Institutional Drivers of Internet Voting Adoption in Ghana: A Qualitative Exploratory Studies

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Abstract

Internet voting system adoption in elections can bring enormous benefits to an electoral process. Though few countries have adopted it for their legally binding elections, others have discontinued its use because of perceived vulnerabilities. But it has been argued that the benefits the internet voting system provide outweigh the perceived vulnerabilities. The main purpose of this study is to examine the drivers of the internet voting system from the organizational context. The study is purely qualitative using semi-structured interviews. The interview participants were top management of EC staff, political parties' executives and experts who were purposively selected, and thematic analysis was used to extract patterns from the data collected. The main themes that emerged from the thematic analysis include pressure from political parties, pressure from the government, legal framework, financial readiness of EC, EC top management support, convenience, accuracy, and increase voter turnouts. The discussion of the findings and the implication of the results were discussed in the study.

Keywords: Internet voting, institutional factors, e-government, coercive forces, Ghana.

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1 Introduction

There has been a conscious effort by the different governments in Ghana to implement various electronic government (e-government) services, such as "online service portal", "E-payment Services", "Government E-Workspace" etc (Frimpong-Manso, n.d.). Similarly, an internet voting system, one of the e-government services (Carter and Campbell, 2011b; Warkentin, Sharma, Gefen, Rose, and Pavlou, 2018), has also been discussed for its adoption in Ghana electoral process. The adoption of an internet voting system in an electoral process can bring several benefits, such as voter access, convenience voting, and the potential increase in voter turnout among the youth (Carter and Bélanger, 2012; Oostveen and Van Den Besselaar, 2004). Internet voting system is a technology that allows legitimate voter(s) the opportunity to cast their votes electronically through the internet infrastructure and in a secure manner (Oostveen and Van Den Besselaar, 2004; Wiseman, 2017), and this technology can be in the form of "poll site", "kiosk" and remote internet voting system (Carter and Campbell, 2011b; Oostveen and Van Den Besselaar, 2004). Several countries, such as Estonia, Norway, Switzerland, and the UK has experimented on the internet voting system (Wiseman, 2017) and have used it for legally binding elections. Though countries such as the UK and Norway have discontinued it use citing issues of security vulnerabilities, countries such as Estonia have been successful in using it for legally binding elections since 2005 (Wiseman, 2017). But according to Wiseman (2017), these security vulnerabilities identified does not outweigh the enormous benefit internet voting brings to the electoral process.

The researcher shares the view of Wiseman and argued that the internet voting system, as an additional channel for voting in Ghana and African, can provide a lot of benefits in our electoral process and resolve some of the challenges associated with the electoral process. In this regard, it is important to investigate the drivers of internet voting adoption from an institutional perspective, and in the context of this study, I am looking at EC as an institution. It is important to examine and understand the main factors and drivers of internet voting system adoption (Carter and Bélanger, 2012; Carter and Campbell, 2011b) from the social, organizational and political context. Current studies on the internet voting system has concentrated on the security vulnerabilities (Hsiao, Wu, Liu, and Chung, 2017; Park and Rivest, 2017; Shakiba, Doostari, and Mohammadpourfard, 2017), and the few studies (Carter and Campbell, 2011b; Warkentin et al., 2018) that have look at the drivers to internet voting has concentrated on user perspective.

And to the best of my knowledge, studies examining the internet voting adoption from the institutional context in Ghana is very few or may not exist. This study is among the few that have investigated drivers of internet voting adoption from the macro-level in developing country context. In this study, the researcher investigates the institutional drivers to internet voting adoption using institutional theory, roger's diffusion of innovation theory and organizational factors to guide the research.

The remaining sections are organized as follows. In section two the researcher reviews empirical studies on e-government and internet voting and theoretical framework guiding the study. Section three discussed the methods used in this study. Section four presents the results of the findings of the study. Section five discusses the results of the findings and relate it to existing studies, and finally, section six discussed the implication of the research findings.

2 Literature Review

2.1 Introduction

In this section, the researcher defines e-government and examples of e-government services. Furthermore, the section reviews empirical studies on the internet voting system and discusses the theoretical framework guiding this research. The section concludes with a summary of the empirical and theoretical review.

