020	0.19010	0.18081	0.16120	0.12122	0.06368	0.04647	0.01866	0.01875	0.02052

Figure no. 7. Telecommunication Infrastructure Index Kenya

Source: https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/88-Kenya/dataYear/2014

Because South Africa, in a broader sense, has a complete lack in broadband Internet, their rating in the year 2014 was under the world average. South Africa has since then improved its rating to 0.58320 and placing them over the world average (figure no. 8). A majority of South Africans access the Internet over their mobile devices, similar to Kenyans.



TII	2020	2018	2016	2014	2012	2010	2008	2005	2004	2003
South Africa (Rank)										
South Africa (Value)	0.58320	0.42310	0.38065	0.34662	0.22136	0.14431	0.17519	0.12339	0.12520	0.12579

Figure no. 8. Telecommunication Infrastructure Index South Africa

Source: https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/159-South-Africa/dataYear/2014

Corruption Perception Index

The Corruption Perceptions Index (CPI) ranks more than 180 countries according to the degree to which corruption is perceived in the public sector. It is a composite index based on various surveys and research carried out by numerous independent institutions.

Kenya is ranked 137th out of 198 countries on the Corruption Perceptions Index and scores 28 from 100 points. Since 2012, Kenya has managed to increase its score by 7 points showing a clear upwards trend in the past years (Transparency International, 2020).

South Africa is ranked 70th out of 198 countries on the Corruption Perceptions Index and scores 44 from 100 points. Since 2012, South Africa has increased its score by 3 points showing a moderate upward trend in the past years (Transparency International, 2020).

Government Effectiveness Index

Government effectiveness refers to the perceived quality of public services, their autonomy from political influences, the efficacy of policy formulation and implementation, and the credibility of the government's dedication to upholding these policies. In figure 9, it is clear to see that South Africa has higher Government effectiveness, and both countries are above the regional average. If one looks at the long-term projection of both countries, it is clear that South Africa has a downward trend, and Kenya has an upward trend.

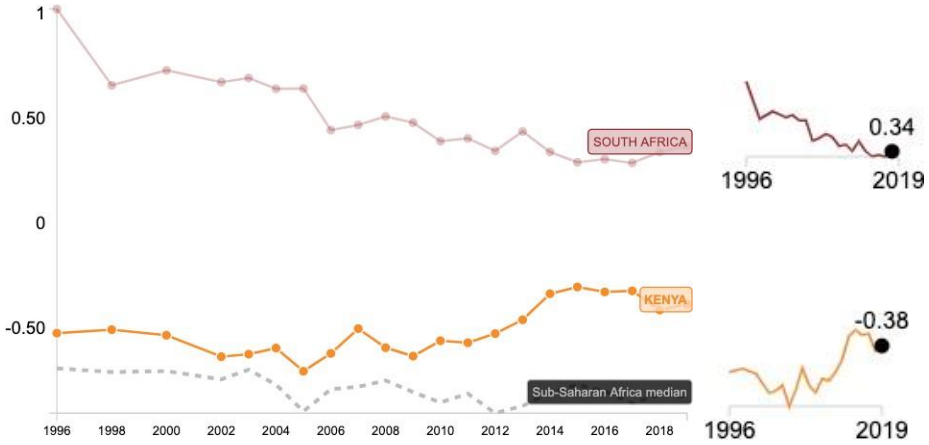


Figure no. 9. Government Effectiveness (Kenya vs. South Africa)

Source:https://govdata360.worldbank.org/indicators/h1c9d2797?country=KEN&indicator=388&countries=ZAF&viz=line_chart&years=1996,2019#comparison-link

7. CONCLUSION

The preceding sections have provided a comprehensive analysis of the literature and empirical research, addressing both RQ1 and RQ2 with respective hypotheses. This section concludes by summarizing and organizing the key findings related to the research questions. Additionally, the limitations of this study will be outlined, followed by a brief outlook on potential future research directions.

