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THEORIZING E-GOVERNANCE: A REVIEW OF THE WORLD BANK'S 3-STAGE MODEL VERSUS THE MODEL OF PC UTILIZATION

Ketty Adoko*[1], Gloria Anume[1], Nelson Mandela Okello[1], Daniel Okullu[1], Jenifer Anyono[1], Eva Akidi[1], Mike Alemo[1], Sarah Jenniffer Angwen[1], Geoffrey Alex Abuka[1], Andrew Were[1], Francis Owera[1], Daniel Okello[1], Victor Okuna[2] and David Mwesigwa[3]

[1]BA Public Administration and Management, Lira University, Uganda; [2]Head, Discipline of Public Administration and Management, Lira University, Uganda; [3]Assoc Prof. Discipline of Public Administration and Management, Lira University, Uganda

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ABSTRACT

Over the recent decades, governments, both in the global north and the global south, have been undergoing and continue to counter several challenges in delivering services to citizens given the ever-burgeoning human population interposed with/by escalating community demands as well as rapid urbanization. A few of these challenges have been addressed through better scientific innovation and digitization of governance. Even though there are several models through which digital governance can be executed, in this paper, we have made a comparative review of two models (the World Bank's 3-stage model and the PC utilization model) with the view of unpacking the intricacies involved in each and how they have been addressed. We have exposed the parallels between the two models with perceptions drawn from the environments of governments in the global south before presenting potential interventions. Our central view emerged from our own practical experiences drawn from our places of work that are largely rural-based, and knowing that, while Uganda boosts of promoting a comparatively higher number of municipalities to city-status within a short period, the situation in those cities remains, almost, semi-rural or sub-urban and so, digital governance presents rather unvarying challenges entwined in ruralism. While we did not present particular cases due to dearth of primary studies, our arguments can be supportive in guiding the country's policy makers as they contend with a pseudo-digital governance phase.

INTRODUCTION

Electronic-governance, popularly known as e-governance, is the application of information communication technologies (ICTs) for delivering a wide range of governmental services. It is accomplished through integration of various systems between Government-to-Citizens (G2C), Government-to-Business (G2B), Government-to-Employees (G2E), and Government-to-Government (G2G) services. E-governance is often associated with back-office processes and interactions within the entire government agenda. As stated by Backus (2001), e-governance involves "the application of electronic means in the interaction between government and citizens, and government and businesses, as well as in internal government operations to simplify and improve democratic, government and business aspects of Governance". Through e-governance, the whole lot of government services are made available to the citizens in a convenient, efficient, and transparent way. It involves the use of ICTs, such as the internet and computers, including the mobile phone, as a platform for exchanging information, providing services and

transacting with citizens, businesses, and other arms of government, including the international community. Through e-governance, there is increased use of ICTs, by government, civil society, and political institutions to engage citizens in political processes so as to promote greater participation of citizens in the public sphere. E-governance has todate been labelled to be the public sector's use of the most innovative ICTs, big data, the Internet of things, robotics, 3D printing, etc., in order to deliver improved services, reliable information and greater knowledge (Klerkx, Jakku, & Labarthe, 2019). Electronic governance denotes to any government function or process that is carried out in digital form over the Internet. As a consequence, governments set up central websites from which the public can find public information, download government forms and contact government officials. It thus, involves governance in electronic environment that comprises functions, processes, practices, and actions through digital means.

Several reasons underpin, the need for embracing e-governance today, namely: the e-government's ultimate objective is offering enhanced

range of public services in an efficient and cost-effective way to citizens. So, embracing e-governance is believed to enhance transparency for the government because it empowers the public to be up-to-date about what government is working on and the policies which are being executed. Also, the system is believed to replace and improve the 'Paper Based System' (PBS) while implementing e-government with the purpose of saving time, money and the environment. Correspondingly, governments aim to promote better communications between themselves and the corporate sector. E.g., e-procurement facilitates communication between government and the business community and between business communities themselves which allows smaller and/or emerging businesses to compete with bigger companies for public tenders and/or contracts. Hence creating an open and transparent market besides a stronger economy.

