Digital inclusivity: exploring e-government use among businesses in Ghana

Anthony Acquah
College of Education, University of Ghana, Legon, Ghana

Received 10 May 2024
Revised 28 July 2024
3 September 2024
20 September 2024
Accepted 22 September 2024

Abstract

Purpose – Electronic government (e-government) initiatives are critical in bringing about transparency, accessibility and efficiency in public service delivery. Drawing upon e-government literature and the political system theory, this paper aims into the challenges faced by businesses in using e-government applications and how the implementation of e-government can be improved.

Design/methodology/approach – Using a qualitative research method, data was gathered through in-depth interviews with top executives of businesses in the Greater Accra region of Ghana. Thematic analysis was used to analyze the data.

Findings – This study reveals that uneven access to digital technology, security concerns and resistance to change are the main challenges hampering the use of e-government applications by the business sector. Furthermore, this study identifies opportunities for facilitating the implementation of e-government including seeking for feedback from the business community, benchmarking and monitoring and collaboration among government agencies.

Research limitations/implications – This study highlights the challenge of digital divide, which hinders the full realization of the benefits of e-government services for the business sector. Policymakers need to prioritize e-government programs that bridge the gap by way of improving internet connectivity, digital literacy and access to technology. Policymakers should embark on targeted infrastructure development, information, communication and technology training and programs to advance adoption of the e-government among underserved business communities.

Practical implications – Government agencies must conduct training programs on digital skills and cyber-security for businesses. In addition, businesses should introduce change management initiatives that promote culture of ingenuity and flexibility.

Originality/value – This study contributes to the filling the dearth of knowledge on the discourse on e-government adoption in developing economies, particularly in the context of business to government e-government model.

Keywords Technology, E-government, Public service delivery, Government agencies, Political system

Paper type Research paper

Introduction

In this modern era of governance, electronic government (e-government) is central to the delivery of public service (Alqudah and Muradkhanli, 2021; Fernández *et al.*, 2023). As the world move into a dispensation of a digital economy, e-government have been birthed as catalysts for transforming governance and improving transparency and accountability (Mohlala, 2023). A wide gap in technology infrastructure, socioeconomic factors and capacities of institutions define a desolate contrast between e-government landscapes of developed and developing economies (Apostu *et al.*, 2022). E-government in developed

Transforming Government: People, Process and Policy
Vol. 18 No. 4, 2024
pp. 856-873

1750-6166
DOI 10.1108/TG-05-2024-0112

economies is characterized by advance technological infrastructures, access to diverse online services and flawless integration of digital tools into governance (Akpan-Obong *et al.*, 2023; Arayankalam *et al.*, 2021; Bhagat *et al.*, 2022). On the contrary, developing economies come to grips with the challenge of setting up basic technological infrastructure and surmounting institutional barriers in the implementation of e-government (Bhagat *et al.*, 2022). This dichotomy highlights the complex interaction between technology, governance and economic development in influencing e-government landscapes globally.

Among the several developing economies navigating this digital transition, Ghana is an interesting study case. Ghana as a case encapsulates the intricacies and opportunities innate in e-government use in a developing economy context. Against the background of budding digital connectivity and changing governance structures, comprehending the nuances of e-government use by businesses in Ghana is significant. Drawing upon e-government literature and the political system theory, the paper delves into the challenges faced by businesses in using e-government services.

The research questions addressed in this study are:

RQ1. What are the challenges that the business sector encounter in the use of e-government?

RQ2. How can the implementation of e-government for the business sector be improved?

The study contributes to the discourse on e-government adoption in developing economies, particularly in the context of the business sector. It underscores the importance of dealing with the challenges faced by the business sector in using e-government solutions. The paper is structured as follows: theoretical underpinning, methodology, findings, discussion, conclusion and recommendations.

Theoretical underpinning

Political system theory

The study used political system theory to explain the use of e-government among businesses in Ghana. A political system consists of identifiable and related structures and practices (political process and government institutions) that make authoritative value decisions that are lawful and binding on the society (Anderson, 1997). The adoption of political system theory for the study is justified in that the government and business sector are interconnected and co-dependent. E-government is made up of three parts or components: technology, management and government and therefore understanding the interaction from a holistic perspective is relevant due to the multifaceted and interrelated nature of the components (Lindgren *et al.*, 2021). Examining Ghana's e-government from a holistic view will help policymakers and bureaucrats comprehend how these components interconnect and affect one another. The political system theory is applicable to e-government adoption by helping to explain the role of businesses and feedback loop in the formulation and implementation of e-government policies. The political system (e-government) receives inputs (demand and support) from the business sector, the business sector use of e-government is affected by stress (challenges of e-government use), which ultimately affects outputs (public service delivery) (Acquah, 2022). A feedback loop exists by which the outputs (public service delivery) alter future inputs (Easton, 1953). The feedback from the business sector helps to shape or improve e-government (Acquah, 2022).

Business sector. The business sector refers to the sector of the economy that comprise companies (Barmuta *et al.*, 2020). Straková *et al.* (2020) describes the business sector as that

sector of the economy responsible for the production and distribution of goods and services. Gaglio *et al.* (2022) defines the business sector as the total number of firms engaged in production and distribution of goods and services in a country. The business sector is typically categorized into agriculture, manufacturing and services. Understanding the business sector use of e-government can help to improve access to e-government services by businesses of all types and sizes.

E-government

E-government is defined as the adoption of information, communication and technology (ICT) tools and internet to enhance public service delivery (Abdulkareem and Mohd Ramli, 2022; Waititu and Du Plessis, 2021). This definition however is too narrow as it focuses on the technological aspect of e-government. To improve on the definition of e-government, Prabhu and Raja (2023) broadens the scope of e-government. Prabhu and Raja (2023) posit that e-government is the use of online applications to improve the delivery of public services, engage with the populace and facilitate the involvement of citizens in governance. The limitation though with Prabhu and Raja definition is that it does not take into consideration the budding scenery of e-government as technology and society change. In this study, e-government is understood as a process in that it involves the continuous adoption of ICT to transform the provision of public service to the business sector. E-government is an ongoing sequence of activities that is targeted at improving the provision of public service to businesses.

