

September 2014

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Jean Vincent Fonou Dombeu

Vaal University of Technology, fonoudombeu@gmail.com

Nelson Rannyai

Vaal University of Technology, nelsonrannyai@gmail.com

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Fonou Dombeu, Jean Vincent and Rannyai, Nelson (2014) "African E-Government Research Landscape," *The African Journal of Information Systems*: Vol. 6 : Iss. 3 , Article 2.

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African E-Government Research Landscape

Cover Page Footnote

Authors would like to thank Prof. Michael Pillay for proofreading this manuscript. Many thanks also go to the reviewers and editors for their useful comments that helped improving the quality of the paper.



African E-Government Research Landscape

Research Note

Volume 6, Issue 3, July 2014, ISSN 1936-0282

Jean Vincent Fonou Dombeu

Vaal University of Technology, South Africa
fonoudombeu@gmail.com

Nelson Rannyai

Vaal University of Technology, South Africa
nelsonrannyai@gmail.com

(Received May2013, accepted June2014)

ABSTRACT

Over the past decade, African governments have followed the worldwide trends towards establishing e-government with the aim of improving public service delivery to citizens through the use of Information and Communication Technology (ICT). As a consequence, authors from academia, government departments and agencies, civil society, industry, non-governmental and international organizations have embarked into e-government research focusing on Africa. However, the state of the art of e-government research in Africa is poorly documented. This study analyzes the status of e-government research in Africa. A qualitative technique based on online searches and literature reviews is used to collect data that have addressed any aspect of e-government development in Africa. Thereafter, the content analysis of the reviewed literature is performed. The results of the study show: (1) the growth pattern of Africa e-government research within a period of 10 years from 2002 to 2012, (2) the issues addressed by the researchers on e-government development in Africa, (3) the African countries and regional participation in e-government research in Africa, and (4) the affiliation and expertise of authors undertaking research on e-government in Africa. These results provide useful insights that might be of interest to African governments, industry and academia for the future development of e-government on the continent. Also included in the paper is an annotated bibliography of e-government research.

Keywords

Africa, E-government, ICT in eGovernment, African eGovernment Research.

INTRODUCTION

Across the world, governments are embarking on an exciting journey, *viz*, electronic government (e-government). Heeks (2002) defined e-government as the use of the Internet and World Wide Web for delivering governmental information and services to its citizens. It is regarded as an application of ICT to governance processes and decision-making, in ways that provide opportunities for citizens and communities to regularly receive information about government activities and to participate in decision-making by governments (Kaaya, 2004). The benefits of implementing e-government include long term cost savings and improved service quality (Kaisara and Pather, 2009). Moreover, in today's global economy, high quality e-governmental services can provide a nation with competitive advantage for international business (Onyancha, 2007). The growing adoption of e-government by countries is a testimony to its role as an effective tool for public service delivery (Matavire et al., 2010).

Africa is the second largest continent with about a fifth of the world's total land area and the second most populous continent with one-seventh (about 950 million) of the world's population (Burke, 2012). Africa was once labeled a technological desert with respect to technology adoption and use (Ramessur, 2009). However, in the last decade, African governments have followed the trends towards adopting e-government with the objective of enhancing free flow of information, citizens' participation in the public policy processes, promoting productivity among the civil servants, and improving the delivery of public services (Njuru, 2011). This is witnessed by the initiation of several e-government initiatives across the continent including web sites and portals that promote reasonable access to government information and services by citizens and businesses (Rorrissa and Demissie, 2009). Furthermore, Africa has been one of the most dynamic regions in terms of ICT growth over the last decade; thus it is in this context that e-government in Africa has evolved (Burke, 2012).

E-government research in general investigates the use of information and technology, public policy, government operations, government services, and citizen engagement as the key concepts in the field (Heeks and Bailur, 2007). The main themes in e-government research are: technological innovation and modernization in the public sector, e-government program evaluation and policy analysis, e-participation and digital democracy, e-services and accountability, transparency and the dissemination of information (Bolívar et al., 2010). Interest in e-government research has grown in recent years as governments have viewed it as a lever for changing outmoded bureaucracies, making improvements in the efficiency and effectiveness of public service, enhancing service to citizens and businesses, and promoting participation and democracy (Rowley, 2011). Therefore, conducting research on the emergence of e-government in the African context is critically important not only to capture its history but to identify lessons that will inform future e-government policies and strategy formulation (Burke, 2012).

Understanding e-government research in Africa has not been explored in detail with critics stating that e-government research is generally weak (Heeks and Bailur, 2007). Several studies have explained the quality, rigor and relevance of e-government in Africa (Bolívar et al., 2010). The state of the art of e-government research in Africa is not well documented and existing e-government literature focuses mainly on those from countries abroad (Burke, 2012). The aim of this study is to analyze the status of research on e-government in Africa. The method is based on a qualitative technique using online searches and literature reviews to collect data that has addressed any aspect of the development of e-government in Africa. Thereafter, the reviewed literature is analyzed. The results of the study are used to show: (1) the growth pattern of Africa e-government research within a period of 10 years from 2002 to

2012, (2) the issues addressed by the researchers on e-government development in Africa, (3) the African countries and regional participation in e-government research in Africa, and (4) the affiliation and expertise of authors undertaking research on e-government in Africa. These results provide useful insights that may be of interest to African governments, industry, and academia for the future development of e-government on the continent.

The rest of this paper is organized as follows: Section 2 discusses current African e-government research. The methodology of the study is presented in Section 3. Section 4 presents and discusses the results of the study. A discussion of e-government research in other parts of the world is outlined in Section 5. The conclusion and recommendations are discussed in the final section of the paper.

BACKGROUND ON RESEARCH IN E-GOVERNMENT IN AFRICA

Research undertaken on e-government in Africa has primarily focused on gaining an understanding of the adoption and usage of ICT in governments focusing on exploring the implications of transforming traditional governments to e-government, as well as the challenges and constraints to the implementation and advancement of e-government (Menda, 2005; Ifinedo, 2006; Chango, 2007; Njihia, 2006; Ochara, 2008; Bwalya, 2009; Potnis and Demissie, 2009; Yonazi et al., 2010; Matavire, 2010; Nyirenda and Cropf, 2010; Nabbanja and Bada, 2011; Adeyeye and Aladesanmi, 2011; Dhamodharam and Saminathan, 2011; Gebba and Zakaria, 2012; Eliamani, 2012; Monyepao and Weeks, 2012; Mzyece, 2012; Nkomo, 2012; Azeez et al., 2012). Many papers address the technical design of systems for successful implementation of e-government initiatives (Naidoo, 2006; Sagna, 2006; Chigona and Samaai, 2006; Farelo and Morris, 2006; Ssewanyana, 2009; Jakachira, 2009; Kettani and El-Mahidi, 2009; Ochieng et al., 2011; Karokola et al., 2012; Asongwe, 2012).

Several researchers have proposed models and frameworks for the successful development, monitoring and implementation of e-government in African countries (Trusler, 2003; Lephot and Lerato, 2006; Ezz and Papazafeiropoulou, 2006; Vitali and Zeni, 2006; Gichoya and Hepworth, 2007; Sellami and Jmaiel, 2007; Azaab et al., 2009; Ochara-Muganda, 2010; Ochara-Muganda and Van Belle, 2010; Mishrif and Selmanovic, 2010; Bwalya, 2010; Bwalya and Healy, 2010; Mundy and Musa, 2010; Vencatachellum and Pudaruth, 2010; Fonou-Dombeu and Huisman, 2010; Lin et al., 2011; Al-Khatib and Lee, 2011; Asianzu and Maiga, 2012; Abdelsalaam et al., Ochara, 2012; 2012; Soumia et al., 2012). The preconditions for successful implementation of Africa's current and future e-government initiatives are discussed in Heeks (2002); Misuraca (2006); Schuppan (2008); Ginindza (2008); Gichoya (2009) and Adeyemo (2011).

Various web measurement frameworks were applied to assess African governments' websites' security, usability, user satisfaction, design, and capabilities for marketing online government services to foreign investors (Korsten and Bothma, 2005; Rorrissa and Demisse, 2009; Onyancha, 2007; Yeratziotis and Van Greunen, 2009; Akakandelwa, 2011; Kaisara and Pather, 2011; Pretorious and Calitz, 2011; Rugina and Chachage, 2012).

Viser and Twinomurizi (2006), Pathak et al. (2007), Abrahams and Newton-Reid (2008), Ruhode et al. (2008), Azab et al. (2009), Wangwe et al. (2009), Kaisara and Pather (2009) and Mbwete and Bhalalusesa (2011) discussed e-government strategies and efforts to facilitate e-readiness in African states and ensure that the e-government systems in place are accessible to a broad spectrum of citizens. Lessons that can be learned from African countries that have successfully implemented e-government

for economic diversification and service delivery are discussed in several papers (Awotwi and Owusu, 2008; Bwalya et al., 2010; Nkwe, 2012; Saadi and Almahjoub, 2012; Verma et al., 2012; Baradei et al., 2012; Abdalla, 2012).

Mutula (2005), Mnjama and Wamukoya (2007), Moloji and Mutula (2007), Aregu et al. (2008), Ng'eno (2010), Mutula and Mostert (2010), and Uutoni et al. (2011) proposed the electronic records management (ERM) to support e-government development and show how utilizing digital content could help decrease the digital divide by enabling the public to efficiently access government information. The utilization of information infrastructures such as telecenters and libraries to provide access to information in isolated African rural communities has been discussed (Ngulube, 2007; Aregu et al., 2008; Hallberg et al., 2012).

Studies from an industry perspective have discussed e-government readiness and evaluated the technological and organizational aspects of e-government systems (Vosloo and Van Belle, 2005; Sukhoo and Kurrumchand, 2012). Some studies have outlined the investments made by African governments in telecommunication infrastructure, human capital development, and interactive portal development to achieve higher e-readiness indices (Njuru, 2011; Lubua and Maharaj, 2012).

An open system theory that emphasized the need for continuous interaction between government organizations and the private sector in implementing e-government was proposed by Andersen and Henriksen (2005). This theory has been applied in Dlamini et al. (2010), Cisse (2005) and Dlodlo et al. (2012) to prescribe that e-government implementation be undertaken collaboratively by the public and private sectors to facilitate the modernization of government services.

E-government models, approaches and frameworks related to the use of ICT in the private sector taking into consideration disparities between rich and poor, and urban and rural views of African cultural dimensions are discussed in Easton et al. (2003) and Friedland and Gross (2010). Mohamed (2011) and Weddi (2005) discussed transformation of African governments through e-government and management of the relationship between governments and citizens with effective use of ICT in delivering public services.

Miriam et al. (2009) proposed guidelines for e-government policy and practice in developing countries and exposed the gaps between design and reality in e-government initiatives. E-government artifacts such as websites and e-services connecting government to its citizens are examined in De Tolly et al. (2006) and Wray and Van Olst (2012).

Other studies examined, investigated, and evaluated various aspects of the adoption and usage of ICT in the public sector with emphasis on the technical, user, and organizational aspects of e-government (Jakachira, 2009; Miriam et al., 2009). Maumbe (2009) and Twinomurizi et al. (2012) discussed the analytical frameworks based on the public sector which could be applied to measure the impact of ICTs on government and its societal role and relationships. The impact and implications of e-government initiatives on the structure and functioning of the public sector and the establishment of transformational change in the public sector are also discussed (Bwalya et al., 2011; Ssempebwa and Lubuulwa, 2011; Elkadi and Abdelsalam, 2012). Finally, efforts to prevent corruption, suggesting e-government strategies that standardize and clarify procedures for delivery of government services are discussed in Phala (2007), Grewan (2011) and Cloete (2012).

Burke (2012) used 50 articles published between 2000 and 2010 from Scopus to discuss the state of e-government research in Africa. Although the methodology employed is closely similar to that of this study, Burke (2012) findings are based on a very limited dataset and does not consider important aspects of e-government research in Africa such as: (1) the countries and institutions involved in e-government research, (2) the African and non-African authors undertaking research on e-government, (3) the growth pattern of e-government research, (4) the number of published e-government research articles per African country, and (5) the regional contributions of African countries in e-government research. This study overcomes these shortcomings and provides a thorough and detailed discussion of the state of e-government research in Africa between 2002 and 2012.

RESEARCH METHODOLOGY

Literature Search

Initially, keywords were used in online search engines such as Google and Google Scholar. The keywords included: electronic government in Africa, e-government in Africa, electronic governance in Africa, e-governance in Africa, e-governance in developing countries, e-government in developing countries, electronic government in developing countries and electronic governance in developing countries.

Search Keywords
a) electronic government AND Africa
b) e-government AND Africa
c) e-governance AND Africa
d) internet AND government AND Africa
e) information technology AND government AND Africa
f) digital AND government AND Africa
g) e-services AND Africa
h) e-participation AND Africa
i) e-democracy AND Africa

Table 1: Combined Search Keywords use in the Literature Survey

Thereafter, the search results were expanded by using several keywords combined with the AND operator as shown in Table 1 (Burke, 2012). Secondly, online citation databases such as Science Direct, Elsevier, Emerald, Sage Journals online, Springer Link, Science Target, Scopus and IEEE Xplore were explored to obtain more relevant research. Thirdly, due to the fact that search engines may not find an adequate amount of related literature, the reference sections of the downloaded papers and reports were scrutinized to find relevant literature. Fourthly, specific searches were performed for the individual 55 African states and produced literature that was country specific. Finally, searches were made from the websites of leading E-government and Information Systems journals and conferences. Leading e-government journals included: Electronic Journal of Electronic Government, International Journal of Electronic Government Research, Journal of Electronic Government, Journal of e-Government, Government Information Quarterly, Journal of Government Information, European Journal of Information System, Information Systems Journal, Information Systems Research, MIS Quarterly, African Journal of Information Systems, The African Journal of Information and Communication,

International Journal of e-Business and e-Government Studies, Journal of e-Government Studies and Best Practices, The Electronic Journal of Information Systems in Developing Countries, The Electronic Journal of Information Systems Evaluation, International Journal of Technology and Management, etc. Conferences encompassed: Information Society Technology for Africa (IST-Africa), European Conference on E-government, International Conference on ICT for Africa, International Conference on Theory and Practice of Electronic Governance, International Conference on Digital Government Research and International Conference on Theory, Practice of Electronic Governance, International Conference on Information Resources Management and Hawaii International Conference on System Sciences.