Likewise, embracing e-governance enables companies and individuals to get information quicker and at any moment of the day or night in comparison to the ancient (under the populary system of analogue, which required physical interface between two or more parties) since e-government and its capacity are available to all people regardless of their geographical location or social status. And since governing is too costly and expensive, e-governance can condense the related costs thereby enhancing the effectiveness of spending money by government. Such funds can then be directed to social programs that benefit especially the most vulnerable such as subsidized agricultural system, essential healthcare and basic elementary education. Seeing that governing is inconvenient, e-governance can improve and encourage the rate of participating and using less obtainable public services. It facilitates government-feedbacks from people and other non-governmental or outside of government stakeholders, and thus, enhance accountability for public servants as a result (Awor, Okuna & Mwesigwa, 2024). Because governments are seldom transparent, e-governance can satisfy transparency expectations of their citizens/taxpayers and consequently, make better and stronger relationships with people in addition to the private sector. More so, implementing of e-governance means ease of use of governmental services for citizens, enhancing governmental service delivery, simplifying compliance of governmental laws for citizens, improving citizen engagement and trust in public, decreasing fraud and improving cost efficiency for the government (Heeks, 2006). Thus, e-governance raises the standards of living and becomes a vital tool for governments and their citizens.

In short, more efficiency, enhanced services to better serve citizens, better accessibility of public services, more transparency and accountability of government are a few of the advantages of e-governance. To this end, a number of models have been proposed in respect of e-governance, they include but not limited to; Hiller and Belanger's five-stages model, United Nation's five stage model, World Bank's 3-stage model, Gartner's four-stage model, Unified theory of acceptance and use of technology, and the model of PC utilization. In this review, our concentration is on two models, explicitly, the World Bank's 3-stage model and the model of PC utilization.

The World Bank's 3-stage model

The World Bank's model, of e-governance, summaries three distinct stages, viz; *publish, interact*, and *transact.* Each of the stages epitomizes a dissimilar level of engagement between government entities and citizens through digital platforms. The World Bank (2004) offers foundational insights into e-governance models, worldwide, while detailing explicit stages delineated by the institution itself. To support policymakers in devising their own plans and ingenuities, the Center for Democracy and Technology (2002) divides the process of e-governance implementation into three stages. These stages are somewhat reliant on each other and each one appears to require the other to be completed before another one can commence, and theoretically, they offer three ways to reflect about the goals of e-governance.

It is important to note that the publish stage is significant in a number of ways, namely: one, it promotes transparency and accountability for the reason that by publishing information online, governments increase transparency, allowing citizens to access essential data about policies, budgets, and decisions. This openness promotes accountability and trust between the government and the public. Two, it enhances public access to information given that it ensures that citizens have easy access to information, empowering them to make informed decisions and engage in civic activities. This democratization of information is crucial for fostering an informed electorate. Three, is the aspect of awareness and engagement given that by disseminating relevant information, governments can foster greater public awareness and engagement in governance processes (Zavratnik, Superina & Duh, 2019). Citizens can better understand the services available to them and how to access these services. Four, is that it guarantees the foundation for further stages by serving as a preliminary step before moving on to interaction and transaction stages. It therefore, establishes a digital presence and a repository of information that can be leveraged for more comprehensive e-governance functionalities. Five, is the standardization of information as it can encourage the standardization of data and information dissemination thereby leading to more consistent and reliable data for both citizens and government agencies. Six, is that it enhances service delivery for the reason that by making public services and information readily available, the publish stage enhances the overall efficiency of service delivery. It reduces the time and effort citizens spend seeking information about government services. And to finish, it can facilitate citizen participation given that through accessible information, citizens are more likely to participate in consultations and feedback mechanisms hence, contributing to a more responsive and inclusive governance process.