Challenges that the business sector encounter in the use of e-government. Technological challenges. Technological infrastructure is a critical factor in the determination of whether e-government is successful or otherwise (Alshaher, 2021). A major challenge that businesses encounter in the use of e-government is technological infrastructure (Alharmoodi and Lakulu, 2020). According to Alharmoodi and Lakulu (2020), most developing countries have deficient internet connection, poor ICT infrastructure and lack of access to ICT devices and software creating major challenge in the adoption of e-government by businesses. Previous studies on technological challenges in e-government implementation for businesses generalize the findings across developing economies. These studies fail to provide a nuance explanation of country-specific technological challenges affecting businesses. The study contribute to filling this gap by exploring Ghana's unique technological challenges and how it impacts e-government use among businesses.

Cyber threat

Cyber threat is another challenge businesses encounter in the use of e-government. As businesses use e-government services, they are exposed to cyber threats for example cyber fraud, identity theft, hacking and data breach (Shah *et al.*, 2022). Businesses in using e-government provide information about their staffs, operations and finances. This information can be stolen by online fraudsters to commit fraud such as taking loans in the name of the business. These criminal activities result in financial loss and damage the reputation of businesses (Shah *et al.*, 2022). The literature underscores the cyber threats that businesses face in using e-government but does not explore the readiness of businesses in dealing with these threats. The study helps to fill this gap by exploring how businesses in Ghana perceive their susceptibility to cyberattack and their readiness in responding to these threats.

Regulatory and legal challenges

Regulation plays a critical role in the implementation of e-government (Glyptis *et al.*, 2020). A major barrier in the use of e-government by businesses is the nonuniformity of laws and

policies across diverse geography. For multinational firms operating in diverse countries, navigating the different compliance environment is not easy. Differences in digital laws for example e-commerce laws, digital signature laws and data protection laws create apprehension that hamper the use of e-government by businesses. Glyptis *et al.* (2020) adds that the rate of changes in regulation usually fall behind advancement in technology. Although there is abundant literature on regulatory complexities of e-government implementation in developing countries, there is limited focus on how regulatory complexities impact businesses. This study will help to fill this void by explaining how regulatory complexities creates obstacles for businesses.

Socio-economic challenges

Socioeconomic factors has been documented to hamper the use of e-government by businesses (Munyoka, 2019). The low level of ICT knowledge or literacy prevalent among SME owners in many developing countries is a barrier to e-government use (Munyoka, 2019). Munyoka (2019) argue that cultural resistance hinder the use of e-government by businesses in developing economies. As a result of cultural resistance, businesses especially SMEs prefer conventional means of engaging government agencies rather than using e-government platforms, thus slowing the use of e-government among businesses (Vuyokazi, 2022). The cost of using e-government is a barrier hampering its use among businesses in developing economies (Glyptis *et al.*, 2020). The cost is deterrent to many businesses resulting in the reliance on the traditional approach to accessing government services (Glyptis *et al.*, 2020). The literature underscores socioeconomic challenges in the use of e-government among businesses in developing economies; however, it does not provide a nuance examination of how these factors interact. The study contributes to filling this void by exploring the socioeconomic environment and how it affects the use of e-government among businesses in Ghana.

How implementation of e-government for the business sector be improved. Enhancing IT infrastructure. Robust IT infrastructure ensures that e-government services is reliable (Alshaher, 2021). Robust IT infrastructure ensures that businesses are able to access e-government services during peak periods. The literature underscores the significance of robust IT infrastructure in the implementation of e-government for businesses in developing economies. However, the focus on technological robustness usually ignores the localized infrastructural gaps in developing economies. The study contribute to filling the void by throwing light on how infrastructural deficit impact businesses in Ghana, providing a nuanced perspective in addressing the issue.

Capacity building and training. Heeks (2001) argue that the fundamental reason for the failure of e-government project for businesses is the gap between how the e-government was designed and the capability of the user. Ndou (2004) assert that the lack of adequate capacity building affect the utilization of e-government services by businesses. The literature most often highlight a one-size-fits-all approach, without exploring the different level of digital awareness and knowledge among business categories. The study contributes to addressing this gap by determining the specific training needs of businesses and propose right capacity-building programs.

User-centered design. Bannister and Connolly (2011) argue that seeking the views of businesses in the design of e-government will result in widely adoption of e-government services. Involving businesses at the design stage ensures that their needs and preferences are taken into account in the design of e-government. This will result in a more user-friendly interface that is aligned to the demands of businesses. Although, the design of a user friendly e-government is beneficial for businesses, the literature overlooks the varied needs of

different business sector, where businesses vary in terms of digital readiness, capacity and size. The study contribute to filling this void by exploring how e-government can be implemented to meet the diverse needs of businesses, considering the specific challenges that they encounter in accessing e-government services.

