

Who Uses Social Media? An Investigation into Facebook Adoption among Elected Officials in the 6th Parliament of the Republic of Ghana

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Abstract: *The role of technology, particularly social media in politics has become a topic of extensive study in the United States and other developed countries. Since the advent of web sites like Facebook and Twitter, politicians have adopted this platform for many types of communication. Political scientists have used diffusion of innovation theory to explain adoption of Social Media among politicians and characteristics that differentiate the large section of elected officials who have established their presence on social media from the minority who did not. This study uses electoral factors and personal characteristics to examine Facebook adoption in the 6th parliament of the Republic of Ghana. The results revealed that the adoption decision depends on the lawmaker's level of education and the noncompetitive nature of the constituency where the lawmaker hails but no relationship how lawmakers actively use the adopted technology. By examining how elected officials adopt social media and understanding the motivations for adoption allow us to measure to a large extent whether technology has improved the relationship between elected officials and their constituents. This study hope to contribute to the study of politics and social media worldwide, while providing special insight into social media adoption in sub-Saharan Africa.*

Keywords: *Social media, Technology, Ghana, Parliament, Facebook*

1. INTRODUCTION

The evolution of the Internet becomes ubiquitous tool for discussion of political and social issues. The Internet has reshaped public administration and how public agencies and departments render various public services to citizens. More importantly, the Internet has improved the dialogue between elected officials and citizens by increasing channels of communication between politicians and their constituents in both developed and developing countries. A more recent web technology that has become popular and bridged the communication gap in diverse ways is the social media. The social media have opened up possibilities for online human-to-human interaction. The Social network sites (SNS) particularly emerged as a unique platform for online discourse. Because of how social media allow users to interact and collaborate with each other, the youths are more motivated to communicate online compared to the traditional websites, where people are limited to the passive viewing of contents.

A study by Golbeck, Grimes, and Rogers (2010) found that social media has become one of the most reliable medium by which people communicate with their family, friends, colleagues, businesses, and the government. The capability of social media to promote interpersonal and group cohesion offers new and unprecedented opportunities for elected officials and community leaders to inform and be informed by the citizenry and constituents (Golbeck, Grimes, & Rogers, 2010). Since the advent of SNS, blogs, wikis, folksonomies, video sharing sites, hosted services, and web applications, increased communication between politicians and constituents. This includes campaigning, rallying the political base, stating policy positions, opposing the policy positions of opponents, and keeping constituents informed of new legislation that is passed.

It is undeniable fact that the Internet has changed how citizens and elected officials interact. Legislatures are embracing social networking sites like Facebook and Twitter to communicate

with constituents. The active use of social media tools has increased the presence of elected officials in social media, particularly in the United States and other developed countries. The trend is gradually changing in developing countries, particularly those in sub-Saharan Africa. Institutions and elected officials who are lagging behind the new opportunities offered by SNS are criticized as being resistant to change. For example, a report from Congressional Management Foundation accused Congress of being slow to adapt to both institutional reforms and technological developments. However, the trend of technological lag is not the same with the use of social media. Elected officials have adopted the use of social media more quickly than it adopted other technologies like email and the use of websites (CMF).

Mobile telecommunications further, shrink distance, making communication much easier and faster through the use of web 2.0 applications. Among the many applications, SNS such as Facebook, Twitter, LinkedIn, Google Plus+, and My space have increased democratic engagement of citizens in decision making. This has consequently lowered the barriers to access to information, particularly in governance. Politicians now have the means to react immediately to issues from their constituents than at any other time. Politicians also have the conduit through which constituents can quickly provide their own ideas for a new policy or to reform previous policy. The new channels of communication created by social media are fast and cheap, such that it has considerable influence on public and political opinion between elected officials and their constituents. Several studies have identified the use of social media by elected officials as both a communication tool and as a tool for political campaigning, purposely for substantive policy discussions and partisan politics (Golbeck, Grimes, & Rogers, 2010; Gulati & Williams, 2007). While social media is found to be effective in accomplishing communication tasks that were once significantly more expensive in regard to time and money, what is less clear is what drive elected officials to use social media platform for a meaningful dialogue with their constituents? The increasing use of social media for interactivity necessitates a study into exploring what factors are likely to drive people to rely on these participatory tools particularly for political engagement.

ICT infrastructure is very expensive to implement. This is due to the cost of equipments and the expertise. This has not deterred developing countries to take the advantage of the benefits the social media technology offer in developed countries. For example, the Government of Ghana is currently implementing e-Ghana Project that is to assist the Government to leverage information and communication technology (ICT) to develop the IT Enabled Services industry which will contribute to improved efficiency and transparency of government functions through the use of e-government applications (www.ghana.gov.gh). Several other developing countries in Africa are implementing similar projects to enable fast internet connection. Social media has become a generalized technology, which has become one of the fastest adopted technologies in recent years (Golbeck, Grimes, & Rogers, 2010). Therefore, understanding the characteristics of elected officials who are likely to engage in the use of social media may help citizens, researchers and the media to understand and reach out to these elected officials.