2.2 Electronic Government (E-government)

The concept of e-government has been discussed in various studies, and several definitions exist in literature. E-government can be simply be defined as the application of Information and Communication Technology in the government processes in order to deliver services to its citizenry in a more convenient and efficient manner (Elbahnasawy, 2014; Gordon, 2002; Kolachalam, 2009). Using e-government allows citizens to have better interaction with the government and also brings transparency and accountability in the activities of government (Elbahnasawy, 2014; Kolachalam, 2009; Zheng, Chen, Huang, and Zhang, 2013). There are several e-government services that have been implemented in various governments across the globe and this includes services such as "e-assistance", "online statistical data", and e-voting or internet voting (Kolachalam, 2009). In the context of this study, the concentration is on internet voting as an e-government service. Several

studies (Carter, 2008; Zhao, José Scavarda, and Waxin, 2012; Zheng et al., 2013) have look into the adoption and diffusion of e-government service other than internet voting system and has examined the drivers to it adoption, but few studies (Carter and Bélanger, 2012; Carter and Campbell, 2011a; Warkentin et al., 2018) has examined the drivers to internet voting system adoption, and it is important to note that when it comes to internet voting or e-voting system, the drivers to it adoption may not be the same as other e-government services. In the subsequent section, the researcher reviews existing studies on internet voting system adoption and drivers that influence its adoption.

2.3 Empirical Review

The empirical investigation begins by examining e-voting and or internet voting (i-voting) and examine the main drivers of its adoption in past research.

Most of the notable studies on e-voting adoption in the literature include the works of these authors (Carter and Bélanger, 2012; Carter and Campbell, 2011a; Oostveen and Van Den Besselaar, 2004; Warkentin et al., 2018; Wiseman, 2017). Carter et al. (2011a), examine the impact of trust and relative advantage on internet voting diffusion in the context of the USA. In their study, an attempt was made to identify the determinant factors of internet voting adoption from the user's perspective, by administrating closed-ended questionnaires to respondents. The findings from the study show trust in the internet, relative advantage and e-government information utilization has a significant influence on the user's intention to use the internet voting system. The results of Carter et al. (2011a) were also confirmed by the work of Warkentin et al. (2018), in which the authors examine how social identity and trust and technological factors influence user's intention to adopt the internet voting system. The findings of Warkentin et al. (2018) shown that trust and perceived usefulness have a significant influence on user behavioural intention to use an internet voting system. Also, studies conducted by Choi and Kim (2012) on voters' intention to use e-voting technologies identify drivers such as perceived usefulness ease of use, accuracy, and confidentiality (Choi and Kim, 2012). One of the few studies that examine the adoption of e-voting from macro-level is the work of Adeshina and Ojo (2017), where they examine the adoption of e-voting from an organizational perspective and investigating the influence of "external environment", organizational, and individual voters (Adeshina and Ojo, 2017). The results of the work of Adeshina et al. (2017) was grouped into "external environment",

"Organisational factors", "E-voting innovation" and "Individual context". A summary of the results of the findings show factors such as perceived usefulness, perceived efficacy, ease of use, availability of external technical support, effective logistic structure, training readiness, physical security and perception on the efficacy of technology and drivers to organizational adoption of e-voting system (Adeshina and Ojo, 2017). Similarly, Achieng and Ruhode (2013) also looked at e-voting adoption from the organizational level by examining the factors that can influence the Electoral management body decision to adopt e-voting technologies. Factors such as ease of use, trust in innovation, resource and infrastructure were identified as the key drivers to e-voting system adoption (Achieng and Ruhode, 2013).

The most dominant factors or drivers to e-voting and i-voting adoption found in this empirical review identified drivers or factors such as trust (trust in internet and trust in entity), relative advantage and technological factors as the main significant factors influencing user intention to use e-voting or i-voting system (Carter and Campbell, 2011b; Choi and Kim, 2012; Warkentin et al., 2018). All these studies examine adoption from individual perspectives in developed countries context. But in the context of this study, the focus is to examine these drivers from an organizational perspective, since few studies (Achieng and Ruhode, 2013; Adeshina and Ojo, 2017) has looked into organizational adoption of internet voting in the developing country context.