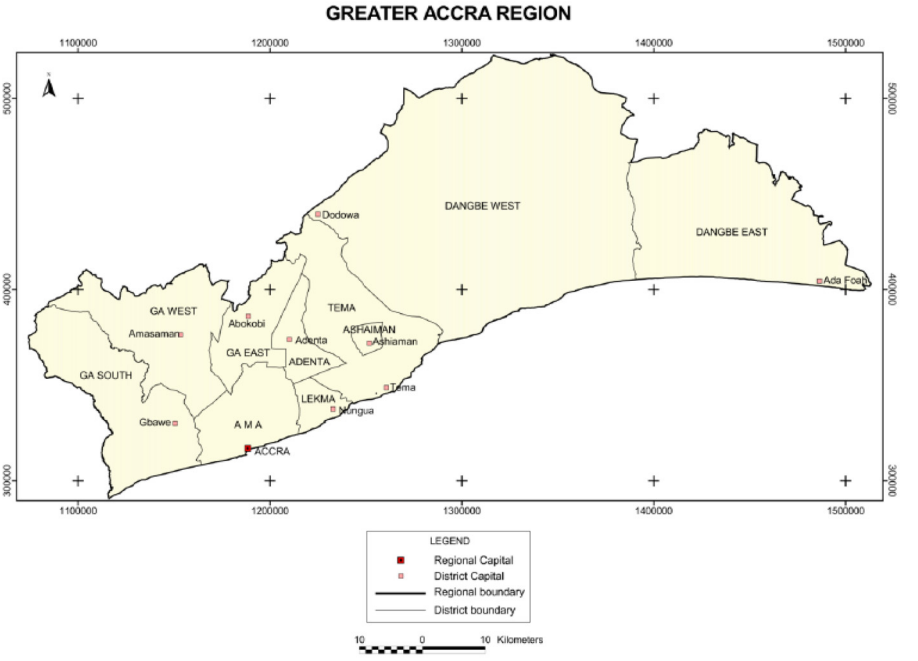
Methods

Study area

The study focused on the Greater Accra region as the case study. The Greater Accra region covers a land size of roughly 225.67 km^2 (87.13 sq mi) [Ghana Statistical service (GSS), 2018]. The Greater Accra region has over 1,200 businesses (GSS, 2018). The justification for conducting the study in the Greater Accra region is that, it has the largest number of businesses in the country GSS, 2018). The region boasts of several businesses that use e-government services hence the appropriateness to conduct the study in the region. Another justification is that Greater Accra region has the highest rate of ICT use among businesses in the country (GSS, 2018). The map of Greater Accra region is presented in Figure 1.

Research design

The phenomenon is to explore the challenges of e-government use among businesses and how implementation can be improved in Ghana. The study was designed as an exploratory research. The justification for adopting exploratory research is that the problem is not well



Source: Ghana Statistical service (GSS) (2018)

Figure 1. Map of Grater Accra Region

understood. Exploratory research is conducted when the author has limited understanding of a problem and seeks to collect information to help explain the phenomenon (Campbell *et al.*, 2020).

Sampling and sampling technique

Thirty businesses were selected for the study. The justification for selecting 30 businesses is that qualitative study uses limited sample size (Boddy, 2016). Purposive sampling technique was used to select (30) representatives of businesses (CEO and IT managers). Purposive sampling relies on the author's judgment and expertise in selecting participants based on certain criteria that are pertinent to the research (Campbell *et al.*, 2020). The justification for selecting CEO's and IT managers is that they are in charge of e-government adoption in businesses in Ghana. To circumvent bias, businesses from the three principal types of businesses in Ghana (agribusiness, manufacturing and services) were selected. The justification for selecting these category of businesses is that they are the main types of businesses in Ghana (Kusi *et al.*, 2015). Ten businesses in each of the three categories were selected. The justification is to have equal representation of the three categories of businesses. Even though 30 businesses were selected for the study, the interview was truncated after 18 participants due to data saturation. Data saturation is a phenomenon in collecting qualitative data where after some number of interviews conducted, no new information or insights appear to be emerging from the participants (Islam and Aldaihani, 2022). Data saturation implies that the author has collected sufficient data and that additional data is implausible to provide new insights relevant to the research question (Mthuli *et al.*, 2022).

Inclusion criteria

Businesses chosen fall within medium to large scale businesses. Regional Project on Enterprise Development (RPED, 2002) group firms that employ between 30 and 99 employees as medium and over 100 employees as large businesses. The justification for selecting medium and large scale businesses is that they are often formally managed and use e-government services (Acquah, 2022).

Exclusion criteria

Small-scale businesses were excluded from the study. RPED (2002) categorized businesses as small if they employ between 1 and 29 workers. The justification for excluding small scale businesses is that many small businesses in Ghana do not use e-government services (Akomea-Bonsu and Sampong, 2012).

Participant selection criteria

CEO's and IT managers were selected as the participants for the study. The selection of CEOs is justified in that they have a holistic understanding of the firm's operations, which makes them right participants to evaluate the adoption of e-government by their respective firms. The criteria for selecting CEOs was that the person must have championed e-government adoption (e-taxation, e-procurement) in the firm. Selection of IT managers is also justified because they have understanding of the technological capabilities of the firm, making them ideal participants to provide insight into the challenges of e-government adoption by businesses and how e-government can be improved. The criteria for selecting IT managers was that the person should be in charge of integrating e-government application to the firms IT infrastructure.

Interview protocol development

The data was gathered via the use of an interview protocol. The interview protocol was developed by asking questions that will help to answer the research questions. The questions asked were informed by what was gleaned from the literature review. Probing questions were asked the participants. The questions was crafted to elicit detailed response from the participants rather than just a "yes" or "no" answer. For example, participants were asked to describe their experiences and thoughts on the use of e-government. Follow-up questions were also asked to elicit profound insights (Solarino and Aguinis, 2021). The justification for adoption a probing approach in conducting interview is that it is widely recognized as an appropriate strategy particularly if the study seeks to get deep insight from participants that have personal experience of a phenomenon (Dunwoodie *et al*., 2023).

Reliability and validity

To enhance reliability, a pilot study was conducted with a small group of participants to test the interview protocol (Castillo-Montoya, 2016). Through the pilot test, ambiguous questions were refined to provide clarity and improve consistency. To improve validity, a thorough literature review was conducted to ensure that the questions covered the full scope of the study (Castillo-Montoya, 2016). Also academics in the field of public administration and IT were consulted to evaluate whether the interview protocol contain questions that are relevant in answering the research questions.

Ethical standards

Ethical standard in conducting social science studies were fully complied. Anonymity of the participants was ensured by not disclosing their names. They were assured of their privacy for partaking in the study. Also the participants were informed about the benefit and risk associated with the study. In addition, they were made to sign a consent form prior to conducting the interview.

