

RESEARCH ARTICLE

E-governance in Africa's local governments: Do district assemblies in Ghana optimize the use of websites and social media?

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Abstract

The case study research design was adopted to evaluate websites and social media portals (Facebook and Twitter) of two municipal assemblies in the Greater Accra Region of Ghana. Data were collected through the researcher's interaction with these portals, interviews and focus group discussions with 36 respondents. It was established that these platforms have provided new channels for information sharing between local authorities and citizens. Again, it was also found that it facilitates interaction with local authorities. Nevertheless, it came out that its full deployment has not been realized. Despite favorable demographic characteristics, citizens in the study areas do not make good use of e-government options to interact with their local government officials. The research explores the challenges and opportunities for the adoption of these e-government initiatives by metropolitan, municipal, and district assemblies (MMDAs) in Ghana. Key conclusions and policy implications are drawn from the study.

KEYWORDS

Africa, e-government, Facebook, local governments, social media, website

1 | INTRODUCTION

Local governments in many countries, especially in the developed world, are using the internet, social media, and web technologies to emphasize external collaboration, civic engagement, network building, and customer service (UN, 2016). Scholars have also hailed information and communication technology (ICT), as it provides the opportunity to leapfrog stages of development and enter directly into the information age (Adera, Waema, May, Mascarenhas, & Diga, 2014). While there is a new promise and similar high expectation for social media platforms in government, researchers recognize technology as a challenge facing the future of public administration (Bretschneider & Mergel, 2011; Farazmand, 2012; Johnston, 2010; Zavattaro, 2013). Public administrators around the world can be more efficient in the provision of better services and adequately respond to demands for transparency and accountability through e-government (Bertot, Jaeger, & Grimes, 2010). It is argued that ICT advancements have significantly affected all aspects of social life, as the proper implementation of e-government strategy could enhance the effectiveness of local government functions in Ghana (Misuraca, 2007). Apparently, the opportunities provided by governments as a result of introducing ICT could lead to increased operational efficiency and better quality of services provided by government agencies (Osei-Kojo, 2017).

The new generation of public administrators expect access to these social media platforms as tools for interacting with citizens, service providers, and others as they make decisions, evaluate performance, and accomplish other administrative responsibilities (Bretschneider & Mergel, 2011). In an attempt by governments in developing countries to enhance socio-economic development and improve standard of living for their citizens, local authorities are structured to facilitate pro-poor development and promote equitable opportunities by improving basic services with resources from local taxes and development funding transfers (United Nations International Children's Emergency Fund, 2017).

In the early days of e-government introduction into the Ghanaian governmental institutions, Alemna and Sam (2006) observed general poor preparedness of local governments (metropolitan, municipal, district assemblies [MMDAs]) to actualize e-government strategies in their operations. Issues such as the availability of ICTs, electricity, illiteracy, and telecommunications were raised as barriers to e-government adoption in rural areas in Ghana. Other studies have explored the nature of adoption of e-government, benefits, and challenges associated with its implementation in some selected government agencies, all excluding local government structures like MMDAs (Addo, 2016; Osei-Kojo, 2017). Findings of these studies come to the consensus that e-government has tremendous potential for making government institutions more efficient in the execution of their mandate (Alemna & Sam, 2006; Fiankor & Akussah, 2012; Misuraca, 2007).

In spite of the availability of recent research works in the area of e-government in Ghana, there have been inadequate studies on e-government and its potential as an innovative strategy to assist local government institutions in Ghana to achieve their developmental objectives. In Ghana, MMDAs are responsible for the overall development in their jurisdictions through the exercise of deliberative, legislative, and executive powers (Yeboah-Assiamah, 2016). MMDAs are constrained by challenges regarding their ability to respond to the critical needs of their communities in a more responsive, efficient, and effective manner (Yeboah-Assiamah, Asamoah, & Osei-Kojo, 2014).

The general belief is that e-government holds the promise to catapult local governments to function more efficiently and expeditiously in responding to the needs of the citizens in a more democratic way. It is felt that giving the populace the chance to participate in the decisions that affect them may contribute significantly to empower the people in the local communities (ibid). Participatory theorists allude to the fact that, through democratic procedures in the function of governmental institutions, citizens can take control over the activities of their everyday life (Qinghao & Zhinzhang, 2014) and such transformation can be achieved through e-government. Studies show that many government websites lack the interactivity essential to social media platforms (Brainard & Derrick-Mills, 2011; Hand & Ching, 2011; Mergel, 2012; Zavattaro, 2013). In West's (2004) empirical study of government websites, results demonstrate that few government websites incorporate interactive democracy and citizen engagement initiatives. Most studies on social media application in government agencies conclude that citizen feedback does not affect agency decision making or organizational learning (see also Margo, 2012).

In spite of evidence on the use of websites among other strategies as channels of information by MMDAs in Ghana, there are still concerns that these institutions have not been proactive in taking advantage of e-government revolution (Fiankor & Akussah, 2012). In view of this lacuna, this study aims to assess the extent to which e-government has been used as channels of information exchange and avenues for citizen participation in MMDAs in Ghana. Specifically, the study evaluates the use of websites and social media (Facebook and Twitter) as instruments to stimulate citizen engagement and interaction in MMDAs. The study also examines the challenges hindering the effective deployment of e-government tools (webpages and social media) in the operation of MMDAs in Ghana.