Studies have shown that people use social media to do some business, meet people, express their culture or thoughts, or promote their work (Correa & Jeong, 2011). It is important to investigate the links between elected official's use of social media, their educational background, and nature of their constituencies to understand whether these factors are likely to drive them use this new technology. This paper explores what is likely to drive elected officials in the 6th Parliament of the Republic of Ghana (a country located in sub-Saharan Africa), to use Facebook? Using data on elected officials in the 6th parliament of Ghana and the 2012 General elections, this paper explore the relationship between elected official's adoption of Facebook, biodata, and the results from the 2012 general elections. It is important to pay attention and uncover the factors that facilitate the adoption of social media particularly among elected officials who need to be in constant touch with their constituents. The study expects majority of the legislators to adopt the use social because legislators in Ghana do not have offices where citizens from their constituents can meet them for policy discussion or issues bothering in their constituencies. It is expected that majority of the legislators adopt social media use so that they can be in constant touch with their constituents as do legislators in developed countries.

The rest of the paper proceeds as follows. The second section gives background to Ghana, the motivation for the study, and the theory underpinning the study. Due to limited studies on social

media use in developing countries, particularly countries in sub-Saharan Africa, the third section only review relevant studies on social media use among elected officials in developed countries. Section four discusses their search design and methodology. Section five presents the results and discussion on the analysis. Section six discusses the conclusion, the limitations, contributions of the study, and areas for future studies.

1.1. Background on Ghana

Ghana is a country located in sub-Saharan Africa and was the first to attain independence from the British colonial rule in 1957. Three years into independence, Ghana attained republic through her charismatic leader, Dr. Kwame Nkrumah in 1960. The first republic was overthrown in 1966. The second republic was established after the return to democratic system of government in 1969.

A military coup led by General Ignatius Kutu Acheampong overthrew the second republic in 1972. Series of coup happen within the military government until the third republic was established in 1979 under Dr. Hilla Limann. There was a military takeover in 1981 under Chairman Rawlings. Ghana ushered in the fourth republic in 1992 under the leadership of President Rawlings and the National Democratic Congress. The National Assembly (the parliament) started with 200 legislators. The National Assembly currently has 275 legislators from 275 constituencies.

1.2. Motivation for the Study

Ghana is one of the most stable governments in sub-Saharan Africa, after successfully organizing six presidential and parliamentary elections. Two different political parties have so far exchanged government leadership. These two parties have dominated the political landscape, making Ghana to establish its democracy as a two major democracy just like the United States and United Kingdom.

The parliament currently has 275 members of parliament (MP), representing 275 constituencies with a total population of over 25 million (WB, 2013). However, MPs do not have offices at the Parliament House. MPs neither have offices at their various constituencies. Few of the MPs use party offices at their constituencies as offices, where they sometimes meet citizens from their constituencies for discussion on issues pertaining to their electoral districts. Another sad side of the entire debate is that, the website of Ghana's Parliament (www.parliament.gh) has scanty information on MPs. Neither their postal address nor email and telephone numbers are available for contact. An important question is how do citizens meet and discuss issues relating to their constituencies with their MPs?

Second, among the several social media in use for effective interaction, Facebook emerged as the most widely patronized worldwide (Bertot, Jaeger & Grimes, 2010; Bertot, Jaeger, Munson & Glaisyer, 2010; Hargittai, 2008). Facebook has attained nearly universal diffusion, and it has become the most patronized social media network in the world (Huberman, Romero, 2009; Kavanaugh et al., 2012; Lazar & Jaeger, 2011). Due to its phenomenal growth, Facebook emerged as the largest and most widely used social media network in the world among other social media like Linked, MySpace and Google plus (Lipinski & Neddenriep, 2004; Pirolli, Preece & Shneiderman, 2010; Powell, Byrne & Dailey, 2010; Wentz & Lazar, 2011; Zhao & Rosson, 2008; Zhou, 2010). As of September 30, 2013, Facebook has 1.19 billion monthly active users, 874 million monthly active users who used Facebook on mobile products, and 727 million daily active users on average (Facebook, 2013).

Third, study by Pew Research Center indicates the growing level of online and social media use in developing countries, particularly Ghana. A recent study on Ghana indicates 77 people out of 100 people use social media once they are online (Pew Research center, 2013). Another study on Ghana indicates 79 people out of 100 people own Cell phones and smart phones and use internet (Pew Research center, 2013). These studies go to show how the use of internet and social media is on the rise in Ghana and the need to study its usage among elected officials is of great value, particularly for policy initiatives.

2. THEORETICAL FRAMEWORK AND CONCEPT

Diffusion of innovations theory is used to explain adoption of social media (Facebook) among elected officials in the 6th Parliament of the Republic of Ghana. Diffusion of innovation theory describes the mechanism through which new ideas, practices, or technologies spread into a social system (Rogers, 2003). The theory helps to explain the process of adoption of an innovation. Everett M. Rogers (2003) is the most prominent developer of diffusion of innovation theory in his book, *Diffusion of Innovations*, first published in 1962. Various academic disciplines, including communication, political science, anthropology, geography, sociology, marketing, public health, and economics have applied the diffusion of innovation theory (Rogers, 2004).

