

Optimising E-Government Technologies to Leverage the Effectiveness of E-Democracy in the 21st Century

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Received: 📅 2025 Jan 07

Accepted: 📅 2025 Jan 27

Published: 📅 2025 Feb 05

Abstract

Given the increasing embracement of internet, information and digital technologies across all aspects of the global society's operations, this study evaluates how the optimisation of e-government technologies would leverage the effectiveness of e-democracy in the 21st Century. Using integrative review to extract and analyse multitudes of the existing studies, findings imply that as e-governance system has improved to entail the utilisation of internet technology, mobile devices, online polling and voting, social media and other digital platforms in the administration and governance of the processes for the implementation of various government policies, it is also influencing the evolution and development of the concept of e-democracy. However, as compared to the developed democracies like the US, Germany and UK, the major limitations of e-government as an antecedent for enhancing e-democracy in most of the developing economies in Africa were found to arise from the dictatorial government's fear of the unknown, deterring effects of fake news and harmful propaganda, as well as inadequate resources to invest in the required e-government and e-democracy technologies. Considering that the government has managed to solve all its challenges of inadequate financial resources by prioritizing the importance for creating an effective e-democracy system, it is suggested in the Framework for enhancing the Effectiveness of E-democracy System that creating an effective e-democracy system would require government to consider four dimensions of e-democracy system that encompass technology, administrative, personnel, and data management and analytics.

Keywords: E Government, E Democracy, Impact of E Government, Limitations of E Government, Limitations of E Democracy

1. Introduction

Increasing advancement and usage of information and digital technologies by government officials and the general global population have influenced not only the emergence of the concept of e-government, but also the notion of e-democracy [1]. E-government or electronic government connotes the strategic process of using a set of information and digital technologies to engage, plan, implement and deliver various service delivery improvement policies of the government. E-democracy is the utilisation of the available information and digital technologies to empower ordinary citizens to express not only their democratic rights and popular views, but also to civically engage citizens to participate in various democratic processes and activities of the State [1]. It is through the advancement of the concept of e-government that the notion of e-democracy was born. Though sometimes used interchangeably, the concept of e-government still differs from the notion of e-democracy.

E-government is the usage of the information technology to engage, consult and involve ordinary citizens in the

planning, implementation and monitoring of the processes for the implementation of the service delivery policies and programmes. E-government aims not only to improve the engagement of the citizens, but also effective interface between governments and citizens [2]. This improves the capabilities of the government to understand and respond to the dichotomous needs and preferences of the population. Though the concept of e-government emerged from just the mere practice of creating government websites and e-mails to improve the communication between the government and citizens, it has subsequently evolved to the advanced stage where citizens are engaged, consulted and involved in the planning and implementation of various government policies and programmes.

The concept of e-government is efficiency-enhancement driven [3]. Its major focus is often to reduce operational costs whilst also improving the operational efficiency of government institutions and agencies. By eliminating paper-based work to adopt electronic or digital operations, e-government reduces operational costs and efficiency to

improve the optimisation of the often limited government resources to create and deliver as an array of various public services as possible [4]. However, as the government seeks to use various information and digital technologies to analyse and respond to various dichotomous needs and preferences of the population, such approach also induced the emergence of the concept of e-participation and e-governance.

E-participation refers to the advertent or even inadvertent process of using a mix of various information and digital technologies to get ordinary citizens consulted, involved and engaged in the accomplishment of various government activities [5]. It entails the redirection of citizens to read and contribute using online suggestion boxes or other digital measures to the information about government policies and programmes that are published on the websites, government information portals or any other digital channels. It is through the improved e-participation that the e-government system also influences the improvement of e-governance.

E-governance connotes the strategic process of using the available information and digital technologies to improve the effectiveness of the administration of government institutions/agencies, stakeholder management as well as transparency and accountability of the process for the implementation of various government programmes [6]. Yet as e-government seeks to improve the interactions of government officials with ordinary citizens, it also empowers citizens to get involved and engaged in the accomplishment of various service delivery programmes. It is the redirection of the traditional government activities to online systems that has influenced the evolution of e-government to e-governance and then subsequently to e-democracy.