2 | CONCEPTUAL OVERVIEW

2.1 | E-government maturity

The growing discussion in the literature on the usage of ICT in enhancing the practices of governance has coincided with postulations on the evolution of e-government adoption (Fan, 2018). Gartner (2001) established a four-stage model to describe the evaluation of e-government usage; these four stages were the following: publish, interact, transact, and integrate. Publish entails an initial stage where an e-government website is only created to share information to its users; then, it gets to a point where visitors can interact with the organizations through forms, emails, chat box, and other tools on the webpage. The third is the transaction stage, where visitors can pay for services through the webpage. For instance, visitors can pay their taxes with their debit or credit cards. The final stage, integrate, is reached when all different services are integrated on the same portal such that a visitor can pay taxes and request for marriage certificate through the same website. Similarly, United Nations (2014) posit that e-government develops through four phases: (1) emerging presence (basic online information), (2) enhanced presence (improved sources, e-tools, e-services of information), (3) transactional presence (interactive applications, nonfinancial/financial transactions), and (4) connected presence (whole of government, G2G, G2B G2C, C2G).

However, Moon (2002) developed a much more detailed framework for e-government progress. This framework has five stages that include (1) information dissemination/catalog, (2) two-way communication, (3) service and financial transactions, (4) vertical and horizontal integration, and (5) political (citizen) participation. Panopoulou, Tambouris, and Tarabanis (2008) also developed a similar framework that did not only evaluate the features of e-government website but also the provision of services and the avenues for citizen participation.

Mergel and Bretschneider (2013) also suggest a three-stage model to categorize the various phases in the use of social media by government institutions. During the first phase, agencies experiment informally with social media outside accepted technology use policies. The next stage is when government organizations recognize the need to draft norms and regulations to govern the use of social media. Finally, the institution outlines appropriate behavior, types of interactions, and new modes of communication, which are subsequently formalized into social media strategies and policies.

Heeks (2003), on the other hand, provides a simple framework for assessing the success or failure of e-government initiatives. He maintains that results of e-government initiatives can be grouped into three. The first one is total failure. This is where the initiative was never implemented or was implemented but immediately abandoned. The second is partial failure. This is where the major goals for the initiative were not attained

and/or there were significant undesirable outcomes. The last is success, which characterizes e-government projects where most stakeholder groups attained their major goals.

Increasingly, the ideal end of e-government has been envisaged as ensuring open government and facilitating citizen participation in the governance process. It is believed that e-government would put the world in the right position to actualizing the Sustainable Development Goals (United Nations, 2016).

2.2 | Adoption of websites and social media: Review of empirical literature

In most parts of the world, the usage of internet-enabled technologies for government business is evident (Shirky, 2011). To examine this move by public institutions, there have been studies that evaluate the adoption of Web 2.0 and social media by public institutions. For instance, Shirky (2011) views social media and web technologies as a double-edged sword. Whereas Web 2.0 and social media can strengthen transparency in government business, it can also be a threat to the rights and freedoms of citizens. In that, governments can easily monitor civil engagements. Oppressive governments can use these tools to harm citizens who oppose their political stance.

Linders (2012) examined the shift from Web 1.0 to Web 2.0 by many governments to facilitate easy communication and participation by citizens. Through an analysis of the adoption of social media by government institutions in the United States, Linders suggests that there are three main kinds of citizens' engagement in government through Web 2.0; these are "citizen sourcing," "government as a platform," and "do-it-yourself government." Graham, Avery, and Park (2015) also examined the use of Web 2.0 and social media in crisis communication at the local government level. They also found that social media use is positively associated with the ability to control a crisis and that the extent of social media uses influences the effectiveness of the crisis response.

Bonsón, Torres, Royo, and Flores (2012) also evaluated the adoption of websites and social media by the European Union (EU) local government bodies. The purpose was to ascertain whether these technologies have indeed increased transparency, e-participation, and enhanced opportunities for real corporate dialogue. They concluded that most local governments are using Web 2.0 and social media tools to enhance transparency but, in general, the concept of corporate dialogue and the use of Web 2.0 to promote e-participation have not materialized. Similarly, Van der Meer, Gelders, and Rotthier (2014) found that even in the so-called developed world, the use of Web 2.0 and social media has not fully evolved to the stage where citizens view these tools as conduits of their inputs into governance. All these studies reveal the need for governments to encourage citizens' adoption of these Web 2.0 for government engagements.

Local governments in Asia have also adopted Web 2.0 and social media. Kuzma (2010) assessed the level of government participation of 50 Asian governments on three social media sites. The results show that a minority of Asian governments (approximately 30%) use Web 2.0 tools for communication and information dissemination. The study found in these settings that social sites are used as tools for information dissemination on official government channels, education, and promoting tourism. The implications are that Asian governments are missing opportunities to better serve their citizens if they fail to reach the growing number of Internet users through innovations like social media.

Other scholars (Bertot, Jaeger, & Grimes, 2012) also examined the ways in which governments incorporate recent ICTs into e-government transparency initiatives, to promote collaboration with the public, and the ways citizens can employ social media to monitor government activities. The study examined e-government adoption by public institutions in the United States and some Asian countries: India, Korea, and Pakistan. It was found that social media is used as a tool to enhance democratic consolidation. Social media achieves this objective through exposing government processes, which include bidding, contracting, and processing of forms; public monitoring of activities of government officials; speed processing of government forms; limiting direct contact between members of the public and government officials; establishing channels for information dissemination from government agencies to members of the public, particularly through media that members of the public prefer using; providing outlets for public suggestions for improving government openness; and allowing members of the public to track the progress of their own interactions with government.