Data Collection

After the search described above, the next step was to delimit the literature. Overall, the preliminary search produced 261 research papers including journal articles, conference papers, research reports, Master's theses and Doctorate dissertations. The number of research papers was then reduced to 216 based on their relevance to the study. This was ascertained by reading their titles, abstracts and conclusions. Thereafter, different perspectives for analyzing the collected e-government research were defined on the basis of the work in Bolivar et al. (2010) including: issues addressed in e-government research, the countries and institutions involved in e-government, the African and non-African authors undertaking research on e-government, the number of published African e-government research papers per year, the number of research papers per African country, etc. This resulted in the list of themes depicted in Figure 1. These themes constitute the perspectives in which e-government research in Africa is analyzed later in this study.

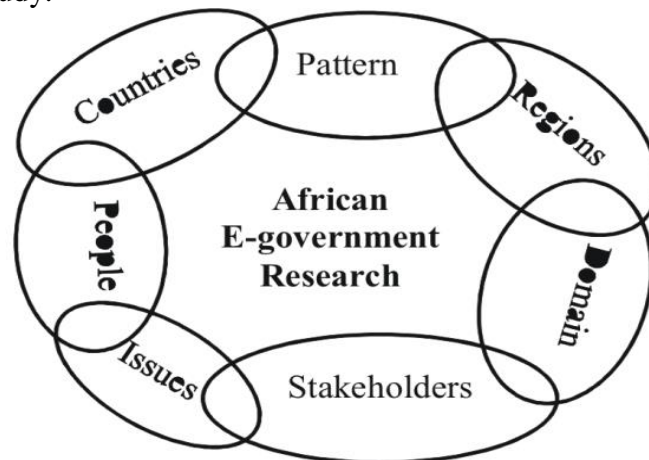


Figure 1: Dimensions of E-government Research in Africa

In Figure 1, Pattern refers to the curve of growth of e-government research in Africa from 2002 to 2012; countries include African and non-African countries involved in e-government research related to Africa; Domain refers to the fields of study in which research on e-government in Africa are been undertaken; People are the authors of e-government research in Africa and Issues are the research problems addressed by these authors; regions refer to African regions involved in e-government research. The Stakeholders of e-government research in Africa are classified into four main categories namely, academia, industry (I), public administration, and civil society. Academic research includes contributions from authors affiliated with universities; the category of industry research encompasses contributions of authors from private companies and non-academic research centers. Public administration research refers to the contributions from authors affiliated with government departments

and agencies, whereas, civil society research refers to contributions from non-governmental organizations (NGOs) (ROP, 2004; ROS, 2004; Lekorwe and Mpabanda, 2007) and international organizations (IO).

Only 24 African countries are involved in e-government research according to the sample of research papers found. Countries represented are: Algeria, Botswana, Burkina Faso, Cameroon, Comoros, Egypt, Ethiopia, Ghana, Kenya, Lesotho, Libya, Mali, Mauritius, Morocco, Mozambique, Namibia, Nigeria, Rwanda, Senegal, South Africa, Tanzania, Tunisia, Uganda and Zambia. Further, although significant literature was discovered for these 24 countries, the number of research papers found for some of them was quite low. These countries include: Algeria, Burkina Faso, Comoros, Ethiopia, Mali, Rwanda, and Tunisia, of which only 1 e-government research paper was found. The next section presents and discusses the results of the study.

RESULTS AND DISCUSSION

Stakeholder Contributions in E-Government Research in Africa

On the basis of the categorization of stakeholders presented in the previous section, this study shows that, as expected, the majority of discovered e-government research in Africa is carried out by the academic world with an 82% contribution followed by public administration with a 14% contribution (Figure 2). The latter is 10% more than the contribution of 4% for civil society, i.e., NGOs and international organizations. The industry scored 0% contribution in e-government research in Africa. However, the above findings largely exclude research reports on e-government strategies and policies of African governments. In fact, many African countries have adopted basic legislations, policies, and strategies (Korsten and Bothma, 2005; Rorrissa and Demisse, 2009) for e-government implementation, which may be considered to a certain extent as e-government research results. However, most of these research reports were unavailable at the time of this study due to certain factors such as the low online presence and visibility of African research in general (Burke, 2012) and the language barrier. In fact, this study has only targeted e-government research written in English. Any research written in other African countries' official languages such as Arabic, French, Portuguese, Swahili, etc., could not have been discovered.

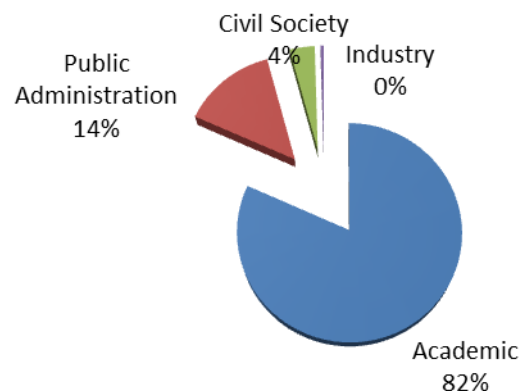


Figure 2: Stakeholder Contributions in E-Government Research in Africa

Public administration's contribution included research from authors from government departments and agencies as in Table 2.

Public Administration Institution	Country
Department of public service and administration	South Africa
Center for e-Innovation (Government Agency)	South Africa
Provincial government of Western Cape	South Africa
Department of economic development and tourism	South Africa
The ICT policy implementation technical unit (Government Agency)	Mozambique
Center for e-Governance (Government Agency)	Ghana
Ministry of finance planning and economic development	Uganda
National health insurance authority	Ghana
Gauteng city-region observatory	South Africa
Ministry of state for administrative development	Egypt
The new vision online (Government Agency)	Uganda
Council for scientific and industrial research (Government Agency)	South Africa
Bureau of statistics (Government Agency)	Uganda
Central informatics bureau (Government Agency)	Mauritius

Table 2: Public Administration Institutions Contributing in E-government Research in Africa

Table 2 shows that authors from only 6 African countries including: Egypt, Ghana, Mauritius, Mozambique, South Africa, and Uganda are affiliated with government departments and agencies. These countries are those with the highest online presence of government departments on the continent (Rossissa and Demisse, 2009).

The civil society and industry institutions contributing to e-government research in Africa including privates companies, non-academic research centers, NGOs, and international organizations are presented in Table 3.

Institution	Classification	Country
Shuttleworth Foundation	NGO	South Africa
L'Evenement	NGO	Burkina Faso
CIO World	NGO	Ghana
Eco perspectives	NGO	Mali
Union for science and technology advancement Africa	NGO	Tanzania
United Nations department of economic and social affairs	IO	United Nations
The World Bank	IO	World Bank
State informatics limited	I	Mauritius
Virginia department of health	IO	USA

Table 3. Civil Society and Industries Contributing in E-Government Research in Africa

Table 3 and Figure 2 show that industry in African countries is not undertaking much e-government research; only 1 research paper discovered was authored from an Information Technology company based in Mauritius. The contribution of both African and Non-African academic institutions (universities) is presented in the next subsection.

Contributions of Academic Institutions in E-Government Research in Africa

Overall, according to the sample papers collected, authors from 50 African universities are conducting e-government research. These universities are distributed amongst 20 countries including: South Africa (17), Botswana (1), Mauritius (1), Namibia (1), Nigeria (4), Zambia (1), Egypt (3), Morocco (1), Tanzania (5), Kenya (1), Uganda (3), Mozambique (1), Lesotho (1), Rwanda (1), Cameroon (2), Ghana (1), Ethiopia (1), Algeria (1), Libya (3), and Tunisia (1). Figure 3 presents the number of African universities publishing e-government research in different countries.

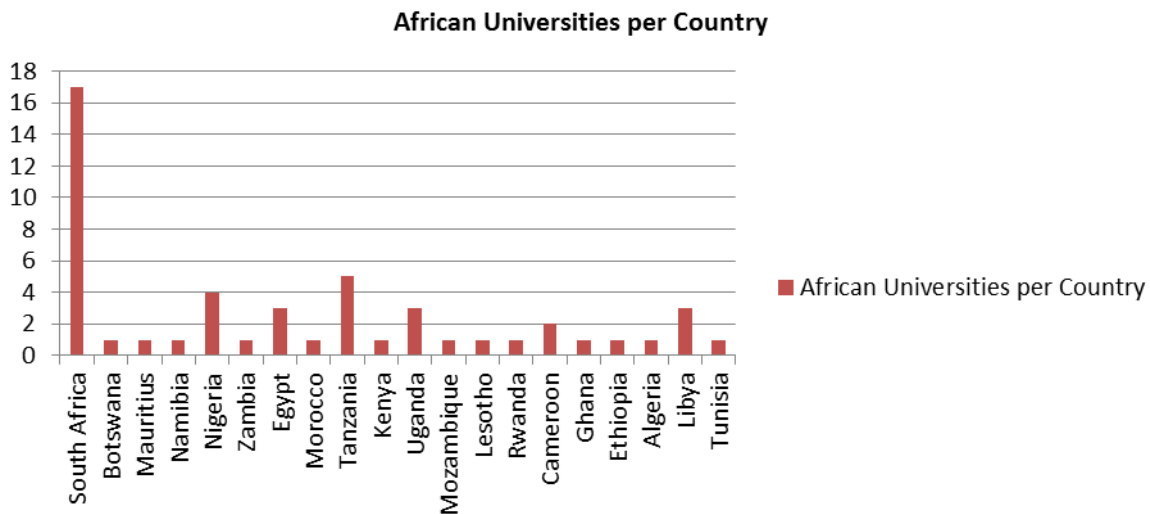


Figure 3: Number of African Universities Contributing to E-Government Research and Corresponding Countries

Authors from 25 non-African universities are also involved in e-government research publications related to Africa. These overseas universities are distributed in 12 countries including: United States of America (7), Germany (2), United Kingdom (6), Netherlands (2), Finland (1), Taiwan (2), Thailand (1), United Arab Emirates (1), Sweden (1), Calcutta (1), Norway (1), and Italy (1). As shown in Figure 4, and as expected, authors from African universities produce more research papers (76%) on e-government in Africa than their counterparts in non-African universities (24%).

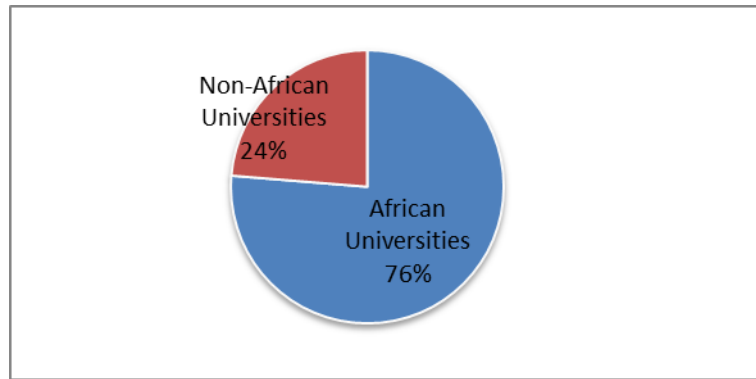


Figure 4: Contributions of African and Non-African Universities in E-Government Research in Africa

The next subsection presents the scale of African e-government research between 2002 and 2012.

Growth Pattern of E-Government Research in Africa

An analysis of the number of research papers on e-government in Africa, published between 2002 and 2012 inclusive, indicates that 2012 was the most productive year with the highest publication rate of 26% (57 publications) (Figure 5). The trend in terms of the number of published research papers from 2002 until 2012 indicates an upward trend except for 2002 and 2004, in which there were 3 published research papers (1.4%). On the other hand, Figure 5 shows that 16 research papers (7%) were published in 2006. This is slightly higher than the numbers for 2007 and 2008, in which 10 (4.5%) and 14 (6.3%) research papers were produced, respectively.

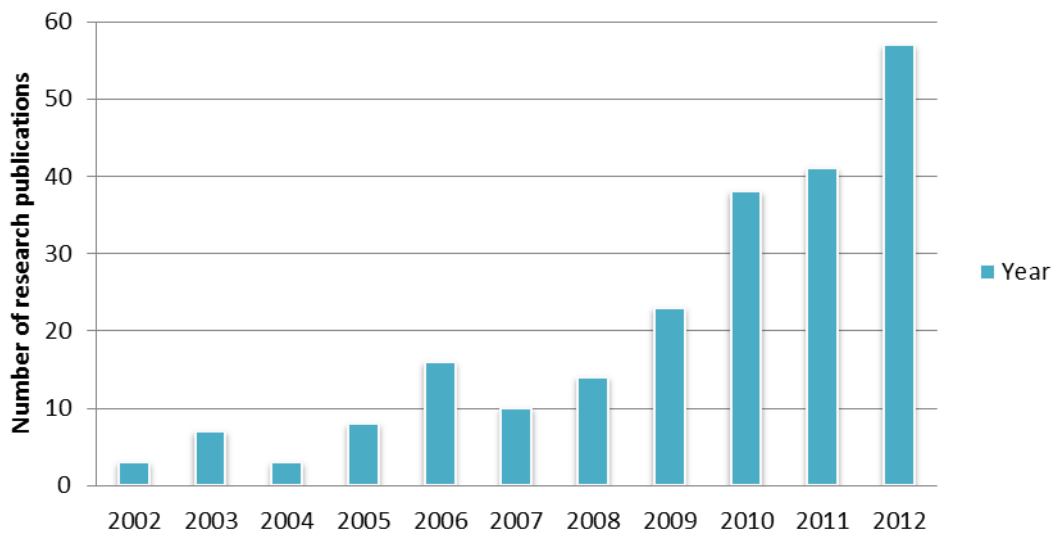


Figure 5: Growth Pattern of E-government Research in Africa

The contributions in e-government research made by different African regions are presented in the next subsection.