Unfortunately as empirical facts from the African continent and the other developing countries indicate, usage of e-democracy is a concept which is still ignored by several governments [7]. Even if the information and digital technologies have improved to lower the costs of e-democracy, most of the governments, including the developed countries' governments like the United States, Germany and the United Kingdom are still reluctant to fully embrace the utilisation of the concept of e-democracy [8]. Combined with the limited empirical studies that have been conducted on the concept of e-democracy in Africa, it is a nexus of such insights that motivate this study to use the methodology described below to evaluate how e-government technologies can be optimised to leverage the effective utilisation of e-democracy in the 21st Century.

2. Methodology

Empirical process of evaluating how e-government technologies can be optimised to leverage the effective utilisation of e-democracy in the 21st Century entailed the use of integrative review. Integrative review is one of the qualitative critical content analysis that focuses on gathering and evaluating not only peer-reviewed studies, but also the other plausible articles published on the concept being investigated [9]. Integrative review differs from systematic review on the basis that whereas systematic review focuses

on gathering and evaluating only the peer-reviewed studies, the integrative review gathers and evaluates all articles that offer any plausible insight about the phenomenon being investigated. Given the fact that a lot has been conducted on e-government, but not the notion of e-democracy, it was such values of integrative review that motivated its usage in this study.

Through integrative review, it was anticipated that the study would be able to gather all the insights on how the optimisation of e-government technologies leverages the effectiveness of e-democracy in the 21st Century. To accomplish that, the process of integrative review was structured according to four steps encompassing defining of the integrative review question, literature search, literature extraction and analysis [10]. In the first instance, the critical questions for integrative review were defined in alignment with the research topic to entail the analysis of how does the optimisation of e-government technologies improve the effectiveness of e-democracy in the 21st Century.

To probe this question, further integrative review question examined how e-government technologies catalyse e-democracy as well as the kinds of challenges that often mar the successful optimisation of e-government technologies to enhance the effectiveness of e-democracy. Once the integrative review questions were clear, the process of literature search commenced. To extract only the literature and articles relevant to the study, literature search was guided by the use of keywords like "e-government", "e-democracy", "impact of e-government", "limitations of e-government", "limitations of e-democracy", "e-government as a catalyst for e-democracy". While using these keywords, the wider search of the relevant literature from the internet was accomplished using Search Engines like Google and Web of Science. This enabled search and extraction of enormous amount of information on e-government and its catalyzing effects on e-democracy. However, to limit the analysis only to the literature relevant to the study, the title, abstract and full text of each article were read to ascertain whether each of the extracted articles met the inclusion criteria of having been published in English language in the past 5 years.

Articles that did not meet these criteria were excluded from the analysis, as the selected articles were subjected to a critical analysis using thematic and narrative analysis. Whilst using thematic and narrative analysis, the first stage of the analysis was directed towards extracting key themes, subthemes and their accompanying explanatory chunks of texts that elucidate how the optimisation of e-government technologies improve the effectiveness of e-democracy in the 21st Century. In terms of the second research question, thematic and narrative analysis were undertaken to further extract themes, subthemes and their explanatory chunks of texts that depict the kinds of challenges that often mar the successful optimisation of e-government technologies to enhance the effectiveness of e-democracy [9]. All these themes, subthemes and their accompanying narratives were pieced together to discern how they offer a coherent narrative on how e-government technologies catalyse e-democracy as

well as the kinds of challenges that often mar the successful optimisation of e-government technologies to enhance the effectiveness of e-democracy.

To improve the overall credibility and reliability of the study, views from different studies were contrasted and compared with each other to eliminate risks of biasness and reliance on only one view on how e-government technologies catalyse e-democracy as well as the kinds of challenges that often mar the successful optimisation of e-government technologies to enhance the effectiveness of e-democracy. As depicted below, the overall findings of the study are evaluated and discussed as follows.