Data analysis

With interviewee consent, the interviews were audio taped. After the interviews had been completed, the data was transcribed, read over and over again for familiarization of the data. Next, the data was coded and entered into the Nvivo software program. Reflective thematic analysis was used to analyze the data. The first step was familiarization where the author read the transcribed data several times noting down initial thoughts, for example, the mentioning of particular e-government challenges (Braun and Clarke, 2019). The second step was generating codes where codes where codes were assigned such as access to technology, user experience to pertinent data segments (Braun and Clarke, 2019). Inter-rater reliability was ensured by having multiple coders autonomously code the data. Cohen's kappa measure was calculated to check for agreement in the coding. The third step was searching for themes where the author grouped the codes into themes, for example, internet accessibility. The fourth step was reviewing themes where the author refined themes by making sure that all data extracts put under a specific theme is aligned and important (Braun and Clarke, 2019). The fifth step was defining and naming themes where the author clearly defined each theme. The analysis was expanded with second-order themes. It involved examining patterns and relationships between the primary themes to provide an exhaustive understanding of the data (Mishra and Dey, 2022). The data was revisited keeping in mind the primary theme and looking for patterns. Based on the pattern, second-order themes were developed. Incorporating the second-order themes into the analysis ensured a nuanced interpretation of the data (Mishra and Dey, 2022). The final step was the write up where the author crafted a

narrative to explain each theme and support each theme with by direct quotations from the participants from to clarify key points (Locke *et al.*, 2022).

Results

The study answered two key questions with empirical data to achieve project aim. The section below presents the themes from each question's data:

RQ3. Challenges business sector face in the use of e-government.

The study found that digital divide poses a challenge to the business sector use of e-government (see Appendix). Digital divide widens the inequalities of e-government use by the business sector.

A CEO of a service company stated:

> Not all businesses have equal access to digital tools or skills required to effectively use e-government. Unequal access to internet and digital literacy create barriers for businesses, hampering their ability to benefit from e-government services. *(IDI; CEO).*

Digital divide subvert the widely adoption of e-government by businesses in developing economies. It holds back many businesses in developing economies in fully reaping the benefits of e-government. Digital divide creates a two-tier system where digitally equipped businesses fully reap the benefits of e-government while those that are not digitally equipped are left behind.

Another challenge reported by the business sector is data security and privacy concerns (see Appendix). The business sector raised concern about security and privacy of data when using e-government. Trust is imperative on the part of businesses if they are to feel confident in using e-government for their interactions and engagement with government agencies.

A CEO of a manufacturing company stated:

> […] making sure that data of businesses is protected from unauthorized users is crucial for enhancing trust in e-government services (*IDI; CEO).*

Trust is the foundation for successful implementation of e-government for businesses. When businesses are of the view that their data is not secured, they show disinterest in e-government. This perception is widespread because of poor regulatory framework, inadequate technological infrastructure and weak data protection laws in developing economies.

Resistance to change was also reported as a challenge in the use of e-government by the business sector (see Appendix). Employees resist the use of e-government for these reasons: they are comfortable with the regular routine of their present work process and are hesitant to adopt e-government. Also they regard the use of e-government as ominous to their job security or roles, fearing that e-government would make their skills unneeded.

A manager of an agricultural firm stated:

> Using e-government services requires businesses to adjust to the new processes, which is met with resistance from employees accustomed to working via the conventional approach. *(IDI; IT manager).*

Employee resistance points to a deep-rooted status quo bias. The status quo bias makes employees prefer manual way of accessing government services as they feel more secured. Adopting e-government, which has come to replace manual process of accessing government services, trigger anxiety, particularly among employees who lack digital skills. Second-order theme emerging from the findings is lack of e-government readiness on the

part of businesses. Lack of readiness underscores the gaps in accessing e-government services. It reflects how different businesses in different economic tiers are not ready to reap the benefits of e-government:

RQ4. How can the implementation of e-government solutions for the business sector be improved?

Three themes emerged on how the implementation of e-government solutions for the business sector can be improved:

(1) benchmarking and monitoring;

(2) feedback; and

(3) collaboration (see Appendix).

Benchmarking and monitoring

Benchmarking and monitoring by Ministry, Department and Agencies (MDAs) to automate process and operations can help to bring about transparency. Monitoring and benchmarking ensures that there is fulfillment of synergies, enjoying economies of scale, promoting the rationalization of task, adoption of early remedial actions and the incorporation and standardization of projects.

A representative of a business stated:

> The number of e-government services for the business sector is not the most essential factor; rather, how those services have enhanced business operations should be used to assess effectiveness of e-government *(IDI; IT manager).*

Benchmarking and monitoring are imperative in implementing e-government. Benchmarking and monitoring improve transparency, economies of scale, synergies and efficient allocation of resources. By comparing performance indexes, MDAs are able to identify best practices, rationalize operations and adopt early corrective mechanisms.

Feedback

The government should seek the view of businesses on the implementation of e-government. Businesses have important feedback on the practical challenges they encounter in the use of e-government .Their suggestion can help the government tailor e-government initiatives to the needs of the business sector.

The need to seek feedback from the business sector is supported by this voice:

> Encouraging dialogue with the business sector on implementation of e-government will increase the business sector knowledge and acknowledgment of government's attempts to improve service delivery while delivering value via the implementation of e-government *(IDI; CEO).*

Encouraging deliberations between government agencies and businesses facilitate mutual understanding. Through dialogue, businesses can appreciate the government's effort likewise the government can also understand the needs and priorities of businesses.

Collaboration among Ministry, Department and Agencies

MDAs offering services to businesses should not operate as silos and must collaborate with each other. Collaboration by MDAs will help to rationalize processes, enhance information sharing and provide efficient service delivery to the business sector.

A representative of a service organization stated that:

> E-government initiatives are led by different MDAs looking for solutions to assist them accomplish their specific mandates. The government should desist from seeing e-government as a stand-alone project and instead recognize the need of integrating it into broader efforts to enhance governance. *(IDI; IT manager).*

Collaboration among MDAs is critical in the implementation of e-government. The benefits of collaboration include improved data integration, cost savings and effective public service delivery for businesses. Second-order theme arising from benchmarking, feedback and coordination is improving service quality and efficiency. Through feedback government agencies can collect input from businesses to identify areas that requires improvement for better e-government service delivery. Coordination will ensure that government agencies and businesses work together to improve service quality and efficiency.