Rogers (2003) defined diffusion as “the process in which an innovation is communicated through certain channels over time among the members of a social system” (Rogers, 2003, p. 5). Thus, diffusion results in adoption, implementation, and institutionalization (Rogers, 2004). Individuals or organizations may adopt an innovation by reaching a decision to acquire the innovation. They may decide to implement the innovation where it is tested or practiced. The innovation adopted may be institutionalized where it is supported and incorporated into mainstream routines (Dusenbury& Hansen, 2004). Rogers (2003) further, defined an innovation as “an idea, practice, or object that is perceived as new by an individual or other unit of adoption” (p. 12). An example of innovation in the field of Public Administration includes e-government, e-participation, e-procurement and e-service. According to Rogers (2003), diffusion process is made up of the innovation, the communication channels, time, and the social system. Rogers (2003) notes that characteristics of the innovation, the communication channels, and the social system all have varying influences at different times in the diffusion process (Rogers, 2004).

This study adopts (Rogers, 2003) theory of innovation diffusion as the theoretical basis to analyze the factors that affect social media (Facebook) adoption among elected officials in the 6th Parliament of the Republic of Ghana. According to Rogers (2003), adoption decision is different from implementation decision and institutionalization. This study examines the adoption decision and implementation decision. Five different factors are identified that affect innovation adoption. These factors include innovation factors; individual factors; task factors; environmental factors; and organizational factors. These factors are further disintegrated into different traits or attributes with a total of 28 attributes. These factors in the diffusion of innovation theory represent independently. Rogers (2003), indicates that the dependent variable for examining the diffusion of innovation theory in any social system is the tendency to adopt an innovation.

3. LITERATURE REVIEW

Studies on social media use in developing countries are limited. The literature on social media has paid significant attention to developed countries (Gueorguieva, 2007; Gulati and Williams, 2007; Golbeck, Grimes, & Rogers, 2010; Lenhart and Fox, 2006; Sifry, 2006). This section examines the related literature on social media use in general as well as social media use related to elected officials, particularly in United States and other developed countries.

4. STUDIES RELATED TO SOCIAL MEDIA USE

The online presence of Congressional candidates in the United States of America increased in 2006. While 85% of those running for Senate had web presence in various forms, the House recorded 79% of online presence (Gulati and Williams, 2007). There was also increase in communications strategies by the various candidates running for House and Senate elections with the integration of web sites and SNS (Gulati and Williams, 2007). Consequently, the Republican Party and the Democratic Party launched their online tools for party organization, My GOP and Party builder respectively (Sifry, 2006). The use of blogs and other medium of online communication began to emerge among congressional candidates and later increased expeditiously (Gueorguieva, 2007; Lenhart and Fox, 2006). Congressional candidates were successful in using the web presence to promote participatory democracy and invigorate grassroots political organization. Various studies indicate that SNS became the participatory tool in the 2006 congressional elections in the US with Facebook as a social media most used by congressional candidates (Golbeck, Grimes, & Rogers, 2010). Boyd and Ellison (2007) note that Facebook.com became one of the most popular SNS in 2006 and studies related to its usage grow across diverse disciplines. Evidence suggests that the use of SNS for political discussions is on the

rise (Golbeck, Grimes, & Rogers, 2010). A recent survey by Pew Internet Research indicates that 73% of online adults now use SNS of some kind and 42% use more than one SNS (Meagan & Aaron, 2014). The report further indicates that Facebook remains the platform of choice for most adult users, though there is a high increase in the use of other social networking sites like Instagram and Pinterest (Meagan & Aaron, 2014). While there is growing increase in the use of SNS for political activities, many young adults now use SNS to get information about the Presidential and Congressional election campaign (Golbeck, Grimes, & Rogers, 2010).

Facebook was founded in 2004, with a mission to give people the power to share and make the world more open and connected (Facebook, 2013). Some studies suggest how Facebook is used for cooperative work, between individuals as well as organizations (Zhao & Rosson, 2008). Honey and Herring (2009) also explored the use of social media in communication, such as conversation between individuals as well as organizations. The findings suggest that the use of social is on the rise for communication both between individuals and organizations (Honey and Herring, 2009). Similarly, Zhao and Rosson (2009) also shed some lights on how social media is used in informal communication. The authors posit that the use of social media for informal communication has gain significant presence in recent decades (Zhao and Rosson, 2009). Social media is also used in marketing, information sharing/broadcasting of events, including academic conferences and emergency response situations. (Guerguieva, 2007; Huberman, Romero & Wu, 2009).

Some studies have analyzed the use of social media and online services with user-generated content using Twitter, Facebook, Flickr, and YouTube. In their seminal work on understanding social media use by government officials, Kavanaugh et al. (2012) look primarily at how Government officials seek to use social media as resources to improve services and communication with citizens. The authors used findings from an exploratory study based on 25 participants in the form of focus group interviews and participant questionnaires. They collected official posts and comments from Facebook page, Twitter feeds, and YouTube videos. Different Twitter analytical tools were used together with semantic analysis of the data to identify popular topics that were characterized by followers of the various profile data. The authors conclude that people use social media, particularly Facebook, Twitter, and YouTube to discuss daily activities, and seek, and share information (Kavanaugh et al., 2012). A previous study conducted a similar study of social media use (Huberman, Romero, and Wu, 2009). The authors find similar results that communication between people in social media takes place on daily activities to seek and disseminate information (Huberman, Romero, and Wu, 2009).