2.4 Theoretical Framework

The theoretical framework guiding this research includes institutional theory, diffusion of innovation (DOI) theory and organizational model. From an institutional perspective, the study examines how organizations' decisions are influenced by external pressures or factors (Teo, Wei, and Benbasat, 2003), and the study looks at the work of Scott and, DiMaggio and Powell (DiMaggio and Powell, 1983; Scott, 2014). With Roger's DOI, the study looks at how an organization's decision to adopt internet voting can be driven by the perceived advantages of the innovation (Rogers, 1983). According to Rogers (1983), a technological innovation that is perceived to have some "relative advantage" has a significant influence on its adoption intention. Similarly, certain organizational factors, such as organizational size, IT department size, organizational readiness and attitude towards technological innovation has also been found to drive organizational innovation adoption (Teo et al., 2003). The study integrates institutional theory, diffusion of innovation theory and organization factors as a theoretical framework.

2.4.1 Institutional context

There have been several studies (Gibbs and Kraemer, 2004; Henderson, Sheetz, and Trinkle, 2011; Sherer, Meyerhoefer, and Peng, 2016; Teo et al., 2003) into institutional factors to the adoption of technological innovation. The institutional theory examines how organizational decisions are influenced by external factors to adopt certain technological innovations due to legitimacy (DiMaggio and Powell, 1983; Henderson et al., 2011). Institutional theorist argues that organizations often adopt a particular innovation, not solely because of efficiency but more importantly to gain legitimacy (DiMaggio and Powell, 1983; Sherer et al., 2016; Teo et al., 2003) within their environment. That is the decision to adopt an innovation are "not driven by rational goals of efficiency" (Gibbs and Kraemer, 2004) and the advantages the technology can bring, but also external influences from the environments in which they operate (DiMaggio and Powell, 1983; Henderson et al., 2011). Scott describes the institutional environment to be made up of the regulative, normative and cultural-cognitive, which he termed as the institutional pillars (Scott, 2014). Organizations succumb to these external influences or pressure to adopt these innovations in order to be seen by the environment as being legitimate (DiMaggio and Powell, 1983), and DiMaggio and Powell (1983) identified these pressures to be made up of coercive, mimetic and normative pressures. Coercive pressure emanates from a higher authority, law or legal framework that puts pressure on an organization to adopt certain innovation (DiMaggio and Powell, 1983; Teo et al., 2003), and Scott (2014) also describe this in his regulative pillar. In the context of this study, it is assumed that external pressures from voters, political parties and international donors can drive EC as an institution in the adoption of internet voting. Hence from institutional context, the study looks at the regulative framework, pressure from the government, pressure from political parties and pressure from voters as a driving force to EC adoption to internet voting system.

2.4.2 Relative advantage

The perceived relative advantage of an innovation, such as, the performance of the technology and its derived benefits, has also been argued to be one of the main driving force to organizations adoption of a technology (Agbesi, 2019; Hameed, Counsell, and Swift, 2012b; Jeon, Han, and Lee, 2006; Rogers, 1983). Relative advantage is one of the main elements described in Roger's work as the driving force to technological innovation adoption (Rogers, 1983). Rogers (1983) defines relative advantage as "the degree to which an innovation is perceived as better than the idea it supersedes" Hence

if the new idea is perceived by the intended users as better than the current system, the diffusion of the new idea will be faster (Rogers, 1983). In the context of this study, the comparison will be between a paper-based voting system and an internet voting system, and how political parties and voters perceived the two systems. The study assumed that, if the main stakeholders such as political parties and voters realize the benefits of internet voting in an election, it will drive its adoption.

2.4.3 Organizational factors

Organisational factors, such as top managers attitude towards an innovation and top managers support, organizational slack, organisational ICT infrastructure and IT department size has also been argued to have significant influence on organization propensity to adopt a technological innovation (Hameed, Counsell, and Swift, 2012a; Hameed et al., 2012b; Rogers, 1983; Teo et al., 2003). Organizational slack is the available "uncommitted resources" at the disposal of the organization (Rogers, 1983), and this has significant influence on organization innovation adoption decision (Rogers, 1983). With top managers' attitude towards innovation, it is assumed that if managers who influence decision has a positive attitude towards technological innovation, they will be more inclined to adopt new innovation (Damanpour and Schneider, 2006; Rogers, 1983), and in this context internet voting system. Similarly, the support of top managers also goes a long way to drive technological adoption (Hameed et al., 2012b), because without the support of top managers it will be difficult for the technology to be adopted. Furthermore, organizational slack, which according to Rogers (1983) is the "degree to which uncommitted resources are available to an organization" has also been identified in research as a driver to organizations' decision to adopt technological innovation. That is, if an organization has resources available to commit to the new innovation, it will have a significant positive influence on the adoption (Herold, Jayaraman, and Narayanaswamy, 2006; Rogers, 1983). Organizations ICT infrastructure, which is the organization's internal infrastructure such as hardware, software, and communication system, has also been argued to influence technology adoption (Hameed et al., 2012b).

