The Stimulus of Factors in Implementing the E-Governance Concept in Namibia

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ABSTRACT

This paper reports on a case study where the Namibian environment is used to gain deeper understanding of the factors that influence e-governance and how those factors manifest themselves. This study is motivated by the continuous challenges that are encountered by many African countries, either in the development or implementation or both, of the e-governance solution. The interpretivist approach was employed, and qualitative data were gathered using the semi-structured interview technique. Activity theory was used as a lens to guide the analysis of the data, from which six factors were found to influence the implementation of e-governance in the country. The factors are know-how; requirements of both technical and non-technical components; political-will, which draws on power to make decisions; heterogeneity; a repertoire of actors-power relationship; and governance, which includes standards, policies, and principles. The empiricism nature of the study boosts knowledgeability of the challenges that hinder implementation of the solution, which in-turn affect service delivery.

KEYWORDS

Activity Theory, E-Governance, Implementation Strategy

1. INTRODUCTION

Although there is no universal definition for E-governance, it is an application of IT that enables citizens to access government services and information electronically (Dhindsa et al., 2013). Linders et al. (2018) assert that e-governance efforts are a step in the right direction for reforms, as the use of electronic systems has scored high in improving service delivery. E-governance is very vital in developing countries, as highlighted by Beaumont (2017). He recommended that to have a huge economic and social development, developing countries needed to put more effort into the drafting of policies and procedures to promote this. However, Visser and Twunomurinzi (2009) argue that

e-governance in developing countries has been associated with failure in most cases, although most governments continue to invest in ICT-based programmes, policies and interventions.

Furthermore, Giri and Shakya (2019) highlight that most developing countries find it difficult to achieve their e-governance goals despite taking pride in introducing such reforms. Interesting to note is the effort by governments of developing countries to implement e-governance strategies, yet political instability and other leadership issues hinder their success. In support, Nawafleh et al. (2012) pointed out that social, political, and economic downturn in developing countries has failed the successful implementation of e-governance. Although it is a developing country, Namibia has made strides in maintaining a moderate e-governance stance. Quite notable efforts have been noted, such as the improvement of the Home Affairs Operating System covering most of the borders surrounding Namibia, which was implemented when the ministry employed a turnaround strategy. However, Nengomasha and Uutoni (2015) maintained that Namibia still lagged in e-governance because of the low usage of ICTs and affordability.

A five-year e-government Strategic Action Plan was implemented by the government of Namibia for the sole purpose of transforming information and improving service delivery to the citizens, according to the Office of the Prime Minister (OPM), in 2013. This includes attempts to improve transparency of government's activities. Also, other systems and services depend on e-governance, yet implementation has been a challenge. Nengomasha and Uutoni (2015) reported that even though the implementation of e-governance has so far taken 5 years, it is far from completion. Five year later, equaling 10 years, Yrika (2020) admits that the implementation of e-governance has not been successful, and that it would been most needed in unprecedented period caused by COVID-19 pandemic.

So far, the studies conducted on e-governance mainly concentrated on the challenges and benefits of implementing the concept in different countries including developing countries. Beaumont (2017) and Dhindsa et al. (2013) reported on the challenges and benefits of e-governance, Linders et al. (2018) explored new trends in e-governance implementation centred on the citizens; Amukugo and Peters (2016) reported on the challenges faced by Namibia in implementing a Citizen-centric e-government, and Khan (2017) analyses the challenges of e-governance in public administration focusing on privacy and security. Other studies that dealt with e-governance include Giri and Shakya (2019); Thabit (2019); Radohikaashree (2018); Nielsen (2017); and Bhattacharya (2017).

Despite the numerous studies, the challenges remain unresolved in many e-governance projects (Gregory & Tembo, 2017). This is highly attributed to fact that none of the existing studies address the factors that influence the challenges or how the factors manifest into challenges that hinder the development or implementation. This study has two key motivations. Firstly, many countries develop e-government, to improve the quality of services that they provide to the communities without an understanding of the influencing factors. This research by identifying key components that influence the e-governance, seeks to contribute to the accomplishment of a consolidated strategy. Secondly, while many countries are developing e-government, little is known about the non-technical factors that influence implementation. To this end, the interpretivist approach is employed to examine the factors that influence the implementation of e-governance in the Namibian government environment and how these factors manifest themselves. The approach was guided using activity theory. This helps to gain more insights and understanding on why things happen in the way that they do in the development and implementation of e-governance (Iyamu, 2021).

2. LITERATURE REVIEW

The review of literature is divided into two parts, e-governance and activity theory that form the core aspects of the study.

2.1. E-Governance

Based on this premise, e-governance is very vital in developing countries (Beaumont, 2017; Ndou, 2004). Effectively, e-governance is key to improving the services offered by government to its

citizens (Pardo et al., 2011). Beaumont (2017) recommended that to have a huge economic and social development, developing countries needed to put more effort into the drafting of policies and procedures to promote it. This is the type of challenge the Namibian government has been grasping with for many years (Amukugo & Peters, 2016). Bhattacharya and Suri (2017) argue that e-governance in developing countries has been associated with failure in most cases, although most governments continue to invest in ICT-based programmes, policies, and interventions. The adoption of e-governance is slow in many developing countries (Iyamu, 2020). There is need to reduce risk in e-governance initiatives for all the stakeholders involved and understanding the factors that influence the implementation of the solution is critical (Gil-García & Pardo, 2005).

E-governance is an innovation of the government; whose primary objective is to provide quality service to the citizens. The objective of e-governance is achieved or carried out by promoting transparency and accountability (Ullah et.al., 2021; Banerjee et al., 2020; Xia, 2017), enhancing service delivery (Ajibade, Ibietan, & Ayelabola, 2017), and facilitating the integration of services and systems, including e-health. Thus, there are entities that are involved in achieving the objective, which include technologies, processes, activities, and humans. E-governance aids the development of various technologies that encourage citizens to participate in different areas which culminates to smart cities in the country (Oliveira, 2020). Lee-Geiller and Lee (2019) posit that e-governance solution should be designed centred more on the citizens' perspectives rather than the provider's viewpoints. This ensures citizens' satisfaction and promotes transparency and democracy (Ju, Liu & Feng, 2019; Sanmukhiya, 2019).

Despite Al-Khasawneh and Obeidallah (2014) exploit of difficulties that are often associated with e-governance, many of the challenges persist. Increasingly, e-governance is becoming a crucial and essential interface between governments' systems including the electronic health (e-health) (Rigas & Almutairi, 2013). In governance, e-health assist citizens to be inclusive and gain control of their health activities (Alrobai et al., 2019). According to Ibitomi and Iyamu (2022), governance is required for vital issues, such as planning, and management of information.