Regional Contribution in E-Government Research in Africa

Regionally, Figure 6 shows that all 5 African regions contribute to E-government research in Africa. Southern African is the dominant region with 100 (63.2%) published research papers; the Central Africa

region occupied the last position with 2 (1.2%) published research papers. This indicates that more countries in the Southern African region participate in e-government research as compared to countries in Central Africa. Southern Africa is followed by the Eastern African region, which produced 28 (17.7%) published research papers; the Western African region produced 17 (10.7%) published research papers, which is more than 11 (6.9%) published research papers produced by the Northern African region.

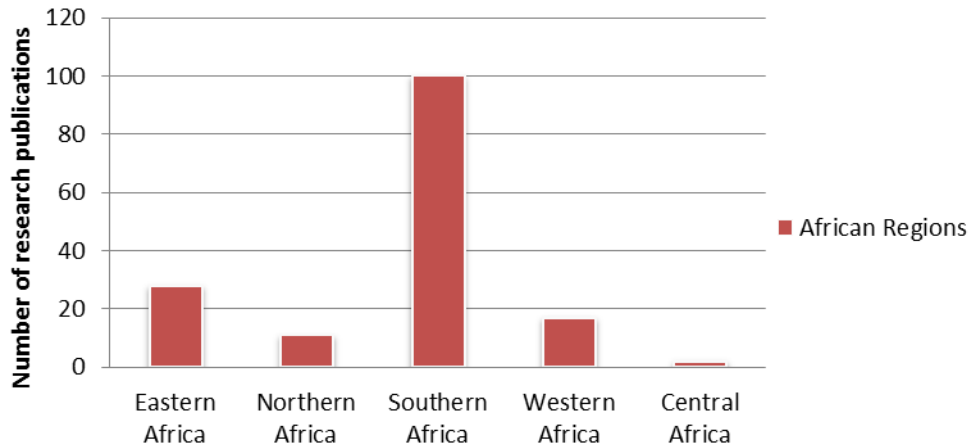


Figure 6: Contributions of African Regions in E-government Research

African countries and their academic institutions participating in Africa e-government research are discussed in the next subsection.

African Countries’ Contributions in E-Government Research

Let’s recall that research papers considered were those where all or part of authors were affiliated with institutions located in Africa. Each paper written by author(s) from an/the same academic institution was assigned to the host country of the institution. A paper with multiple authors from different institutions was shared amongst all the countries hosting these institutions. This decision was guided by the fact that there is no universally approved rule that defines the sequence of authors in a research paper according to the weight of their contributions (Basel, 2013). If an author was affiliated with more than one institution, the paper was assigned to all the host countries of these institutions. Figure 7 shows the distribution of e-government research per African country. South Africa occupies the leading position with 78 (48%) published research papers followed by Uganda, Kenya, and Tanzania with 11 (7.2%), 9 (5.9%), and 9 (5.9%) publications, respectively. Nigeria recorded 8 published research papers. Countries such as Botswana and Mauritius stand with 6 (3.9%) and 5 (3.2%) publications respectively, with Zambia and Egypt having 4 (2.6%) each. Mozambique, Namibia, Ghana, and Libya published 3 (1.4%) research papers each while only 2 (1.3%) research papers were recorded for each of Lesotho and Cameroon. Finally, countries including: Algeria, Burkina Faso, Comoros, Ethiopia, Mali, Rwanda, Senegal, and Tunisia were represented by only 1 (0.6%) research paper each in the corpus of papers found (Figure 7).

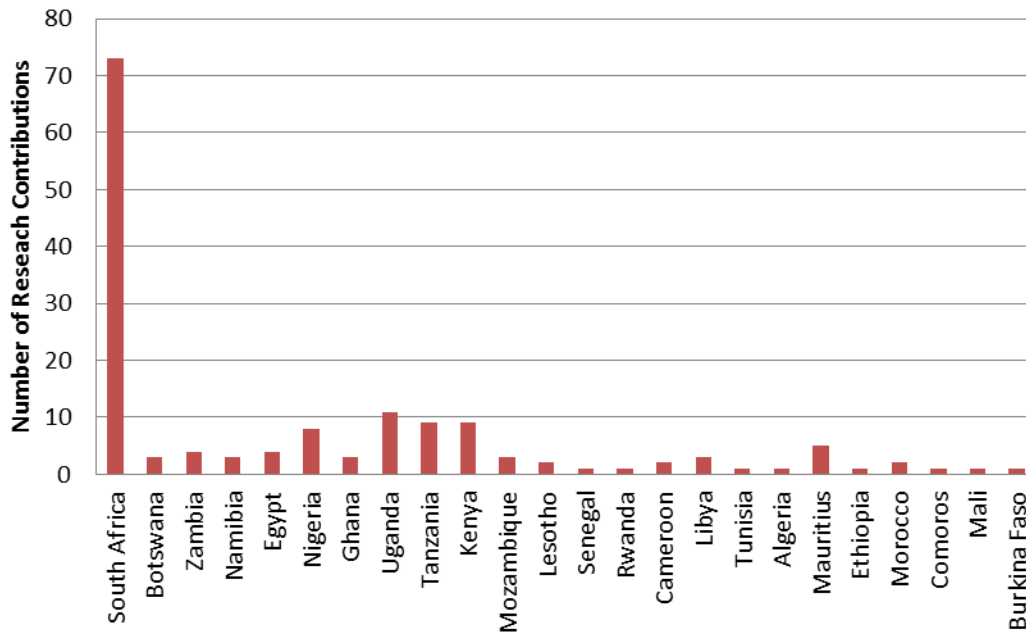


Figure 7: Contributions per African Country in E-Government Research

The disparities of contributions of African regions and countries in e-government research, displayed in Figures 6 and 7, respectively, may be attributed to the fact that this study has focused only on published research written in English. Research written in other African countries’ official languages, such as Arabic, French, Portuguese, Swahili, etc., was not considered. Another reason is the low visibility of African research in general. In fact, African research is poorly documented and often not represented online or indexed in larger research repositories for worldwide access (Burke, 2012). The next subsection discusses different domains under which authors are undertaking e-government research related to Africa.

Domains of E-Government Research in Africa

Figure 8 depicts several domains involved in e-government research in Africa. The study could not assign all the identified research papers (222) in the domains identified in Figure 8; only 93 research papers were allocated to the different domains based on the affiliations of the authors.

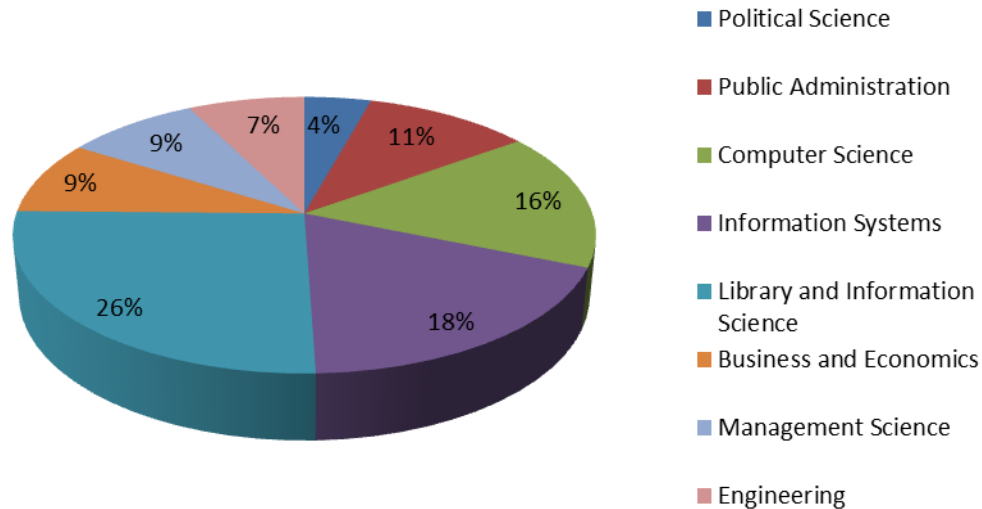


Figure 8: Contributions in E-Government Research per Domain

The domains considered include Public Administration, Computer Science, Information Systems, Business and Economics, Library and Information Science, Management Science, Political Science (Bolivar et al., 2010), and Engineering. It appeared that the largest number of research papers is produced by authors from the Library and Information Science domain; they contributed 26% of the overall publications while the least contribution is from the Political Science domain with a 4% contribution. The Library and Information Science domain was followed by the Information Systems, Computer Science, and Public Administration, which contributed 18%, 16%, and 11%, respectively. An equivalent contribution of 9% was produced by Management Science and the Business and Economics domains. The Engineering domain scored 7% research contribution. Issues addressed in different African e-government research publications are presented in the next subsection.

Issues Addressed in E-Government Research in Africa

Based on the corpus of paper found, authors undertaking e-government research in Africa tackle certain issues as listed in Figure 9. Even though the issues varied from country to country, some were commonly addressed by many authors. This is witnessed by the number of published research papers per issue provided in Figure 9. Challenges and opportunities of e-government in Africa are addressed in 28 research papers. The least addressed issue is the proposal of e-government strategies, which was covered in 5 research papers. Best practices of e-government implementation were covered in 6 research contributions. Furthermore, Figure 9 portrays that evaluation of government websites is covered in 16 research papers. On the other hand, models and frameworks for implementing e-government, and assessment of the state of e-government were covered in 11 research papers, respectively. The implication of e-government on public policy and citizen roles and participation in e-government were covered in 8 research papers, respectively. Lastly, Figure 9 shows that the accessibility of e-government services, analysis of e-government readiness, and usage of ICTs in e-government implementation were addressed in 7 research papers.

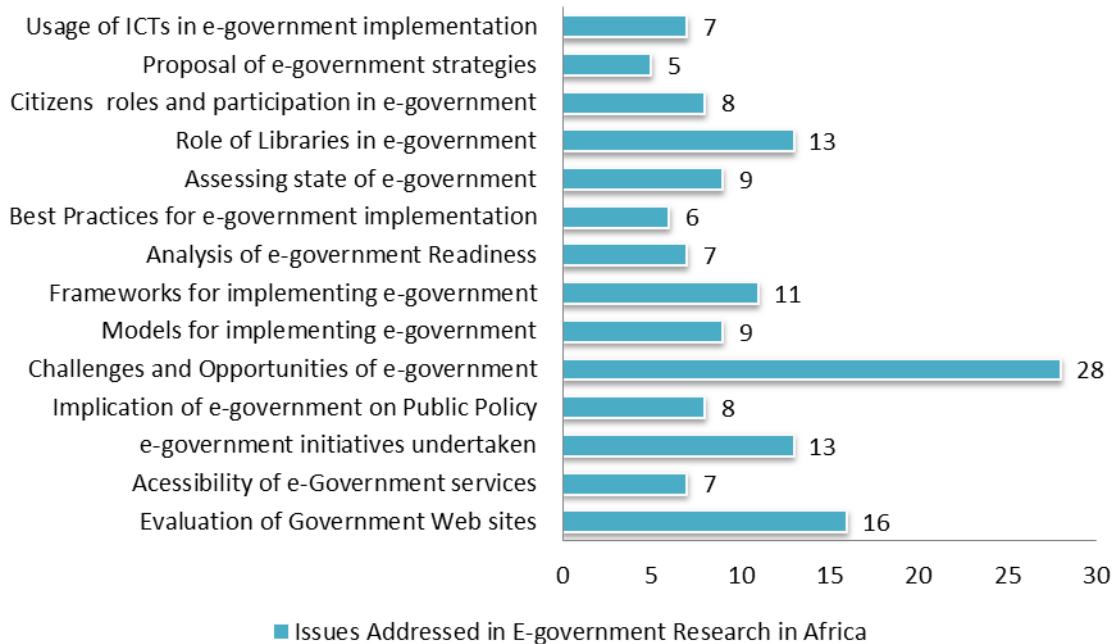


Figure 9: Issues Addressed in E-Government Research in Africa

A discussion of e-government research in other parts of the world is done in the next section so as to compare our findings with other similar studies.

E-GOVERNMENT RESEARCH IN OTHER REGIONS OF THE GLOBE

The state of e-government research in Europe, United States of America (USA), and Australia was presented earlier (Codagnone and Wimmer, 2007). The study discussed funding mechanisms of e-government research in these three regions in terms of: (1) the funding bodies of e-government research, (2) stakeholder participants in e-government research, (3) topics addressed in e-government research, (4) partnership mechanisms between government and stakeholders in e-government research, (5) direction and policies of e-government research, and (6) e-government research programs and strategies. The above items show that e-government research in these regions is well structured. Compared to e-government research in the rest of the world, many African countries do not have any clearly defined direction, policies, programs, or strategies for e-government research and there are no dedicated funds allocated to this type of research. Moreover, it is worth noting that the main e-government research topics or issues in Europe, USA, and Australia (Codagnone and Wimmer, 2007) are largely different from those presented in this study (Section 4.7); this may be explained by the technology advancement in these regions compared to that in Africa as well as the specific social and cultural characteristics of Africa. This has an impact on the nature of issues addressed in e-government research in the respective regions.