In Golbeck, Grimes, and Rogers (2010), the authors presented extensive study on Twitter use by the US Congress by using the content posted to Twitter by members of the U.S. Congress. The authors coded tweets by elected officials based on Informational, Locations and Activities, Official Business, External Communication, Internal Communication, Personal Message, Request for Action, and Fundraising (Golbeck, Grimes, and Rogers, 2010). The study focused on the content of posts by legislators. The authors found that informational posts account for more than half of all posts. Furthermore, majority of the posts have links on what the elected official shares. Locations and Activities posts were 27%, which entails the daily activities of the Congressperson outside the legislature.

Golbeck, Grimes, and Rogers (2010) found “Twitter does indeed provide a forum in which direct communication between Congress people and their constituents” (p. 1620). Additionally, elected officials use Twitter fundamentally for outreach, not for improving transparency. Thus, the content of the tweets have little to do with the insight into congressional activities as well as to improve governmental transparency. The tweets do not educate the readers on legislation or issues of legislative activities, but rather new information about their activities that seems to improve their image. The authors conclude that Twitter forum is not used for Congressional communication but rather outreach programs by Congress people (Golbeck, Grimes, and Rogers, 2010).

In their research on micro blogging using Twitter, Honey and Herring (2009), investigate conversation in the form of tweets by users. The authors conducted a content analysis on more than 200 tweets over different periods of time. The authors created 12 different open coding in order to understand the central issue in conversation. Among the categories used were about meta

commentary, addresses, information for others, announce/advertise, exhort, information for self, media use, opinion, solicit information, other's experience, and self-experience (Honey and Herring, 2009). The authors conclude that members of Congress use social media for different variety of activities, including communication with their constituents on new development in Congress as well as solicit support for the various legislations that they give their full support (Honey and Herring, 2009).

Studies have shown that Twitter and social media are new technological options by which members of elected officials communicate with constituents (Bertot, Jaeger & Grimes, 2010; Bertot, Jaeger, Munson & Glaisyer, 2010; Gulati & Williams, 2007). Some studies focused on Congressional communication, that is, how members of US Congress communicate, interact, connect, and engage with citizens, constituents, and the general public (Lipinski & Neddenriep, 2004). Golbeck, Grimes, and Rogers (2010) provide some insight on the study of Congressional communication. According to the authors, Congressional communication should focus on studying the Congressperson as elected official serving his constituent and not as a political candidate running for office. Lipinski and Neddenriep (2004) detail the various means by which Congressional communication takes place. These methods include personal appearances, television, radio, postal mail, newspaper, e-mail, and Web sites (Lipinski & Neddenriep, 2004). The two major categories are mediated methods, which include television, radio, and newspapers. The other method is directed methods which includes personal appearances, postal mail, e-mail, and Web sites (Lipinski & Neddenriep, 2004). The authors' note that due to inconsistencies and bias in media coverage for politicians, mediated methods should be avoided (Lipinski & Neddenriep, 2004). As a result, the authors advise scholars to focus on direct methods to study how legislators communicate with their constituents (Lipinski & Neddenriep, 2004).

Lipinski and Neddenriep (2004) note that there was difficulty in undertaking studies on Congressional communications due to gaining access to data, but Internet has revolutionized and changed this trend. Consequently, the use of Internet for Congressional communication is of much value. Studies on Congressional communication focused on a specific medium of communication. While some studies focused on the interviews, surveys, and focus group discussions from congressional staffs to understand how Congress communicate to their constituents, others adopt specific media as a method to understand how congress communicate with their constituents (Golbeck, Grimes, and Rogers, 2010). Through content analysis, some scholars use Web sites owned by legislators to study how legislators communicate with their constituents (Kavanaugh et al., 2012). Studies indicate that 90% of all the communications between Congress and citizens or constituent is via electronic method (Golbeck, Grimes, and Rogers, 2010). For this reason, the growth in Facebook popularity and the question on how legislators use it to communicate with citizens and constituents should be important for scholarly research (Golbeck, Grimes, and Rogers, 2010). Social media has become a major source for learning, interaction, and communication with business, family and friends, and legislators should be no exception to this current trend of information sharing. The use of social media among elected officials, particularly those in developed countries is on the rise, particularly in the advent of smart phones and other devices like tablets and PDAs.

4.1. Social Media Adoption Among Elected Officials

There are extant literatures on the characteristics of social media adopters, the period of adoption and the extent of adoption for both individuals and organizations (Fichman, 1992; Frambach & Schillewaert, 2002). There are various factors that influence the adoption decision and implementation decision and paramount to this is the adopter characteristics (Gulati and Williams, 2007; Gulati and Williams, 2012; Gulati and Williams, 2013). Other adoption decision depends on the characteristics of the innovation or the technology, including ease of use and the cost involved (Gulati and Williams, 2013).