Stage one - Publish: The initial stage involves using ICT to expand access to government information. In this stage, the primary focus is on providing information to the public. This stage encompasses establishment of online platforms where government agencies can publish data, documents, and resources that are accessible to citizens. The goal is held to be put to enhancing transparency as well as ensuring that citizens have access to relevant information about government activities, policies, and services. Publish sites seek to disseminate information about government and information compiled by government to a wide an audience as possible. In doing so, publish sites serve as the leading edge or vanguard of e-governance. The publish stage is characterized by several landscapes such as *static information dissemination* where Websites are primarily used for posting information, for example, laws, regulations, reports, and other declassified governmental publications. Also, is *accessibility* since efforts are made to ensure that information is easily accessible to all segments of society. Correspondingly, is *user engagement*, even though interaction may be limited in this stage, it serves as a basis for building trust between citizens and government by making information available. Limited interactivity is prominent since interaction between the government and citizens is minimal. While information is available, user engagement and two-way communication are not yet well-established. Also, are *basic online services* given that some government services may be available online but they are often limited to simple functions, such as downloading forms rather than full-service delivery. Besides, there is *focus on transparency* as emphasis is placed on making government operations more transparent and accountable through public access to information. A number of censures have been put forth vis-à-vis the publish stage, for instance, three prominent issues have come up (information overload, outdated information and accessibility). Regarding information overload, it is claimed that when a vast amount of information is published, it can be overwhelming for citizens. For instance, government websites loaded with complex data and documents can lead to confusion rather than clarity. Regarding outdated information, if the published content is not regularly updated, it can mislead citizens. For example, outdated tax guidelines or public health information can create inefficiencies and citizens can end-up submitting to inaccurate policies. And as far as accessibility issues are concerned, not every citizen may be able to access or

understand the information published online. Language barriers or dearth of literacy in older residents can prevent effective communication.

Stage two - Interact: This stage gives emphasis to broadening civic participation in government. The Interact stage builds upon the foundation established, in the Publish stage, by letting a two-way communication between government agencies and citizens. This stage underscores engagement and feedback mechanisms that allow citizens and the business community to, without restrictions, interact with government agencies and/or officials actively. It is characterized by *a two-way communication* since there is increased interaction between government and citizens. Consequently, various official platforms enable feedback mechanisms, allowing citizens to communicate their needs and opinions directly to public officials. Also, is the aspect of *service delivery* given that governments provide online services to users, making it easier for citizens to access information and services such as applying for permits, paying taxes, or accessing public records. This stage emphasizes improved efficiency and effectiveness in service delivery. Correspondingly, is the issue of *information sharing* as the government utilizes technology to share information more transparently with citizens (Acanga, Mwesigwa, Oryang & Oboi, 2022a). This can include access to data on government activities, plans and budgets, promoting accountability.

The other aspect is *participation* given that citizens can participate more actively in governance processes, including public consultations and policy-making, often facilitated through online platforms and tools. In addition, there is *digital literacy* since emphasis is put to improving digital learning among citizens to ensure they can effectively engage with e-governance initiatives. This includes training and resources to support users navigate online services. Also, is *integration of services* since different government services become integrated, allowing users to access multiple services through a single platform, which enhances the user experience. And notably, there is *collaboration* given increased partnership between different government agencies in services and information sharing, leading to a more holistic approach to governance.

The interact stage has proved to be very significant in several ways, specifically; in terms of enhanced engagement, it focuses on increasing communication and engagement between government entities and citizens. Therefore, this stage allows for two-way interaction, which facilitates dialogue where citizens can voice their opinions, give feedback and voice their concerns directly to their government. As well, there is improved service delivery, by enabling interaction, government can better understand the needs and preferences of her citizens, leading to more tailored and effective public services. This stage encourages responsiveness and accountability in governance (Karinda, Nursin, Sawir & Sriyakul, 2024). Also, there is transparency and trust as interactive platforms can promote transparency by providing citizens with access to information regarding government operations, decisions, and policies. This openness can foster greater trust in governmental institutions. Likewise, there is empowerment of citizens since the stage stresses the need for citizens to have access to the tools and platforms necessary for them to engage actively in the governance process, empowering them to participate in decision-making and civic activities, leading to a more engaged and informed populace.