As observed from the discussed literature, there has been an extensive adoption of Web 2.0 and social media by government institutions. This practice has been associated with enhancing transparency and improving communication between governmental actors and citizens. Nevertheless, in most cases these technological innovations have not been widely accepted by citizens as a conduit for citizen participation in the governance process. Moreover, it is evident that African context has not featured prominently in recent academic discourse on Web 2.0 and social media adoption by government institutions.

3 | METHODOLOGY

A case study design of social research was adopted. The Ga West Municipal Assembly (GWMA) and Adentan Municipal Assemblies (AdMAs) in the Greater Accra Region of Ghana were selected. The municipal assemblies are two of the 16 MMDAs in the Greater Accra Region of Ghana. The demographic characteristics of the two local governments formed the basis for their inclusion in the study. Of all MMDAs in Greater Accra Region, GWMA had the highest literacy rate, which was discovered to be 96.8% according to the latest Population Census in Ghana (Ghana Statistical Service, 2012). High literacy rate is a good facilitator for e-government projects, since this kind of demography is found to have good impact on e-government engagement by target populations (Musso, Weare, & Hale, 2000). Another determinant of e-government usage age. It is

established that populations that are more youthful are deemed more receptive to e-government strategies (Mensah & Mi, 2017). Of all the 16 MMDAs, AdMA had the highest percentage of individuals in the age brackets of 15 to 64, which was 66.2% according to the 2010 Population Census (Ghana Statistical Service, 2012).

Data acquired for the study involved information gathered through the researcher's interaction with the websites, as well as, the Facebook and Twitter portals of the two municipal assemblies, throughout the month of November 2017. The state of websites of the assemblies was discussed based on the variables enumerated by the framework of Fan (2011, 2018), which is illustrated in Table 1. The researcher also developed a framework for assessing the social media portals of the study organizations illustrated in Table 2.

In addition to these observations, primary data were acquired through interviews and focus group discussions at the offices of the selected MMDAs throughout the month of January 2018. Thirty-six respondents involving key local government officials from both GWMA and AdMA were purposively chosen for the study.

In-depth interviews that lasted an average of 45 minutes were conducted with staff of AdMA and GWMA. The respondents were identified through the purposive and snowball sampling techniques. After initial interviews with management information systems (MIS) officers (the central figures on issues of electronic government at the study institutions), they were asked to identify other key actors in e-government implementation. This class of respondents included assistant directors, human resource managers, public relations officers, MIS officers, planning officers, and community development officers of the two municipal assemblies.

Two focus group discussions that lasted a period of an hour were also conducted in each municipal assembly. Each of the two focus group comprised six participants, who were residents. Assembly members are elected or appointed residents of communities who form part of the highest decision-making body at the local level called the Assembly. All interviews and focus group discussions were recorded and thoroughly transcribed, after which a thematic analysis of data was done to organize the findings in accordance with the objectives of the research.

4 | PRESENTATION OF FINDINGS

4.1 | Websites and social media accounts evaluation

E-government encompasses the deliberate inculcation of ICT and its related technologies in enhancing the activities of public institutions (Bertot et al., 2010). At AdMA and GWMA, there was evidence of the usage of many e-government strategies including the use of computers for basic office tasks, the usage of biometric clocking systems for recording attendance of workers, amongst others. However, the research was more focused on the use of websites and social media by these public institutions. Based on the objectives of the research, the websites and social

TABLE 1 Evaluation criteria for local government websites

Website Evaluation Category	Variables
Privacy/security	Privacy policy Security policy
Usability	Ease of use web page design Searching capabilities Multilingualism Disability access Links to external websites
E-content	Contact details (eg, office phone number, office address, and email address) Online publications (eg, policies, reports, plans, council meeting minutes, and council forms) Directory of other government services Directory of local services Multimedia material (audio and video clips for relevant public information)
E-services (nonfinancial transactions and financial transactions)	Nonfinancial transactions Online registration Online request for services Online application for permit Online library services E-tendering systems Financial transactions Online payment of rates and fees e-procurement
E-participation	FAQ Submit comments online to councilors Submit comments online to management Online consultation with councilors Online consultation with management Voting online
Feedback on website	Ability to report problems/deficiencies in the website Ability to request inclusion of facilities in the website

Source: Fan (2018)

TABLE 2 Evaluation criteria for social media

Social Media Platform	Variables
Facebook	Duration of account's operation Contact details (eg, office phone number, office address, and email address) Number of page likes Number of page follows Number of online publications (eg, policies, reports, plans, council meeting minutes, and council forms) and multimedia material (audio and video clips for relevant public information) Number of comments generated from users Number of replies to comments by administrator
Twitter	Duration of account's operation Contact details (eg, office phone number, office address, and email address) Number of account follows Regularity and quality of online publications (eg, policies, reports, plans, council meeting minutes, and council forms) and multimedia material (audio and video clips for relevant public information) Number of comments and retweets generated from users Number of replies and retweets by administrator

media accounts (Facebook and Twitter) of the selected MMDAs were evaluated in based on the criteria presented in Tables 1 and 2. Findings of the evaluation are presented subsequently in this section.