As of the time of this study, implementation of e-governance continues to pose challenges to many countries, particularly those in developing world. In the area of e-governance, Basu (2004) examines the legal framework relating to e-governance from the perspective of developing countries. Also, from developing countries' perspective, Iqbal and Bagga (2010) highlight challenges of e-governance as trust, resistance to change, digital divide, cost and privacy, and security. In a study conducted from Tanzania context, Mahundu (2016) argues that implementation challenges of e-governance are not the same; they differ from country to another, based on sociotechnical factors. This view is reechoed by Samsor (2020) and Stephany (2020) who highlighted that the obstacles hindering successful implementation of the e-governance are related to organizational factors, ICT literacy and social obstacles.

Some of the challenges which many developing countries are confronted with include internet connectivity, political instability, inadequate ICT infrastructure, and infrastructure management (Addo & Senyo, 2021). These challenges, one way or the other, affect the deployment and use of e-government systems, making citizens lose out on the benefits (Suri & Sushil, 2022; Beaumont, 2017). Furthermore, Giri and Shakya (2019) highlight that most developing countries find it difficult to achieve their e-governance goals even though they take pride in introducing such reforms. It is interesting to understand why governments of many developing countries continue to make huge efforts in trying to implement e-governance strategies even though political instability and other leadership issues hinder their successes (Khan, 2017; Shikha, 2009). In their study, Nawafleh et al. (2012) pointed out that social, political, and economic downturn in some developing countries has prevented the successful implementation of e-governance. These challenges are not synonymous with only Namibia.

2.2. Activity Theory

Activity theory (AT) is a sociotechnical theory that focuses on the events of episode. According to Iyamu and Shaanika (2018, p.165), AT "is a socio-technical theory or concept concerned with the

development of social activities". The theory is often used as a lens to gain a deeper understanding of human activity within a system, through its tenets as shown in Figure 1: Tools, Subject, Rules, Community, Division of labour, and Object (Kelly, 2018; Engestrom, 2001). It is in the same disposition that the theory is employed in this study.

In AT, Tools are utilised by subjects to carry out an activity. They are involved in the transition of an object to become an outcome (Iyamu & Shaanika, 2018). Tools can be in the form of language, textbooks, policies, procedures, or way of thinking. Subject refers to the people who are involved in the activity (Dennehy & Conboy, 2017)), which can be an individual or a group of actors who are either of technical or non-technical capability. Rules control activities and interactions in the system and community comprises the participants of the activity (Kelly, 2018). The object can be tangible or intangible; it sets the direction in which an activity proceeds (Simeonova, 2018). Division of labour comprises how different tasks are distributed among the community members and the rights they have (Nehemia-Maletzky et al., 2018).

The link between AT and IS research lies in the fact that IS consists of socio-technical objects that are created by humans, used by humans, through rules followed by communities/the environment (Karanasios, Allen & Finnegan, 2018). To understand the way things are done in this process, there is a need to come up with a theory that explains the activities better. Korpela et al. (2004) emphasised on the use of activity-based methods in IS implementation of projects, to fully utilise the capability of AT. Hence, IS research discovering of frameworks that link information systems innovation and the use of such innovations. In consideration of the above, Mkhomazi and Iyamu (2013) highlight the fact that the social context of IS is complicated, and the use of Activity theory as a lens (perspective) is imperative in bringing out previously complex areas/issues within the social system or environment.

In this study, AT was used to gain a deeper insight into the complex environment of e-governance. This was done by examining the different activities that take place and the different roles of all the people involved in the deployment of e-governance in Namibia. This was done by viewing the activities through the six components of AT: subject, tool, object, rules, community, and division of labour.

3. METHODOLOGY

Qualitative methods were applied in this study from an interpretivist viewpoint. Semi structured interviews and document analysis were used to collects data. It was necessary to employ the

Figure 1.
Activity theory model (Engestrom, 2001)
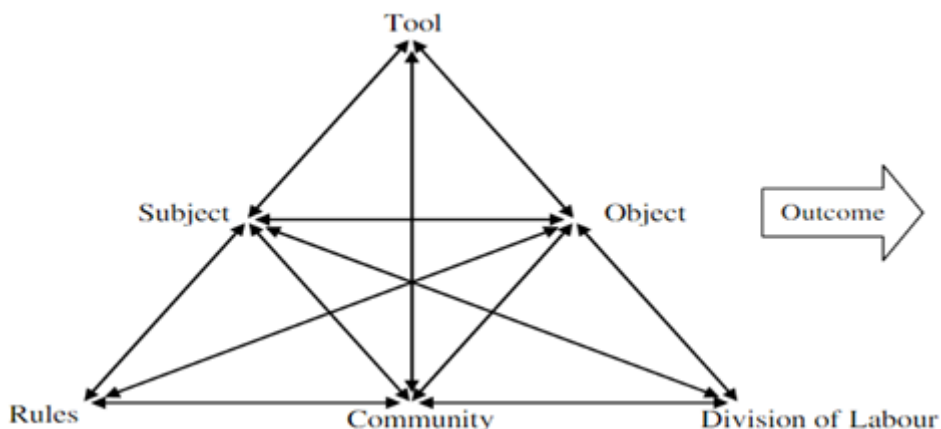
triangulation technique during the data collection process. This helps to corroborate the data, which enriches the data and makes it comprehensive to understand the concept of e-governance in the context of Namibia. Importantly, triangulation provides a means of testing the validity of data collected by converging data from different sources (Farquhar et al., 2020). The documentation was useful to provide historical insights and provide background data to the study.

The study was carried out in the Namibian government environment, using two entities, the Ministry of Information and Communication Technology (ICT) and Office of the Prime Minister (OPM) as cases. These two entities were selected primarily because they were custodian of the e-governance solution in the country. Permissions were sought at two levels from each of the entities, at authority and individuals. before we embarked on data was collected from participants. Heads of units assisted in identifying the participants. The interviews took place in the participants' offices. The COVID-19 World Health Organisation guidelines which included maintaining social and physical distance, masking up and sanitizing were adhered to during the data collection.

The interviews were face-to-face. The participants were asked open ended questions which allowed the interviewer to probe more and to clarify ambiguous questions or repeat them if not understood (Schroder, 2016). Also, the technique enables the researcher to take into consideration the verbal and non-verbal cues that aid better understanding of the respondents' responses (Leedy & Ormrod, 2014). Very importantly, the semi-structured technique enables the interviewees to expand on their responses and possibly, provide examples where needed.

Criteria was used to select participants, to increase the chances of data richness. Experience of up to18 months, level in organisational structure and area of specialisation formed the criteria. This was to ensure balance of views and opinions. Based on the criteria, twelve participants from IT specialists and non-IT units were selected, as shown in Table 1. Data was collected at a point of saturation, meaning no new information was forthcoming from the participants. The point of saturation was reached with the 9th interview but hoping there might be more new information, three more interviews were carried out. We had to stop at the 12th interview as the response reflect saturation.