2.1. Findings

In line with the integrative review questions, the overall findings of the study are analysed and presented according to subsections encompassing:

- E-Government as a Catalyst for E-Democracy
- Approaches/Models for Enhancing Effectiveness of E-Democracy
- Limitations of E-Government as an Antecedent for Enhancing E-Democracy

Details of these are as follows.

2.2. E-Government as a Catalyst for E-Democracy

As governments have been optimizing their e-government technologies to consult, engage, empower and promote the civic participation of various activities like voter registration and online voting, it has also influenced the emergence of the concept of e-democracy [11]. E-democracy is the strategic usage of the available information and digital technologies to aid the civic participation of the ordinary citizens in various democratic activities of the country. The evolution and advancement of the usage of e-democracy has not only emerged from the government's improved usage of e-government technologies, but also from the innovative uses of digital technologies to advocate and advance their basic human rights as well as democratic rights through online petitions, opinion polling and inadvertent or inadvertent adoption of a particular popular position against the government or a particular political figure [12]. Advancement of the usage of e-democracy technologies is also influenced by the ordinary citizens' increasing usage of social media to express their common popular views, organise protests, riots and strikes that even overthrow some governments as well as online political campaigns that seek to utilise various propaganda messages and even fake news to de-campaign the government or a particular opponent. It is from such practices of the ordinary citizens that the concept of e-democracy formally emerged to be used by the governments for online consultation, participation and voting [13].

Critical actors in e-democracy that seek to use various forms of information and digital technologies of the 21st Century to accomplish an array of different democracy related activities encompass citizens, governments, political organisations, media, activists/pressure groups, elected officials and campaigners for various political offices. Regarding the roles

of citizens for promoting the use of e-democracy, it is usually the citizens who have been at the forefront of influencing government to evolve from just the use of e-government technologies to the use of e-democracy systems. Citizens are critical e-democracy actors who are often the first to use various available online and digital technologies as the platforms for attacking government and influencing government to adopt a particular policy perspective [14].

Ordinary citizens use online platforms like facebook, twitter(X), Instagram, Tik-Tok and Linked-In to express their views that either indicate contentment or dissatisfactions with a particular government action or policy. In the event of dissatisfactions, government officials are usually forced to come out to clarify the situation. Since most of the ordinary citizens are not easily reachable through the physical world, the government also adopted the use of the online and digital systems as the measures for responding to any online campaigns by citizens [15]. It is through such approach that ordinary citizens have been and are still influencing the overall evolution and development of e-democracy. Yet as governments react to the online and digital democratic activities of the ordinary citizens, it also becomes an important actor in the evolution and development of the concept of e-democracy.

In most cases, especially in developing countries like South Africa and other African countries, governments have been quite slow to adopt technologies that promote the evolution and development of e-democracy [16,17]. However, because ordinary citizens are ahead in terms of the invention of new methods from the existing technologies that can be used to promote electronic democracy, governments are forced to act. If they don't act, the fear is that the opposition governments would take the opportunity to utilise such unattended online political operators to destabilize the effective political system of the country. Due to such needs, governments have emerged as critical actors in the e-democracy processes by using and developing technologies that facilitate the online democratic participation of ordinary citizens in different government programmes [18].

In the quests to facilitate e-democracy principle in which the ruling government operates and acts according to the popular demands, various governments have introduced the e-democratic platforms like official government social media platforms, websites and government portals in which government information are presented for citizens to read and express their views. It is from such comments and criticisms that the government identifies popular opinions to respond to and adopt as part of its policies [19]. In that regard, e-democracy technologies also tend to improve the participation of ordinary citizens in the critical decision-making activities of the government. It renders it possible for the government to adopt a more citizen-centric approach. In addition to using such platforms, governments have also introduced platforms that permit online voters' registration as well as voting. These are often accompanied with the introduction of the online suggestion boxes as well as petition lines that enable ordinary citizens to petition a

particular government department to express their needs and demands that they require the government to respond to [20].