Another interesting study by Bolivar et al. (2010) analyzed the trends of e-government research worldwide. The analysis focused on: (1) the growth pattern of e-government research between 2000 and 2009, (2) universities and departments that produced e-government research, (3) authors that took part in e-government research and their affiliations, (4) the subjects or issues addressed in e-government research, and (5) the methodologies employed in e-government research. In their findings, Bolivar et al.

(2010) showed that the outputs of e-government research have increased gradually between 2000 and 2009; this finding is similar to that reported in this study on e-government research in Africa between 2002 and 2012. On a global scale, Bolivar et al. (2010) revealed that the highest number of published e-government research is produced by American universities (45.58%), followed by European (29.36%), Asian (15.64%), Canadian (4.45%), Australian (2.20%), New Zealand (1.39%), South American (0.93%), and African (0.46%) universities; these findings agree with that of this study (Section 4.2) on the overseas countries and universities that are undertaking e-government research focusing on Africa. Furthermore, Bolivar et al. (2010) provided the key domain of expertise of authors undertaking e-government research including: public administration, public and policy, library and information science, computer science and information systems, accounting, business and economics, marketing and communication, and management science; these domains are similar to those discussed in this study in Section 4.6.

Many other studies (Yildiz, 2007; Heeks and Bailur, 2007; Todorovski and Erman, 2009; Goldkuhl, 2012) have discussed e-government research. Authors of these studies mainly analyzed the current literature on e-government research and suggested (1) guidelines for strengthening best practices in e-government research (Yildiz, 2007; Heeks and Bailur, 2007), and (2) methodologies (Todorovski and Erman, 2009) and models (Goldkuhl, 2012) for transforming e-government in an established research field in future where high quality research outputs could be produced. The next section concludes the study and provides some recommendations.

CONCLUSION AND RECOMMENDATIONS

This study analyzed the status of e-government research in Africa. Online searches and content analysis of published research contributions were used to collect the data for the study. The data analysis revealed that the rate of publications of e-government research related to Africa has increased over the past 10 years with 2012 being the most productive year. This trend is expected to grow in the upcoming years and will maintain a desirable path for Africa e-government research. It was also found that only 24 (43.6%) out of 55 African countries are represented in the e-government research that was found, i.e. more than the half of countries on the continent were not represented in the e-government research. This poor visibility of African countries in published e-government research is probably due to the fact that most African countries do not have any clearly defined direction, policies, programs, or strategies and dedicated funds for e-government research as compared to other parts of the world (Codagnone and Wimmer, 2007). Further, the results suggest that most of the current research on e-government in Africa is undertaken by authors affiliated to academic institutions from only 15 (27.3%) countries on the continent; this may be due to common barriers at African universities such as (1) heavy teaching loads for academic staff (large classes and many teaching contact hours), (2) additional consulting work to supplement the low income from academic work, (3) low capabilities/qualifications of academic staff for advanced level research such as Master's and Ph. D. degrees as well as supporting mechanisms for conducting research including funding, publication incentives, conference hosting/participation, etc. (Sawyer, 2004; Kizza, 2011). It was also shown that the industry participation in e-government research is quite low with few contributions from private companies and non-academic research centers. The results also show that the contribution of government departments and agencies in published e-government research on the continent is quite low. This is witnessed by the few contributions from government divisions in only 6 African countries (14%). A regional consideration of African countries portrays Southern Africa as the leading region in terms of e-government research with 63.2% contributions and the least contribution of 1.2% comes from Central Africa. However, it was appealing

to find out that all 5 African regions are involved in e-government research. With regard to stakeholders, the academic world showed the largest contribution to Africa e-government research with African universities showing an upper hand (76% contributions) over universities abroad (24% contributions). Several research domains contributed to e-government research in Africa. However, authors from the library and information science, information systems, and computer science domains produced the largest number of research publications (26%, 18% and 16%, respectively). Similar findings were reported in Heeks and Bailur (2007); Bolivar et al. (2010) and Burke (2012). Finally, several issues were addressed in e-government research in Africa and the challenges and opportunity of e-government for African governments was the most prominent issue; this is in line with the fact that most authors of e-government research focusing on Africa are interested in analyzing the impact of the adoption and use of ICT in government on the continent (Bwalya, 2009; Yonazi et al., 2010; Matavire et al., 2010; Adeyeye and Aladesanmi, 2011; Nkomo, 2012; Azeez et al., 2012).

In light of the above findings, this study makes the following recommendations that would certainly boost the research outputs on e-government in Africa in the long-term and strengthen the capacities of African countries in adopting e-government:

- The establishment of a strong partnership between African governments, industries, and academia for the frequent update and definition of contents of African e-government programs according to the countries' specificities,
- The initiation of mechanisms for financial support of e-government research from African governments, industries, bilateral and multilateral partners,
- The creation of research centers and various institutes specializing in e-government studies, either in government divisions, academic institutions, industries, or non-governmental organizations and
- The initiation of various e-government related workshops and conferences to be organized and held on the African continent.

This study has focused on published research on e-government in Africa written in English only. Related research publications in other African countries' official languages such as Arabic, French, Portuguese, etc. were not considered. The methodology of the study was also undermined by the fact that (1) African research is poorly documented and often not represented online or indexed in larger research repositories for worldwide Internet access (Burke, 2012) and (2) The size and the ever-growing nature of the Internet (Bughin et al., 2011) may have made some sources of relevant publications (conferences, journals, etc.) to be left out at the time of data collection. However, due to the intensity and diversity of the collected research papers for this study, the authors believe that these limitations would not significantly affect the overall findings of this study.

APPENDIX: ANNOTATED BIBLIOGRAPHY

Abdalla, S. (2012). An e-government Adoption framework for Developing countries: A Case study from Sudan. *PhD Dissertation, School of Applied Sciences, Cranfield University*. Empirically examined the adoption of e-government at a national and organizational level, taking the public sector in Sudan as a case study: [Soudan].

- Abdelsalam, H., Reddick, C., ElKadi, H., & Gamal, S. (2012). Factors Affecting Perceived Effectiveness of Local E-government in Egypt. *International Journal of Information Communication Technologies and Human Development (IJICTHD)* 4(1) (pp. 1-12). Suggests strategies to better design e-government technology for local governments in Egypt: [Egypt].
- Abrahams, L., & Newtown-Reid, L. (2008). E-governance for social and Local Economic Development: Gauteng City Region Perspective. *Link Public Policy Research* 1(9) (pp. 2-47). Proposals aimed at fostering strong local linkages in between e-governance and social economic development in Gauteng region, South Africa: [South Africa].
- Adeyemo, A. (2011). E-government implementation in Nigeria: an assessment of Nigeria's global e-gov ranking. *Journal of Internet and Information Systems* 2(1) (pp. 11-19). Surveying Nigeria's performance in e-government, identify area of deficiencies and suggest improvements: [Cape Verde, Nigeria, Ghana, Senegal, Gambia].
- Adeyeye, M., & Aladesanmi, O. (2011). Re-inventing local government capacity in Nigeria: The e-governance imperative. *34th MIPRO International Convention Conference* (pp. 1603-1608). Provides a framework for understanding the role of e-governance in enhancing local government capacity in Nigeria : [Nigeria].
- Akakandelwa, A. (2011). An Exploratory Survey of the SADC e-government Web Sites. *Ligrary Review* 60(5) (pp. 421-431). Evaluate selected SADC countries' e-government websites with regard to language, content, currency, interactivity and visibility: [South Africa, Botswana, Lesotho, Namibia, Swaziland, Mauritius, Zimbabwe, Madagascar, Malawi, Mozambique, Tanzania, Zambia, Angola, DRC, Seychelles].
- Albert, I. (2009). Whose E-governance?: A Critique of Online Citizen. *International Journal of eBusiness and eGovernment Studies* 1(1) (pp. 27-40). Discuss the readiness of African states to practice e-governance: [All African countries].
- Al-Khatib, H., & Lee, H. (2011). E-Government Systems Success And User Acceptance In Developing Countries: The Role of Perceived Support Quality. *International Journal of eBusiness and eGovernment Studies* 3(2), (pp. 69-78). Explain user acceptance of e-government systems considering several user groups with regard to digital division in developing countries.
- Aregu, R., Bagaya, M., & Nerbone, J. (2008). An ICT based Digital Content Information Access Framework in Developing Countries: the Case of Agricultural Informatics Access and Management in Uganda. *IST-African Conference and Exhibition* (pp. 1-6). Investigate the level and the extent of ICT based access to digital content and information by the Ugandan agricultural and development community: [Uganda].
- Asianzu, E., & Maiga, G. (2012). A Consumer Based Model for Adoption of E-Tax Services in Uganda. *IST-Africa Conference and Exhibition* (pp. 1-15). Presents a model for e-tax adoption as a form of e-government to attempt to bridge public service delivery gap for Uganda as a developing country: [Uganda].

- Asongwe, P. (2012). E-Government And The Cameroon Cybersecurity Legislation 2010: Opportunities and challenges. *The African Journal of Information and Communication* 1(12) (pp. 156-163). Highlight the importance of e-laws for effective Cameroonian public administration, and discuss the challenges for implementation of e-government: [Cameroon].
- Awotwi, J., & Owusu, G. (2008). Lack of Equal Access to ICTs by Women: An e-Governance Issue. *ICEGOV Conference* (pp. 452-457). Explore the inadequacy of women's participatory role in governance due to lack of access to ICTs in Ghana : [Ghana].
- Azab, N., Kamel, S., & Dafoulas, G. (2009). A suggested framework for assessing electronic government readiness in Egypt. *Electronic Journal of eGovernment* 7(1) (pp. 11-28). Develop an e-government framework encompassing components as people, technology, process, strategic planning and their interactions in an Egypt environment: [Egypt].
- Azeez, N., Abidoye, A., Adesina, A., Agbele, K., Venter, L., & Oyewole, A. (2012). Threats to E-Government Implementation in the Civil Service: Nigeria as a Case Study. *The Pacific Journal of Science and Technology* 13(1) (pp. 398-402). Presenting a comprehensive list of various threats at pre and post implementation of e-government in Nigeria's civil service : [Nigeria].
- Baradei, L., Shamma, H., & Saada, N. (2012). Examining the marketing of e-Government services in Egypt. *International Journal of Business and Public Management* 2(2) (pp. 12-22). Examine the effectiveness of marketing e-government services in Egypt: [Egypt].
- Burke, M. (2012). A Decade of E-Government Research in Africa. *The African Journal of Information and Communication* 2(12) (pp. 2-25). Analyses e-government research in Africa for the last decade: [Sudan, Congo, Nigeria, Seychelles, Tunisia, Mauritius, Morocco, Namibia, South Africa, Sao Tome & Principe, Ghana, Zimbabwe, Equatorial Guinea, Libya].
- Bwalya, K. (2009). Factors affecting adoption of e-government in Zambia. *The Electronic Journal of Information Systems in Developing Countries* 38(4) (pp. 1-13). Assessing challenges, opportunities and issues with regard to e-government adoption in Zambia: [Zambia].
- Bwalya, K., & Healy, M. (2010). Harnessing e-government adoption in the SADC region: a conceptual underpinning. *Electronic Journal of eGovernment* 8(1) (pp. 23-32). Status of e-government implementation in the SADC region presenting case studies that describe how e-government has been harnessed in Botswana and Zambia for social inclusion: [Mauritius, South Africa, Mozambique, Tanzania, Botswana, Namibia, Zambia].
- Chango, M. (2007). Challenges to e-government in Africa south of Sahara: a critical view, and provisional notes for a research agenda. *1st International Conference on Theory and Practice of Electronic Governance* (pp. 384-393). Addressing the question of why in Africa e-government projects have higher rate of failure than success: [Gambia].
- Chete, F., Oyemade, D., Chiemeke, S., & Ima-Omasogie, I. (2012). Citizens' Adoption of SMS Based E-Government Services in Lagos State. *Journal of Emerging Trends in Computing and Information Sciences* 3(4) (pp. 654-660). Identify factors influencing citizens adoption of SMS based e-government services in Nigeria: [Nigeria].

- Chogina, W., & Samaai, E. (2006). An Assessment of Factors Influencing Rural eAdoption: A Case of South Africa. *IST-Africa Conference and Exhibition* (pp. 1-10). Discusses factors which influence the adoption of community computing in rural and semi urban set up: [South Africa].
- Cisse, A. (2005). Ambitious plans for e-governance in Mali. *iConnect Collected Magazine* (pp. 48-50). Discussing e-governance in Mali looking at the government s ICT project: [Mali].
- Cloete, F. (2012). E-government Lessons From South Africa 2001 – 2011: Institutions, State Of Progress And Measurement. *The African Journal of Information and Communication 1(12)* (pp. 128-142). Summarizes the strategic importance of the shift from paper based public administration to electronic governance in South Africa: [South Africa].
- Cumbi, V., & Chemane, L. (2007). Mozambican Government Portal Case Study: Visitor Analysis. *IST-Africa Conference and Exhibition* (pp. 1-10). Measure the performance of the e-government portal in Mozambique: [Mozambique].
- Dandjinou, P. (2007). E-Governance Strategies in Cape Verde and South Africa: From Service Delivery to e-Participation. *ICEGOV Conference* (pp. 452-457). Elaborates on key lessons learnt from Cape Verde and South Africa on reform in public service delivery and citizen engagement : [Cape Verde, South Africa].
- de Tolly, K. (2006). Rethinking E-government Development: Issues, Lessons and Future Prospects for the Cape Gateway Portal in South Africa. *IST-Africa Conference and Exhibition* (pp. 1-11). Examines e-government development in Africa based on the Cape Gateway project in South Africa : [South Africa].
- Dhamodharam, R., & Saminathan, A. (2011). Challenges of E-Government in African Countries: Creating an Enabling Environment in Nigeria. *IST-Africa Conference and Exhibition* (pp. 1-8). Find out challenges on the way of an enabling e-government environment in African countries particularly Nigeria: [Nigeria, Ghana, Botswana].
- Dlamini, I., Ngobeni, S., & Mutanga, M. (2010). African Egov: Secure E-Services. *eChallenges e-2010 Conference and Exhibition* (pp. 1-8). Reviewing current state of e-government architecture in South Africa, suggesting and recommending improvements: [South Africa].
- Dlodlo, N., Olwal, T., & Mvelase, P. (2012). The Internet of Things in Bridging the Gap in Municipal Service Delivery. *IST-Africa Conference and Exhibition* (pp. 1-11). Proposes the adoption of Internet of things (IoT) technologies in enhancing service delivery in the South African municipalities : [South Africa].
- Easton, H., Nakene, M., Naidoo, S., & Kafidi, P. (2003). Validating the user-centered design process within a developing context. *CHI-SA 2003 Conference* (pp. 1-5). Illustrating how the user-centered process can be validated within developing context in South Africa : [South Africa].
- Elkadi, H., & Abdelsalam, H. (2012). E-Alexandria 2005-2010: A Multi-Perspective Analysis. *The African Journal of Information and Communication 1(12)* (pp. 143-155). Presents a brief review of the process of constructing e-government systems experienced through the e-Elexandria project in the Egyptian local e-government: [Egypt].