To corroborate the data obtained from the interviews, over 40 technical and non-technical documents relating to e-governance in Namibia were collected and examined. The documents were subjected two levels of scrutiny. The first step, it must relate to e-governance in the Namibian context. In the second step, only the documents that focus on implementation and challenges were selected. After careful examination of the documents, they were narrowed down to 16 which consisted of 10 strategic documents, 4 policy documents and 2 technical reports.

4. ANALYSIS OF THE DATA

Different e-governance projects have been implemented for the government to provide quality service to the citizens. This constitutes many activities that make them function. The six components of the activity theory (AT), that is, subject, tools, object, rules, community, and division of labour are applied in analysing the different activities under e-governance.

Table 1.
Participants

Unit	E-governance	IT Specialist	Total
Senior Management	2	1	3
Middle Management	4	4	8
Others	1	0	1
Total	**7**	**5**	**12**

4.1 Activity Theory: Tool

In AT, a tool consists of tangible or non-tangible apparatus, systems, procedures, or instruments used to execute an activity within context, in achieving specific objectives. Tools, such as IT solutions, government policies and regulations, are applied to guide the implementation and management of e-governance to provide quality service to the citizens. These tools in turn influence how, when, and where the e-governance agenda is implemented, managed, and supported. For example, the e-government's strategic action plan provides comprehensive steps to be taken by the government in using ICT to better serve its citizens, including the dates specific steps need to be completed and the people and ministries responsible.

To implement and manage e-governance, the non-tangible and technical tools used include Wi-Fi, Local Area Network (LAN), Wide Area Network (WAN), and software such as applications, operating systems, and servers. Although these tools have been identified as actors from an ANT perspective, it is necessary to re-identify them because they share a different connection and relationship with different entities. The OPM, various ministries, and departments within the e-governance framework use software to promote transparency and enhance service delivery. Trainings, workshops, and business process re-engineering are also tools used in e-governance. Tangible technical tools in e-governance implementation and management include hardware such as computers, satellite devices, printers, scanners, telephones, and mobile phones.

These tools are constantly evolving over time and space, meaning that they are updated occasionally to suit the activity or the implementation and management of the e-governance system to ensure that Namibian citizens have access to quality service delivery. This entails an integration with a solution like e-health to provide essential services to the community. E-governance integration with e-health is a complex process that requires specific tools to ensure success in promoting transparency and enhancing quality service delivery in the Namibian healthcare system. Therefore, e-governance integration with e-health is enabled firstly by simple tools, such as the internet, which encompasses the WAN and LAN as well as general connectivity coupled with computers and other accessories needed to pull r the e-health and e-governance integration agenda together. As one participant points out:

"Some hardware, software and connectivity issues still hinder the implementation of e-health in clinics that are remote areas of the country" (GOV2, pg7:32-33).

The tools form the basis and integral part of electronic processes (e-process) and electronic services (e-service). The absence of these makes e-governance integration with e-health solution impossible. Also, government policies and regulations set the direction in which different government systems should be implemented, deployed, and integrated. It would be difficult to integrate e-governance with the e-health solution without these guidelines.

4.2 Activity Theory: Subject

In AT, Subject refers to actors or a group of actors or entities, which are living beings. The actors voluntarily or contractually take ownership or responsibility in an activity. Thus, the actor makes use of tools in the context of AT. Therefore, for the e-governance system to function, the subjects are involved in the day-to-day activities and operations of the various tasks. In the current (as at time of this study) set-up of the country, the actors (or subjects) of e-governance are employed in 4 main administrative offices of the government: The Office of the Prime Minister; Ministry of Home Affairs; Ministry of Health and Social Services; and Ministry of ICT.

The implementation of e-governance in Namibia to improve quality service among citizens through IT solutions requires agents, people, or groups to work together. From AT perspective, the subjects involved in e-governance include the technical personnel such as software developers, system analysts, IT managers, and network administrators and IT specialists from different government

ministries, including OPM as well as the non-technical personnel such as procurement officers, policy officers, legal team, directors, deputy directors and the Prime Minister.

The technical personnel involved in e-governance are very critical to its implementation, including integration. Hence, it is essential for the actors to possess specialised skill sets that ensure the processes are efficiently executed to fulfil the goal and objectives of serving the needs of the citizens. However, some critical skill sets were scarce. This could be attributed to two main reasons. Firstly, e-governance was an emerging concept in the Namibia environment. Secondly, there seem to be cases in the region that could be referenced or tapped from. The skill-set manifests in knowledgeability, which contributes to influencing stakeholders' decisions in the various stages of deploying e-governance. A participant explained the following:

"The government should hire certified project managers who have the skills to manage e-governance projects" (GOV2, pg5:7-8).

These factors consequently influence e-governance integration, directly or indirectly, considering the intertwining of the actors' roles in the process. For instance, the home affairs staff must gather biographical data and approve it for use in various ministries, including health facilities. Likewise, ministries such as the ministry of defence have their own clinics and hospitals and their operations need to be supported by e-governance efforts to ensure quality service delivery, transparency, and general efficiency to the benefit of Namibian citizens.

4.3 Activity Theory: Object

An object can be tangible or intangible and sets the direction in which an activity proceeds (Shaanika & Iyamu, 2015). The objects that enable and relate to the functioning of e-governance are of both technical and non-technical nature, which include processes, policies, and politics. Involving these technical and non-technical factors means that they have the ability or capability to influence the activities that determine the direction and status of e-governance in the country.

From the technical front, some of the subjects, such as systems' analysts, systems' administrators, and software developers, have their individual or group motives in the implementation and management of the e-governance solutions. Some of these motives are to enable citizens to get quality service delivery or promote transparency in the activities of the government administrations. These types of motives necessitate the integration of e-governance with e-health to foster and ensure better healthcare services across the country. Thus, the implementation of e-governance must be aligned to allow integration to take place. This includes implementing e-governance solutions on the platforms that enable and support technologies that are compatible, can co-exist, are flexible, and Interoperable. These can be achieved and ensured through policies, principles, and standardisation based on technology requirements. One of the participants explained the following:

"Information systems standards apply to many different parts of information systems and promote the ability for systems to share information and thereby allow users to have integrated views of health data" (ST10, pg28:8-10).

On the other hand, with the non-technical, subjects with various unique expertise, such as procurement officers, legal officers, and policy officers, have a motive to support the implementation and management of e-governance solutions. The objectives, goals, mission, and vision of e-governance drive the agenda and are followed to ensure a successful integration of systems. It requires consolidated efforts of both technical and non-technical functions.