The constituency attributes, such as the size and support base of the political party explain adoption and use of website (Chadwick, 2006; Klotz, 2004). Constituency attributes is found to correlate with citizen's access to internet and the use of services (Mossberger, Tolbert, & Stansbury, 2003). Constituency demographics are found to influence candidates' Internet and social media use (Hernnson, Stokes-Brown, & Hindman, 2007). Conversely, an analysis of constituency demographics also indicates that constituencies with open-seat candidates and strong

challengers were non adopters of social media (Gulati & Williams, 2011). Elected officials with limited funding or poorly funded candidates in legislative elections are non adopters (Gulati & Williams, 2011). An earlier study by Tornatzky and Klein (1982) on diffusion of innovation suggests that constituency characteristics should enable candidates to adopt new technologies because it is compatible with existing norms and customers or users. Various studies on diffusion of innovation have examined a variety of adopter characteristics, including level of education of the adopter, the size of the constituency, the competitive nature of election in the constituency and money (Gatignon & Robertson, 1985). Money is found to increase early adoption decisions of legislators (Gatignon & Robertson, 1985). Legislators that are non incumbent with fewer financial resources are found to have higher risks in adopting new technologies (Martinez, Polo, & Flavia n, 1998). Important to this study is the level of education of the individual legislator. Education is found to influence the perception about the use of technology, and social media is no exclusion (Kondouri, Nauges, & Tzouvelekas, 2004). As the level of education of the individual increases, the higher the diffusion of an innovation accelerates, and knowledge barriers diminish (Attewell, 1992).

5. THE USE OF SOCIAL MEDIA IN SUB-SAHARAN AFRICA

Studies examining the use of social media in sub-Saharan Africa are limited; however, there are seminal work on how citizens use social media to communicate during crises and how social media is used for teaching and learning (Bosch, 2009; Mäkinen and Kuira, 2008). For example as at 2012, 2 million of Kenya's population of 40 million uses Facebook to communicate (Internet World Statistics, 2013).

In their seminal work on the use of social media in crisis in Kenya, Mäkinen and Kuira (2008) found that social media was used as an alternative medium of communication for citizen before, during, and after the crisis in the 2007 Kenyan presidential election. Their findings demonstrate the pace at which social media is used as a medium of communication in Kenya (Mäkinen and Kuira, 2008). In studies on the use of Facebook among South African college students, Bosch (2009) found that the use of Facebook in teaching and learning at the University of Cape Town is very beneficial to both teachers and students. As indicated earlier in this study, the awareness of social media use is on the rise particularly with the introduction of portable devices such as smart phones and tablets (Pew Research center, 2013). This is evident in the survey conducted by Pew Research Center on Ghana (Pew Research center, 2013). This is an indication of the adoption and use of social media by the people living in Ghana and sub-Saharan Africa.

While there are studies on how legislators in developed countries like UK and US use social media particularly Facebook and Twitter to communicate with citizens and their constituents, no previous study has presented a framework for understanding communication between legislators, citizens, and constituents in developing countries particularly those in sub-Saharan Africa. Rather than focusing on social media use (Mäkinen and Kuira, 2008) or for teaching and learning for college students (Bosch, 2009), this paper specifically look at the adoption of Facebook by legislators. The use of Facebook in communication is on the rise, with 1.19 billion monthly active users, it is relevant to study how legislators in developing countries, in Africa are adopting to this new trend of technology. In this study, we look at how elected officials in Ghana adopt Facebook. This study does not focus on the content of what they post and the followers that they communicate with.

6. RESEARCH QUESTION AND HYPOTHESES

Studies related to social media use among elected officials indicate that elected officials use social media to communicate with constituents (Gulati and Williams, 2007; Gulati and Williams, 2013). More importantly, highly educated people have comparative advantage with respect to the adoption and implementation of new technologies (Bartel & Lichtenberg, 1987). The issue that is of interest to this study is adoption and utilization of Facebook in the context of elected officials in Ghana's parliament. Three basic issues in previous studies helped frame the research question in this study. First, Facebook, Twitter and social media in general are new technological options by which members of elected officials communicate with constituents (Bertot, Jaeger & Grimes, 2010; Bertot, Jaeger, Munson & Glaisyer, 2010; Gulati & Williams, 2007). Second, level of

education has comparative advantage in the adoption of new technology. Third, communication takes place between elected officials and constituents daily through the use of social media (Huberman, Romero, and Wu, 2009).

Based on some of the previous studies on social media use by elected officials in developed countries (Golbeck, Grimes, & Rogers, 2010; Gueorguieva, 2007; Lenhart and Fox, 2006; Gulati and Williams, 2007; Gulati and Williams, 2013; Meagan & Aaron, 2014; Sifry, 2006; Zhao & Rosson, 2008), the research question is formulated based on the diffusion of innovation theory developed by Rogers (2003). The research question in this study is what factors affect the adoption and utilization of Facebook among elected officials? To examine this question, the study uses individual factors (level of education) and environmental factors (noncompetitive of the constituency) as the independent variables to examine the dependent variables: the propensity to adopt Facebook and Facebook utilization. Four hypotheses are used to examine the research question. Hypotheses one and two examine the Facebook adoption among elected officials, using the individual characteristics and environmental characteristics (Rogers, 20013). Based on previous studies, the study arrives at these hypotheses:

H1 –Level of education is positively associated with Facebook adoption

H2 –Noncompetitive parliamentary seat (constituencies with party strongholds) is positively associated with Facebook adoption

H3 –Level of education is positively associated with Facebook utilization

H4 –Noncompetitive parliamentary seat (constituencies with party strongholds) is positively associated with Facebook utilization.