Similarly, the interact stage serves as a feedback mechanism as it acts as a central feedback ring where government can receive insights and data from citizens, helping to identify gaps in services and areas for improvement. The stage supports a more alert and responsive governance model. Consistently, it can enhance capacity building by helping to build digital literacy and skills of both citizens and government officials. By engaging in e-governance platforms, both groups can become more proficient at navigating digital channels, which can have broader implications for national development. The other issues is the policy development, knowoing that collecting citizen input can lead to more informed policy decisions.

Governments can better align their priorities with the real needs and wants of the people they serve.

On the contrary, the interact stage has been criticized over limited engagement since a number of citizens may not engage in interactive platforms due to apathy or lack of awareness of available channels. For example, in developing countries such as Uganda, citizens often feel that their input may not influence government decisions seeing that whenever government decides to do something, it doesn't matter how much citizen reject the idea, gover will rproceed with its implementation. A notable example is the rationalization of the coffee development authority (CDA) that was mooted by the executive until the policy was forced through the legislature. Also, there are maintenance costs due to the fact that continuous engagement requires resources to maintain the platform and respond to citizen queries, which may strain government budgets. For instance, governments in most developing countries like Uganda have faced challenges in sustaining user engagement in interactive platforms due to high operational costs. But also, the issue of misinformation risks cropping in since interactive forums can become breeding grounds for misinformation. Social media platforms allow for rapid propagation of incorrect information, obscuring government efforts in managing public engagement.

Stage three - Transact: The third and final stage aims at making government services available online. The transact stage represents the most advanced level of e-governance within this model. In this stage, governments offer online services that allow citizens to gain complete transactions electronically. This includes activities such as applying for permits, paying taxes, or accessing social services without needing to visit a physical office. However, this stage is observed as the most dormant stage in Uganda and many other developing countries, this is attributed to several factors such as; limited infrastructure, access to technology, bureaucratic challenges, lack of trust in online systems, insufficient promotion of digital services, and low awareness among the population to mention but a few.

The transact stage is branded by several elements such as secure online payments since it often incorporates secure online payment systems, facilitating smooth financial transactions between citizens and the government. These systems rely on modern cybersecurity measures to protect sensitive information from falling down the path of hackers. Likewise, services become more user-centric, with platforms designed to provide personalized experiences based on user preferences, prior interactions, and specific needs. This involves tailored service recommendations and streamlined processes. Also, enhanced digital platforms are designed to be accessible to a broader range of citizens, including those with disabilities, by applying best practices in usability and accessibility standards. Correspondingly, governments employ data analytics to track service usage, citizen feedback, and overall performance. This data helps to improve service delivery and inform policy decisions (Acanga, Mwesigwa, Oryang & Oboi, 2022b). As well, in the transact stage, governments may collaborate with private sector entities or other non-profit organisations to offer additional services through government platforms, thus, widening the scope of available services for citizens. Too, platforms are designed to facilitate ongoing citizen engagement and interaction, hence, encouraging feedback and citizen participation in governmental decision-making processes.

Of significance, the transact stage is primarily focused on the delivery of services to citizens through electronic means. Likewise, by moving transactions online, governments can streamline processes, reduce the need for physical paperwork, and cut-down on administrative costs. This can lead to significant savings for both the government and its citizens. E-governance, in the transact stage, improves access to services for citizens, especially in remote or underserved areas. It allows users to complete transactions from anywhere, consequently, eliminating the need for travelling and/or having to wait in long queues. Likewise, online transactions can enhance transparency as citizens can track their applications and payments anytime and

anywhere. These instances help to build trust in government operations, as it reduces openings for corruption and other malpractices to take place. The transact stage encourages the design of services that are more user-friendly since government can leverage technology to provide personalized services based on users' needs, which helps in improving overall citizen satisfaction. And, this stage enables better data collection and management, thus, allowing government to analyze transaction patterns. This insight can inform policy decisions and improve service delivery.