The objectives of e-governance are to make government administration more transparent, speedy, and accountable, while addressing the society's needs and expectations through efficient public

services and effective interaction between the people, businesses, and government. Furthermore, the OPM highlights that e-governance aims to make it convenient for the general citizens to access information and government services. One participant expressed the following:

" The idea for e-governance is to ease access to government services by citizens and to improve collaboration amongst stakeholders" (GOV2, p. 1:13-14).

At the time of this study, the implementation of e-governance solutions was hindered by much bureaucracy, which in turn supports a fragmented e-health system. A participant expressed the following:

"Decisions on projects are often delayed because it is difficult to get the executive government official who chairs the steering committee to attend all meetings as they have other engagements" (GOV2, pg4:6-8).

The administrative procedures that need to take place before any e-governance solution can be implemented are excessively complicated and lengthy, resulting in different health departments having their stand-alone systems that are not integrated amongst themselves and the e-governance framework.

4.4 Activity Theory: Rule

Rules are meant to govern the activity towards producing an outcome. Rules can be classified into different categories such as laws, principles, policies, and regulations. The rules shape and guide the direction of an activity. This can be attributed to the fact that the rules are applied to maintain order in an environment such as an organisation and a community. Consequently, without rules, the objectives of an activity can suffice, which is detrimental to actors involved. Primarily, e-governance is intended to enhance quality service through factors such as transparency, interconnectivity of services, and access to information (electronic records). One participant expressed the following:

At OPM we are guided by the e-governance strategic action plan when implementing any e-governance solution (GOV2, pg1:10-11).

In Namibia, the implementation and management of the e-governance solutions are governed and regulated by policies and standards contained in different documents. The e-governance strategic action plan provides a comprehensive plan of the steps to be taken by the government to use ICT to better serve its citizens. There is the 5th National Development Plan (NDP5) with some aspects dedicated to IS/IT solutions and e-governance. The office of the prime minister's annual plan also sets out the actions to be taken by OPM in fulfilling its strategic objectives, including leveraging e-governance and ICT infrastructure in all government ministries. This action and process manifest in a power relationship between the government administrative offices. These influences requirements gathering and the implementation of e-governance in the country.

The office of the prime minister is busy drafting a digital strategy that will guide the implementation of e-governance. All government areas that need to be digitised are included (GOV2, pg1:25-26).

E-governance systems implementation, support, and use are fundamentally governed by rules, which include regulations, policies, principles, and standards from technology, process, and management perspectives. Through governance, the e-governance can achieve its objectives, including transparency, accountability efficiency, and effectiveness in providing services to the citizens. However, this is not currently the case in Namibia, as of the time of this study. The challenges include lack of integration with critical and essential services in the form of e-health. Although the relevant

regulations and standards are there, as mentioned above, there are no measures put in place to ensure they are applied; making it difficult for integration to happen.

4.5 Activity Theory: Community

A community involves people that have a common culture or values in carrying out an activity. It is in this context that this study explores the roles and influence of community in the deployment, management, support, and implementation of e-governance in Namibia. Different groups of people are involved in e-governance, and they are referred to as a community.

The groups consist of technical (ICT) and non-technical personnel found within an e-governance context/environment. Some of the roles of the community are to provide requirements, technical support, maintenance, and assessment of the e-governance solutions. Also, the community is expected to ensure the co-existence and integration of e-governance with other systems such as e-health. The technical personnel found in the public service sector context consists of software developers, system analysts, IT managers, and network administrators. The non-technical personnel found in the sector include policy officers, procurement officers, legal team, directors, deputy directors, the Prime Minister and other professionals.

The collaboration, consolidation, and alignment of the requirements for e-governance were imperative, although within the current system there is not much development yet; hence, the idea of integrating e-governance and other systems like e-health to ensure quality healthcare service delivery, transparency, and general efficiency in Namibia`s service industries. The effort of integrating e-health and e-governance systems have been challenging as the community which is supposed to drive the initiative lacks skills and technological support as well as the right policies to support the collaboration. A participant shared the same sentiments below.

"The challenge with e-governance implementation is that the people that are involved in the project are not well equipped with the right skills" (GOV1, pg2:32-33).

The cabinet and parliament are also communities found in e-governance implementation. The cabinet is made up of the president, the vice president, and other ministers nominated by the president. Before any e-governance project can be implemented, it needs the approval of cabinet first. Then, once it is approved by the cabinet, the parliament also needs to approve it. Some members of cabinet are also members of parliament. Currently, there is a challenge of cabinet and parliament members not having the know-how to adequately assess the e-governance solutions that are brought before them. A participant explained:

"Legislators and top executive government officials need to receive specialised training aligned to their duties they will be expected to perform" (GOV2, pg5:14-15).

The lack of adequate skills amongst legislators hinders the integration of e-governance with e-health. Some members within the cabinet and parliament are also computer illiterate, which results in not fully understanding what is brought before them.

4.6 Activity Theory: Division of labour

Division of labour entails the allocation of specific tasks in accordance with the subjects' areas of specialisation. Tasks are performed by subjects, and these subjects are allocated roles or tasks within the activity. In this instance, IT specialists, government representatives, and citizens have specialised tasks that support the implementation of e-governance.

The roles of the IT specialists in e-governance include providing technical support, maintaining, and implementing e-government solutions, and its co-existence and integration with other technology

solutions. The role of non-technical personnel, such as policy officers, procurement officers and directors, is to ensure the system fulfils their needs. Iyamu and Shaanika (2018) highlighted that due to the power that actors possess, they can enable or constrain systems and technologies' activities through conscious or unconscious actions. The roles seem to be clear for those who were involved in e-governance from technical and non-technical perspectives. What seemed to be unclear was whether the activities carried out in accordance with the roles were evaluated to ensure completeness. This could be associated with the challenges or gaps in the integration of e-health with e-governance.