4.1.1 | Websites

Privacy and security issues are of prime significance in e-government implementation; however, it was found that little had been done in that regard by AdMA and GWMA. None of the visited websites had an updated privacy statement. Figure 1 is a screenshot of the pages of both websites during the evaluation period. It can be observed that at the time of assessment, the privacy statements on both websites were dated 2016.

In respect of ease of use of websites, both assemblies were at similar stages. The design was basic and very easy to navigate. Links of the website of institutions such as Ministry of Finance and Ministry of Local Government were included on the website as useful links.

Websites had all important contact details including office phone numbers, office addresses, office location on Google Maps, email addresses, and links to their Facebook and Twitter accounts. Both websites also had quality images of events and developments in their jurisdiction. Administrators of GWMA and AdMA websites had posted some important official documents, which included approved fees and rates payable to the Assemblies. On the other hand, there were some broken links on both websites. On the GWMA website, there was a link to an Instagram account, which was broken; similarly, there was a link to a Skype account on the AdMA website, which was broken. Neither of the websites had local languages nor disability support; however, there were relevant useful links on both websites.

There were no platforms available, which enabled residents to access public services on their websites; neither was it possible for residents to pay fees, rates, and other financial obligations online. Indeed, there were no electronic services (e-services) on both websites; however, there were links of the Government of Ghana's e-services portal.

Concerning avenues of citizen participation through the website, it was found that the websites of both municipal assemblies had adequate avenues for comments and inputs from their citizens. Both websites had electronic forms for sending messages to authorities, such as government officials, coordinating directors, and the municipal chief executive. AdMA's website had a chat feature that enabled instant messaging between the administrator and visitors of the website.

4.1.2 | Social media

Social media has enriched human existence through easy and rapid information sharing. Corporate bodies use social media as a tool for advertising, marketing, and enhancing services delivery. Apart from the use of websites, the study organizations also had accounts on Facebook and Twitter. AdMA created their Facebook account in February 2008. This account had generated 278 likes at the time of the study. On the other hand, the GWMA had a page created in April 2017, which had garnered 102 likes at the time of assessment. Both AdMA and GWMA had all the requisite contact information on their pages, which included their phone numbers, addresses, websites, and emails. They also had their mission statement and some general information on their pages.

In addition, GWMA had made 12 posts on their Facebook page, whereas AdMA had made 68 posts. Comparing the periods of existence of both assemblies it can be gathered that the officials of GWMA are more active as compared to AdMA as far as frequency of post is concerned. However, in both cases, the administrators have not been active and interactive on their portals as they have failed to reply to comments made by users on several occasions. Again, there were instances where pictures were posted without a caption, which implies low commitment of the institutions to the use of social media. Figure 2 is a screenshot of the Facebook page of AdMA where a user complained of the lack of caption to some pictures that were posted.