To further improve the government's engagement and interactions with the ordinary citizens, governments have also introduced the dedicated government social media officials who interact and respond to various citizens' queries. This improves the extent to which ordinary citizens are able to understand the rationale of various government policies as well as the ability of government to understand why ordinary citizens are putting across some of the demands [2]. Compared to the ruling political party or government, it is the political parties that are the greatest promoters of e-democracy. Political parties have been at the center of the emergence of various innovations that seek to improve the adoption of various digital technologies in the promotion of e-democracy.

In that process, political parties use various online platforms and social media to reach out and influence ordinary citizens to adopt a particular position [5]. To get the population to force governments to adopt a particular policy position, the political parties use technologies like artificial intelligence, machine learning and big data analytics to extract vital information from government as well as to come out with online videos and messages that de-campaign the government and lure the population to adopt a particular policy position.

The adoption of such policy position may even entail the use of online platforms and social media platforms to get the population to protest, riot and force the government out like it was in Egypt and Sudan [8]. Yet as the political parties play such roles, the media has also been quite instrumental for influencing the adoption of various digital technologies in the promotion of e-democracy. Ever since the concept of the internet emerged to introduce new paperless ways of creating and distributing information, most of the media houses shifted from using physical systems to adopt usage of only the online structures.

The implication is that various forms of online and digital media like You Tube TVs, digital TVs and radios as well as others have emerged to engage in various forms of commentaries, analysis and reporting that further use facts to catalyse the use and evolution of digital democracy [11]. The catalyzing roles of the media are complemented by the functions of the civil society organisations that emerge in the form of pressure groups and activists to engage in the online campaigns that seek to influence citizens to adopt a particular policy position against the government. Yet as these actors influence the evolution and development of e-democracy in various ways, the pragmatic approaches adopted by such players have also influenced the emergence of various models for e-democracy [18].

2.3. Approaches/Models for Enhancing Effectiveness of E-Democracy

As e-governance system has improved to entail the utilisation

of internet technology, mobile devices, online polling and voting, social media and other digital platforms in the administration and governance of the processes for the implementation of various government policies, Muhammad reveals that it has also led to the emergence of two approaches for e-democracy and governance [3]. Though intertwined, the two approaches encompass consultative and deliberative approach. The consultative approach connotes the strategic process of utilising internet technology, mobile devices, online polling and voting, social media and other digital platforms in the engagement, consultation and involvement of ordinary citizens in the planning and the implementation of various government policies and programmes [1]. Consultative approach emphasises the need for the utilisation of e-democracy technologies to create and deliver citizen-centric outcomes that respond to the most pressing needs and demands of the majority of the population. It aims to improve the consultation of the ordinary citizens so that the government can understand the major socio-economic problems facing the population in a particular area before coming up with the policy that dictate the amount of budget allocation.

Through the usage of the consultative approach, most popular governments often seek peace and harmony through which the government closes all gaps that can be utilised by the opposition political parties to disorganize the country [12]. In the bid to ensure the government works according to popular demands, the consultative approach to e-democracy ensures that the population is frequently engaged and consulted as part of the collaborative governance initiatives that emphasise stronger citizen-government interface. In the consultative approach, the government can use the direct or the indirect approach to consultation. Direct approach may require the creation and use of the more formal digital mechanisms and channels for consulting, engaging and involving the citizens in the process for the design and implementation of various government programmes [3].

Indirect approach does not use formal approach but indirect methods like posting the government plan on social media or leaking development plans during the design stage so that the ordinary citizens can comment and express their views. It is through the analysis of various social media comments and views that government analysts are able to discern the common popular position about a particular government policy or programme that will be introduced. Since the individual members of the population do not know that their views are being evaluated, they may tend to be more honest and transparent. This enables the government to modify their policy contents to respond to the popular comments and views of the citizens. As Muhammad notes, the consultative approach differs from the deliberative model [4]. Deliberative model refers to the approach where the government introduces formal online channels, forums or platforms through which ordinary citizens are invited to participate in the discussion and debates on various new policy initiatives that the government aims to introduce.