Also, the transact stage often serves as a bridge to more advanced stages of e-governance seeing that successful implementation can pave the way for the transformation stage, where systems are integrated and applications are more sophisticated. To finish this, there is efficient e-governance practices given that the transact stage can contribute to broader economic goals by encouraging entrepreneurship, reduced transaction costs for businesses, and fostering innovation (Center for democracy and technology, 2002). In contrast, rivals to the transact stage point to the issues of digital divide, cyber security risks and user resistance given that countless users, particularly in rural or underdeveloped areas, may lack access to the necessary technology or internet connection. For example, in parts of Uganda, limited access to computers and internet connectivity hampers citizens' ability to perform online transactions. They contend that online transactions are vulnerable to hacking and fraud. For instance, several government websites have faced breaches leading to unauthorized access to citizens' financial data. And it is further claimed that citizens may be hesitant to adopt online transactions due to deficiency of trust in digital systems. For example, in Uganda, older persons may prefer in-person transactions due to unfamiliarity with technology.

The model of PC utilization

PC Utilization refers to the use of personal computers (PCs) by citizens to access and utilize e-governance services (Hiller & Belanger, 2001:175). The model of PC utilization, in e-governance, outlines how computers, and other related technologies, are employed within government systems to improve efficiency, governance, and public interaction. The key components of the model of PC utilization are;

a) *Infrastructure* - The foundation of PC utilization in e-governance is the widespread availability of computers and reliable internet access. Governments need to ensure that PCs are accessible both in public offices and, ideally, for citizens to engage in digital platforms from home (Heeks, 2006). Infrastructure development, including the installation of high-speed internet networks and the provision of PCs in community centers, schools, and public offices, is essential for effective e-governance. Countries such as Estonia have excelled in e-governance by ensuring high levels of internet penetration and providing extensive online services accessible through PCs (United Nations, 2016).

b) *Government Portals and Services -* The model of PC utilization in e-governance likewise involves developing web portals and online platforms through which citizens can interact with the government. These portals enable services such as applying for licenses, paying taxes, accessing e-healthcare services, and participating in e-voting (Bertot, Jaeger, & Grimes, 2010). Therefore, PCs serve as the primary device for accessing these platforms, offering a user-friendly interface for citizens to perform a wide range of functions from the comfort of their homes or workplaces.

c) *Public Administration Efficiency -* Within government agencies, PCs are vital for managing administrative tasks, data storage, and communication between departments. By using PCs, government employees can digitize records, process documents faster, and systematize countless routine administrative tasks, thus, reducing the need for paper-based systems and manual processes (Heeks, 2006). This improves operational efficiency and ensures apt service delivery.

d) *E-Participation and Citizen Engagement* - PCs enable citizens to participate in governance by providing platforms for e-participation, where citizens can offer feedback, participate in public consultations, or access governmental data. This helps expand democratic participation and transparency in decision-making (United Nations, 2016). After all, online forums and platforms allow individuals to engage in governance processes without being physically present, thus promoting inclusivity (Acanga, Mwesigwa, Oryang & Oboi, 2022a).

e) *Data Analytics and Decision-Making -* PCs are essential tools for analyzing large volumes of data that are generated in e-governance systems. Government agencies can use PC-based software for data analytics to enhance decision-making, particularly in policy development and resource allocation (Heeks, 2006). For instance, PCs can help to process data from e-health records or e-taxation systems to inform healthcare or fiscal policies.

f) *Training and Capacity Building -* Successful e-governance initiatives require training government employees and citizens on the effective use of PCs and digital platforms. This includes building digital literacy and technical skills among civil servants and the public, ensuring they can navigate e-government services effectively (ibid). Governments can achieve this by organizing workshops, providing online resources, and establishing help desks to enhance the utilization of PCs for governance.