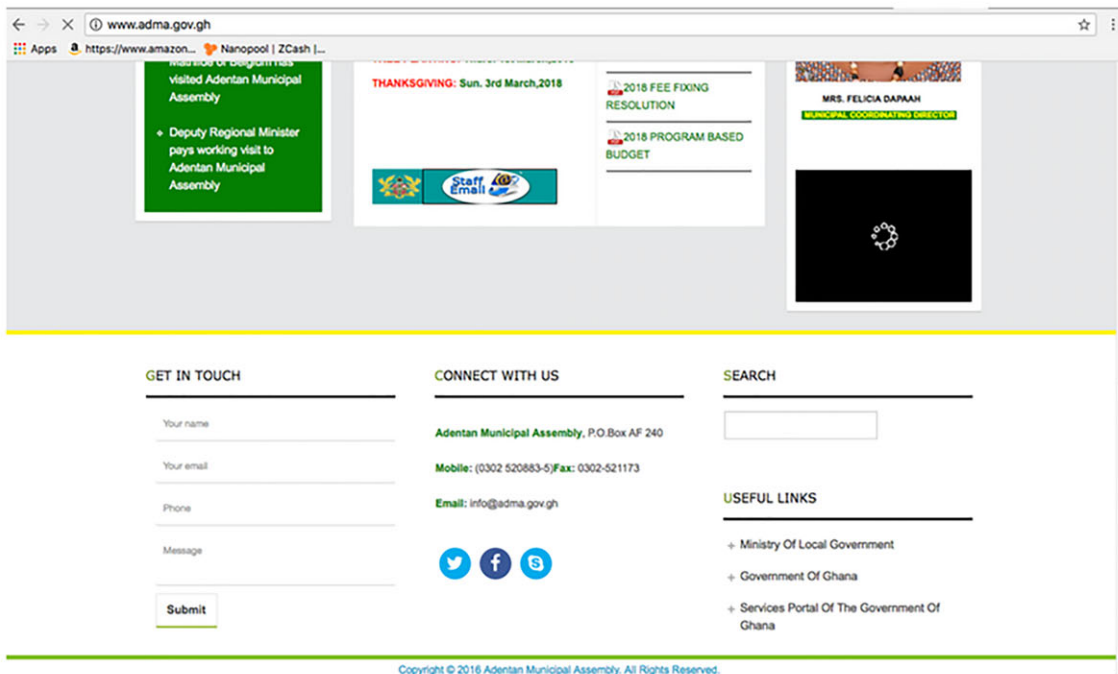
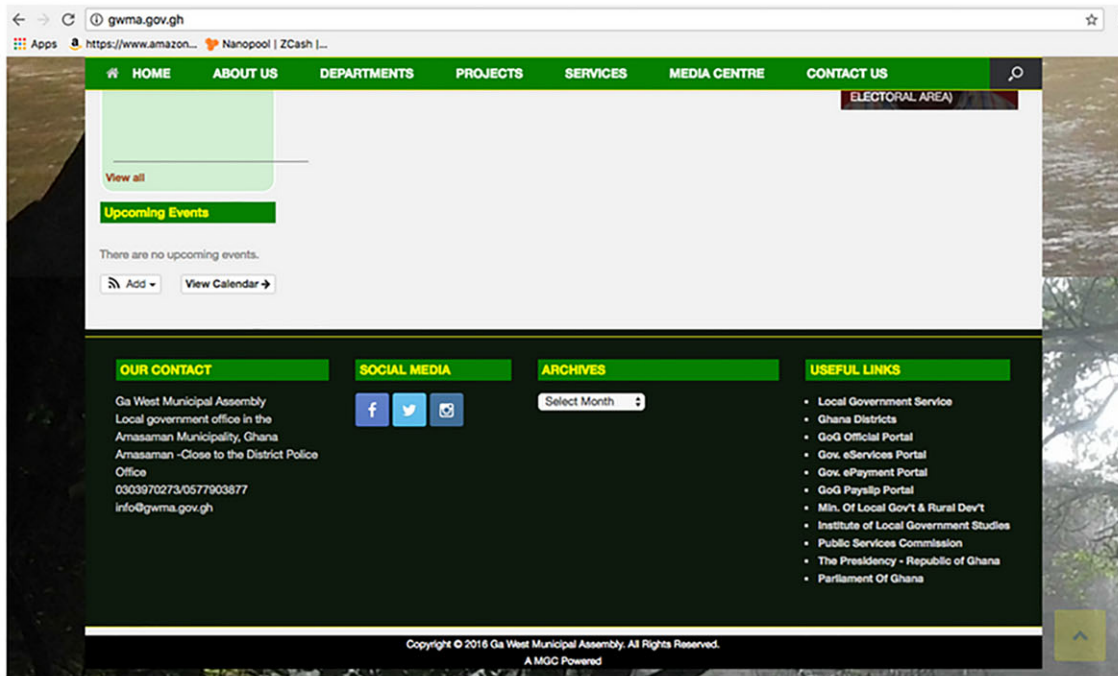


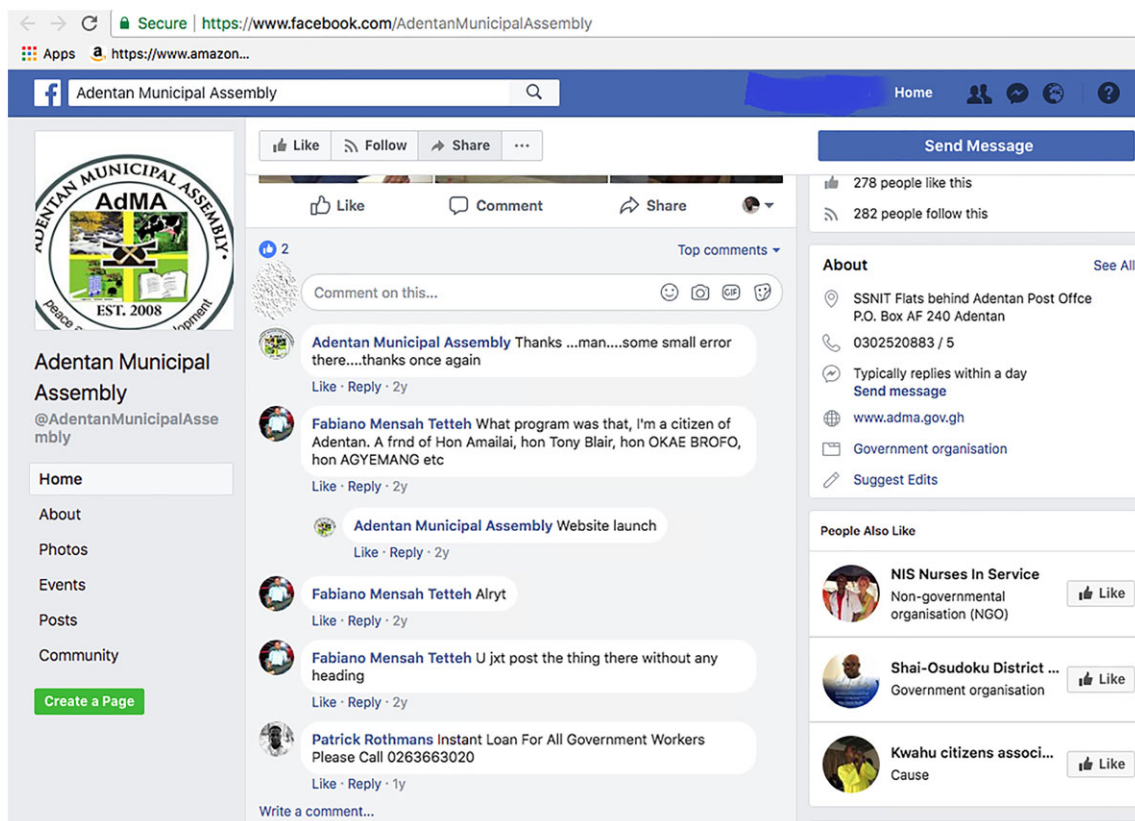
FIGURE 1 Screenshot of web pages of Adentan Municipal Assembly (AdMA) and Ga West Municipal Assembly (GWMA)