- Ezz, I., & Papazafeiropoulou, A. (2006). Inter-organizational Collaboration towards Process Integration in the Public Sector. e-government collaboration in Egypt. *39th Hawaii International Conference on System Sciences* (pp. 1-10). Proposing a framework for inter-organizational collaboration in Egypt environment: [Egypt].
- Farelo, M., & Morris, C. (2006). The status of e-government in South Africa. *IST-Africa Conference* (pp. 1-12). Discuss the status of e-government in south Africa and the progress of e-government initiatives: [South Africa].
- Fonou-Dombeu, J., & Huisman, M. (2010). Investigating e-government knowledge base ontology supporting development projects monitoring in sub Saharan Africa. *International Journal of Computing and ICT Research* 4(1) (pp. 20-29). Constructing ontology in support of e-government initiatives in the domain of developments in a Sub Saharan African country: [South Africa, Kenya, Ghana, Uganda, Burkina Faso].
- FriedLand, C., & Gross, T. (2010). Measuring the Public Value of e-Government: Methodology of a South African Case Study. *IST-Africa Conference and Exhibition* (pp. 1-12). Present a case study for measuring public value of e-government in a South African national department: [South Africa].
- Gebba, T., & Zakaria, M. (2012). E-Government in Egypt: An Analysis of Practices and Challenges. *International Journal of Technology and Management* 1(1) (pp. 11-25). Addresses services provided by E-Highlight Egypt's E-government readiness ranking, explore the challenges encountered in e-government Implementation: [Egypt].
- Gichoya, D. (2007). Facing the Challenges of ICT Implementation in Government. *IST-Africa Conference Exhibition* (pp. 1-9). Presents the recommendations for implementation of e-government in Kenya together with their guidelines: [Kenya].
- Ginindza, B. (2008). The state of e-government in Swaziland with special reference to government ministries and departments. *MI's Thesis, School of Sociology and Social Studies, University of KwaZulu-Natal*. Assess the state of e-government in Swaziland with special reference to government ministries and departments : [Swaziland].
- Grewan, R. (2011). Developing a Model for Information Society and Development at a Provincial Level in South Africa. *IST-Africa Conference and Exhibition* (pp. 1-16). Reflects on the experiences of the Northern Cape Province in South Africa in developing e-government information models: [South Africa].
- Hallberg, D., Godem, C., & Dzemey, W. (2012). Telecentre Approaches in Cameroon and Kenya Illuminated Using Behavioural Archaeology. *African Journal of Information and Communication* 1(12) (pp. 48-64). Discuss telecentre projects in Kenya and Cameroon using behavioral archaeology focusing on e-government services : [Cameroon, Kenya].
- Heeks, R. (2002). E-government in Africa: promise and practice. *Information Policy* 9(7) (pp. 97-114). Best practices that may help close design-reality gaps and help improve e-government project success rates in Africa: [Egypt, Ghana, Mauritius, South Africa].

- Heginbotham, M. (2006). Development through e-government : strategic options for South African application. *Masters' Thesis in Public Administration, University of Stellenbosch*. Discuss E-government as a strategy for promoting development for the future of South Africa: [South Africa].
- Hepworth, M., & Gichoya, D. (2007). Government Informatics: Challenges of Laying the Foundation for eGovernment. *IST-Africa Conference and Exhibition*. Reviews variables affecting the implementation of e-administration in African countries with special reference to Kenya: [Kenya].
- Hergathy, A. (2007). eGovernment Implementation in Rwanda: Practitioners Lessons. *IST-Africa Conference and Exhibition*. Discuss difficulties in ICT and e-government implementations realized by the government of Rwanda over the period 2001 to 2006: [Rwanda].
- Horsten, H., & Bothma, T. (2005). Evaluating South African government websites: methods, findings and recommendations. *South African Journal of Information Management* 5(3) (pp. 1-11). Assessing effectiveness of national websites in providing access to government information: [South Africa].
- Ifenedo, P. (2006). Towards e-government in a sub-Saharan African country. *Journal of eGovernment* 3(1) (pp. 3-28). Provide useful insights regarding problems of e-government in Nigeria: [Nigeria].
- Jakachira, B. (2009). Implementing and integrated e-government functionality for a marginalized community in the eastern cape. *Master's Thesis in Computer Science, University of Fort Hare*. Developing a cost-effective e-government system to improved public services to the Dwesa area in Eastern Cape, South Africa.: [South Africa].
- Kaaya, J. (2004). Implementing e-government services in east Africa: assessing status through content analysis of government websites. *Electronic Journal of eGovernment* 2(1) (pp. 39-54). Analysis to determine the status of government web sites of three East African countries: Kenya, Tanzania and Uganda: [Kenya, Tanzania, Uganda].
- Kaisara, G., & Pather, S. (2009). E-government in South Africa: e-service Quality access and Adoption Factors. *11th Annual Conference On World Wide Web Applications* (pp. 2-17). Discuss service quality dimensions and adoption factors of e-government in South Africa, citizens' expectations and attitudes in relation to accessibility and adoption of e-government services.: [South Africa].
- Kalu, K. (2007). Capacity building and IT diffusion: a comparative assessment of e-government environment in Africa. *Social Science Computer Review* 2007(25), (pp. 358-371). Developing internal utilization capacity and public access to ICT to improve e-government in Africa.
- Karokola, G., Kowalski, S., & Yngstrom, L. (2012). Secure e-Government Services: Protection Profile for Electronic Voting – A Case of Tanzania. *IST-Africa Conference and Exhibition* (pp. 1-13). Discuss security services in electronic voting processes for the Tanzanian government: [Tanzania].

- Kettani, D., & El Mahidi, A. (2009). Fez e-government project: an initiative transforming scientific research to value in Morocco. *Government Information Quarterly* 7(4) (pp. 371-380). Analyzing case study for ICT development in Morocco: [Morocco].
- Keyeyago, F. (2012). Deterrents to Using Government Websites in Uganda: Extension of the Technology Acceptance Model, Self-efficacy and Awareness. *IST-Africa Conference and Exhibition*. To assess the extent to which perceived usefulness influences uses of the Uganda Bureau of Standards website: [Uganda].
- Lephoto, M., & Lerato, L. (2006). Speech Technology for Accessing Government Information Services. *IST-Africa Conference and Exhibition* (pp. 1-8). Discuss use of speech technology and usage of telecommunication technologies intended for use by Lesotho government in delivering of public information and services: [Lesotho].
- Lin, F., Fofanah, S., & Liang, D. (2011). Assessing citizen adoption of e-Government initiatives in Gambia: A validation of the technology acceptance model in information systems success. *Government Information Quarterly* 28(1) (pp. 271-279). Showing how technology acceptance model (TAM) and e-government initiatives would positively impact the Gambian government despite cultural differences in the country: [Gambia].
- Lubua, E., & Maharaj, M. (2012). ICT Policy and e-Transparency in Tanzania. *IST-Africa Conference Exhibition* (pp. 1-10). Explores the adequacy of Tanzania ICT Policy for enhancing transparent and efficient service provision to the public: [Tanzania].
- Macueve, G., & Macome, E. (2007). Conceptualization of e-Government as an Information Infrastructure: A Case Study from Mozambique. *IST-Africa Conference and Exhibition* (pp. 1-9). Discuss conceptualization of e-government applications in Mozambique: [Mozambique].
- Matavire, R., Chigona, W., Roode, D., Sewchurran, E., Davids, Z., Mukudu, A., & Boamah-Abu, C. (2010). Challenges of E-government Project Implementation in a South African Context. *The Electronic Journal of Information Systems Evaluation* 13(2) (pp. 153-164). Identify some factors that inhibit the successful implementation of e-government in the Western Cape in South Africa: [South Africa].
- Maumbe, B., & Ntombovuyo, N. (2009). Crafting and e-government development model for South Africa: a strategic new direction for the Western Cape province. *International Conference on Information Resources Management* (pp. 1-19). Proposing a model for the national policies and provincial growth and development strategy for the Western Cape, South Africa.: [South Africa].
- Mazengera, B., & Mavetera, N. (2010). Factors Contributing To Successful E-Government Implementation in Southern African Development Community (SADC) Countries. *Innovation and Knowledge Management: A Global Competitive Advantage* (pp. 1050-1057). Proposes a framework that can be adopted by SADC states in e-government projects: [Angola, Botswana, DRC, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, South Africa, Tanzania, Swaziland, Zambia, Zimbabwe].

- Mbwete, G., & Bhalalusesa, R. (2011). Assessment of Public Services e-Government Initiatives: A Case Study of Tanzania. *IST-Africa Conference and Exhibition* (pp. 1-7). Provides an assessment of selected public service units in Tanzania: [Tanzania].
- Menda, A. (2005). Computerising local government in Tanzania: the Kinondoni experience. *iConnect Collected Magazine* (pp. 51-53). Discuss the success and challenges of e-governance in Tanzania : [Tanzania].
- Meyer, J. (2007). e-Government and e-Governance as Perceived by the Populace of South Africa: An Eastern Cape Study. *IST-Africa Conference and Exhibition* (pp. 1-9). Formalize the use of the electronic media in order to assist policy formulation and implementation in e-governance and e-democracy in the Eastern Cape region, South Africa: [South Africa].
- Mishrif, A., & Selmanovic, S. (2010). E-government in the Middle East and North Africa: The Role of International Organizations in the Experience of Egypt and Morocco. *6th International Conference on Public Administration* (pp. 905-926). Present e-government as a tool for modernizing public administration in Egyptian and Moroccan e-government policies: [Morocco].
- Misuraca, G. (2006). E-governance in Africa, from theory to action: A practical-oriented Research and Case Studies on ICTs for Local Governance. *International Conference on Digital Government Research* (pp. 209-218). Focuses on the context, theory and thinking around the issue of ICTs and local governance in Africa with case studies evaluating e-government projects in Uganda and Senegal: [Uganda, Senegal].
- Mnjama, N., & Wamukoya, J. (2007). E-government and Records Management: An assessment tool for E-records Readiness in Government. *The Electronic Library* 25(3) (pp. 274-284). Discuss the challenges facing archivists and records managers in keeping electronic records in public sector organizations in Africa: [Ghana, Tanzania].
- Mohamed, K. (2011). Evaluation of the status of the e-government in Comoros. *Diplomacy Foundation* (pp. 1-7). Evaluating the Comoros country online presence : [Comoros].
- Moloi, J., & Mutula, S. (2007). E-records Management in an E-government Setting in Botswana. *Information Development* 23(4) (pp. 290-306). Investigating e-records management as regard to e-government delivery of services and programs in Botswana: [Botswana].
- Monyepao, M., & Weeks, R. (2012). Case Study: Assessing and Evaluating the Readiness of the ICT Infrastructure to Provide e-Government Services at a Local Government Level in South Africa. *Technology Management for Emerging Technologies Conference* (pp. 2778-2784). Seeks to understand the challenges experienced by municipalities in providing E-government services in South Africa: [South Africa].
- Mtingwi, J., & Van Belle, J. (2012). The State of E-government and M-government Readiness in Malawi. *International Journal of Information Technology and Computer Science* 6(1) (pp. 58-68). Investigates e-readiness of the Malawian government to engage in mobile government : [Malawi].