Deliberative model takes the form of representative democracy where the government instead of engaging every citizen may require representatives to be elected to participate in such online forums or digital platforms [4]. Though it has the limitations of limiting the direct participation of ordinary citizens, it still tends to enhance the effectiveness of e-democracy by getting the representatives of ordinary citizens to participate in the planning, implementation and monitoring of the process for the implementation of various government programmes [20].

Such a view echoes various theoretical narratives that indicate that in the bid to improve the utilisation of various digital technologies to enhance the effectiveness of digital democracy, governments are increasingly using a mix of two or more models of digital democracy that encompass representation, deliberation, collaborative, information, direct e-democracy, hybrid e-democracy and participatory e-democracy. Representation model of e-democracy seeks to create and use a range of online platforms and forums to improve the representation of ordinary citizens in various government institutions and agencies [6]. It often uses mechanisms like digital platforms through which the representatives of the ordinary citizens are engaged, consulted and involved in the accomplishment of various government activities.

Deliberation model encourages the utilisation of various social media platforms as well as digital technologies to encourage the debates and discussions of various government programmes as part of the initiatives of exploring the best service delivery programmes that must be adopted to respond to the popular demands and needs of the population. It emphasises the utilisation of a more participatory approach to governance [19]. Collaborative model emphasises the use of interactive interface of the citizens with the government in the planning, implementation and monitoring of various service delivery programmes. It uses technologies like online collaborative tools, platforms and crowdsourcing to encourage the frequent participation of ordinary citizens in the decision-making processes of the government [7].

To improve transparency and accountability, information model encourages the utilisation of an array of the available digital technologies in the dissemination of the required information to the population. Ordinary citizens must also be encouraged to utilise such similar technologies to access all the information which are essential for understanding what the government is doing to respond to their needs and demands [13]. Direct e-democracy uses methods like online voting, online petition and social media comment sections to permit ordinary citizens to directly participate in the democratic processes of the country.

In contrast, the hybrid model uses a mix of representative and direct e-democracy to permit the use of situations where only public representatives are engaged and the areas where public representatives are engaged together with the ordinary citizens in the discussion, debate and evaluation

of more touching and concerning government policies and programmes [17]. Participatory e-democracy requires the deeper direct involvement and engagement of the citizens in the decision-making processes of the government as well as in the evaluation of the effectiveness of the process for the implementation of various government programmes.

2.4. Limitations of E-Government as an Antecedent for Enhancing E-Democracy

Major limitations of e-government as an antecedent for enhancing e-democracy often arise from:

- Government's Fear of the Unknown
- Fake News and Propaganda
- Inadequate Resources

Details of these are evaluated as follows.

2.5. Government's Fear of the Unknown

Government's fear of the unknown is one of the major limitations of e-government as an antecedent for enhancing e-democracy. Most of the governments especially in the developing countries are afraid of the wider use of e-democracy enhancing technologies like social media and the creation of other online platforms for enhancing e-democracy [21]. This is because e-democracy is construed by some of the governments to over empower the ordinary citizens to approach and demand from government what they would usually fear to directly approach government officials through face-to-face physical system. Due to the capabilities of the e-democracy technologies to hide the physical identities of most of the activists, most of the ordinary citizens often feel emboldened to mobilise and pressure governments to deliver the demands that the government may not be able to easily respond to [22].

In that regard, most of the governments in the developing countries tend to suffocate the growth, evolution, development and advanced integration of e-democracy technologies in the normal democratic processes. Even if there is expression of dissatisfactions and concerns of the population about a particular issue, the government often uses a strategy of either not responding at all to such demands by issuing a statement or by technically sabotaging the operation of some e-democracy technologies during such periods of protests [23].

Most of the developing country governments fear that with the over-empowered population, it can be difficult to manage and govern the country because e-democracy technologies empower multitudes of the population to do as they wish. In the African countries like Cameroon, Equatorial Guinea, Gabon, Uganda, Rwanda, South Sudan and Eritrea where some of the presidents have manipulated elections to rule for decades, social media as some of the technologies for enhancing e-democracy are either stringently restricted or even completely banned [21].