On Twitter, GWMA created an account in April 2017, which had 19 followers. AdMA had a twitter account with four followers, which was created in December 2017. Both accounts were furnished with contact information, including the location and website links. Ga West had made only 15 tweets, whereas AdMA had made only three (see Table 3). Also, there had been no user engagement on both platforms; however, GWMA had made some 15 retweets of some posts made by other state institutions like its sister MMDA; Accra Metropolitan Assembly (AMA). GWMA had also posted 20 photos of events hosted by the Assembly.

TABLE 3 Social media evaluation: findings

Social Media Platform	Variables	Results	
		AdMA	GWMA
Facebook	Duration of account's operation	10 y	10 mo
	Contact details (eg, office phone number, office address, and email address)	All details provided	All details provided
	Number of page likes	278	102
	Number of page followers	278	102
	Number of online publications (eg, policies, reports, plans, council meeting minutes, and council forms) and multimedia material (audio and video clips for relevant public information)	68	12
	Number of comments generated from users	22	2
Twitter	Duration of account's operation	1 mo	10 mo
	Contact details (eg, office phone number, office address, and email address)	All details provided	All details provided
	Number of account follows	4	19
	Number of online publications (eg, policies, reports, plans, council meeting minutes, and council forms) and multimedia material (audio and video clips for relevant public information)		
	Number of comments and retweets generated from users	0 retweets 0 likes 0 replies 0 retweets	5 retweets 13 likes 0 replies 15 retweets
	Number of replies and retweets by administrator		

Abbreviations: AdMA, Adentan Municipal Assembly; GWMA, Ga West Municipal Assembly.

**FIGURE 2** Screenshot of Adentan Municipal Assembly (AdMA) Facebook page

It can be concluded that GWMA is more active on social media as compared with AdMA, with reference to the frequency of posts on both Twitter and Facebook as well as their page following. Nevertheless, it is far from the truth to assert that GWMA is making optimum use of their website and their social media portals. It can also be asserted that both MMDAs preferred Facebook to Twitter as social media tool. Generally, both the social media portals of GWMA and AdMA were not regularly updated. Moreover, administrators did not attend to numerous comments that had been made concerning matters of relevance to the Assemblies. The usage of social media seemed periphery on the agenda of both Assemblies.

4.2 | Usefulness of e-government adoption

Information gathered through in-depth interviews and focus group discussions revealed that the adoption of Web 2.0 by the MMDAs was associated with some opportunities.

4.2.1 | Efficient information sharing with inter and intra agency stakeholders

The use of Internet-based ICT strategies was believed to have enhanced efficient information sharing among the staff of the study institutions. Commenting on the usefulness of the e-government strategies in information sharing among stakeholders of AdMA, a staff stated,

"Yes, they are useful, it is information and when we have the right information on time, it aids development and it even improves the economy. For instance, let us say the government wants to give seedlings to the people of the Adentan community, and we are not able to get it to the residents on time, people might miss out. So, it is always important to get information disseminated as quickly as possible."

Through their website, the staff of the AdMA have a staff mail platform that assists in the easy and efficient sharing of information. Information sharing is said to be efficient since the use of these strategies reduces the usage of paper and its associated cost.

Regarding interagency information sharing, staff at AdMA agreed that the usage of ICTs has improved communication between the AdMA and their stakeholders. For instance, platforms like email, Twitter, and Facebook provided the Assembly with events happening at their sister MMDAs such as the AMA. The usage of these platforms in this regard was found to have reduced transportation cost, which used to be incurred through the dispatch of hard copy documents.

4.2.2 | Enhancement of administrative functions

Interviews conducted with staff revealed that e-government has led to the enhancement of administrative functions. On staffing, it was revealed that the website was used in advertising job vacancies. Web 2.0 and social media offer a wider range of audience as compared with the traditional media like radio, newspapers, and television. This is because these internet-based platforms can reach candidates everywhere. This practice widens the pool of applicants, and this may improve the likelihood of hiring competent staff at the assemblies. A staff of AdMA confirmed the usefulness of ICT in the human resource functions saying:

"In recruitment, we use ICT to scout for potential employees and to train staff. The Human Resource Department makes optimum use of ICT."

At GWMA, despite the sparingly use of email for communication among staff, it was admitted that it had enhanced directing as an administrative function. A respondent engaged at GWMA commenting on the role of the e-government strategies in enhancing directing opined:

"These ICTs make it easier to direct staff and assign them tasks, we relay information to staff through the website on their obligations too. We even use social media like Facebook amongst ourselves (even though semi-formally) to direct staff."

Directing in this context means the manner in which managers at GWMA instructed and guided the performance of the workers to achieve organizational goals, this is a critical administrative function, and the role of e-government plays in that regard was remarkable according to respondents at GWMA.