From the empirical and the theoretical studies (Damanpour and Schneider, 2006; DiMaggio and Powell, 1983; Hameed et al., 2012a,b; Rogers, 1983; Scott, 2014; Teo et al., 2003), the study adopts this integrated research model, as shown in Figure 1, as a guide to this research.

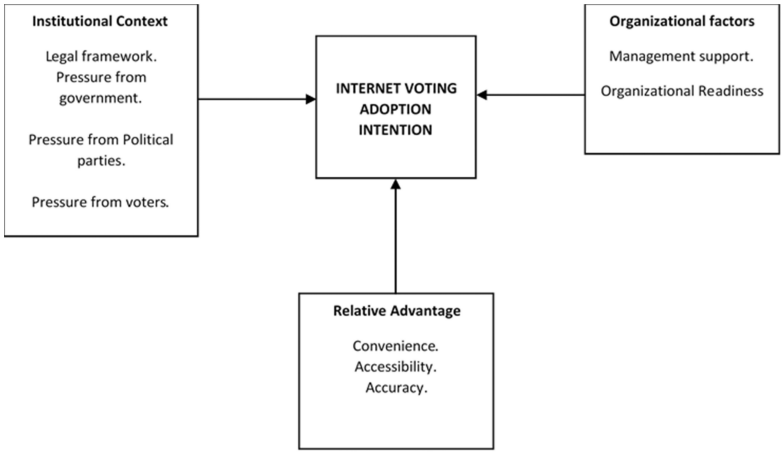

Figure 1 Drivers to internet voting adoption research model.

3 Methodology

The study adopted exploratory research, using a qualitative research design method. The data collection method used for the study was through semi-structured interviews from top EC management, selected political party executives and IT experts. These respondents were purposefully selected because of their knowledge and expertise about the research problem (Creswell, 2007; Plano Clark and Creswell, 2015).

The semi-structured interviews were conducted over six months period through telephone, skype, and emails. Since it was difficult to get the selected participants face-to-face, this media was used for the interview. In all eight persons were interviewed, made up of two (2) EC top officials, two NPP Executives, two NDC executives and two experts, and each of these participants received a copy of the interview protocol in advanced. The two EC officials were recommended to the researcher for the interview by one of the Electoral Commissioners after the commissioners received the request for the interview. All the telephone and skype interviews were recorded and later transcribed.

NVIVO 12 software application was used as part of the data analysis tools. After all the interviews have been transcribed verbatim, the transcribed data was uploaded into the NVIVO software package to begin the data analysis. Thematic data analysis was used to extract the patterns from the transcribed data (Clarke and Braun, 2017). The process for the data analysis began by loading all the transcribed data into the NVIVO application, after which the researcher read through the whole transcribed data to get an

overview of the data collected (Creswell, 2007). The researcher read the transcribed document for the second time, but this time, line by line and assigning labels to words, sentences or paragraphs that are important, in a process called coding (Creswell, 2007; Saldana, 2009). These codes were re-examined and some of the codes were renamed and some merged together. The codes were subsequently grouped into sub-themes and themes after careful examination of the codes. The grouping of the codes was based on how they related to each other. To ensure validity, the researcher allows three other persons to re-code the transcribed data after which the individual codes generated were compared.

4 Results

The main themes identified in the data analysis includes (a) Institutional factors (b) Organizational factors, (c) and Technological factors. These themes are summarized in the paragraph below.

4.1 Institutional Factors

Institutional forces were found to be a driver that can influence the adoption of internet voting system in Ghana. The main stakeholders such as International observers, Government, and political parties were found to have a greater influence on EC's decision-making processes. The institutional forces as identified in the data analysis include coercive forces and legal framework.