In such countries, social media operations are never freely permitted as some of the countries like Uganda and Cameroon have even banned Facebook and other online platforms that put a lot of pressure on the government to adhere to the

required democratic principles [6]. In the initial stages of the emergence of social media as one of the e-democracy tools, there were little initiatives of the governments to restrict social media usage. But when it became evident from the Egyptian riots as well as the riots in Libya and other North African countries that were affected by Arab Spring that social media can actually be used to organise mass protests that overthrew a government, most of the countries with dictatorial tendencies reacted by completely banning social media platforms like Facebook, Twitter and Tik-Tok [24].

Due to fear of the unknown, even countries that pretend to be democratic also tend to engage in actions that sabotage the efficient functioning of social media during and after elections. In other instances, the government as being non-issues that do not deserve effective government response ignores mass complaints raised through social media. The implication is the sabotage causing the ineffective use of the required e-democracy technologies. Besides such challenges, the evolution and development of e-democracy is also affected by the emergence of fake news and propaganda.

2.6. Fake News and Propaganda

Fake news and propaganda used mainly on social media as some of the technologies for enhancing e-democracy has affected the extent to which social media can be believed and trusted as the viable technology for enhancing e-democracy [14]. Quite often, it is through social media that the effectiveness of e-democracy becomes effective for mobilizing and putting across various views to the population. However, as various political parties, activists and pressure groups seek to influence the population to adopt a particular policy position, the use of fake news and propaganda has often affected the credibility of social media as the technology for enhancing the effectiveness of e-democracy [6]. In effect, some of the governments and critics feel that social media cannot be regarded as an effective technology for enhancing e-democracy because some of the information cannot be proved to be true.

However, proponents of social media usage in e-democracy argue that it is important to use social media to enhance e-democracy because it reflects the actual realities that are often felt during the actual physical face-to-face interactions. In the actual physical face-to-face interactions, there is usually intense exchange of words and views as well as robust debates and confrontations [13]. So they argue that since such incidents are experienced in the physical world, the robustness of the debates that social media mediates reflects the actual incidents that transpire during the physical face-to-face debates. In that instance, they argue that the use of social media as one of the technologies for enhancing e-democracy must be encouraged. Even if fake news and propaganda is the challenge, they argue that those who are affected by fake news and propaganda must come out during social media debates to clarify with facts that what they claim is fake news is actually fake news [11].

Due to the fear of fake news and propaganda that come with the use of social media in e-democracy, some of the

governments still restrict the effective use of social media as well as the overall evolution and development of the concept of e-democracy. In effect, even if theories indicate e-democracy to develop and evolve through the four main stages of emergence, adoption, consolidation and maturity, the notion of e-democracy in most countries have only reached and stagnated at the emergence stage [13]. Emergence is the stage that the government engages in the experimentation of various e-democracy technologies like the use of social media platforms, online voters' registration and voting and government online platforms for enhancing citizens' engagement.

Due to such unintended consequences like fake news arising from some of the e-democracy technologies, the use of some e-democracy technologies is often abandoned to leave the e-democracy evolution just on the emergence stage [25]. This contrasts with the adoption stage where the use of e-democracy technologies is widely adopted, the consolidation stage where more e-democracy technologies are introduced and integrated with the existing ones to consolidate the use of e-democracy technologies as part of the normal democratic process. In the maturity stage, e-democracy technologies are not only used during elections, but also as the critical and essential part of the government's democratic operations in which citizens' consultation, engagement and participation is the norm for the government to operate more effectively. However, it is not only the fear of fake news and harmful propaganda that have prevented e-democracy from evolving upto the maturity stage, but also lack of the required financial resources [6].