Some of the tasks that are allocated to the various actors and groups in the implementation, support and management of e-governance solutions are budget allocation, the recruitment of qualified staff, and setting up the network infrastructure across the country. The primary reason for allocating these tasks is to have the right personnel with the required skills working on the tasks to produce an e-governance solution that solves current problems in the country, and that covers all the objectives set at the beginning of the project. On the one hand, some of the consequences of not allocating these tasks are producing a solution that will become a white elephant due to its incompleteness, and not meeting requirements. On the other hand, the implications of inappropriately allocating the tasks are not meeting stipulated deadlines, and the cost of the project going up.
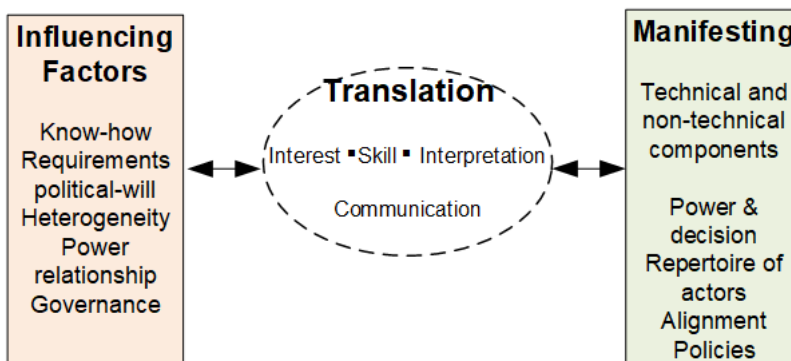
5. IMPLEMENTING E-GOVERNANCE

Figure 2 depicts the six factors which are found to influence e-governance, from implementation perspective: (1) know-how; (2) requirements of both technical and non-technical components; (3) political-will, which draws on power to make decision; (4) heterogeneity; a repertoire of actors (5) power relationship; and (6) governance, which includes standards, policies, and principles. The influence entails direct and indirect control and manipulation, to control and manage the processes, activities, and technology (technical). The factors are discussed below.

5.1 Know-How

Know how involves the practical experience and expertise to perform tasks at different levels (Chandra, 2019). To ensure successful implementation of e-governance, the most experienced and knowledgeable people are required (Aftab.2019). This includes IT specialists and non-IT personnel. The IT specialists focus on technology related factors, while the non-IT personnel covers factors that are not related to technology solutions, which include government business and service delivery. The distinctive focuses require collaboration between the actors, to cover the necessary activities for a successful

Figure 2.
Factors influencing e-governance implementation

implementation. The end-users are included in these two groups of implementers. The involvement of end-users is critical, to ensure smooth transition from stage to another during the implementation of the e-governance solution, including experiencing the benefits of the solution (Gupta, 2021).

Despite the criticality of know-how, there was scarcity of personnel who are expertise in e-governance implementation. This is attributed to two main factors: there were no other existing cases for terms of reference; and those who develop the solution are not necessarily implementers. Rather find a common ground, some actors employ power vested in their position, to make decision. Such action benefits political interest at the expense of technology solution, which manifests in the implementation of the solution. Thus, the Namibian government needs to put measures in place to raise awareness for both politician and other actors of e-governance.

5.2 Requirements

Collaboration between actors that are responsible in the implementation of e-governance is a critical requirement. Essentially, collaboration is primarily to avoid gaps and eliminate the possibility of isolating solutions, requirements, and communication (Wadhwa, 2020). Also, requirements of both technical and non-technical ensure interoperability, which is a support factor for implementation of the solution (Panetto & Cecil, 2013). Governance supports the collaboration of e-governance components as it offers the standards, policies, and principles required for the manageability of implementation.

Both functional and non-functional requirements are needed for e-governance implementation. Primarily, because functional requirements describe software features or functions that enable users carry out certain tasks (Dabbagh, Lee & Parizi, 2015). In e-governance implementation, functional requirements describe three fundamental aspects: how the e-governance solution operates; how data from different government entities are shared; and the business processes that are involved. Technology requirements detail the required ICT infrastructure, which are the hardware and software requirements that are needed for the e-governance solution (Farzandipour et al., 2020). ICT infrastructure is particularly a challenge in Namibian rural areas as pointed out by Mutasa and Iyamu (2021), hence the factors that influence such poor state of infrastructure is crucial. Otherwise, repertoire of challenges will persist. Full understanding and clear articulation of requirements can lead to successful implementation of a solution solves the problems at hand (Spoletini & Ferrari, 2017).

5.3 Political Will

Political-will is described as the commitment and dedication of decision makers to carry out different activities towards certain set goals (Abazović & Mujkić, 2015). In Namibia, the activities of the e-governance are vested on the Ministry of ICT and OPM. The head of these units are politician, which source their power from the democratic setting where Parliament is the focal actor. As a result, activities relating to e-governance seek approval from the Government administrative cabinet and the parliament. The decision to approve or reject any of the activities is always synonymous to technical fit or capability. There are other factors of influence, which include exalt of power and lack of know-how.

Politically, the cabinet and parliament will their power to approve the budget for e-governance projects, including its implementation. Despite developing countries investing much in e-governance solutions, political instability and various leadership issues interfere with its success (Gu et al.,2021; Khan, 2017; Shikha, 2009). It is important for decision makers to be educated on how to separate their political affiliations from matters of national interest, in making decisions that are for the good of the country which includes the approval of e-governance implementation and its activities (Samsor, 2020). Also, lack of political-will can delay approval of e-governance implementation's activities (Gupta et al., 2018). Delays in approvals hinder e-governance implementation success, which is tied to completion and budgetary.

5.4 Heterogeneity

In this context, heterogeneity refers to multiplicity of actors in the different units or groups that exist (Nehemia-Maletzky et al., 2018), in the implementation of the implementation of e-governance. Also, the interaction between helps build relationships and different for various activities, which create heterogeneity (Islam, Mäntymäki & Turunen, 2019). In the implementation of e-governance in Namibia, there is lack of synergy because of weak heterogeneity. This influenced by isolation of ideas (know-how) between IT specialists and non-IT specialists, and lack of collaboration between implementers. As a result, government systems are built on different platforms, using different vendors, and having different data formats. This greatly affects the implementation of e-governance from interoperability perspective (Ronoh, Omieno & Mutua, 2018). In addition, this creates systems' fragmentation, which defeats e-governance purposes from implementation standpoint and hampers service delivery.

There is need for heterogeneity of actors and activities, to improve uniformity in the ways in which e-governance solution is implemented in the country. This enables flexibility in sharing data by systems of government entities and reduces duplication of data and repetition of effort (Maksimovic & Vujovic, 2017). E-governance implementation is characterised by many actors which include IT specialists and government officials, and measures need to be put in place to harmonise the different expertise from the different actors. Heterogeneity in the implementation of e-governance enhance corroboration between non-technical factors such as legal, political, and socio-cultural dynamics (Novakousk & Lewis, 2012).

5.5 Power Relationship

Also, the e-governance projects require approval from the government administration, which sometimes exercise its power. This draws on the relationship between specialists and government officials including politicians, in the implementation of the e-governance. Politically, the cabinet has the power to approve the budget for e-governance implementation. Despite this vested power, many cabinet Ministers and parliamentary members do not have the know-how to adequately assess the e-governance solutions when it comes to approval. This is a challenging factor that affects the implementation.

Power relationship is an action by a person, to impose his/her wishes on another individual or group (Zaaiman, 2020). This means that the relationship is defined by power vested on structured or system within which the actors operate. The person with the lesser power feels compelled to perform or carry out tasks. In e-governance implementation, relationship between the implementers is often enacted by power, it is more so because of the involvement of politicians (Peters et al., 2021). Thus, many IT specialists find it difficult to carry out important actions necessary for e-governance implementation because of political influence. It is on this basis that power relationship is considered negative influence, counter productivity and derails e-governance implementation (Jeong et al., 2021).