Discussion

Concerning the research question: what are the challenges that the business sector encounter in the use of e-government, the study found these challenges: digital divide, lack of trust and resistance to change. Digital divide as a barrier to the adoption of e-government services by businesses is not peculiar to Ghana as its common in many developing economies. For example, in Bangladesh, large segments of the population lack digital skills to effectively adopt e-government services (Al Mamun *et al.*, 2021). Digital divide manifest in the form of disparities in internet connectivity, digital illiteracy and unequal access to e-government services (Apriliyanti *et al.*, 2021; Bojang, 2019). The digital divide is a structural challenge as it is rooted in systemic issues within the society. Digital divide is a major challenge affecting businesses use of e-government, emphasizing the gap between businesses that are digitally equipped to reap the full benefit of e-government and those that are not. Although digital divide is also a challenge for citizens, the impact on businesses is distinct because it affects operations of the firm. For citizens, the impact of digital divide relates more to lack of access to government services. The impact of digital divide on the citizen is felt at the individual level but for businesses the impact is felt at the operational level. The digital divide issue as a challenge to the use of e-government among businesses is supported by political system theory. In the context of political system theory, digital divide reflects systemic disparities within society and that addressing such disparities requires comprehensive policies and interventions. Policies by the government must go beyond individual interventions. It must address systemic disparities in technology infrastructure, culture, education and economics to create a more equitable digital access for all businesses.

Security and privacy concern was also found to be a challenge to the use of e-government services by businesses. Richards and Eboibi (2021) similarly found in Nigeria that cyber threat, such as data breaches, identity theft and hacking undermine the use of e-government. This finding aligns with the broader literature on e-government, which stresses on the imperative of trust in the use of digital platforms. Businesses, especially those that collect sensitive information, are rightly worried about the risk of data breach, unlawful access and cyber-attacks by online criminals. Although citizens also report of data security and privacy, the emphasis is different from businesses. For citizens, the emphasis is on protection of their personal information and the possibility of identity theft by online fraudsters while businesses focus on broader operational security. The apprehension of the business sector in divulging sensitive information when using e-government platforms is supported by regulatory frameworks within the political system. In a political system, government institutions perform a critical function in setting and enforcing regulations and policies to protect data privacy of businesses. Trust by the business sector in the use of e-government is dependent upon the political system (government institutions) ability to put in place robust

data protection measures. Political system theory emphasizes the role of government institutions in regulating and ensuring the effective implementation of public policy (Wirtz *et al.*, 2020).

Resistance to change is a common phenomenon in organizational behavior not just in Ghana but in many developing economies. Kumar *et al.* (2018) found that in India businesses resist the use of e-government due to the complexity of integrating e-government onto their business platforms. Employees resist change in adopting new technologies due to several factors that include fear of job loss, disinclination to learn new skills and comfortable with using familiar routines (den Nieuwenboer *et al.*, 2017). Resistance to change as a challenge to the use of e-government among businesses is supported by political system theory. Political system theory emphasizes the need for organizations to engage employees, provide regular training and assure employees that their jobs are secured (Ansell *et al.*, 2023). Political system theory helps to explain the challenges that the businesses face in the use of e-government services, encompassing structural bottlenecks, cultural and institutional dynamics within the political system.

In respect of the research question how can the implementation of e-government for the business sector be improved, the study found benchmarking and monitoring, collaboration and feedback as the way forward. Benchmarking and monitoring efforts is imperative as it improves transparency and efficiency in the implementation of e-government. The need for benchmarking ad monitoring of e-government is consistent with the literature, which emphasizes the significance of performance measurement and assessment of e-government (Skargren, 2020). Ismail *et al.* (2017) argue that benchmarking e-government against best practices globally and monitoring e-government performance can help identify areas that need improvement, allocate resource efficiently and ensure that e-government initiatives meet their intended objectives. The need to set benchmark in the implementation of e-government is supported by political system theory. In political system theory, the government is viewed as an intricate network of organizations and players with different interests and goals. Benchmarking and monitoring efforts is a reflection of the government's role in setting values and assessing e-government performance. Benchmarking and monitoring enhance accountability (Kajimbwa, 2018), which is a key principle in political system theory.

Collaboration among different government agencies that are responsible for implementing e-government is essential for consistency, effectiveness and proficiency. Chilembo and Tembo (2020) argue that silo kind of implementation of e-government initiatives result in duplication of efforts, ineffectiveness and disintegration of services. Collaborative strategy enhances synergy, use of common resource and integrated service delivery (Ochuba *et al.*, 2024). Collaboration underscore the tenet of integration within political system theory, where different parts of the government work together to address complex policy challenges. By working together as a team and pooling resources, government agencies can enhance the effectiveness of e-government, benefiting the business sector and the country as a whole.

Seeking feedback from the business sector is imperative for successful implementation of e-government. The need to seek feedback from the business sector aligns with the literature emphasizing the importance of user-centric e-government design and continuous feedback loops in e-government initiatives (Parsheera, 2023). Feedback from the business sector on their use of e-government is supported by political system theory. Political system theory underscores the significance of seeking feedback to facilitate communication and interaction between the government and stakeholders (businesses). Feedback from businesses reflects the government's responsiveness to addressing the concerns raised by the business sector in accessing e-government services.

Implications

Policy

Developing countries must develop comprehensive digital inclusion strategy to implementing e-government for businesses. Developing countries should adopt the following steps: develop digital literacy programs, improve data security and privacy laws, improve technological infrastructure and promote a supportive organizational culture. Likely obstacles in implementing the policy include: limited participation in digital literacy training programs, particularly in remote areas, high costs of IT infrastructure and lack of political commitment. To overcome these barriers, governments should involve the business sector in the planning, design and implementation of e-government to ensure its adoption by all businesses.

Practice

Governments in developing countries should provide assistance or support to businesses that lack the competence or resource to effectively adopt e-government. Support can be given in the form of targeted training for marginalized businesses and supply of ICT equipment.

Theory/research

E-government theories in developing countries should incorporate a multi-dimensional perspective, encompassing IT infrastructure, organizational culture and digital literacy readiness These factors interact to influence the adoption of e-government by businesses in developing economies.

Conclusion

The study has thrown light on the challenges faced by the business sector in accessing e-government services, as well as how e-government service can be improved. Security concerns, digital divide and resistance to change as the main challenge in the adoption of e-government by businesses underscore regulatory, structural, institutional and cultural dimensions innate in the use of e-government. The application of political system theory provides a new disposition in the adoption of e-government by businesses in developing economies. The political system theory lens allows for a holistic assessment of the institutional, structural, cultural and regulatory dimensions ingrained in the adoption of e-government by businesses in developing economies.