A study has shown that rejection to adopt an innovation is not the opposite of adoption; this is because a different set of factors might be the cause or the impact of this rejection (Gatignon& Robertson, 1989).

7. RESEARCH DESIGN AND METHODS

7.1. Data

A total of 275 elected officials in the 6th Parliament of Ghana were identified. The 2012 election roster from Electoral Commission of Ghana (EC) and the website of Parliament of Ghana (www.parliament.gh) were used to collect the biodata of the elected officials and the demographics of their constituencies. Where there are differences in the name or the electoral constituency, the study uses the roster from Electoral Commission for the 2012 general elections. To identify an elected official who had their own Facebook page, I entered the elected official's name as it appears on the electoral roster from EC into Facebook's internal search engine. The search process started on December 15, 2013 and ended on December 30, 2014.

Since the two dependent variables (Facebook adoption and Facebook utilization) are binary categorical variables, the use of ordinary least squares (OLS) would result in biased, inefficient and inconsistent parameter estimates (Long & Freese, 2006). The dependent variable in the first model, Facebook Adoption, was coded "1" if the elected official had a Facebook page for a campaign or personal profile and coded "0" if the elected official did not have a page or a personal profile. This study does not take into consideration whether the elected official manages the Facebook page himself or not. The interest of this study lies on the elected official having Facebook page. Some of the elected officials have campaign pages. Five of the elected officials have their own personal websites which they also use as their campaign websites.

Two independent variables are of interest in this study, individual or personal characteristic (the elected official) and environmental characteristic (the constituency of the elected official - electoral factor). The electoral factor variable is an indicator of noncompetitive nature of the parliamentary seat of the constituency where the elected official hails. In other words, a constituency is regarded as noncompetitive if it is regarded as a stronghold of any of the political parties. Since there are no leading parliamentary election forecasters in Ghana as we do have in United States and other developed countries, the study uses previous trend of voting in both presidential and parliamentary elections to measure this variable. Noncompetitive constituency was coded as "1" if the two previous general elections (parliamentary and presidential) were won

by the same political party that won the 2012 parliamentary and presidential elections or “0” otherwise. The second independent variable is level of education that measure personal characteristic of the elected official. Level of education is coded as “1” if the elected official had Masters or Ph.D. or “0” otherwise. The study does not consider certificates such as ACCA, CIMA or postgraduate certificates as second degrees.

The study uses six control variables. First, the study controls for gender. Gender is coded as “1” if the elected official is a male and “0” if a female. Ghana had six successful elections in the fourth republic and two political parties have emerged as the two dominant parties. These political parties have wrestled power from each other. The contest between these two parties is very high. It is difficult to predict which party will emerge as a winning party in the presidential election. Out of the six elections organized, three were decided through a run-off. This indicates the competitive nature of elections in Ghana. For the above reason, it is important to critically control the electoral factor in the various constituencies since they will greatly impact on the individual legislators. Political Party affiliation is coded as “1” if the elected official is from the ruling party (NDC) and “0” otherwise. Age represents a key personal attribute that is shown to be related to non-adoption of technology (Wei, 2001). The age of each elected official is calculated using their date of birth as indicated on their biodata on the parliament website (www.parliament.gh). Where mistake is identified, or the date of birth was not indicated, it is left blank. For example, an elected official was indicated to have 2013 as a date of birth that is incorrect and was excluded. After searching through multiple sources, the year of birth for 21 of the elected officials could not be obtained.

Elected official vote indicates the percentage of the vote obtained by the elected official in the 2012 parliamentary election. Party of Presidential candidate who won the presidential election in the constituency was coded as “1” if it is the ruling party that won the presidential vote in that constituency or “0” otherwise. Vote of President is the percent of the vote obtained by the political party that won the presidential election in that constituency. Non incumbent is coded as “1” if the elected official is a non incumbent (first term in parliament) or “0” if the elected official is an incumbent. According to Gulati and Williams (2011), constituency demographic variables no longer explain adoption of social media but are still relevant. The second model excluded non Facebook adopters (Model 2). The independent variable in this model measures the activity of the elected official. Active on Facebook is coded as “1” if the elected official made any comment or replies any comment on his wall for the past three months prior to data collection of the study. The content of the post is not relevant to this study. For an elected official to be considered active, he or she might have made comment or reply comment on his or her wall between September and December. Out of a total of 88 elected officials found to have adopted Facebook, only 26 (29.55%) were active or had comment or reply comment on their walls.

8. METHODOLOGY

Logistic regression model was used to estimate the independent variables on the dependent variables. This explains what factors influence MPs to adopt Facebook as at December 2013 to communicate with constituents, colleagues, friends or family members. Logistic regression is adopted over ordinary least square regression in this study because the dependent variables are binary. Consequently, logistic cumulative distribution function is most commonly used in nonlinear functions that produce values between zero and one. As a result, logistic regression is the appropriate methodology to analyze a binary dependent variable. The analysis was conducted in Stata statistical software.