4.1.1 Coercive forces

With coercive forces, the study looks at how external and internal pressures can drive the adoption of an internet voting system by EC. Sub-themes identified from this main theme include pressure from IPAC (Inter-Party Advisory Committee), Pressure from Government, Pressure from international donors and pressure from the electorates.

Pressure from IPAC

From the transcript of the interview and the document analysed it was identified that most major electoral reforms are initiated by the IPAC, and there has also been an initial deliberation from IPAC for the feasibility of the adoption of the electronic voting system in future elections in Ghana. For example, one of the interviewees from EC stated that:

> "I think a push from the political parties will be the ultimate something that could push EC to adopt. Mostly decision taking by

> EC is proposed by IPAC. So, a major factor or push that will let EC adopt the e-voting might come from the political parties themselves that is IPAC." (from respondent)

Another interviewee also indicated that IPAC is the main stakeholders that influence electoral changes and are the main stakeholders that can push for the adoption of the internet voting system:

> "It is mostly from IPAC and from pressure groups. When you consider current reforms, the main driver was from the court case which came out after the 2012 elections, so mostly the push is always coming from IPAC which is made up of the parties that registered by the EC itself." (from respondent)

The respondents were of the view that once the political parties through their representative in IPAC push for the use of internet voting system EC will have no other option than to begin to investigate in feasibility and adoption.

Pressure from Government

EC by the constitution is an independent body and their activities are not to be influenced by any other institution. But from the interview, it was observed that the Government often has an influence on EC activities. First and foremost, government influence can come from its representatives in IPAC and secondly government can influence EC's decision through budget allocations.

> "EC has prepared a budget for me (government) to pay and I am also saying that go and implement this if you don't implement, I cut down your budget if you implement, I approve your budget." (from respondent)

The respondents believed the adoption of internet voting will be greatly influenced by a Government push for its adoption or rejection.

Pressure from Donors

It was also identified that International donors also influence EC reforms decision and are also a major stakeholder that could influence EC's internet voting adoption decisions. One of the Interviewees have this to say:

> "Unofficially, they are like the government, because these international observers also donate, or they provide some support to our

> elections, if they are bringing in some support and they make a proposal to the EC, personally I think there will not be a way EC will totally deny their offer, so unofficially yes we can say they have some influence."

4.1.2 Legal framework

One main driver to internet voting system adoption is the countries laws regarding elections. There should be a legal framework that will make it possible for the adoption of internet voting for general elections in Ghana. But currently, such laws do not exist. In the opinion of the respondents from EC, if this law is in place, it will compel EC to start the necessary preparations for the adoption of an internet voting system.

> "There is no law either has there been any road map, we have laws or legal framework for ROPAL. We need this law or legal framework in order to adopt e-voting. If there are laws, that binds EC to implement e-voting in the next 4, 8, 12, etc. years, then there will be a road map towards the adoption, but if there is no law or legal framework binding EC then I think they will always come and say we are not ready." (from respondent)

> "There is no legal framework yet, but it will be necessary when e-voting becomes the option" (from respondent)

4.2 Organizational Factors

The study explores how organizational factors can predict the adoption of internet voting adoption in Ghana. Factors such as financial readiness, IT department size and top management attitude were explored.

4.2.1 Financial readiness

With financial readiness, the study explores how EC's projects are often financed and how EC will finance the adoption of an internet voting system. It was revealed in the interview that financing of this innovation won't be a challenge since the support will be from the government and international donors. One of the EC officials has this to say:

> "Talking about financing EC projects, what happens is that EC must prepare the entire budget for the elections and the budget is submitted to the finance ministry or the government to provide the financial support for the program."

Another respondent also indicated that they also received support from international donors:

> "And again, apart from the government coming in to finance the EC's budget, there are sometimes donor supports to our elections." (from respondent)

It was also understood that sometimes the support comes in the form of election materials or equipment, and this is what another respondent said with regards to this point:

> "Sometimes they may take care of some portion of the materials needed for the elections. I quite remember in 2012, 2016 election, a donor country, they provided the screens (the screen is the booth used for the voting) used for voting during the elections." (from respondent)

4.2.2 Top management support

In this section, I asked the interviewees about top management attitude and interest towards internet voting, and it was identified that top management of EC has a positive attitude towards the adoption of e-voting (either DRE or internet voting) and have every interest to adopt it provided it is feasible to implement now. From the interview I was informed that EC did tasked a special committee, before the 2016 elections, to investigate the possibility of the use of the e-voting system.