One area for future research emerging from the study is the longitudinal impact of e-government on the productivity of businesses and economic growth. There is the need to assess how sustained use of e-government use among businesses impact their operations and economic growth in the long run. A study of this magnitude can provide clarity on the long-term benefits of e-government use among businesses in developing economies.

Limitation

The study is limited by geographical scope. The study focused on the Greater Accra region of Ghana. Although businesses in the region provided valuable insights into the challenges faced in using e-government services, it may not entirely reflect the challenges and experiences of businesses in other regions and the country as a whole. In addition, the data collected was complex and unstructured, posing challenge in its systematic and interpretation. Also communicating the findings in a manner that is comprehensible to a wider audience was difficult as a result of the nuance nature of the data.

References

Abdulkareem, A.K. and Mohd Ramli, R. (2022), "Does trust in e-government influence the performance of e-government? An integration of information system success model and public value theory", *Transforming Government: People, Process and Policy*, Vol. 16 No. 1, pp. 1-17.

Acquah, A. (2022), "E-government and public service delivery: perspective of the business sector in Ghana", Unpublished PhD Dissertation, University of Ghana.

Akomea-Bonsu, C. and Sampong, F., (2012). The impact of information and communication technologies (ICT) on small and medium scale enterprises (SMEs) in the Kumasi metropolis, Ghana, West Africa. *European Journal of Business and Management*, Vol 4 No 20, pp. 152-158.

Akpan-Obong, P.I., Trinh, M.P., Ayo, C.K. and Oni, A. (2023), "E-governance as good governance? Evidence from 15 West African countries", *Information Technology for Development*, Vol. 29 Nos 2/3, pp. 256-275.

Al Mamun, A., Islam, S., Arifuzzaman, M. and Suhaimi, M.A.B. (2021), "E-government services for sustainable development: the challenges and strategies of implementing E-Government in Bangladesh", *International. Journal. Computer. Science. Information. Technology. Research*, Vol. 9 No. 1, pp. 65-74.

Alharmoodi, B.Y.R. and Lakulu, M.M.B. (2020), "Transition from e-government to m-government: challenges and opportunities-case study of UAE", *European Journal of Multidisciplinary Studies*, Vol. 5 No. 1, pp. 61-67.

Alqudah, M.A. and Muradkhanli, L. (2021), "Electronic management and its role in developing the performance of e-government in Jordan", *Electronic Research Journal of Engineering, Computer and Applied Sciences*, Vol. 10 No. 3, pp. 65-82.

Alshaher, A. (2021), "IT capabilities as a fundamental of electronic government system success in developing countries from users perspectives", *Transforming Government: People, Process and Policy*, Vol. 15 No. 1, pp. 129-149.

Anderson, J. (1997), "Response to Theodore J. Lowi' comments on Anderson, governmental suasion: adding to the Lowi Policy Typology", *Policy Studies Journal*, Vol. 25 No. 2, pp. 283-285.

Ansell, C., Sørensen, E. and Torfing, J. (2023), "Public administration and politics meet turbulence: the search for robust governance responses", *Public Administration*, Vol. 101 No. 1, pp. 3-22.

Apostu, S.A., Vasile, V., Vasile, R. and Rosak-Szyrocka, J. (2022), "Do smart cities represent the key to urban resilience? Rethinking urban resilience", *International Journal of Environmental Research and Public Health*, Vol. 19 No. 22, p. 15410.

Apriliyanti, I.D., Kusumasari, B., Pramusinto, A. and Setianto, W.A. (2021), "Digital divide in ASEAN member states: analyzing the critical factors for successful e-government programs", *Online Information Review*, Vol. 45 No. 2, pp. 440-460.

Arayankalam, J., Khan, A. and Krishnan, S. (2021), "How to deal with corruption? Examining the roles of e-government maturity, government administrative effectiveness, and virtual social networks diffusion", *International Journal of Information Management*, Vol. 58 No 12, p. 102203.

Bannister, F. and Connolly, R. (2011), "The trouble with transparency: a critical review of openness in e-government", *Policy and Internet*, Vol. 3 No. 1, pp. 1-30.

Barmuta, K.A., Akhmetshin, E.M., Andryushchenko, I.Y., Tagibova, A.A., Meshkova, G.V. and Zekiy, A.O. (2020), "Problems of business processes transformation in the context of building digital economy", *Entrepreneurship and Sustainability Issues*, Vol. 8 No. 1, p. 945, doi: 10.9770/jesi.2020.8.1(63).

Bhagat, C., Mishra, A.K. and Aithal, P.S. (2022), "Model for implementation of e-government services in developing countries like Nepal", *International Journal of Case Studies in Business, IT and Education (IJCSBE)*, Vol. 6 No. 2, pp. 320-333.

Boddy, C.R. (2016), "Sample size for qualitative research", *Qualitative Market Research: An International Journal*, Vol. 19 No. 4, pp. 426-432.

Bojang, M.B. (2019), "Challenges and successes of e-government development in developing countries: a theoretical review of the literature", *International Journal of Research and Innovation in Social Science*, Vol. 3 No. 4, pp. 410-414.

Braun, V. and Clarke, V. (2019), "Reflecting on reflexive thematic analysis", *Qualitative Research in Sport, Exercise and Health*, Vol. 11 No. 4, pp. 589-597.

Campbell, S., Greenwood, M., Prior, S., Shearer, T., Walkem, K., Young, S., Bywaters, D. and Walker, K. (2020), "Purposive sampling: complex or simple? Research case examples", *Journal of Research in Nursing*, Vol. 25 No. 8, pp. 652-661.

Castillo-Montoya, M. (2016), "Preparing for interview research: the interview protocol refinement framework", *Qualitative Report*, Vol. 21 No. 5, pp. 34-52.

Chilembo, Z. and Tembo, S. (2020), "Opportunities and challenges of coordinating the implementation of e-government programmes in Zambia", *International Journal of Information Science*, Vol. 10 No. 1, pp. 29-43.

Den Nieuwenboer, N.A., Cunha, J.V. and Treviño, L.K. (2017), "Middle managers and corruptive routine translation: the social production of deceptive performance", *Organization Science*, Vol. 28 No. 5, pp. 781-803.