9. DIAGNOSTICS

To alleviate any possible impact of any anomaly, the study checks for correlation, multicollinearity, and heteroskedasticity between the variables. The result indicates that there is no correlation between the dependent and independent variables. To test for multicollinearity, Variance inflation factor (VIF) test was run. The result indicates that a high degree of multicollinearity was not present. The Breusch-Pagan/Cook-Weisberg test for heteroskedasticity was performed. The results indicate that a heteroskedasticity was not present.

10. RESULTS

Analysis of the data reveals that 88 of the 275 (32%) of elected officials in the 6th Parliament of the Republic of Ghana adopted Facebook as at December 2013. It also reveals that 26 of the 88 (29.55%) who adopted Facebook also utilizes it. This is an indication that Facebook adoption and utilization are slow among elected officials in Ghana. The prediction of Facebook adoption from the model is 92 percent and Facebook utilization is 90 percent.

Findings are summarized in order of hypotheses. The first hypothesis predicted a positive relationship between Facebook adoption and level of education. The result in table 1 confirms there is a positive relationship between the level of education and Facebook adoption which is significant at 0.01 levels.

Table1. Results of Regressions of Facebook Adoption among Elected officials in the 6th Parliament of the Republic of Ghana

Independent variables	Dependent variables	
	Model 1 (Facebook Adoption)	Model 2 (Facebook utilization)
Level of Education	0.761** (0.308)	0.370 (0.682)
Noncompetitive seat	1.374* (0.642)	-3.399 (1.816)
Gender	-0.331 (0.437)	-0.292 (0.912)
Political Party	-0.397 (0.513)	-3.254** (1.230)
Age	-0.047** (0.018)	-0.002 (0.038)
Vote of Elected Official	0.072* (0.03)	0.033 (0.071)
Party of President	0.474 (0.533)	3.531** (1.325)
Vote of President	-0.074** (0.03)	-0.024 (0.072)
Nonincumbent Seat	-0.345 (0.302)	0.115 (0.657)
Intercept	0.614 (1.301)	1.483 (3.064)
Summary Statistics		
N	275	88
N correctly predicted	253	80
Percent correctly predicted	92.00	90.91
Log likelihood	-145.508	-38.591
Pseudo R2	0.078	0.196

These regressions were estimated using the data on Facebook Adoption of Lawmakers in Ghana. Standard errors are giving in parentheses under unstandardized logistic coefficients. The individual unstandardized logistic coefficient is statistically significant at the *5% level or **1% level.

The result in table 2 indicates the predicted probability change from both models (Facebook adoption and Facebook utilization). The results indicate that, holding all other variables constant at their means, elected officials with level of education (second degree) have probability of 12.9% percentage points higher of adopting Facebook than elected officials without second degrees.

The second hypothesis posited a positive relationship between Facebook adoption and noncompetitive seat (constituencies with party strongholds). As expected, the variable obtained a positive coefficient (1.374). This indicates a positive association between elected officials from party strongholds and adoption of Facebook, significant at 0.05 levels. The results in table 2 indicate that, holding all other variables constant at their means, elected officials from constituencies that are noncompetitive (party strongholds) have probability of 17.2% percentage points higher of adopting Facebook than elected officials from competitive seat constituencies

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(open-seat). Three control variables were also significant. Age and percent of the vote of the presidential candidate are significant at 0.01 levels but are negatively related to Facebook adoption. The vote of elected official also significant at 0.05 levels and is positively related to Facebook adoption (coefficient of 0.072).

Table2. Predicted independent variables on dependent variables

Independent variables	Dependent variables	
	Facebook Adoption	Facebook utilization
Level of Education	0.129	0.071
Noncompetitive seat	0.172	-0.665
Gender	-0.062	-0.060
Political Party	-0.070	-0.586
Age	-0.007	0.000
Vote of Elected Official	0.000	0.002
Party of President	0.082	0.603
Vote of President	-0.002	-0.006
Nonincumbent Seat	-0.061	0.023
Intercept	0.129	0.071

The third hypothesis which had predicted a positive relationship between the level of education and Facebook utilization (frequent use of Facebook) received partial support. It failed to rise to the level of statistically significant but is positively associated with Facebook utilization. Holding all other variables constant at their means, level of education (second degree) have probability of 7.1% percentage points higher of utilizing Facebook than elected officials with no second degrees.

The fourth hypothesis, predicting a positive relationship between noncompetitive seat and Facebook utilization also received no support (not statistically significant and also negatively related). Holding all other variables constant at their means, elected officials from constituencies that are noncompetitive (party strongholds) have probability of 66.5% percentage points lower of utilizing Facebook than elected officials from competitive seat constituencies (open-seat). However, two control variables were statistically significant. Party affiliation of the elected official and party affiliation of the presidential candidate are both statistically significant at 0.01 levels. While party affiliation of elected official is positively related to Facebook utilization, party of the presidential candidate is negatively related Facebook utilization.