> "After the 2012 court case, EC tasked a special committee to find out if the e-voting system can be used in the next elections, but the committee report indicated that Ghana is not yet ready." (from respondent)

Response from the interviews shows that top management has a positive attitude towards a possible implementation of the e-voting system in Ghana.

4.3 Technological Factors

From the technological factors, the main theme derived from the respondents was the relative advantage the internet voting system can bring into the electoral process. From the perspective of the respondents, the use of an internet voting system will have more advantages and prestige over the current paper-based voting systems. It was obvious the EC staff understand

the enormous advantages and prestige internet voting can have over the current voting system. Some of the sub-themes identified were the reduction in queues at a polling station, the convenience of voting, easy tabulation of results, elimination of human errors, elimination of rejected ballots, increase in voter turnouts, attracting of young voters, timely declaration of results, and voting without fear and intimidation. These sub-themes are explained in the paragraphs below:

4.3.1 Convenience

The EC officials were of the view that the long distance between some voter's residence and the polling stations, at times, discourage voters from going to vote, but with internet voting, it will make it more convenient for such voters. Excerpts from the response are shown below:

> "Yes, I think even distance from voters house to the voting centre can discourage people to come out to vote, so is internet voting is available as an alternate channel it will help those persons." (from respondent)
>
> "And then once we look at e-voting in general, I can be in my room, office or any location and vote." (from respondent)
>
> "It will save me time; and prevent me from traveling to vote and the discomfort of queuing."
>
> "It will make the voting process more efficient, easier and timely ballot counting, reduce election cost."

4.3.2 Accuracy

It was of the view of the EC officials that with computerization of the voting process it will make it easier in the tabulation of the result and will give accurate voting results. Secondly, it will remove the human element in vote counting. Samples of the views expressed by the officials are shown below:

> "When you look at the advantages e-voting have over paper-based I think it will make the calculation of the results simple and accurate." (from respondent)
>
> "Internet voting will the elimination of human intervention in the process, it becomes more appropriate and accurate in terms of calculation." (from respondent)

4.3.3 Increase voter turnouts and attract young voters

The respondents share the view that it is possible internet voting can increase voter turnouts and also attract young voters. It was argued that the youth or the young voters like to play around technology hence if there is an option to vote via their smartphone or computer it will be a motivating factor. Some of their views are shared below:

> "If only there is education. If all voters have been educated on how to do the voting and they are able to do it then it will increase the voter turnout. One because you vote at your own pace at your own convenience, you do not have to go and queue." (from a respondent)

> "But if I have the convenience of being anywhere even on my phone at any point in time and within a minute or two, I have voted, definitely it is going to increase voter turnout." (from a respondent)

> "The youth like working with computer/technology, everything computerized they are happy with it. So, the fact that they are going to play with the computer they select their preferred candidate to entice them." (from a respondent)

> "Some of them even have this problem of going to join the queue and vote, so it will attract more youth to the voting process than the adult who might have challenges to the use of technology." (from a respondent)

4.3.4 Timely declaration of results

Timely declaration of results was identified to be an advantage internet voting will have over paper-based voting. The assumption is that, since votes are stored electronically, tabulating results, which takes much time in paper-based voting, will be just a click of a button in internet voting and will overall, make the final declaration of results fasters.

> "When you look at the advantages e-voting have over paper-based I think it will make the calculation and announcing of results faster and accurate." (from a respondent)

> "Internet voting will enable quick release of election results." (from a respondent)

4.3.5 Voting without fear and intimidation

In the opinion of the respondents, the introduction of internet voting will help voters who are afraid to go to voting centers to vote, for the fear of being

harassed or intimidated, to use this channel to vote. It was of the view of the EC officials that, currently the issue of harassment and intimidation are some of the causes of low voter turnout at some polling stations:

> "When people are afraid and fear for their lives because of this macho person parading around polling centres, they stay home." (from a respondent)

> "I don't have any fear of being intimidated or harassed, because nobody sees me around to intimidate or harass me to vote for party A or B. So, there are more advantages compare to the disadvantages of using e-voting for general elections." (from a respondent)

5 Discussion

The main purpose of the study was to examine the drivers to internet voting adoption from organizational context, using institutional theory, diffusion of innovation theory and organizational factors as a research lens. In this section, the researcher discusses the results of the findings in relation to the research framework and link the results to previous studies.