4.3 | Challenges in e-government adoption

Some conditions constrained the adoption of e-government at the study organizations. Information on challenges faced in the adoption of Internet-based strategies revealed through interviews with staff and assembly members were the following: lack of capacity of potential users of ICT strategies, infrastructural challenges, high Internet cost, and residents' ignorance of e-government strategies.

4.3.1 | ICT skills of intended users

Issues concerning the capacity of potential users of ICTs recurred throughout the interviews conducted with respondents at both AdMA and GWMA. In the course of the interactions, respondents expressed the need for a robust training program for all the staff of AdMA on the use of basic ICTs. Interviews with respondents revealed that there had not been regular training programs for staff on the use of ICTs. The lack of the capacity of staff in the usage of Internet-based ICTs was identified to be a threat to the effective use of ICTs. A staff opined,

"The assembly does not do any training for me even as a staff of the AdMA. I do not know about the others ... there should be workshops to educate workers on the use of ICTs."

At GWMA, it was found that ICT training had been conducted for the MIS unit, budget unit, finance unit, planning unit, and the human resource management unit. Regarding ICT courses organized for staff of the Municipal Assembly, it was found that there have been training on Microsoft Office applications and the use of the Ghana Integrated Financial Management Information System (GIFMIS).

The problem with the capacity of potential users was of greater concern in the focus group discussions with the residents of both municipal assemblies. A resident indicated,

"But if we want to introduce such ICTs, it should not just be the staff that are trained; citizens of Ghana, in general, must also be educated adequately to use it. I know it is difficult, but if they can do it that will be the best measure to enhance its usage in local governance."

There were references to the high illiteracy rate, as well as the inability of most residents to use Internet-based ICTs. One of such respondents posited,

"I doubt if it is relevant at all, how many of us can even use this Internet? Even me, I am educated but with my smartphone, I hear it has a lot of functions, however, I only use it for phone calls."

Respondents projected the notion that formal education was not enough to guarantee familiarity with e-government strategies, as there were educated people (especially the elderly) who were not conversant with websites and social media portals. This situation was said to be a disincentive to the introduction and usage of e-government strategies like websites and social media portals as channels of information at the local levels of government.

4.3.2 | Infrastructural challenges

Having an ICT infrastructure at the local level is a critical aspect of enhancing e-government adoption. Notwithstanding the above, it is imperative to mention that it was realized that only a few offices had designated computers to help in the information management of the Assemblies. It was surprising to know that the records office of the GWMA had no computers to keep records of staff and other official businesses.

Internet-based ICT strategies depend on the availability and usage of the Internet. Information gathered from AdMA and GWMA suggested that the availability of reliable Internet connectivity to facilitate the use of ICTs at the offices of the Municipal Assemblies had been a challenge. Most staff engaged in the study claimed that the Internet connection from National Information Technology Agency (NITA) was unreliable. The unreliability of network from NITA had warranted the use of paid Internet services from private providers like the Vodafone to complement the Internet services provided by NITA. The head of the MIS department at AdMA disclosed in an interview,

"We also pay for broadband from Vodafone to support the coverage we get from NITA. Sometimes the network from NITA is unreliable, and apart from those who are mandated to use the GIFMIS, like the finance, budget offices and other key stakeholders with the use of GIFMIS, there are other departments who need Internet connectivity. So, paying for those services actually improves service delivery to our community."

Apart from the challenges of Internet connectivity, there were also concerns about the use of antiquated equipment like computers, which are expected to be replaced. Confirming this assertion was a staff of the MIS Department of AdMA, who said,

"There should be a replacement of ICT equipment, which are outdated. I personally believe that for computers, for instance, they have a relevant cycle of five (5) years, after which they must be replaced."

Interviews revealed that the staff were using outdated computers and other related ICT that hindered effective deployment of e-government in the assemblies.

4.3.3 | Cost of internet

Interviews conducted at AdMA on the use of Internet-based ICTs by government agencies and citizens proved that the high cost of Internet in Ghana was a barrier to the adoption e-government. However, a staff believed that the benefits of the service exceed its cost:

"If we weigh the benefits of the use of e-governance as compared to the cost, I think it is reasonable. We pay for broadband from Vodafone to support the coverage we get from NITA...paying for those services improves service delivery to our community. So the cost is not a really a great challenge, the benefits outweigh the cost."

Most respondents agreed that there was a need for regulatory agencies like the National Communication Authority to facilitate the reduction of Internet costs in Ghana. A respondent stated,

"Internet is very expensive in Ghana; I think this is not good for the development of Internet presence for Government Agencies. I believe the government must put in place measures to make accessing these websites free of charge. Just like some networks do not charge customers for accessing websites like Facebook, the government must do something similar for Ghanaians to motivate us to use such websites."

4.3.4 | Target users' ignorance of e-government strategies

Through interviews and focus group discussions with members of the Adentan Community, it emerged that most of the respondents were not aware of AdMA's website and social media portals. When quizzed about the availability on websites and Internet-based ICTs use by AdMA, one of such respondents said, "I don't really know".

At GWMA, it emerged that the authorities have not provided enough information to residents about their e-government portals. A respondent opined,

"Well we try our best to update it, but we can do better. The issue is a lot of our people here do not use those platforms because some were 'born before computer' and some are also illiterates, so we focus more on the traditional methods like using the information vans."