The findings suggest that overall, elected officials are likely to adopt social media (Facebook) but less likely to utilize it (use it frequently) to send information to the general public or engage the general public in discussion.

11. DISCUSSION

This study proposed and examined an integrated approach to understanding how elected officials in the 6th Parliament of the Republic of Ghana adopt and utilize Facebook. Drawing upon data from the 275 elected officials, the study finds that level of education of the elected official and noncompetitive nature of the constituency all plays a part in Facebook adoption. However, these factors do not play any part on utilization outcomes. The Facebook adoption (32%) and Facebook utilization (29.55%) indicates the low rate of diffusion innovation of technology among elected officials in the 6th Parliament of the Republic of Ghana.

This study used diffusion of innovations theory to understand social media adoption among elected officials in Ghana. The findings underscore that education plays an important role in technology adoption among elected official in Ghana. This study confirms similar study by Kondouri, Nauges, and Tzouvelekas (2004). Highly educated people tend to adopt new technologies faster than those with less education. Elected officials who are highly educated tend to adopt social media because they understand its usefulness. However, using the adopted technology is different and has no association with level of education and noncompetitive nature of the constituency. Adopting Facebook varies from utilizing it to communicate with colleagues, constituents, friends and families. As knowledge accelerates, diffusion of innovation also accelerates. Alternatively, elected officials with second degree might have used social media during their studies which they might have found very useful and interesting. They get exposure

to the use of social media and will, therefore adopt it. Thus, education increases the probability of using information communication technology; hence, the adoption of social media and elected officials with more education has the likelihood of adopting social media than those with less education. However, education does not influence the elected official to use social media frequently. The revelation could mean that formal education increases the adoption of new technologies.

Constituencies with strong partisan support also influence how elected officials adopt Facebook. The adoption of social media by elected officials from constituencies with strong partisan support is an indication to keep in touch with the mass support they have back in their constituencies. This could also impact on maintaining their support base in subsequent elections by making the constituency much stronger for the political party. As at the December 2013, elected officials do not have offices, both at their constituencies and the Parliament House. So the issue of how the general public communicates with their representatives is very difficult. Adopting social media will increase the chances of the elected official keeping in touch with the many supporters.

12. CONCLUSION

This study advances the literature on the factors affecting adoption of new technology among politicians by exploring the relationship between social media adoption and level of education and competitive nature of the constituency among elected officials. This study focuses on Facebook adoption and utilization. Social media is a concept on the ways in which Internet users connect, interact and communicate with others through applications including social networking sites (SNS), instant messaging, video chatting, and video sharing. The study examines how individual and environmental factors relate to Facebook adoption.

Overall, the findings in this study suggest that, level of education and noncompetitive electoral constituencies have a positive relationship with Facebook adoption among Ghanaian MPs. However, the model in this study does not support Facebook utilization among Ghanaian MPs. Findings in this study are consistent with previous studies into social media such as blogs and Facebook (Amichai-Hamburger & Vinitzky, 2010; Guadagno et al., 2008; Ross et al., 2009).

13. LIMITATIONS AND DIRECTION FOR FUTURE STUDIES

The study has some limitations. First, the study focuses on the 6th Parliament of the fourth Republic. Using all the sessions (from first to sixth) to undertake similar study is more comprehensive and necessary to understand the trends in social media adoption and utilization. Second, undertaking qualitative study to the contents posts and the general activities of the MPs on social media is relevant for good analysis. Third, this study is limited to only Ghana and the need to undertake similar study in other sub-Saharan Africa is necessary. Fourth, the study uses two of the three levels of diffusion of innovation: adoption, implementation, and institutionalization (Rogers, 2003). A study into institutionalization of social media is necessary to understand the trends in the use of social media in various public institutions.

The results in this study carry important broader theoretical implications. It contributes to broad literatures on technology adoption among elected officials. The study uncovers the factors that are likely to drive elected officials to adopt a technology such as social media, particularly politicians in sub-Saharan Africa. Overall, the study contributes to understanding the category of politicians willing to adopt social media and likely to adopt new technology.

There are also practical implications for both politicians and the general public; particularly the youth that uses social media to connect. The low percentage of adopters and users indicate that elected officials in sub-Saharan Africa have a long way to go particularly in the adoption of new technology such as Social media. Social media, particularly Facebook has attained nearly universal diffusion, and it has become the most patronized social media network in the world. Elected officials should be encouraged to take advantage of the new opportunity social media offers and use it to connect with constituents. The use of social media such as Facebook is cheaper and convenience to carry information across to many audiences. For the general public, this study does not recognize social media, particularly Facebook as an effective medium of having fruitful dialogue for policy discussion with elected officials due to the low adoption. Alternatively, those who adopt it do not utilize it for effective dialogue. Constituents should

therefore, look elsewhere for effective dialogue with elected officials to resolve pressing challenges that confront them.

This study is one of its kinds that examine social media adoption and utilization in sub-Saharan Africa among elected officials. Future researchers should focus on other countries in sub-Saharan Africa to examine whether a similar trend exists. This study only examines two of the three stages of innovation: adoption and implementation. Future researchers should focus on the institutionalization of the innovation of social media, particularly within the various branches of government such as the legislature, the judiciary and the executive.

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