5.1 Institutional Context

From an institutional context, the results of the findings show coercive pressures and legal framework as drivers to internet voting adoption by EC.

From the coercive context, the source of these pressure comes from government, IPAC, and international donors. The results show that, most often, the government in power has an indirect influence on EC decision making when it comes to some key electoral decisions in Ghana, even though EC is supposed to be an autonomous institution. Currently, the appointment of the Electoral commissioners is done by the president of the country in consultation with the council of elders, hence in principle, these commissioners will have some allegiance towards the appointing authority and allow them to be influenced (Atuobi, 2008). Similarly, the government can also influence the EC through the allocation of budget, hence the assumption is that if the government wants an internet voting system to be adopted, the government can put pressure on EC to investigate its adoption. Sometimes also, government and other political parties influence EC's electoral decision making through IPAC. IPAC is an Inter-Party Advisory Committee consisting of members from all political parties in Ghana. The role of IPAC is to come

out with recommendations to EC on major electoral decisions. But EC has the final decision to either accept or reject the recommendation. This result supports DiMaggio and Powell (1983), who argues that organizations adopt certain innovations because of pressure from a higher body and in this context government in power, and coercive pressure has been argued to be a key driver to the adoption of innovation (Gibbs and Kraemer, 2004; Shi, Shambare, and Wang, 2008). From the results, the study did not find pressure from voters as a significant driver to internet voting adoption, as has been assumed by the researcher. One key observation made during the course of the study was that voters often follow the direction of their political parties, hence if the political parties accept to use a particular technology, in this context internet voting, their supporters are likely to also use it.

From a legal context, the findings of the results show how the legal framework for the internet voting system can drive the adoption of internet voting in Ghana. Currently, there is no legal framework for the use of internet voting systems in elections in Ghana. This law is needed to provide the framework that will govern the use of an internet voting system for elections in Ghana, and which will also compel EC to start looking into its implementation.

5.2 Organizational Factors

Regarding organizational factors, the results show an organization's financial readiness and top management support as a key driver to EC internet voting adoption in Ghana. The results show that the source of funding for EC projects is through government and international donors, and once there is a decision to start using an internet voting system, there will be a budget allocation for that project. These sources of funding will be a significant factor in the adoption of the internet voting system in Ghana because the funds will be used for the upgrade of EC internal ICT infrastructure, training of staff and procurement or development of the internet voting system. As indicated in the meta-analysis of Hameed et al. (2012b), several other studies have come out with similar findings to support this result. Similarly, the results indicate top management's positive attitude towards internet adoption for general elections. The responded argued that EC top management constituted a committee to investigate the possibility of its introduction e-voting system during the 2016 December elections. With top management of EC having a positive attitude towards the internet voting system it will have a positive influence on its adoption. This result is in line with other studies (Kuyo, Muiruri, and Njuguna, 2018; Sabherwal, Jeyaraj, and Chowa, 2006;

Zheng, 2010) that find top management support as a significant driver to organizations adoption to innovation. According to Zheng (2010) organizations, top management commitments go a long way to influence the overall adoption of technological innovation. If top management is not in support of the innovation or don't see it important, its adoption will be difficult.