- Mundy, D., & Musa, B. (2010). Towards a Framework for E-government Development in Nigeria. *Electronic Journal of eGovernment* 8(2) (pp. 148-161). Detail research undertaken to examine the path towards the implementation of mature e-government services in Nigeria: [Nigeria].
- Mutula, S. (2005). Bridging the digital divide through e-governance: A proposal for Africa's libraries and information. *The Electronic Library* 23(5), (pp. 591-602). present the status of the digital divide in Africa and the implications for libraries.
- Mutula, S., & Mostert, J. (2010). Challenges and opportunities of e-government in South Africa. *The Electronic Library* 23(5) (pp. 38-53). Challenges and opportunities of e-government implementation in South Africa with reference to service delivery and implication of libraries: [South Africa].
- Mzyece, M. (2012). A Critical Analysis of E-government in Zambia. *The African Journal of Information and Communication* 1(12) (pp. 110-127). Presents a critical analysis of e-government in Zambia : [Zambia].
- Nabbanda, T., & Bada, J. (2011). Survey on Local Software Development for e-Government of Uganda with a Focus on e-Health Applications. *IST-Africa Conference and Exhibition* (pp. 1-11). Analyses the state of practice of local e-government software development in Uganda focusing on e-Health applications: [Uganda].
- Naidoo, G. (2006). An overview of e-government policy initiatives in South African government. *Computer Society of India (CSI), Special Interest Group on e-Governance (SIGeGov)* (pp. 322-331). Discuss e-government initiatives undertaken by the South African Government: [South Africa].
- Ng'eno, E. (2010). Embracing E-Government in Service Delivery and Business to People Through Libraries: a Case for Kenya. *IST-African Conference and Exhibition* (pp. 1-9). Discusses how people in Kenya can best access e-government information by using the National library service : [Kenya].
- Ngulube, P. (2007). Nature and accessibility of e-government in sub Saharan Africa. *International Review of Information Ethics*. 7(7), pp. 1-13. Discuss infrastructure, human resource and resource factors of e-government access in sub Saharan Africa [Cape Vert, Central African Republic, Ethiopia, Gabon, Gambia, Guinea, Lesotho, Madagascar, Malawi, Mali: Niger, Seychelles, Togo, Benin, Burkina Faso, Cameroon, Cote d'Ivoire, Ghana, Kenya, Mauritania, Mozambique, Namibia, Nigeria, Rwanda, Senegal, Sierra Leone, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe].
- Njuru, J. (2011). Implication of e-government on public policy and challenges of adopting technology: the case of Kenya. *Journal of Global Affairs and Public Policy* 1(1) (pp. 2-20). E-government 's implication on public policy and implementation in Kenya, Examining challenges of adopting technology and organizational changes: [Kenya].
- Nkomo, N. (2012). Implications of e-government on information delivery services. *International Journal of Humanities and Social Sciences* 2(16) (pp. 1-19). Investigating availability of e-

government services and their implication on information delivery services in South Africa: [Mauritius, South Africa].

- Nkwe, N. (2012). E-government: Challenges and Opportunities in Botswana. *International Journal of Humanities and Social Science* 2(17) (pp. 39-48). To examine the challenges encountered in e-government implementation as well as the potential opportunities available in the context of Botswana society: [Botswana].
- Nyirenda, J., & Cropf, R. (2010). The Prospects of eGovernment and eGovernance in Sub Saharan Africa: A case Study of Zambia. *International Journal of Electronic Government Research* 6(1) (pp. 23-45). Discuss the prospects of e-governance and e-government in Sub Saharan countries particularly looking at Zambia: [Zambia].
- Ochara, N. (2012). An organizing vision for e-participation projects in Africa. *Digital Democracy: Concepts, Methodologies, Tools, and Applications*, (pp. 1261-1292). Explores the theoretical sustainability of e-government in Africa.
- Ochara-Muganda, N., & Van Belle, JP. (2010). A proposed framework for for e-government knowledge infrastructures for Africa's transition economies. *Journal of e-Government Studies and Best Practices* 2(1) (pp. 70-79). Proposing a framework for building E-government knowledge infrastructures in Africa catering for local, national and regional levels: [Nigeria, Kenya, South Africa].
- Ochieng, D., Gichoya, D., & Odini, C. (2011). Proposed ICT-Enabled Services Model for Local Authorities in Kenya. *IST-Africa Conference and Exhibition* (pp. 1-9). Proposes an Online Transaction System (OTSS) model for improving effective and efficient public service delivery in local governments in Kenya: [Kenya].
- Onyancha, O. (2007). E-government in eastern and southern Africa: a webometric study of governments' websites. *International Review of Information Ethics* 7(1) (pp. 297-310). Discuss the performance of Eastern and Southern African countries on the Web with a view to determine their impact and visibility regarding e-government: [South Africa, Uganda, Kenya, Mozambique, Namibia, Madagascar, Tanzania, Zimbabwe, Malawi, Lesotho, Swaziland, Botswana, Djibouti, Eritrea, Somalia, Seychelles, Sudan, Zambia, Angola, Ethiopia].
- Pathak, R., Singh, G., Belwal, R., & Smith, R. (2007). E-governance and corruption - developments and issues in Ethiopia. *Public Organization Review* 7(3) (pp. 195-208). Factors generating corruption in Ethiopia and the potential of e-governance to mitigate corruption: [Ethiopia].
- Phala, V. (2007). Using e-Government/ICT's to Curb Corruption in the Public Sector. *IST-Africa Conference and Exhibition* (pp. 1-9). The role of Information and Communications Technology and e-government in curbing corruption in the public sector of South Africa: [South Africa].
- Potnis, D., & Demissie, D. (2009). Barriers to socio-economic opportunities in Africa: an e-government perspective. *iSociety: Research, Education, Engagement Conference*, (pp. 1-4). Propose a model for strengthening e-government as a gateway to socio-economic opportunities in Africa.

- Pretorious, M., & Calitz, A. (2011). The Use of Focus Groups to Improve an e-Government Website. *Web Society 3rd Symposium on Communication, Networking and Broadcasting Conference* (pp. 88-94). Focuses on the usability of the provincial government of the Western Cape e-government website: [South Africa].
- Ramessur, T. (2009). E-government and online public service: a case of cyber island. *International Journal of Computing and ICT Research* 3(2) (pp. 12-19). Measure the impact of e-governance on service delivery in Mauritius with the online application for driving license: [Mauritius].
- Rorrissa, A., & Demisse, D. (2010). An analysis of African e-Government service websites. *Government Information Quarterly* 27(2) (pp. 1-9). Analysis of content of e-government websites in Africa according to features available as well as deployment of government services: [all African countries].
- Rorrissa, A., & Demissie, D. (2009). The start of Art of e-Government services in Africa: An analysis of Relevant. *42nd Annual Hawaii International Conference on System Sciences* (pp. 1-8). Analysis of content of e-government websites in Africa according to features available as well as deployment of government services: [All african countries].
- Rugina, J., & Chachage, B. (2012). Evaluation of Government Websites for Business Development Services (BDS) in Tanzania. *IST-Africa Conference and Exhibition* (pp. 1-8). Evaluate government websites for business development services in Tanzania and emphasizes the simplicity of using the websites: [Tanzania].
- Ruhode, E., Owei, V., & Maube, B. (2008). Arguing for the Enhancement of Public Service Efficiency and Effectiveness through e-Government: The Case of Zimbabwe. *IST-Africa Conference and Exhibition* (pp. 1-13). Examine Zimbabwe's potential in adopting e-government initiatives and proposing formulation of an e-government strategy : [Zimbabwe].
- Saadi, M., & Almahjoub, A. (2012). E-governance in Libya – Where we are and Where to Go. *Libyan Conference on International E-government* (pp. 1-7). Comparative analysis of e-governance structure and discussion of e-governance road map for Libya: [Libya].
- Sagna, O. (2006). Modernizing Public Servicesthrough the Use of ICT's: The Case of Senegal. *IST-Africa Conference and Exhibition* (pp. 1-11). Provides an overview of e-government initiatives in Senegal since 2000 and gives challenges and lessons learn: [Senegal].
- Schuppan, T. (2009). E-government in developing countries: experiences from sub Saharan Africa. *Government Information Quarterly* 26(1), (pp. 118-127). Different institutional and cultural contexts to be considered when implementing e-government in Sub-Saharan Africa.
- Sedoyeka, E. (2012). Obstacles in Bridging the Digital Divide in Tanzania. *International Journal of Computing and ICT Research* 6(1) (pp. 60-73). Give the current situation of digital divide in Tanzania: [Tanzania].
- Sellami, M. (2007). A Secured Service-Oriented Architecture for E-government in Tunisia. *E-government Interoperability Conference* (pp. 1-11). Propose a secured and service-oriented architecture for the accomplishing of Tunisian e-government applications: [Tunisia].

- Sore, R. (2005). Can ICT improve public service delivery in Burkina Faso? *iConnect collected Magazine* (pp. 5-7). Discussing whether ICT can improve public service delivery in Burkina Faso: [Burkina Faso].
- Soumia, A., Rabah, I., Mohamed, M., & Abdelaziz, K. (2012). An Approach for Evaluation of e-Government Information Systems Agility. *International Conference on Information Society* (pp. 193-198). Propose an approach for the evaluation of e-government Information systems agility in Algeria: [Algeria].
- Ssempebwa, J., & Lubuulwa, M. (2011). Improving Information Dissemination and Knowledge Sharing in Local Governments in Uganda: The e-Governance Model. *IST-Africa Conference and Exhibition* (pp. 1-9). Inform implementers and policy makers in developing countries to critically plan and analyze the processes and requirements for ICT projects with lessons learnt from Uganda e-government project.: [Uganda].
- Ssewanyana, J. (2009). E-Government for Development: Implementation Challenges of Uganda's National Backbone Infrastructure Project and Key Lessons. *IST-African Conference and Exhibition* (pp. 1-9). Analyze the processes and requirements for ICT projects regarding challenges and lessons learnt from implementing an e-government project in Uganda: [Uganda].
- Sukhoo, A., & Kurrumchand, S. (2012). Towards Effective E-Government for Africa. *IST-Africa Conference and Exhibition*, (pp. 1-10). Discuss African countries e-government in comparison with global leaders.
- Trusler, J. (2003). South African E-government Policy and Practices: A Framework to Close the Gap. *2nd International Conference EGOV2003* (pp. 504-507). Propose a framework to improve the current e-government implementation process and close the gap between policy and practices in South Africa: [South Africa].
- Twinomurinzi, H., Zwane, M., & Debusho, L. (2012). Servqual as A Socio-Technical Approach To Measuring E-Government Service Quality And Guiding E-Governance Strategies. *The African Journal of Information and Communication* 1(12) (pp. 84-104). Relates Batho Pele to SERVQUAL (e-government framework) used in South Africa : [South Africa].
- Uutoni, W., Yule, W., & Nengomasha, C. (2011). Electronic governance and hybrid libraries in Namibia. *International Federation of Library Associations and Institutions* 37(2) (pp. 118-125). Investigate existence and role of hybrid libraries in e-governance in Namibia: [Namibia].
- Vencatachellum, I., & Pudaruth, S. (2010). Investigating E-Government Services Uptake in Mauritius: A User's Perspective. *International Research Symposium in Service Management* (pp. 1-20). Investigates factors relating to e-government uptake from users perspective in the Mauritian: [Mauritius].
- Verma, S., Kumari, S., Deiri, A., & Kumar, R. (2012). Challenges in Developing Citizen- Centric E-Governance in Libya. *International Arab Journal of e-Technology* 2(3) (pp. 152-160). Analysis of current status e-government in Libya with regard to social, political, economic and technical aspects: [Libya].

- Visser, W., & Twinomurinzi, H. (2006). E-government and public Service Delivery: Enabling ICT to put People First – A Case Study from South Africa. *The Electronic Journal of Information Systems in Developing Countries* 3(1) (pp. 153-165). Investigated e-government within the developing country context of South Africa for public service delivery: [South Africa].
- Vitali, F., & Zeni, F. (2006). Working towards Open Access to Parliamentary Information and Interoperability in African. *IST-Africa Conference Exhibition*, (pp. 1-14). Discussing a framework for using ICTs to increase quality of parliamentary services in Africa.
- Vooslo, S., & Van Belle, J. (2005). E-government and e-readiness of non-profit organization in the western cape, South Africa. *2nd Annual Conference of the Community Informatics Research Network* (pp. 398-407). Identifying e-readiness of Non-Profit Organizations in the Western Cape and identifying constraints to ICT-adoption: [South Africa].
- Wamukoya, J., & Mutula, S. (2005). E-records management and governance in East and Southern Africa. *Malaysian Journal of Library & Information Science* 10(2) (pp. 67-83). Reviews the status of e-records management in East and Southern Africa : [Kenya, Zambia, Zimbabwe, Namibia, Kenya, Botswana, Malawi, Swaziland, Seychelles, Mozambique, Tanzania, South Africa].
- Wangwe, C., Eloff, M., & Venter, L. (2009). E-government Readiness: An Information Security Perspective from East Africa. *IST-Africa Conference Exhibition* (pp. 1-9). Looks at e-government readiness in three East African countries namely Tanzania, Uganda and Rwanda from an Information Security perspective: [Tanzania, Uganda, Rwanda].
- Weddi, D. (2005). Transforming local government: e-governance in Uganda. *iConnect Collected Magazine* (pp. 54-56). Discuss about transforming local government to e-governance in Uganda : [Uganda].
- Wray, C., & Van Olst, R. (2012). Enabling g-Government in the Gauteng City-Region. *The African Journal of Information and Communication* 1(12) (pp. 65-83). Provides focus on the Gauteng city-region observatory (GCRO) GIS website and how it enables g-government, a subset of e-government: [South Africa].
- Yamey, J. (2005). The Ghana.gov project. *iConnect Collected Magazine* (pp. 45-47). Discussing the government portal project in Ghana: [Ghana].
- Yeratziotis, A., & Van Greunen, D. (2009). e-Government - Putting Service at your Fingertips. *IST-Africa Conference Exhibition* (pp. 1-15). Discusses the stages of e-government development with a focus on South Africa in particular also explaining the culture-context dimension: [South Africa].
- Yozani, J., Sol, H., & Boonstra, A. (2010). Exploring issues underlying citizen adoption of e-government initiatives in Developing Countries: The Case of Tanzania. *Electronic Journal of eGovernment* 8(2) (pp. 176-188). Identifying issues underlying adoption of e-government initiatives in Tanzania: [Tanzania].