5.6 Governance

The implementation of the e-governance solution is governed and guided by different policies, principles, and standards, which are communicated and interpreted different depending on the interest, know-how or interpretation of the implementers (Adeodato & Pournouri, 2020). Technical and non-technical personnel are involved in implementing e-governance in Namibia. The implementation and management of the e-governance solutions are governed and regulated by policies and standards. However, the administrative procedures before any e-governance solution can be implemented are excessively complicated and lengthy, resulting in some departments or units having their own stand-alone solutions.

Governance consists of three main components, policies, principles, and standards. These components help in different ways in the control and management of processes and activities in

an organisation (Keping, 2017). In e-governance, governance is crucial to its success because it fortifies procedures and streamline tasks, such as selection of technologies and sharing of data for services. This helps to prevent numerous interpretations of processes, events, and activities that are related to e-governance implemented. Ronoh et al. (2018) argue that governance is instrumental to interoperable and integration. The different interpretations can translate to lack of know-how, which lead to challenges. In addition, governance ensure management of resources including allocation, accountability, and auditing of tasks (Jacobs,2016).

6. IMPLICATIONS

The implications of this study are viewed from three main angles, integration, better understanding of heterogeneity and synchronisation of services and data, and formulation of critical success factors (CSF).

1. Integration entails and enables connectivity of other systems. The factors revealed in this study can enable successful implementation of e-governance. A successful implementation attracts integration of the solution with other systems in the areas of essentiality, such as the e-health. The integration advances service delivery through alignment between services and strategy.
2. Heterogeneity and synchronisation enable unification. Synchronisation of data and services will enable and support common objectives in Namibian government providing services to her citizens. Another fundament factor is heterogeneity from which repetition (repertoire) manifests. This is particularly because of the diverse nature of actors and networks involved in the process. This requires continuous assessment of the implementation stages. Failure to assess the environment during implementation poses a great risk to the project.
3. Difficult to assess services from e-governance. Another important contribution of the study is that the influencing factors can be used to formulate critical success factors (CSF) for the implementation of the solution. The CSF can be used by the managers to monitor the progress of the implementation of e-governance, to ensure that the objectives are achieved. Without the CSFs, it would be impossible to conclude or measure the success of the implementation of the solution.

7. LIMITATIONS

Despite the comprehensiveness of the study, we see three limitations, in the areas of scope and focus. Firstly, the study is limited to Namibia. Although, it would have been interesting to include more countries in the Africa continent. Secondly, the researchers were aware that e-governance cannot be a standalone system or concept. Its usefulness is based on the connectivity with other services and systems. Despite this understanding, this study is limited to the factors that influence the implication of the concept, e-governance. Thirdly, the study did not include development of the e-governance in the country.

8. FUTURE RESEARCH

From the implications and limitations of the study, further studies can be carried out. Most relevant, further studies can be conducted to develop CSF, specifically for e-governance implementation and practice in Namibia and any other African or developing countries. This is because of the differentiation among governments' focus, cultural setting, and environmental needs of the different countries.

9. CONCLUSION

Structurally, three steps were involved in examining the factors that influence the implementation of e-governance in the Namibian environment. Firstly, relevant personnel and authorities were involved in the study, from whose data was collected. Secondly, analysis of the data was conducted using AT as a lens. From the analysis presented in section 4, six factors were revealed, as illustrated in Figure 2. In the final step, the factors are discussed as they manifest and influence implementation of e-governance in the country. The examination shows how the factors can influence the implementation of e-governance in the Namibia environment, from different angles. The study contributes as guide towards the implementation of e-governance solution based on the understanding of the factors, such as the relationship that exist within power, expertise, and defining requirements that influence it. This will ensure a smooth implementation of the e-governance solution which results in the improvement of service delivery in the country.

REFERENCES

Abazović, D., & Mujkić, A. (2015). Political will: a short introduction. Sarajevo: Friedrich-Ebert-Stiftung (FES).

Addo, A., & Senyo, P. (2021). Advancing E-governance for development: Digital identification and its link to socioeconomic inclusion. *Government Information Quarterly*, *38*(2), 101568. doi:10.1016/j.giq.2021.101568

Adeodato, R., & Pournouri, S. (2020). Secure implementation of e-governance: A case study about Estonia. In *Cyber Defence in the Age of AI, Smart Societies and Augmented Humanity* (pp. 397–429). Springer. doi:10.1007/978-3-030-35746-7_18

Aftab, M. (2019). E-Governance Practices in Developing Countries. Its Benefits and Challenges. -The Case of Pakistan-. *Industry Promotion Research*, *4*(1), 79–86.

Ajibade, O., Ibietan, J., & Ayelabola, O. (2017). E-governance implementation and public service delivery in Nigeria: The technology acceptance model (TAM) application. *Journal of Public Administration and Governance*, *7*(4), 165–171. doi:10.5296/jpag.v7i4.11475

Amukugo, K., & Peters, A. (2016). Citizen-Centric E-Government Services in Namibia. *Proceedings of the First African Conference on Human Computer Interaction - AfriCHI'16*.

Banerjee, A., Duflo, E., Imbert, C., Mathew, S., & Pande, R. (2020). E-governance, Accountability, and Leakage in Public Programs: Experimental Evidence from a Financial Management Reform in India. *American Economic Journal. Applied Economics*, *12*(4), 39–72. doi:10.1257/app.20180302

Basu, S. (2004). E-government and developing countries: An overview. *International Review of Law Computers & Technology*, *18*(1), 109–132. doi:10.1080/13600860410001674779

Beaumont, S. (2017). Information and Communication Technologies in state affairs: Challenges of E-Governance. *International Journal of Scientific Research in Computer Science and Engineering*, *5*(1), 24–26.

Bencherki, N. (2017). Actor–Network Theory. In *International Encyclopaedia of Organizational Communication* (pp. 2–3). Wiley.

Bhattacharya, K., & Suri, T. (2017). The curious case of e-governance. *IEEE Internet Computing*, *21*(1), 62–67. doi:10.1109/MIC.2017.8

Chandra, A. (2019). Gender Issues in Technical and Vocational Education Programs. *Advances in Educational Technologies and Instructional Design*, 1–22.

Dabbagh, M., Lee, S., & Parizi, R. (2015). Functional and non-functional requirements prioritization: Empirical evaluation of IPA, AHP-based, and HAM-based approaches. *Soft Computing*, *20*(11), 4497–4520. doi:10.1007/s00500-015-1760-z

Dennehy, D., & Conboy, K. (2017). Going with the flow: An activity theory analysis of flow techniques in software development. *Journal of Systems and Software*, *133*, 160–173. doi:10.1016/j.jss.2016.10.003

Dhindsa, B., Narang, M., & Choudhary, K. (2013). Benefits and challenges of e-governance portal. *International Journal of Soft Computing and Engineering*, *3*(5), 121–13.