2.7. Inadequate Resources

Inadequate resources is the other limitation affecting the effective optimisation of digital government to enhance the effectiveness of e-democracy. Inadequate resources affect the investment in the required technologies as well as the personnel for operating the e-government system. Effective operation of the e-democracy system is influenced by four aspects encompassing technology, administrative, personnel and data management and analytics [21]. The technology aspect of e-democracy implementation requires the government to invest in the establishment of the required technologies and equipment. It requires first of all the government to ensure that internet technology reaches every corner of the country. Such initiative requires the government to partner with the private sector players to provide the internet coverage across the country [23]. Without internet coverage across the country, it means that not all segments of the population from various parts of the country will be able to use the e-democracy system. Unfortunately, the satellite costs of extending the internet costs across every corner of the country is often quite hefty for most of the developing country governments that do not often have adequate financial resources [24]. Even for the developed countries, the faster increment of internet networks was driven by the private sector players' quests for profits but not the government incentives.

In effect without the internet connected population, it becomes difficult for the government to adopt e-democracy as part of the normal democratic process. The adoption of e-democracy approach does not just require the investment in the wider internet coverage, but also the introduction of the network systems, hardware and software that support the creation of the government online platforms for government-citizens' interactions [14]. It also requires the creation of the government online social media platforms. It also requires the development of more interactive government websites as well as the investment in the online polling and voting machines and technology. All these require enormous financial investment.

Since the whole democracy process is migrated from the physical system to the online system, it suggests the government must also invest in the creation of a more effective online database for managing the voters' information [15]. Considering the fact that such a voters' register must be synchronized and linked with the country's population register and the national identification systems, it implies such investments would require a lot of funds that some of the governments often do not have. The hefty costs of e-democracy technologies are further compounded by the hefty costs required for administering e-democracy throughout the country. The administrative aspect of e-democracy deals with the process of organising, managing, leading and controlling the process for the accomplishment of various e-democracy activities to influence the attainment of the desired democratic values [26]. Just like the physical democratic system, e-democratic system will also require the establishment of an effective administrative system. It is the administrative system that will enable the organising and structuring of social media operations as well as the operations of the other online platforms in the way that enhances the realisation of the desired e-democracy values.

The administrators are the organizers of the effectiveness of the e-democracy system. Unfortunately, just like the required technologies, the administrative aspects of e-democracy also requires a lot of funds which some of the governments in developing countries often do not have. For the administrative aspect of e-democracy system to be effective, the government would also require multitudes of personnel to manage the operations of various online channels [27]. Effectiveness of e-democracy commences from the capabilities of the government to recruit and deploy all the required personnel who can provide information if requested by any online citizen. It also requires the establishment of the personnel who can initiate debates and engage with the population on various topics in order to understand the most pressing needs that the government must respond to.

If an online citizen uses any of the online system to request for information from government and none of the online government personnel is available to respond and provide the required information, then the concept of e-democracy cannot kick off [28]. Unfortunately, this is often the common trend for even the governments that pride themselves to have embraced e-democracy principles. This is because most of the

governments often do not have adequate financial resources to invest in advanced technologies like artificial intelligence and machine learning that can be programmed to engage and respond to several queries from the population [22]. Yet even if the government invests in the establishment of such advanced technologies, it may still require an effective data management and analytics system [29]. E-democracy just like e-government system deals with enormous online data that requires careful data generation, capturing, processing, storage and retrieval.

Unfortunately, there are still challenges of having specialists with the skills and competencies to manage such complex data structures. Scarcity of such personnel increases costs since the few who are available demand more for being engaged to accomplish multitudes of tasks. This complicates the overall costs of putting in place the e-democracy system [30]. Since most of the governments cannot afford such hefty costs of e-government system, most of the adopted concept of e-democracy often lacks the four dimensions of e-democracy that theories highlight to include e-participation, e-consultation, e-citizen and e-voting. E-participation refers to the extent to which the online population is engaged to participate in various governmental activities.