REFERENCES

- Abdalla, S. (2012) An e-government Adoption framework for Developing countries: A Case study from Sudan, *PhD Thesis*, School of Applied Sciences, Cranfield University, United Kingdom.
- Abdelsalam, H., Reddick, C.G., ElKadi, H., and Gamal, S. (2012) Factors Affecting Perceived Effectiveness of Local E-Government in Egypt, *International Journal of Information Communication Technologies and Human Development*, 4(1): 24-38.
- Abrahams, A. and Newton-Reid, L. (2008) E-governance for Social and Local Economic Development: Gauteng City Region perspective, *Link Public Policy Research*, 1(9): 2-47.
- Adeyemo, A. B. (2011) E-government implementation in Nigeria: An assessment of Nigeria's Global e-gov Ranking, *Journal of Internet and Information System*, 2(1): 11-19.
- Adeyeye, M.O. and Aladesanmi, O.A.T. (2011) Re-inventing local government capacity in Nigeria: The e-governance imperative, *Proceedings of the 34th MIPRO International Convention Conference*, Opatija, Croatia, May 23- 27, 1603-1608.
- Akakandelwa, A. (2011) An Exploratory Survey of the SADC e-government Web Sites, *Library Review*, 60(5): 421 -431.
- Al-Khatib, H and Lee, H. (2011) E-Government Systems Success And User Acceptance In Developing Countries: The Role of Perceived Support Quality, *International Journal of eBusiness and eGovernment Studies*, 3(2): 69-78.
- Andersen, K. V. and Henriksen, H. Z. (2005) The First Leg in E-Government Research: Domains and Application Areas, *International Journal of Electronic Government Research*, 1(4): 26-44.
- Aregu, R., Bagaya, M. and Nerbonne, J. (2008) An ICT-Based Digital Content Information Access Framework in Developing Countries: the Case of Agricultural Informatics Access and Management in Uganda, *Proceedings of IST-Africa Conference and Exhibition*, Windhoek, Namibia, May 07 – 09, 1-6.
- Asianzu, E. and Maiga, G. (2012) A Consumer Based Model for Adoption of E-Tax Services in Uganda, *Proceedings of IST-Africa Conference and Exhibition*, Dar es Salaam, Tanzania, May 09 – 11, 1-15.
- Asongwe, P.N. (2012) E-Government And The Cameroon Cybersecurity Legislation 2010: Opportunities and challenges, *The African Journal of Information and Communication*, 1(12): 156-163.
- Awotwi, J.E. and Owusu, G. (2008) Lack of Equal Access to ICTs by Women: An e-Governance Issue, *Proceedings of ICEGOV Conference*, Cairo, Egypt, December 1-4, 452-457.
- Azab, N. A., Kamel, S. and Dafoulas, G. (2009) A Suggested Framework for Assessing Electronic Government Readiness in Egypt, *Electronic Journal of e-Government*, 7(1): 11 – 28.
- Azeez, N.A., Abidoye, A.P., Adesina, A.O., Agbele, K.K., Venter, L.M. and Oyewole, A.S. (2012) Threats to E-Government Implementation in the Civil Service: Nigeria as a Case Study, *The Pacific Journal of Science and Technology*, 13(1): 398-402.
- Baradei, L, E.,Shamma, H.M and Saada, N. (2012) Examining the marketing of e-Government services in Egypt, *International Journal of Business and Public Management*, 2(2): 12-22.
- Basel, C.B. (2013) Authorship in Scientific Publications: Analysis and recommendations, Swiss Academic of Arts and Sciences, http://www.akademien-schweiz.ch/en/dms/E/Publications/Guidelines-and-Recommendations/integrity/Academies_Authorship.pdf
- Bolívar, M.P.R., Muñoz, L.A and Hernández, A.M.L. (2010) Trends of e-Government Research: Contextualization and Research Opportunities, *The International Journal of Digital Accounting Research*, 10(1): 87-111.
- Burghin, J., Corb, L., Nottebohn, O., Chui, M., de Muller Barbat, B. and Said, R. (2001) The Impact of Internet Technologies: Search, McKinsey & Company.
http://www.mckinsey.com/~media/mckinsey/dotcom/client_service/high%20tech/pdfs/impact_of_internet_technologies_search_final2.ashx
- Burke, M. (2012) A Decade of E-Government Research in Africa, *The African Journal of Information and Communication*, 2(12): 2-25.
- Bwalya, K.J. (2009) Factors Affecting Adoption of E-Government in Zambia, *The Electronic Journal of Information Systems in Developing Countries*, 38(4): 1-13.

- Bwalya, K.J. and Healy, M. (2010) Harnessing e-Government Adoption in the SADC Region: a Conceptual Underpinning, *Electronic Journal of e-Government*, 8(1): 23 – 32.
- Bwalya, K.J. (2010) E-government for Development Information Exchange (DIE): Zambia. *Proceedings of the 3rd International Conference on e-Democracy, Next Generation Society, Technological and Legal Issues*, Springer Berlin Heidelberg Athens, Greece, September 23-25, 279-292.
- Bwalya, K. J., Du Plessis, T. and Rensleigh, C. (2010) Setting the Foundation for E-Democracy in Botswana: An Exploratory Study of Interventions. Information Communication Technologies and the Virtual Public Sphere: Impacts of Network Structures on Civil Security, IGI Global, 229-241.
- Bwalya, K. J., Du Plessis, T. and Rensleigh, C. (2011) Multi-Dimensional Factors Impacting on E-Government Adoption in Botswana, Mozambique and Malawi, *International Journal of E-Adoption (IJE)*, 3(3): 20-32.
- Chango, M. (2007) Challenges to e-government in Africa south of Sahara: a critical view, and provisional notes for a research agenda, *Proceedings of ICEGOV '07: 1st International Conference on Theory and Practice of Electronic Governance*, Macao, China, December 10-13, 384 - 393.
- Chigona, W. and Samaai, E. (2006) An Assessment of Factors Influencing Rural eAdoption: A Case of South Africa, *Proceedings of IST-Africa Conference and Exhibition*, Pretoria, South Africa, May 3 – 5, 1-10.
- Cisse, J. (2005) E-governance in Africa: The right choice for development: e-Governance in Mali, *iConnect Online Magazine*, 35-36.
- Cloete, F. (2012) E-government Lessons From South Africa 2001 – 2011: Institutions, State Of Progress And Measurement, *The African Journal of Information and Communication*, 1(12): 128-142.
- Codagnone, C. and Wimmer, M.A. (2007) Roadmapping E-government Research – Visions and Measures towards Innovative Governments in 2020, Cristiano Codagnone and Maria A. Wimmer (Eds.), 35-53.
- Dandjinou, P. (2007) E-Governance Strategies in Cape Verde and South Africa: From Service Delivery to e-Participation, *Proceedings of ICEGOV Conference*, Macao, China, December 10-13, 452-457.
- De Tolly, K., Maumbe, B. and Alexander, H. (2006) Rethinking E-government Development: Issues, Lessons and Future Prospects for the Cape Gateway Portal in South Africa, *Proceedings of IST-Africa Conference and Exhibition*, Maputo, Mozambique, May09 - 11, 1-11.
- Dhamodharam, R. and Saminathan, A. (2011) Challenges of E-Government in African Countries: Creating an Enabling Environment in Nigeria, *Proceedings of IST-Africa Conference and Exhibition*, Gaborone, Botswana, May 11 – 13, 1-8.
- Dlamini, I.Z., Ngobeni, S.J. and Mutanga, M.B. (2010) South African Egov: Secure E-Services, *Proceedings of eChallenges e-2010 Conference and Exhibition*, Warsaw, Poland, October 27-29, 1-8.
- Dlodlo, N., Olwal, T. and Mvelase, P. (2012) The Internet of Things in Bridging the Gap in Municipal Service Delivery in South Africa, *Proceedings of IST-Africa Conference and Exhibition*, Dar es Salaam, Tanzania, May 09 – 11, 1-11.
- Fonou-Dombeu, J.V. and Huisman, M. (2010) Investigating E-government Knowledge Base Ontology Supporting Development Projects Monitoring in Sub Saharan Africa, *International Journal of Computing and ICT Research*, 4(1): 20 - 29.
- Easton, H., Nakene, M., Naidoo, S. and Kafidi, P.L. (2003) Validating the user-centered Design Process within a Developing Context, *Proceedings of CHI-SA 2003 Conference*, Johannesburg, South Africa, November 10-12, 1-5.
- Eliamani, S. (2012) Obstacles in bridging the Digital divide in Tanzania, *International Journal of Computing and ICT Research*, 6(1): 60-72.
- Elkadi, H.A. and Abdelsalam, H.A. (2012) E-Alexandria 2005-2010: A Multi-Perspective Analysis, *The African Journal of Information and Communication*, 1(12): 143-155.
- Erman, N. and Todorovski, L. (2009) Mapping the e-Government Research with Social Network Analysis, *Proceedings of the 8th International Conference on Electronic Government*, August 30 - September 3, Linz, Austria, 13-25.
- Ezz, I. and Papazafeiropoulou, A. (2006) Inter-organizational Collaboration towards Process Integration in the Public Sector: E-government collaboration in Egypt, *Proceedings of the 39th Hawaii International Conference on System Sciences*, Hawaii, USA, January 4-7, 1-10.

- Farelo, M and Morris, C. (2006) The Status of E-government in South Africa, *Proceedings of IST-Africa Conference and Exhibition*, Pretoria, South Africa, May 3 - 5, 1-12.
- Friedland, C. and Gross, T. (2010) Measuring the Public Value of e-Government: Methodology of a South African Case Study, *Proceedings of IST-Africa Conference and Exhibition*, Durban, South Africa, May 19 – 21, 1-12.
- Gebba, T.R. and Zakaria, M.R. (2012) E-Government in Egypt: An Analysis of Practices and Challenges, *International Journal of Technology and Management*, 1(1): 11-25.
- Gichoya, D. and Hepworth, M. (2007) Government Informatics: Challenges of Laying the Foundation for E-government, *Proceedings of IST-Africa Conference and Exhibition*, Maputo, Mozambique, May 9 - 11, 1-9.
- Gichoya, D. (2009) Facing the Challenges of ICT Implementation in Government, *Proceedings of IST-Africa Conference and Exhibition*, Kampala, Uganda, May 06 - 08, 1-9.
- Ginindza, B.M. (2008) The State of e-Government in Swaziland with Special Reference to Government Ministries and Departments, *MIs Dissertation*, School of Sociology and Social Studies, University of KwaZulu-Natal, South Africa.
- Goldkuhl, G. (2012) From policy to design and effects: A framework for e-government research, *Proceedings of the 9th Scandinavian Workshop on E-Government*, Copenhagen, Denmark, February 9-10, 1-11.
- Grewan, R. (2011) Developing a Model for Information Society and Development at a Provincial Level in South Africa, *Proceedings of IST-Africa Conference and Exhibition*, , Gaborone, Botswana, May 11 – 13, 1- 16.
- Hallberg, D., Godem, C. and Dzimey, W. (2012) Telecentre Approaches in Cameroon and Kenya Illuminated Using Behavioural Archaeology, *African Journal of Information and Communication*, 1(12): 48-64.
- Heeks, R. and Bailur, S. (2007) Analyzing e-government research: Perspectives, philosophies, theories, methods and practice, *Government Information Quarterly*, 24(2): 243-265.
- Heeks, R. (2002) E-Government in Africa: Promise and Practice, *Information Polity*, 9(7): 97-114.
- Ifinedo, P. (2006) Towards E-Government in a Sub-Saharan African Country, *Journal of E-Government*, 3(1): 3-28.
- Jakachira, B.T. (2009) Implementing an Integrated e-Government functionality for a Marginalized Community in the Eastern Cape, *MSc Dissertation*, Department of Computer Science, University of Fort Hare, South Africa.
- Kaaya, J. (2004) Implementing e-Government Services in East Africa: Assessing Status through Content Analysis of Government Websites, *Electronic Journal of e-Government*, 2(1): 39-54.
- Kaisara, G. and Pather, S. (2009) E-government in South Africa: e-service Quality access and Adoption Factors, *Proceedings Of 11th Annual Conference On World Wide Web Applications*, Port Elizabeth, South Africa, September 2-4, 2-17.
- Kaisara, G. and Pather, S. (2011) The e-Government Evaluation Challenge: A South African Batho Pele-aligned Service Quality Approach, *Government Information Quarterly*, 28(2): 211–221.
- Karokola, G., Kowalski, S. and Yngstrom, L. (2012) Secure e-Government Services: Protection Profile for Electronic Voting – A Case of Tanzania, *Proceedings of IST-Africa Conference and Exhibition*, Dar es Salaam, Tanzania, May 09 - 11, 1-13.
- Kettani, D. and El Mahidi, A. (2009) Fez e-Government Project: An Initiative Transforming Scientific Research to Value in Morocco, *Electronic Journal of e-Government*, 7(4): 371 – 380.
- Kizza, J.M. (2011) Building a Strong Undergraduate Research Culture in African Universities, *International Journal of Computing and ICT Research*, 5(2): 6-10.
- Korsten H. and Bothma, T.J.D. (2005) Evaluating South African government Websites: Methods, findings and Recommendations Part 2, *South African Journal of Information Management*, 5(3): 1 -11.
- Lekorwe, M. and Mpabanda, D. (2007) Managing Non-Governmental Organizations in Botswana, *The Public Sector Innovation Journal*, 12(3): 1-18.
- Lephoto, M. and Lerato, L. (2006) Speech Technology for Accessing Government Information Services, *Proceedings of IST-Africa Conference and Exhibition*, Pretoria, South Africa, May 3 – 5, 1-8.
- Lubua, E. W. and Maharaj, M.S. (2012) ICT Policy and e-Transparency in Tanzania, *Proceedings of IST-Africa Conference and Exhibition*, Dar es Salaam, Tanzania, May 09 - 11, 1-10.
- Lin, F., Fofanah, S.S and Liang, D. (2011) Assessing citizen adoption of e-Government initiatives in Gambia: A