Engestrom, Y. (2001). Expansive learning at work: Toward an activity theoretical re-conceptualisation. *Journal of Education and Work*, *14*(1), 133–156. doi:10.1080/13639080020028747

Farquhar, J., Michels, N., & Robson, J. (2020). Triangulation in industrial qualitative case study research: Widening the scope. *Industrial Marketing Management*, *87*, 160–170. doi:10.1016/j.indmarman.2020.02.001

Farzandipour, M., Meidani, Z., Nabovati, E., Sadeqi Jabali, M., & Dehghan Banadaki, R. (2020). Technical requirements framework of hospital information systems: Design and evaluation. *BMC Medical Informatics and Decision Making*, *20*(1), 61. Advance online publication. doi:10.1186/s12911-020-1076-5 PMID:32245499

Gil-García, J., & Pardo, T. (2005). E-government success factors: Mapping practical tools to theoretical foundations. *Government Information Quarterly*, *22*(2), 187–216. doi:10.1016/j.giq.2005.02.001

Giri, S., & Shakya, S. (2019). Practicing e-governance in Nepal: Challenges of civil service. *International Journal of Computer Trends and Technology*, *67*(4), 118–123. doi:10.14445/22312803/IJCTT-V67I4P123

Gregory, M., & Tembo, S. (2017). Implementation of E-health in developing countries challenges and opportunities: A case of Zambia. *Science and Technology*, *7*(2), 41–53.

Gu, D., Khan, S., Khan, I. U., Khan, S. U., Xie, Y., Li, X., & Zhang, G. (2021). Assessing the adoption of e-health technology in a developing country: An extension of the UTAUT model. *SAGE Open*, *11*(3), 1–16. doi:10.1177/21582440211027565

Gupta, A. (2021). Study on the Effect of ICT on E-governance and its Distribution of Facility for Rural Development in Satna District of Madhya Pradesh. *International Journal of Information Technology*, *7*(5), 36.

Gupta, A., Suri, P., & Singh, R. (2018). Analyzing the Interaction of Barriers in E-Governance Implementation for Effective Service Quality: Interpretive Structural Modeling Approach. *Business Perspectives and Research*, *7*(1), 59–75. doi:10.1177/2278533718800562

Iqbal, A., & Bagga, R. K. (2010). E-Governance: Issues in implementation. In *Proceedings of the International Conference on E-Governance* (pp. 1-7). Academic Press.

Iyamu, T. (2020). Examining E-Government Enabling of E-Health Service Through the Lens of Structuration Theory. *International Journal of Sociotechnology and Knowledge Development*, *12*(3), 26–40. doi:10.4018/IJSKD.2020070102

Iyamu, T. (2021). *Applying Theories for Information Systems Research*. Routledge. doi:10.4324/9781003184119

Iyamu, T., & Hamunyela, S. (2014). An ANT analysis of healthcare services for the nomadic patients of Namibia. *International Journal of Actor-Network Theory and Technological Innovation*, *6*(1), 54–67. doi:10.4018/ijantti.2014010104

Iyamu, T., & Mgudlwa, S. (2017). Transformation of healthcare big data through the lens of actor network theory. *International Journal of Healthcare Management*, *11*(3), 182–192. doi:10.1080/20479700.2017.1397340

Iyamu, T., & Shaanika, I. (2018). The use of activity theory to guide information systems research. *Education and Information Technologies*, *24*(1), 165–180. doi:10.1007/s10639-018-9764-9

Jacobs, J. (2016). *E-governance and economic development in Nigeria; problems and prospects*. ICAFIM.

Jeong, J. S., & Han, S. H. (2021). Turnover Intention and Productivity of Local Bureaucrats: Focusing on Influences of Local Politicians Intervention, Central Government Control, and Citizen Compliance. *Korea Observer*, *52*(2), 211–238. doi:10.29152/KOIKS.2021.52.2.211

Ju, J., Liu, L., & Feng, Y. (2019). Public and private value in citizen participation in E-governance: Evidence from a government-sponsored green commuting platform. *Government Information Quarterly*, *36*(4), 101400. doi:10.1016/j.giq.2019.101400

Karanasios, S., Allen, D. K., & Finnegan, P. (2018). Activity theory in Information Systems Research. *Information Systems Journal*, *28*(3), 439–441. doi:10.1111/isj.12184

Kelly, P. (2018). An activity theory study of data, knowledge, and power in the design of an international development NGO impact evaluation. *Information Systems Journal*, *28*(3), 465–488. doi:10.1111/isj.12187

Keping, Y. (2017). Governance and Good Governance: A New Framework for Political Analysis. *Fudan Journal of the Humanities and Social Sciences*, *11*(1), 1–8. doi:10.1007/s40647-017-0197-4

Khan, H. (2017). The challenges of e-governance in public administration. Globalization and the Challenges of Public Administration, 135-160.

Korpela, M., Mursu, A., Soriyan, A., Eerola, A., Häkkinen, H., & Toivanen, M. (2004). Information Systems Research and Development by Activity Analysis and Development: Dead Horse or the Next Wave? *Information Systems Research*, *143*, 453–471. doi:10.1007/1-4020-8095-6_25

Latour, B., (1992). One more turn after the social turn: Easing science studies into the non-modern world. *The Social Dimensions of Science, 292*, 272-94.

Lee-Geiller, S., & Lee, T. (2019). Using government websites to enhance democratic E-governance: A conceptual model for evaluation. *Government Information Quarterly*, *36*(2), 208–225. doi:10.1016/j.giq.2019.01.003

Leedy, P. D., & Ormrod, J. E. (2014). *Practical research: Planning and design* (10th ed.). Pearson Education International.

Linders, D., Liao, C., & Wang, C. (2018). Proactive e-governance: Flipping the service delivery model from pull to push in Taiwan. *Government Information Quarterly*, *35*(4), S68–S76. doi:10.1016/j.giq.2015.08.004

Mahundu, F. G. (2016). E-governance: A sociological case study of the central admission system in Tanzania. *The Electronic Journal on Information Systems in Developing Countries*, *76*(1), 1–11. doi:10.1002/j.1681-4835.2016. tb00557.x

Minn, M. (2016). American Long-Distance Locomobility and the Spaces of Actor-Network Theory. *Social Sciences*, *5*(1), 14. doi:10.3390/socsci5010014

Mkhomazi, S., & Iyamu, T. (2013). A guide to selecting theory to underpin information systems studies. Grand successes and failures in IT. *Public and Private Sectors*, *402*, 525–537.