Dunwoodie, K., Macaulay, L. and Newman, A. (2023), "Qualitative interviewing in the field of work and organisational psychology: benefits, challenges and guidelines for researchers and reviewers", *Applied Psychology*, Vol. 72 No. 2, pp. 863-889.

Easton, D. (1953), "The political system: an inquiry into the state of political science", *Ethics*, Vol. 65 No. 3, pp. 25-39.

Fernández, L.Á.V., Fernández, Y.O., Hidalgo, C.V.S., Aliaga, J.C.C. and Guillén, D.F. (2023), "E-government and its development in the region: challenges", *International Journal of Professional Business Review*, Vol. 8 No. 1, p. 11.

Gaglio, C., Kraemer-Mbula, E. and Lorenz, E. (2022), "The effects of digital transformation on innovation and productivity: firm-level evidence of South African manufacturing micro and small enterprises", *Technological Forecasting and Social Change*, Vol. 182, p. 121785.

Ghana Statistical service (GSS) (2018), "Living in the greater Accra region", available at: www.statsghana.gov.gh (accessed September 2020).

Glyptis, L., Christofi, M., Vrontis, D., Del Giudice, M., Dimitriou, S. and Michael, P. (2020), "E-government implementation challenges in small countries: the project manager's perspective", *Technological Forecasting and Social Change*, Vol. 152, p. 119880.

Heeks, R. (2001), "Understanding e-governance for development", Institute for Development Policy and Management, University of Manchester.

Islam, M.A. and Aldaihani, F.M.F. (2022), "Justification for adopting qualitative research method, research approaches, sampling strategy, sample size, interview method, saturation, and data analysis", *Journal of International Business and Management*, Vol. 5 No. 1, pp. 1-11.

Ismail, N.A., Yusof, Z.M., Sahibuddin, S. and Mahrin, M.N. (2017), "E-government benchmarking frameworks: a systematic review", *Computers in Human Behavior*, Vol. 70 No. 10, pp. 6-25.

Kajimbwa, M.G.A. (2018), "Benchmarking accountability of local government authorities in public procurement in Tanzania: a methodological approach", *Benchmarking: An International Journal*, Vol. 25 No. 6, pp. 1829-1843.

Kumar, R., Sachan, A., Mukherjee, A. and Kumar, R. (2018), "Factors influencing e-government adoption in India: a qualitative approach", *Digital Policy, Regulation and Governance*, Vol. 20 No. 5, pp. 413-433.

Kusi, A., Opata, C.N. and Narh, T.W.J. (2015), "Exploring the factors that hinder the growth and survival of small businesses in Ghana (a case study of small businesses within Kumasi

metropolitan area)", *American Journal of Industrial and Business Management*, Vol. 5 No. 11, pp. 705-723.

Lindgren, I., Melin, U. and Sæbø, Ø. (2021), "What is e-government? Introducing a work system framework for understanding e-government", *Communications of the Association for Information Systems*, Vol. 48 No. 1, p. 43.

Locke, K., Feldman, M. and Golden-Biddle, K. (2022), "Coding practices and iterativity: beyond templates for analyzing qualitative data", *Organizational Research Methods*, Vol. 25 No. 2, pp. 262-284.

Mishra, S. and Dey, A.K. (2022), "Understanding and identifying 'themes' in qualitative case study research", *South Asian Journal of Business and Management Cases*, Vol. 11 No. 3, pp. 187-192.

Mohlala, L.T. (2023), "The factors hindering the successful implementation of e-government within the City of Johannesburg (COJ) Metropolitan Municipality", Doctoral dissertation, University of Johannesburg.

Munyoka, W. (2020), "Electronic government adoption in voluntary environments – a case study of Zimbabwe", *Information Development*, Vol. 36 No. 3, pp. 414-437.

Mthuli, S.A., Ruffin, F. and Singh, N. (2022), "Define, explain, justify, apply'(DEJA): an analytic tool for guiding qualitative research sample size", *International Journal of Social Research Methodology*, Vol. 25 No. 6, pp. 809-821.

Ndou, V.D. (2004), "E-government for developing countries: opportunities and challenges", *The Electronic Journal of Information Systems in Developing Countries*, Vol. 18 No. 1, pp. 1-24.

Ochuba, N.A., Okafor, E.S., Akinrinola, O., Usman, F.O. and Amoo, O.O. (2024), "Strategic partnerships in the satellite and telecommunications sectors: a conceptual review of data analytics-enabled identification and capitalization of synergies", *Engineering Science and Technology Journal*, Vol. 5 No. 3, pp. 716-727.

Parsheera, S. (2023), "Understanding state-level variations in India's digital transformation", *The African Journal of Information and Communication*, Vol. 30 No. 1, pp. 1-9.

Prabhu, S.M. and Raja, M. (2023), "New architecture to facilitate the expansion of e-government", In *Recent Advances in Data and Algorithms for e-Government*, Springer International Publishing, Cham, pp. 55-86.

Regional Project on Enterprise Development (RPED) (2002), "Ghana manufacturing sector survey waves IV (1992-98)", Centre for the Study of African Economies, *Institute of Economics and Statistics, University of Oxford, St. Cross Building, Manor Road, Oxford, OX1 3UL*.

Richards, N.U. and Eboibi, F.E. (2021), "African governments and the influence of corruption on the proliferation of cybercrime in Africa: wherein lies the rule of law?" *International Review of Law, Computers and Technology*, Vol. 35 No. 2, pp. 131-161.

Shah, I.A., Wassan, S. and Usmani, M.H. (2022), "E-government security and privacy issues: challenges and preventive approaches", *Cybersecurity Measures for e-Government Frameworks*, IGI Global, Hershey, pp. 61-76.

Skargren, F. (2020), "What is the point of benchmarking e-government? An integrative and critical literature review on the phenomenon of benchmarking e-government", *Information Polity*, Vol. 25 No. 1, pp. 67-89.

Solarino, A.M. and Aguinis, H. (2021), "Challenges and best-practice recommendations for designing and conducting interviews with elite informants", *Journal of Management Studies*, Vol. 58 No. 3, pp. 649-672.