- validation of the technology acceptance model in information systems success, *Government Information Quarterly*, 28(1): 271–279.
- Matavire, R., Chigona, W., Roode, D., Sewchurran, E., Davids, Z., Mukudu, A and Boamah-Abu, C. (2010) Challenges of E-government Project Implementation in a South African Context, *The Electronic Journal Information Systems Evaluation*, 13(2): 153 – 164.
- Maumbe, B. and Ntombovuyo, N. (2009) Crafting an E-Government Development Model for South Africa: A Strategic New Direction for the Western Cape Province, *Proceedings of International Conference on Information Resources Management*, Montego Bay, Jamaica, May 16-18, 1-19.
- Mbwete, G. and Bhalalusesa, R. (2011) Assessment of Public Services e-Government Initiatives: A Case Study of Tanzania, *Proceedings of IST-Africa Conference and Exhibition*, Gaborone, Botswana, May 11 - 13, 1-7.
- Menda, A. (2005) E-governance in Africa: Successes and challenges: e-Governance in Tanzania, *iConnect Online Magazine*, 36-37.
- Miriam, A., Lips, B. and Schuppan, T. (2009) Transforming E-government Knowledge through Public Management Research, *Public Management Review*, 11(6):. 739- 749.
- Mishrif, A. and Selmanovic, S. (2010) E-government in the Middle East and North Africa: The Role of International Organizations in the Experience of Egypt and Morocco, *In Proceedings of the 6th International Conference on Public Administration*, Canberra, Australia, October 22-24, 905-926.
- Misuraca, G. (2006) E-governance in Africa, from theory to action: A practical-oriented Research and Case Studies on ICTs for Local Governance, *Proceedings of the International Conference on Digital Government Research*, California, USA,, May 21-24, 209-218.
- Mnjama, N and Wamukoya, J. (2007) E-government and Records Management: An assessment tool for E-records Readiness in Government, *The Electronic Library*, 25(3): 274 -284.
- Moloi, J. and Mutula, S. (2007) E-records Management in an E-government Setting in Botswana, *Information Development*”, 23(4): 290-306.
- Monyepao, M.D. and Weeks, R.V. (2012) Case Study: Assessing and Evaluating the Readiness of the ICT Infrastructure to Provide e-Government Services at a Local Government Level in South Africa, *Proceedings of Technology Management for Emerging Technologies Conference*, Vancouver, Canada, July 29-August 2, 2778-2784.
- Mohamed, K.A. (2011) Evaluation of the status of the e-government in Comoros, *Diplomacy Foundation*, 1-7.
- Mtingwi, J. and Van Belle, J, P. (2012) The State of E-government and M-government Readiness in Malawi, *International Journal of Information Technology and Computer Science*, 6(1): 58-68.
- Mundy, D and Musa, B. (2010) Towards a Framework for E-government Development in Nigeria, *Electronic Journal of e-Government*, 8(2): 148-161.
- Mutula, S.M. (2005) Bridging the digital divide through e-governance: A proposal for Africa's libraries and information centres, *The Electronic Library*, 23(5): 591 – 602.
- Mutula, S.M. and Mostert, J. (2010) Challenges and Opportunities of e-Government in South Africa, *The Electronic Library*, 28(1): 38 – 53.
- Mzyece, M. (2012) A Critical Analysis of E-government in Zambia, *The African Journal of Information and Communication*, 1(12): 110-127.
- Nabbanja, T. and Bada, J.K. (2011) Survey on Local Software Development for e-Government of Uganda with a Focus on e-Health Applications, *Proceedings of IST-Africa Conference and Exhibition*, Gaborone, Botswana, May 11 – 13, 1-11.
- Naidoo, G. (2006) An overview of E-government Policy Initiatives in the South African Government, *Computer Society of India*, 1(2): 322-331.
- Njuru, J.W. (2011) Implications of E-Government on Public Policy and Challenges of Adopting Technology: The Case of Kenya, *Journal Of Global Affairs And Public Policy*, 1(1): 2-20.
- Njihia, M. (2006). An Adequate base for theorizing E-government Change in Africa: The Promise of Critical Realism and Complexity. *Proceedings of the 2nd International Conference on E-governance (ICEG)*, Pittsburgh, Pennsylvania, USA, 12-13 October, 1-9.
- Ng’eno, E. J. (2010) Embracing E-Government in Service Delivery and Business to People Through Libraries: a Case for

- Kenya, *Proceedings of IST-Africa Conference and Exhibition*, Durban, South Africa, May 19 – 21, 1-9.
- Ngulube, P. (2007) The Nature and Accessibility of E-Government in Sub Saharan Africa, *International Review of Information Ethics*, 7(7): 1-13.
- Nkomo, N. (2012) Implications of e-Government on Information Delivery Services, *International Journal of Humanities and Social Science*, 2(16): 1-19.
- Nkwe, N. (2012) E-government: Challenges and Opportunities in Botswana, *International Journal of Humanities and Social Science*, 2(17): 39-48.
- Nyirenda, J.C. and Cropf, R. (2010) The Prospects of eGovernment and eGovernance in Sub Saharan Africa: A case Study of Zambia, *International Journal of Electronic Government Research*, 6(1): 23-45.
- Ochara-Muganda, N. and Van Belle, J.P. (2010) A Proposed Framework for E-Government Knowledge Infrastructures for Africa's Transition Economies, *Journal of e-Government Studies and Best Practices*, 2(1): 70-79.
- Ochara-Muganda, N. (2010) Assessing irreversibility of an E-Government project in Kenya: Implication for governance, *Government Information Quarterly*, 27(1): 89-97.
- Ochara, N. M. (2008) Emergence of the E-Government Artifact in an Environment of Social Exclusion in Kenya, *The African Journal of Information Systems*, 1(1): 18-43.
- Ochara, N. (2012). An organizing vision for e-participation projects in Africa, *Managing e-government projects: Concepts, Issues, and Best Practices*, IGI Global, 100-130.
- Ochieng, D., Gichoya, D. and Odini, C. (2011) Proposed ICT-Enabled Services Model for Local Authorities in Kenya, *Proceedings of IST-Africa Conference and Exhibition*, Gaborone, Botswana, May 11 – 13, 1- 9.
- Onyancha, O.B. (2007) E-governance in eastern and southern Africa: A webometric Study of the Governments' Websites, *IRIE International Review of Information Ethics*, 7(1): 297-310.
- Phala, V.L. (2007) Using e-Government/ICT's to Curb Corruption in the Public Sector, *Proceedings of IST-Africa Conference and Exhibition*, Maputo, Mozambique, May 09 - 11, 1-8.
- Pathak, R., Singh, G., Belwal, R. and Smith, R. (2007) E-governance and Corruption - Developments and Issues in Ethiopia, *Public Organization Review*, 7(3): 195-208.
- Potnis, D. and Demissie, D. (2009) Barriers to Socio-economic Opportunities in Africa: An E-government Perspective, *Proceedings of iSociety: Research, Education, Engagement Conference*, February 8-11, North Carolina, USA, 1-4.
- Pretorius, M. and Calitz, A. (2011) The Use of Focus Groups to Improve an e-Government Website, *Proceedings of Web Society 3rd Symposium on Communication, Networking and Broadcasting Conference*, Port Elizabeth, South Africa, October 6-28, 88- 94.
- ROP (Republic of the Philippines) (2004) Public Administration Country Profile, Division for Public Administration and Development Management (DPADM), Department of Economic and Social Affairs (DESA), United Nations, February 2004, <http://unpan1.un.org/intrdoc/groups/public/documents/un/unpan023241.pdf>
- ROS (Republic of the Soudan)(2004) Public Administration Country Profile, Division for Public Administration and Development Management (DPADM), Department of Economic and Social Affairs (DESA), United Nations, August 2004, <http://unpan1.un.org/intrdoc/groups/public/documents/un/unpan023289.pdf>
- Rugina, J. and Chachage, B. (2012) Evaluation of Government Websites for Business Development Services (BDS) in Tanzania, *Proceedings of IST-Africa Conference and Exhibition*, Dar es Salaam, Tanzania, May 09 – 11, 1-8.
- Ramessur, T.S. (2009). E-governance and Online Public Service: The Case of a Cyber Island, *International Journal of Computing and ICT Research*, 3(2): 12 – 19.
- Rorrissa, A., and Demissie, D. (2009) The start of Art of e-Government services in Africa: An analysis of Relevant Websites, *Proceedings of the 42nd Annual Hawaii International Conference on System Sciences*, Waikoloa, Hawaii, January 5-8, 1-8.
- Ruhode, E., Owei, V. and Maube, B.M. (2008) Arguing for the Enhancement of Public Service Efficiency and Effectiveness through e-Government: The Case of Zimbabwe, *Proceedings of IST-Africa Conference and Exhibition*, Windhoek, Namibia, May 07 – 09, 1-13.
- Saadi, M. and Almahjoub, A. (2012) E-governance in Libya – Where we are and Where to Go, *Proceedings of Libyan Conference on International e-Government*, Tripoli, Libya, July 14-15, 1-7.

- Sawyerr, A. (2004) African University and the Challenge of Research Capacity Development, *Journal of Higher Education in Africa*, 2(1): 211-240.
- Schuppan, T. (2008) E-Government in Developing Countries: Experiences from Sub Saharan Africa, *Government Information Quarterly*, 26(1): 118-127.
- Sellami, M and Jmaiel, M. (2007) A Secured Service-Oriented Architecture for E-government in Tunisia, *Proceedings of E-government Interoperability Conference*, Paris, France, September 17-20, 1-11.
- Ssempebwa, J. and Lubulwa, M. (2011) E-Government for Development: Implementation Challenges of Uganda's National Backbone Infrastructure Project and Key Lessons, *Proceedings of IST-Africa Conference and Exhibition*, Gaborone, Botswana, May 11 – 13, 1-9.
- Ssewanyana, J.K. (2009) Improving Information Dissemination and Knowledge Sharing in Local Governments in Uganda: The e-Governance Model, *In Proceedings of IST-Africa Conference and Exhibition*, Kampala Uganda, May 06 - 08, 1-9.
- Sukhoo, A and Kurrumchand, S. (2012) Towards Effective E-Government for Africa, *Proceedings of IST-Africa Conference and Exhibition*, Dar es Salaam, Tanzania, May 09 – 11, 1-10.
- Soumia, A., Rabah, I., Mohamed, M. and Abdelaziz, K. (2012) An Approach for Evaluation of e-Government Information Systems Agility, *In Proceedings of International Conference on Information Society*, London, United Kingdom, June 25-28, 193-198.
- Sagna, O. (2006) Modernizing Public Services through the Use of ICT's: The Case of Senegal, *Proceedings of IST-Africa Conference and Exhibition*, Pretoria, South Africa, May 3 - 5, 1-11.
- Twinomurizi, H., Zwane., M.G., Debusho., L.K. (2012) Servqual as A Socio-Technical Approach To Measuring E-Government Service Quality And Guiding E-Governance Strategies, *The African Journal of Information and Communication*, 1(12) 84-104.
- Trusler, J. (2003) South African E-government Policy and Practices: A Framework to Close the Gap, *Proceedings of 2nd International Conference EGOV2003*, Berlin, Germany, September 18-19, 504-507.
- Uutoni, W., Yule, W. and Nengomasha, C.T. (2011) Electronic Governance and Hybrid Libraries in Namibia, *International Federation of Library Associations and Institutions*, 37(2): 118–125.
- Vencatachellum, I. and Pudaruth, S. (2010) Investigating E-Government Services Uptake in Mauritius: A User's Perspective, *Proceedings of International Research Symposium in Service Management*, Pointe Aux Piments, Mauritius, August 24-27, pp.1-20.
- Verma, S., Kumari, S., Arteimi, M., Deiri, A. and Kumar, R. (2012) Challenges in Developing Citizen- Centric E-Governance in Libya, *International Arab Journal of e-Technology*, 2(3): 152-160.
- Visser, W. and Twinomurizi, H. (2006) E-government and public Service Delivery: Enabling ICT to put People First – A Case Study from South Africa, *The Electronic Journal of Information System in Developing Countries*, 3(1): 153-165.
- Vitali, F. and Zeni, F. (2006) Working towards Open Access to Parliamentary Information and Interoperability in African Parliamentary Information Systems, *Proceedings of IST-Africa Conference and Exhibition*, Pretoria, South Africa, May 3 – 5, 1-14.
- Vosloo, S.E. and Van Belle, J.P. (2005) E-government and the E-readiness of Non-Profit Organizations in the Western Cape, South Africa, *Proceedings of the 2nd Annual Conference of the Community Informatics Research Network*, Cape Town, South Africa, August 24-26, 398-406.
- Wangwe, C.K., Eloff, M.M. and Venter, L.M. (2009) E-government Readiness: An Information Security Perspective from East Africa, *Proceedings of IST-Africa Conference and Exhibition*, Kampala, Uganda, May 06 – 08, 1-9.
- Wray, C. and Van Olst, R. (2012) Enabling g-Government in the Gauteng City-Region, *The African Journal of Information and Communication*, 1(12): 65-83.
- Yeratziotis, A and Van Greunen, D. (2009) E-government – Putting Service at Your Fingertips, *In Proceedings of IST-Africa Conference and Exhibition*, Kampala, Uganda, May 06- 08, 1-15.
- Yildiz, M. (2007) E-government Research: Reviewing the Literature, Limitations, and Ways Forward, *Government Information Quarterly*, 24(3): 646-665.

Yonazi, J., Sol, H. and Boonstra, A. (2010) Exploring Issues Underlying Citizen Adoption of E-government Initiatives in Developing Countries: The Case of Tanzania, *Electronic Journal of e-Government*, 8(2): 176-188.