Mutasa, L., & Iyamu, T. (2021). Conceptualizing The Integration of eHealth with eGovernance in a Developing Country. *Information Resources Management Journal*, *34*(3), 64–78. doi:10.4018/IRMJ.2021070104

Nawafleh, S., Obiedat, R., & Harfoushi, O. (2012). E-government between developed and developing countries. *International Journal of Advanced Corporate Learning*, *5*(12), 8–13. doi:10.3991/ijac.v5i1.1887

Ndou, V. (2004). E-government for developing countries: Opportunities and challenges. *The Electronic Journal on Information Systems in Developing Countries*, *18*(1), 1–24. doi:10.1002/j.1681-4835.2004.tb00117.x

Nehemia-Maletzky, M., Iyamu, T., & Shaanika, I. (2018). The use of activity theory and actor network theory as lenses to underpin information systems studies. *Journal of Systems and Information Technology*, *20*(2), 191–206. doi:10.1108/JSIT-10-2017-0098

Nengomasha, C., & Uutoni, W. (2015). E-Government in Namibia. In I. Sodhi (Ed.), *Emerging Issues and Prospects in African E-Government* (pp. 196–215). IGI Global. doi:10.4018/978-1-4666-6296-4.ch014

Nielsen, M. (2017). eGovernance and Online Service Delivery in Estonia. *Proceedings of the 18th Annual International Conference on Digital Government Research*, 300-309. doi:10.1145/3085228.3085284

Novakouski, M. & Lewis, G. (2012). *Interoperability in the e-Government Context* (CMU/SEI-2011-TN-014). Academic Press.

Oliveira, T. A., Oliver, M., & Ramalhinho, H. (2020). Challenges for connecting citizens and smart cities: ICT, e-governance and blockchain. *Sustainability*, *12*(7), 2926. doi:10.3390/su12072926

Panetto, H., & Cecil, J. (2013). Information systems for enterprise integration, interoperability, and networking: Theory and applications. *Enterprise Information Systems*, *7*(1), 1–6. doi:10.1080/17517575.2012.684802

Pardo, T., Nam, T., & Burke, G. (2011). E-Government Interoperability. *Social Science Computer Review*, *30*(1), 7–23. doi:10.1177/0894439310392184

Peters, B., Danaeefard, H., Ahmadzahi Torshab, A., Mostafazadeh, M., & Hashemi, M. (2021). Consequences of a politicized public service system: Perspectives of politicians, public servants, and political experts. *Politics & Policy*. Advance online publication. doi:10.1111/polp.12447

Pierre, J., & Peters, B. G. (2019). *Governance, politics, and the state*. Red Globe Press.

Radhikaashree, M., & Shruthiunnikrishnan, S. (2019). E-Governence in Health Sector–Challenges. *Eurasian Journal of Analytical Chemistry, 13*(SP), 170-172.

Ronoh, H., Omieno, K., & Mutua, S. (2018). An Interoperability Framework for E-Government Heterogeneous Information Systems. *IJARCCE*, *7*(10), 115–126. doi:10.17148/IJARCCE.2018.71025

Samsor, A. (2020). Challenges and Prospects of e-Government implementation in Afghanistan. International Trade. *Politics and Development*, *5*(1), 51–70. doi:10.1108/itpd-01-2020-0001

Sanmukhiya, C. (2019). E-governance dimensions in the republic of Mauritius. Humanities &Amp. *Social Sciences Reviews*, *7*(5), 279. doi:10.18510/hssr.2019.7532

Schroder, J. (2016). *Face to face surveys. GESIS survey guidelines*. GESIS Leibniz Institute for the Social Sciences.

Sekgweleo, T. (2018). A decision support system framework for testing and evaluating software in organisations. Cape Peninsula University of Technology.

Shaanika, I., & Iyamu, T. (2015). Deployment of Enterprise Architecture in the Namibian Government: The Use of Activity Theory to Examine the Influencing Factors. *The Electronic Journal on Information Systems in Developing Countries*, *71*(1), 1–21. doi:10.1002/j.1681-4835.2015.tb00515.x

Shikha, V. (2009). The application of e-government for increased service delivery. *The International Journal of Interdisciplinary Social Sciences: Annual Review*, *4*(1), 1–9.

Simeonova, B. (2018). Transactive memory systems and Web 2.0 in knowledge sharing: A conceptual model based on activity theory and critical realism. *Information Systems Journal*, *28*(4), 592–611. doi:10.1111/isj.12147

Spoletini, P., & Ferrari, A. (2017). Requirements Elicitation: A Look at the Future Through the Lenses of the Past. *2017 IEEE 25th International Requirements Engineering Conference (RE)*. doi: doi:10.1109/re.2017.35

Stephany, F. (2020). It's Not Only Size That Matters: Determinants of Estonia's E-Governance Success. Electronic Government. *International Journal (Toronto, Ont.)*, *16*(1), 1. doi:10.1504/eg.2020.10028669

Suri, P., & Sushil, . (2022). Effectiveness of strategy implementation and e-governance performance. *Evaluation and Program Planning*, *92*, 102063. doi:10.1016/j.evalprogplan.2022.102063 PMID:35349947

Thabit, T., & Jasim, Y. (2019). The challenges of adopting e-governance in Iraq. *Current Research Journal of Social Sciences and Humanities*, *2*(1), 31–38. doi:10.12944/CRJSSH.2.1.04

Ullah, A., Pinglu, C., Ullah, S., Abbas, H. S. M., & Khan, S. (2021). The role of E-governance in combating COVID-19 and promoting sustainable development: A comparative study of China and Pakistan. *Chinese Political Science Review*, *6*(1), 86–118. doi:10.1007/s41111-020-00167-w

Uutsi, T., & Mufeti, T. K. (2021). An Investigation of E-Government Web Accessibility for Visually Impaired Persons in Namibia. In Resilience, Entrepreneurship, and ICT (pp. 403-420). Springer.

Visser, W., & Twinomurinzi, H. (2009). E-government and public service delivery: Enabling ICT to put people first: A case from South Africa. Systemics, Cybernetics, and Informatics, 6(6), 36-41.

Wadhwa, M. (2020). *E-governance in healthcare sector in India*. ICT Indian Working Paper No. 28. Delhi: Centre for Sustainable Development, Columbia University.

Xia, S. (2017). E-governance and political modernisation: An empirical study based on Asia from 2003 to 2014. *Administrative Sciences*, *7*(3), 25. doi:10.3390/admsci7030025

Zaaiman, J. (2020). Power and Influence: Assessing the Conceptual Relationship. *Koers - Bulletin for Christian Scholarship, 85*(1). doi: 10.19108/koers.85.1.2466

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