Straková, J., Rajiani, I., Pártlová, P., Váchal, J. and Dobrovič, J. (2020), "Use of the value chain in the process of generating a sustainable business strategy on the example of

manufacturing and industrial enterprises in the Czech Republic", *Sustainability*, Vol. 12 No. 4, p. 1520.

Vuyokazi, S.B. (2022), "A comparative analysis of the use of e-government services by small businesses (Doctoral Dissertation, University of Johannesburg)".

Waititu, P. and Du Plessis, C. (2021), "Employees' acceptance and adoption of online communication tools as part of an e-government strategy in the public sector in Kenya", *Digital Literacy and Socio-Cultural Acceptance of ICT in Developing Countries*, Springer International Publishing, Cham, pp. 119-138.

Wirtz, B.W., Weyerer, J.C. and Sturm, B.J. (2020), "The dark sides of artificial intelligence: an integrated AI governance framework for public administration", *International Journal of Public Administration*, Vol. 43 No. 9, pp. 818-829.

Further reading

Alhassan, A.L. and Adomi, E.E. (2017), "E-government adoption by SMEs in developing countries: the case of Ghana", *Journal of Emerging Trends in Computing and Information Sciences*, Vol. 8 No. 6, pp. 373-384.

Ashaye, O.R. and Irani, Z. (2019), "The role of stakeholders in the effective use of e-government resources in public services", *International Journal of Information Management*, Vol. 49 No. 10, pp. 253-270.

Bayram, I.S., Koç, M., Alrawi, O. and Al-Naimi, H. (2017), "Direct load control of air conditioners in Qatar: an empirical study", *2017 IEEE 6th International Conference on Renewable Energy Research and Applications (ICRERA)*, *IEEE*, pp. 1007-1012.

Benaddi, H., Laaz, N., Bouhlal, A. and El Kettani, E. (2023), "Data storage architecture for e-government interoperability: Morocco case", *Indonesian Journal of Electrical Engineering and Computer Science*, Vol. 29 No. 3, pp. 1678-1686.

Dawes, S.S. and Pardo, T.A. (2019), "Toward a model of interoperability in e-government", *Public Administration Review*, Vol. 79 No. 6, pp. 824-837.

Dwivedi, Y.K., Shareef, M.A., Simintiras, A.C., Lal, B. and Weerakkody, V. (2016), "A generalised adoption model for services: a cross-country comparison of mobile health (m-health)", *Government Information Quarterly*, Vol. 33 No. 1, pp. 174-187.

Ebrahim, Z. and Irani, Z. (2005), "E-government adoption: architecture and barriers", *Business Process Management Journal*, Vol. 11 No. 5, pp. 589-611.

Heuberger, M. (2022), "Coordinating digital government: explaining coordination challenges regarding the digital transformation of public administration in a federal context", Doctoral dissertation, Universität Potsdam.

Hsu, J.Y., Pan, C.Y. and Hwang, G.J. (2017), "Investigating e-government services adoption using the extended technology acceptance model: an empirical study", *International Journal of Information Management*, Vol. 37 No. 5, pp. 807-817.

Hujran, O., Alarabiat, A., Al-Adwan, A.S. and Al-Debei, M. (2023), "Digitally transforming electronic governments into smart governments: SMARTGOV, an extended maturity model", *Information Development*, Vol. 39 No. 4, pp. 811-834.

Islam, A.N., Dwivedi, Y.K. and Simintiras, A.C. (2019), "Adoption of online public grievance redressal system (CPGRAMS) by Indian SMEs: role of perceived benefits and government support", *Information Systems Frontiers*, Vol. 21 No. 3, pp. 619-637.

Mahlangu, G. (2020), "A multi-dimensional model for assessing e-government service gaps in the context of a developing country: a critical realist perspective", Doctoral dissertation, Cape Peninsula University of Technology.

Sharma, S.K. and Gupta, J.N.D. (2020), "Adoption of e-government services in India: a roadmap for future research", *Information Technology and People*, Vol. 33 No. 3, pp. 901-929.

Stupak, I., Mansoor, M. and Smith, C.T. (2021), "Conceptual framework for increasing legitimacy and trust of sustainability governance", *Energy, Sustainability and Society*, Vol. 11 No. 1, pp. 1-57.

Zeebaree, M. and Aqel, M. (2021), "A weight-analysis technique of existing research on e-government implementation challenges in developing countries", *Journal of Optimization in Industrial Engineering*, Vol. 14, pp. 135-152.

Corresponding author
Anthony Acquah can be contacted at: anthony.acquah1980@gmail.com

Table A1. Data analysis and findings

First-order codes	Compressed first-order categories	Explanation
Research Question 1		
1. Unequal access to digital infrastructure	Digital divide	A gap between those that have access to digital device and those that do not have
2. Lack of digital skills		
1. Lack of trust of the technology	Security concerns	The believe that the government will use the data for tax purposes
2. Data misuse		
1. Use of traditional method	Resistance to change	Employees do not want to adopt the technology
2. Unwillingness on the part of employees to use e-government		
Second-order theme	Lack of readiness	The business sector is not prepared to adopt e-government
Research Question 2		
1. Assessing and monitoring the implementation of e-government	1.Benchmarking and monitoring	Benchmarking and monitoring e-government implementation will ensure that e-government goals are achieved
2. Sharing of experience on e-government implementation by MDAs		
3. Adopting best e-government practices across the world		
1. Promoting e-government awareness to increase use by the business sector	2. Soliciting for feedback from the business sector via e-government	Enhancing business and government and business sector engagement via e-government will lead to improving the implementation of e-government
2. Taking into consideration the perspective of businesses' in e-government implementation		
3. E-government calls for proactive and inclusive approach		
1. Working closely with the pertinent MDAs to develop standards for e-government implementation	3. Collaboration by MDAs	Collaboration by MDAs will ensure that there is cooperation and synergy among implementers of e-government
2. Implementing e-government policy in a coherent/ consistent manner and not in seclusion		
3. Sharing of data among MDAs		
Second-order theme	Service quality and efficiency	Improving service quality and efficiency

Source: Authors' own work