The role of PCs cannot be over-emphasized; for instance, in the government-to-citizens, PCs are used to facilitate direct interaction between the government and citizens. Using PCs, citizens can access public services such as online tax filing, applying for social benefits, or retrieving official documents (Heeks, 2006). PCs can serve as a medium for interface between citizens and digital government services, making service delivery faster and more convenient. Also, in the government-to-business, PCs enable businesses to interact with government agencies so as to comply with regulations, pay taxes, or apply for permits (Bertot *et al.*, 2010). E-procurement systems, for example, rely on PCs for businesses to bid on government contracts and/or manage supply chain operations efficiently. Likewise, in the government-to-government, PCs are critical for communication and coordination between different government departments or between local and national government offices. This action streamlines information sharing, reduces redundancy, and allows for more integrated governance.

The PC model has revolutionized e-governance by offering numerous benefits, viz.: Enhanced citizen engagement since the model enables citizens to participate in governance through online platforms, hence, increased transparency and accountability (Kumar *et al.*, 2017). Also, there is improved service delivery as the model allows for efficient and timely delivery of public services, reducing administrative hurdles (Moon, 2002). Similarly, there is increased accessibility as the model enables government services accessible to citizens with internet connectivity, and so bridging the geographical divide (West, 2004). Equally, there is cost-effectiveness, as the model reduces operational costs, streamlining government processes and enhancing resource allocation (Bhatnagar, 2004). Too, there is enhanced transparency as the model promotes transparency by providing citizens with access to government information and decision-making processes (Bertot *et al.*, 2010). Correspondingly, there is improved data management given that the model enables efficient data management, hence, facilitating informed decision-making and policy development. As well, it encourages citizen participation by fostering citizen engagement in policy-making and ensuring inclusive governance. And to end, it supports economic development as the model contributes to economic growth by promoting entrepreneurship, innovation, and foreign investment.

Nevertheless, a number of challenges to the model of PC utilization have been acknowledged in terms of digital divide, cyber security risks and resistance to change, given that not every citizen has access to PCs or internet connectivity, especially in much of Uganda. This

creates a gap between those who can fully benefit from e-governance services and those who cannot, this limits inclusivity of such systems (United Nations, 2016). And reliance on PCs in e-governance increases the risk of cyber-attacks, data breaches, and other security issues. Governments need to invest in robust cyber security measures to protect sensitive data and maintain trust in e-governance systems (Bertot *et al.*, 2010). But then again, in some cases, government employees or citizens may resist the transition to digital governance due to a deficiency in digital literacy or preference for traditional, paper-based methods (Heeks, 2006). On the positive note, a number of potential solutions have been sought as means to strengthening the model of PC utilization, the central ones being; training and skills development as means to enhance user proficiency in using PCs efficiently thus, improving productivity, reducing errors and increasing the level of confidence (Acanga, Mwesigwa, Oryang & Oboi, 2022a). Also, intensifying the significance of the help desk initiative, can provide timely support for PC-related issues, through quick issue resolution and increased user satisfaction. Similarly, software and hardware updates with a objective of ensuring that personal computers have the latest technology and security patches, which improves performance and compatibility to new software. Equally, enhancement in digital literacy with a view to improve users' basic computer skills and digital awareness. And comparably, clear policies and/or frameworks are vital to empowering the country's Police so as to ensure there are established guidelines for PC utilization and security.

CONCLUSION

In this review, we have analyzed the two models, namely the World Bank's 3-stage model and the model of PC utilization. While the World Bank's 3-stage model serves as a valuable tool for assessing the maturity and effectiveness of e-governance initiatives worldwide, the model of PC utilization illustrates how personal computers are integral to transforming governance operations, enhancing public service delivery, and promoting transparency. By cataloguing the three stages advocated by the World Bank, their model highlights the progressive nature of technology adoption in governance and by leveraging PCs for administrative efficiency, citizen engagement, and inter-governmental communication, e-governance can foster more inclusive, effective, and sustainable governance. Therefore, as governments, especially those in the global south, move through these stages, they can improve transparency, enhance citizen engagement, and ultimately transform public service delivery into a more efficient and participatory process. However, addressing challenges such as the digital divide and cyber security is critical to maximizing the benefits of PC utilization in e-governance.

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