But this is often difficult because governments do not have adequate financial resources to recruit and deploy adequate online personnel who can effectively interact and engage the population [16]. This also affects e-consultation. Though by using various social media platforms and online systems, there exists what is called e-citizen, still a challenge arises from e-voting because some of the governments do not have adequate financial resources to purchase all the required equipment and technologies that can support e-voting without the risks of rigging [30,31]. In other words, all these often affect the effective optimization of e-government technologies to enhance the effectiveness of e-democracy system. Such findings raise many managerial implications for the contemporary public administrators and managers.

2.8. Managerial Implications

Considering that the government has managed to solve its challenge of inadequate financial resources by prioritizing the importance for creating an effective e-democracy system, findings imply that creating an effective e-democracy system would require the government to consider the four dimensions that encompass technology, administrative, personnel, and data management analytics. As reflected in Figure 1, the technology would require the government to invest in the:

- Improvement of Internet Connectivity and Coverage.
- Social Media.
- Interactive Government Websites.
- Online Government informational Portals.
- Online Government Platforms for Citizens' Engagement and Consultation.
- Live Question & Answer Sessions with Digital Government TVs and Digital Radios.
- E-voters' Registration.
- E-Voting Technology.

- Online Suggestion Boxes.
- Use of Artificial Intelligence & Machine Learning.
- Automated Systems.
- Big Data Analytics Technology.

Administrative dimension would require the government to establish the management system in charge of planning, organising, leading and controlling how e-democracy technologies are utilised to achieve the desired e-democracy outcomes.

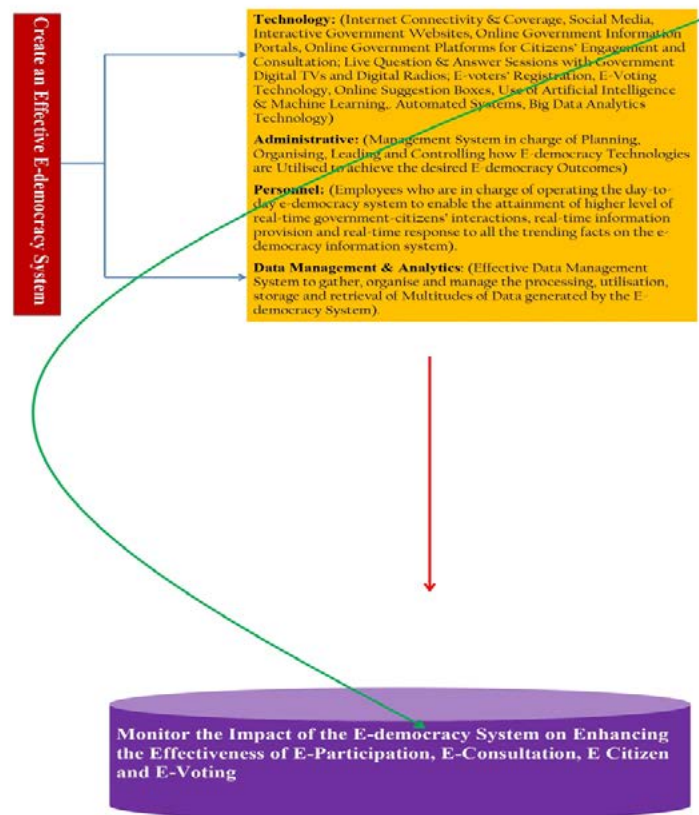


Figure 1: Framework for Enhancing the Effectiveness of E-Democracy System

Personnel dimension will necessitate the recruitment and use of employees who are in charge of operating the day-to-day e-democracy system to enable the attainment of higher level of real-time government-citizens' interactions, real-time information provision and real-time response to all the trending facts on the e-democracy information system.

Data management and analytics dimension will require the creation of an effective data management system to gather, organise and manage the processing, utilisation, storage and retrieval of multitudes of data generated by the e-democracy system.

To enable the attainment of the desired e-democracy outcomes, all these must be accompanied with periodic monitoring of the impact of the e-democracy system on enhancing the effectiveness of e-participation, e-consultation, e citizen and e-voting. This will enable improvement initiatives to be adopted to bolster the overall effectiveness of the e-democracy system.

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