

Adoption of ICTs for Service Delivery Improvement by Local Governments in Uganda: Communication Tools

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1

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Abstract

Provision of public goods and services to the communities remains the mandate of governments, which in most developed and emerging economies has been decentralized to local governments. Guided by the assumption that Information Communication Technologies (ICTs) creates faster communication which enables local governments to serve the communities better; this paper examines how local governments in Uganda have adopted the use of Information Communication Technologies (ICTs) especially emails and telephones as communication tools in their day to day operations. Three districts in Eastern Uganda were selected for this study. Cross-sectional design was used employing mixed methods for data collection. Quantitative data was collected from 225 respondents, while qualitative data was obtained from 5 key informants. The results revealed that very few respondents used emails for communication, slightly a bigger number used telephones and the majority used face to face discussions ? informal meetings, formal meetings and memos to communicate. In the concluding remarks, the paper point out the challenges faced by local governments in an attempt to adopt ICTs and also suggests some remedies to enhance the ICTs adoption.

Index terms— adoption, information communication technologies (ICTs), local governments, eastern uganda.

1 Introduction

he provision of public goods to the communities has remained an issue of concern to scholars and policy makers worldwide (Díaz-Cayeros, Magaloni, & Ruiz-Euler, 2014:2). The state is the main actor when it comes to the delivery of public goods ??Kamei, Putterman, & Tyran, 2015:40) and both developed and developing nations have adopted the use of Information Communication Technologies (ICTs) as a communication mechanism through which communities are best served as this creates more efficiency and effectiveness in coordinating the day to day operations ??Cordella, & Tempini, 2015:280). ??arrett, Davidson, Prabhu and Vargo (2015:136) agree that the ICT tools have led to improved productivity and efficiency in service delivery and also points out that many of the service innovations have cropped up due to the widespread use of ICTs. ??atautis (2015:18) mentions the use of ITCs in local governments as improvement of public policy and transformation of relationships with citizens, business and other public institutions, and also to facilitate the process of decision making. Similarly, the use of ICTs is believed to make the markets function more efficiently and contribute to economic growth which would not have been achieved if the traditional methods were used ??Stork, Calandro & Gillwald, 2013:34). However, in their paper Connected for Development? Theory and evidence about the impact of Internet technologies on poverty alleviation, ??alperin and Fernanda (2017:10) argue that full productivity impact for ICTs may delay to materialize particularly in developing countries due to threshold effects that may delay productivity returns on these technology investments.

ICTs can be defined as computers, hardware, electronic equipments and applications that help people to access, retrieve, process and exchange information and at times are referred to as e-business or e-government (Wang, Hsu,

3 B) ADOPTION OF ICTS: REGIONAL CONTEXT

Reeves, & Coster, 2014:102; Cirera, Lage, & Sabetti, 2016:6). ICTs also enable social networking functions and communications among individuals or groups of people. The Economic commission for Africa has emphasized that the ability to access and use information is no longer a luxury but a necessity for development in a rapidly changing world and to achieve this ICTs need to be involved (Adomi & Kpangban, 2010:1). According to Kayisire and Wei (2016:1) the growth and use of ICT adoption and usage in Africa in the last two decades has been unprecedented and mobile phones are increasingly becoming more affordable and being used as a platform for internet accessibility. Turk, Calandro & Gillwald (2013:14) agree that mobile telephones are increasingly becoming entry point for internet usage and adoption in African continent.

Despite the increasing ray of hope for adoption of ICTs in developing economies, there is scanty literature on how local governments in Uganda have shown trends to embrace ICTs. This paper selected telephone and emails as the most used ICTs (Venkatesh, Croteau & Rabah, 2014:111) for communication and tries to establish their adoption by local governments in Uganda in conjunction with the traditional methods of communication which include

In the next sections of the paper, we provide general literature relating to the adoption and usage of ICTs at global and regional levels and lastly pick scholarly information on how Uganda as a country has endeavored to adopt ICTs as communication tools.

2 a) Global literature for adoption trends of ICTs

Information communication Technologies (ICTs) play a vital role in the revolution aimed at transformation of the global economies leading to socio-economic development (Russell & Steele, 2013:1; Maumbe & Okello, 2013:114). In the American context, 83.6% of the local governments had websites in the year 2000, which grew to 87.7% by 2002 and even those without websites had plans to acquire (Norris & Moon, 2005:68). By the year 2012, global average of mobile subscriptions was at 88.5% with Korea and Netherlands being on the lead, Singapore and Kazakhstan were close behind followed by United Kingdom and United States of America, with Africa having only 26.7% of the subscription (Aquaro, 2012).

In the study conducted in 2012 to assess the world leaders in adoption of ICTs, of the 20 countries which emerged winners, none was from African continent (

, 2017:201). The results of the comparative study undertaken by Ianguang and Jianming (2015:39) indicated that there remains significant variation in the extent of informatization development with China and other countries and trailed by Africa.