In summary, the literature research revealed several critical factors influencing e-Government implementation in South Africa. One of the primary challenges lies in the outdated infrastructure and fragmented systems used by various government entities, resulting in complex and inconsistent processes. Moreover, the high data costs and digital divide pose significant barriers to successful e-Government adoption. Insufficient skills within government entities hinder effective project implementation, while governance and leadership structures are often lacking, affecting the overall success of e-Government initiatives. Additionally, the regulatory and legislative environment can hinder progress rather than enabling improvement, affecting the implementation of e-Government systems. Citizens' concerns include issues related to slowness, reliability, security, and the cumbersome nature of e-Government systems.

Addressing the second research question, it is evident that South Africa, being a more developed country, generally outperforms Kenya in various aspects. However, it is noteworthy that Kenya exhibits a positive upward trend in long-term forecasts, indicating that it is on the right path and taking essential steps to ensure a better future for its citizens. In contrast, South Africa's performance has demonstrated mixed results, showcasing the need for continued efforts in enhancing its e-Government systems.

In conclusion, e-Government presents significant developmental potential, but its implementation is a complex and ambitious undertaking. The region's discussions reflect a high affinity for e-Government among the political elite in these countries, which might be related to a general interest in technology standards in developing nations. However, the extent to which this affinity contributes to good governance and poverty alleviation varies on a case-by-case basis, signifying the importance of achieving crucial developmental policy goals.

While this study provides valuable insights, it is essential to acknowledge its limitations. The research primarily relies on secondary data, and the availability and accuracy of such data may influence the study's conclusions. Additionally, the scope of the analysis may not encompass all relevant factors impacting e-Government implementation in both countries. Future research could benefit from incorporating primary data collection methods and considering a broader range of

factors to offer a more comprehensive understanding of e-Government challenges and potentials in the Sub-Saharan African context.

Some limitations of this research need to be identified too. It was challenging to provide an accurate comparison of e-government in sub-Saharan Africa with industrialized countries and economies, as most e-government studies barely cover Africa. There is also a general lack of reliable data on e-government status in Africa, as most government websites are undeveloped. As university regulations limited time resources, and significantly, the paper's scope, the research did was not in-depth.

Further in-depth research can be done to understand and examine the problem at hand thoroughly and to be able to provide proper advice to South African officials. Further studies can be conducted to compensate for the lack of reliable data on this specific topic.

Theoretical implications of this research are the following:

- The paper provides a comprehensive overview of the current state of e-government services in South Africa and compares it with other Sub-Saharan countries with similar economic conditions. This comparison allows for a better understanding of the challenges and opportunities faced by South Africa in improving its e-government services.
- The identification of eleven key success factors for e-government implementation in South Africa provides valuable insights for policymakers and government officials. These factors highlight the importance of infrastructure, skills, governance, leadership, and regulatory environment, among others, in ensuring the successful implementation of e-government initiatives.
- The paper emphasizes the significance of the Human Capital Index (HCI) and its role in e-government development. The HCI serves as a measure of the education and skills of the population, which directly impacts the successful adoption and utilization of e-government services.

Practical implications of this research are the following:

- The findings of the study can be utilized by the South African government to prioritize and allocate resources to areas that are crucial for successful e-government implementation. For instance, investing in ICT infrastructure, training programs for government employees, and improving digital literacy among citizens can enhance e-government service delivery.
- By examining the successful e-government implementation in Kenya, South Africa can learn from their best practices and strategies to overcome challenges. This cross-country comparison can serve as a benchmark for identifying areas of improvement and providing insights into effective policy formulation.
- The identification of specific success factors, such as governance, leadership, and regulatory environment, can guide government agencies in implementing effective strategies to address existing issues in e-government service delivery and enhance overall governance and transparency.
- Overall, the study provides valuable theoretical insights into the factors affecting e-government implementation and offers practical recommendations for improving e-government services in South Africa. It sets the groundwork for further research and policy development in the field of e-government in the context of Sub-Saharan countries with similar economic conditions.

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