It was also gathered that the Municipal Assembly continues and prefers to use the traditional means of communicating with citizens through notice boards, information vans, and assembly members because of their perception that majority of the resident population do not have the capacity to access information through their websites and social media platforms.

5 | DISCUSSION OF FINDINGS

Evidence from the study proves that AdMA and GWMA adopt the use of websites and social media portals for improving service delivery as well as encouraging citizen participation in the governance process in their respective jurisdictions. From the findings, it can be gathered that e-government infrastructure at both assemblies has matured to the level of two-way communication (Moon, 2002) or the Interaction stage (Gartner, 2001). This is because both platforms (website and social media) have the capability of conveying information from authorities to their audience, as well as, to obtain feedback from them. The maturity of e-government at the local government bodies into the interaction stage is perceived to create an avenue for direct input of citizens into the governance agenda (United Nations, 2014). However, this sort of participation has not been realized at the study institutions, as there seems to be little attention given, especially, to the websites and social media portals, which are effective tools for such purposes. Both assemblies had not been updating their platforms regularly; moreover, comments from followers on important issues relating to the assembly had not been replied by the administrator at the time of evaluation.

Despite the favorable demographic characteristics of AdMA a local government area with highest percentage of youth and GWMA as the MMDA with the highest literacy rate in Greater Accra (Ghana Statistical Service, 2012). Officials perceive that websites and social media are not the most suitable means of information dissemination and receiving feedback. They alleged that traditional methods like information vans and the posting of physical notices rests better with the people in their jurisdictions. According to Heeks (2003), this situation can be termed a partial failure of the e-government project. This suggests the need for policymakers to adopt innovative approaches to encourage the use of e-government tools. Scholars (Asamoah, Osei-Kojo, & Yeboah-Assiamah, 2013) explain that enhancing productivity and service delivery of MMDAs requires optimizing the use of organizational restructuring and the use of ICT.

The study found some limitations to the full deployment of e-government in the study organizations that were mainly issues of the capacity of target users, low resident awareness of e-government tools at the MMDAs, financial inefficiencies, and the related infrastructural deficits. These limitations had also been identified by other studies (Addo, 2016; Alemna & Sam, 2006; Osei-Kojo, 2017). This finding is in sync with the 2016 E-Government Survey, which suggests that a major setback with Ghana's e-government development is the lack of supporting infrastructure (United Nations, 2016).

From the perspective of the usefulness of e-government, this study reveals that the e-government strategies are beneficial in the sense that they enhanced administrative functions as well as inter and intra agency information sharing. The finding that e-government at AdMA and GWMA has improved inter and intra agency communication is remarkable. This is because the resurgence of calls for open government (Bertot et al., 2010; United Nations, 2016) prioritizes the heightened transparency in the activities of government for effective public oversight.

6 | CONCLUSION AND POLICY IMPLICATIONS

The research reveals the extent to which internet-related application such as websites and social media has been adopted by the two local government entities in the Greater Accra Region of Ghana. Findings suggest that in spite of the rapid adoption of these initiatives by the local governments, the tools have largely been abandoned by residents and partially neglected by staff. This can be inferred from the sparing activity on their social media platforms and the responses gathered from the participants of the study. Some factors contributing to the situation include

the infrastructural gap, communication deficits, and inadequate institutional will on the part of the agencies to heighten the use of these internet-based solutions. The dwindling commitment of the local authorities concerning the use of e-government strategies is largely responsible for the partial failure of the initiative (Heeks, 2003). Administrators of websites and social media platforms at AdMA and GWMA appeared to be largely inactive, which suggests an apparent lack of commitment to these initiatives. In view of the bright potentials perceived of websites and social media adoption at AdMA and GWMA, it is expected that some measures be taken to improve the use of these strategies by MMDAs in Ghana. Instead of avoiding these new technologies, governments should develop an overall strategic plan for all agency levels to participate in social networks and develop a coordinated effort to implement these tools. First, MMDAs must demonstrate a commitment to the adoption of e-government initiatives through the allocation of necessary funding for the procurement of infrastructure needed to facilitate the usage of internet applications. Basic infrastructure like computers and stable internet connection must be provided. This must be accompanied with the periodic training of staff on issues relating to the use of relevant internet applications.

Additionally, top management at MMDAs must strategically supervise key bureaucrats responsible for facilitating the usage of the e-government initiatives. These bureaucrats must be required to sign performance contracts that specify their task to be accomplished at a specified period. This practice would ensure accountability of these key actors and will result in better maintenance of the understudied e-government initiatives.

Finally, there must be improved coordination between local agencies and their residents on the implementation of e-government initiatives. MMDAs must encourage the use of new technologies in their jurisdictions using the old means of information like through radio broadcasts, information vans, and bulk messaging since residents are more familiar with those channels. This intervention will be critical in the bid to improve the popularity of these strategies among target users.

The findings of the study reinforce the cardinal role of target users' behavior on the success of e-government policies. There is the need for a more user-centric approach in the implementation of e-government and ICT for development strategies. Policy implementers must not only focus on keeping up with new technologies; however, they must also ensure that there is proper coordination between various stakeholders in the use of these technologies. Coordination can be achieved through broader consultation with target users before the rolling out of e-government policy. In other words, implementers must consider an amalgam of the top-down and bottom-up approaches in the implementation of e-government to ensure target users' awareness and support for e-government policies.

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