5.3 Relative Advantage

From the technological context, one major theme that emerged as an important driver to organizational adoption of internet voting was the advantages the innovation, that is the internet voting, will have over paper-based voting systems. One of the sub-themes was convenience. The respondents expressed their view on the fact that, in some electoral area, the distance between the polling station and voter's residence is long, and this sometimes discourage them in coming out to vote. But with internet voting, these voters will have the option to vote at their own convenience at any location, and voters will not have to commute a long distance to vote. Furthermore, it was the view of the respondent that the internet voting system will bring more efficiency in the election process in terms of timely ballot-counting which will speed up the process of results declaration. Secondly, accuracy also emerged as a sub-theme, where the respondents believed that with internet voting, vote counting and calculation will be more accurate than the paper-based systems, and similarly this technology will eliminate human intervention in the counting process. The findings also show that internet voting adoption in Ghana can increase voter turnout. This assumption is because, voting occurs on a normal working day and sometimes because of the long queues at the voting centres, most workers are not able to vote, but with remote internet voting as an optional channel, these voters will have the chance to cast their vote. Similarly, more of the youth who may not have gone to the voting centres to vote, because of the long queues may vote via internet voting technology. Also, some voters do not go out to vote because of fear of harassment and intimidation by opposing political party supporters, hence internet voting will be the best channel for them to use to vote, and all this can increase voter turnout. Even though previous studies on whether internet voting can increase voter turnout is inconclusive (Bochsler, 2011; Henry, 2003; Sál, 2015), the respondents believed in the context of Ghana it could improved the voter turnout. Previous studies (Lean, Zailani, Ramayah, and Fernando, 2009; Lin, 2011; Schaupp and Carter, 2010; Tung and Rieck, 2005) have also found the relative advantage of innovation to be an important driver to organizations

adoption decision-making the process. The organization, and in this context EC, are likely to adopt internet voting if the benefits internet voting system brings outweighs the current paper-based voting system.

6 Implication and Conclusions

This study has identified three key main drivers to internet voting adoption from an organizational perspective, which include Institutional factors, organizational factors, and technological factors. From an institutional context, pressure from government and political parties was identified as a driver to EC internet voting adoption intention. From an institutional context, the results show how the amendment of the current election laws to include internet voting can drive or push EC to investigate the adoption of internet voting in Ghana. Without the amendment of the electoral laws, EC is not mandated by law to adopt the technology. For example, the current law on election stipulates that all voters have to be present at a designated polling station to go through an identification process before he or she can vote (Commission, 1992), and this current law is in contravention of remote internet voting. Hence it is important for policymakers to look into the amendment of the electoral laws to include an internet voting system to pave way for its adoption. The results also show the impact of pressure from political parties on EC internet adoption decisions. That is, if there is pressure from political parties, as described by DiMaggio and Powell, (1983) as informal pressure, on EC to use internet voting as an additional channel to the current voting system, it will compel EC to look into its implementation. Organizational factors such as top management support and financial readiness also emerged as a driver to the adoption of an internet voting system. The support of EC top management is very essential to the use of the internet voting system in Ghana. If top officials, such as IT directors, EC commissioners, and other higher-level management do not see the importance of technology in an election, it will be extremely difficult for its adoption soon. One way to improve the likelihood of early adoption of the internet voting system in Ghana is to recruit higher-level management who has a positive attitude towards technology in elections and can influence internet adoption decisions (Damanpour and Schneider, 2006; Hameed et al., 2012b; Rogers, 1983). The results also identified technological factors such as the perceived advantages the innovation brings to the electoral process. Some of the advantages includes convenience, the accuracy of results collation, the possibility of increased voter turnouts especially for young voters and

timely declaration of results. All these advantages were identified as drivers to internet voting adoption in Ghana, and which has also been supported in previous studies such as Lin, (2011) and Lean et al. (2009). This result shows that when stakeholders understand the advantages internet voting has over the traditional paper-based system, it will influence their intention in adopting the technology. Currently, the most dominant news on internet voting is about the perceived security vulnerabilities, and that is the first question that is asked when the issue of the internet voting system is discussed because that is what most of the media (print and electronic) are putting out there, whiles ignoring the enormous benefit internet voting brings. And as argued by Wiseman (2017), the internet voting system brings a lot of benefits that outweigh any perceived vulnerabilities, hence these vulnerabilities should not prevent us from using it. Sharing the views of Wiseman (2017), it is the view of the researcher that, the adoption of internet voting will be a step in the right direction.

In conclusion, the study identified three main drivers that can influence EC in adopting an internet voting system. The results show how the amendment of the current electoral laws can drive EC in adopting this innovation. Similarly, political party influence and the benefits of the internet voting system has been found to have a significant influence on the adoption of the internet voting system. This study has contributed to examining how institutional factors, technological and organizational factors influence organization internet voting adoption intention from developing country context. This study concludes that internet voting system adoption in Ghana is possible, but there should be more education on the benefits of the innovation and how the perceived vulnerabilities will be resolved in the events that it occurs. Future research should look into the design of a secure internet voting system that can address the perceived vulnerabilities.

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