While studying internet usage by local government employees in Southern California, Ling and Grant (2005:10) established that 97% of employees had internet in their offices and 99% reported using their emails for office work and other personal work. These results showed very high adoption of ICTs by developed economies. Aware of the fact that the use of ICTs in client-administration would reduce corruption levels by limiting direct contact and permitting reconstruction of all communication records (Szopi?ski, et al., 2017:199), it is therefore imperative that the reasons for low adoption of ICTs by developed nations with all the resources to invest for these technologies needs to be investigated (Jancsics, 2013:320)

3 b) Adoption of ICTs: Regional context

In a bid for developing countries to achieve millennium development goals, the notion of ICTs was introduced around 1980s; it progressed through radio, television, internet and mobile technologies centered on political, social, natural, physical, human and financial aspects (Russell & Steele, 2013:1). Mosweu, Bwalya, & Mutshewa (2017:97) revealed that technophobia, negative attitudes to system use, perceived system complexity and incompatibility with existing information systems as key factors contributing to low adoption and usage of the system in African context.

Understanding it from the Zambian perspective; Bwalya (2017:2) listed factors such as lack of required infrastructure, low ICT literacy rates, cultural beliefs and low economic development to be hindering adoption of ICTs. Ankole and Bankole (2017:501) while drawing conclusions to their study pointed out that; ICT innovations require socio-cultural conditions for adoption, initiation and implementation.

Despite all these challenges, it is interesting to note that the adoption of ICTs in Africa especially the mobile communication technology is growing at a faster rate and by the year 2012, about 650 million subscriptions were registered and this represented a figure more than that of USA or UK, this finding show that Africa is the fastest growing region in terms of mobile communications connectivity and adoption (Kayisire & Wei, 2016:1).

Akoh and Ahiabenu (2012:349) revealed how monitoring of specific and important aspects of elections was conducted using social media tools and ICT applications in 10 African countries which include; Ghana, Côte d'Ivoire, Guinea, Mauritania, Malawi, Mozambique, Namibia, Botswana, Togo and Niger. To date, traditional election coverage, online election reporting on the Africa continent has been experiencing growth in recent years.

Adomi and Kpangban (2010:5) observed that the usage and adoption of ICTs in secondary schools of Nigeria has a positive impact on teaching, learning and research and further notes that efforts to integrate ICT into the secondary school systems have not yielded fruits due to poor project implementation policies and limited information infrastructure. Ogbomo (2009:2) had already noted that illiteracy was a big barrier to adoption of ICT in Nigeria.

In their paper; Uses of Information and Communication Technology (ICT) in agriculture and rural development in sub-Saharan Africa; ??aumba and Okello (2013:114) indicates how the government of South Africa in 2001 after getting frustrated by poor service delivery, adopted the use of e-government as a means of mending the interaction gap with the citizens. Similarly, in the year 2007, Kenya adopted the use of e-government as part of civil service reform through which the citizens could access services effectively and efficiently.

In Egypt, there is e-readiness where all the citizens access the benefits and opportunities created by ICTs and appropriate communication infrastructure has been developed to enable this public access. Some of the ICT services in Egypt include e-learning, e-health, e-government, e-business, e-culture and e-export ??Gebba & Zakaria, 2015:13 It is worthy to note that the adoption of ICTs in African countries varies from country to country which is also based on societal structures, and a case in point is the use of robots to control traffic in the city of Kinshasa by the police department, yet this has not been adopted by cities of Democratic Republic of Congo's neighbors such as Nairobi or Kampala ??Bhattacharya, 2015:82).

4 c) Adoption of ICTs in Uganda: Selected practical examples

The study focused on local governments because it is the institution Government of Uganda has chosen to implement most of the government programmes in the bid to bring services nearer to the citizens. In that respects the findings on how the local governments adopt ICTs, could largely represent the extent of adoption of ICT in Uganda for improvement of service delivery. Our respondents were district public servants responsible for service delivery, and district and sub county political leaders with the mandate to monitor government programmes and offer oversight to the technical staff. These groups were appropriate for the study. The study focused on adoption of ICTs by the local governments where the district and sub county technical staff and political leaders were the respondents, which is one side of the coin in service delivery assessment. The perspective of the masses on ICTs adoption particularly for demanding services and mobilizing for development should be investigated.

Like any other developing country in Africa, Uganda is not spared from ICTs adoption problems and challenges such as low level of ICT literacy, low infrastructure, cultural and socio-economic problems. Nevertheless, ICTs are currently used and adopted in Uganda in the fields such as electoral process, prevention of violence, agricultural sector in the rural areas, commerce and trade, education, health, e-government among others ?? There is light under the tunnel for ICT usage and adoption in Uganda because the National Information Technology Authority (NITA)-Uganda was established by the Act of Parliament with the mandate with the main objective of putting in place ICT policies, strategies and initiatives (NITA-Uganda, 2010:1). NITA-Uganda has also created District Information Business Centers (DBICs) and District Web Portals (DWPs) in about all districts in Uganda. These national ICT policies also reflect the Uganda government desire to adopt ICT systems for national development and also addressing the earlier assertions that Africa is "a technological desert" due to low technology use and adoption (Charles, & Yoshida, 2016:2; Rorissa & Demissie, 2010:161).

Uganda with over 80% of her population being dependant on agriculture, experts have used ICT to create a platform through which scientists and students at the universities can share information with the smallholder farmers in the rural communities, and this enhances development ??Mirembe, Obaa, & Ebanyat, 2016:15). The study findings further indicated that the most preferred ICTs were mobile telephones, computers and internet at 40.5%, 21.3% and 20.1% respectively. Similarly, ICT usage was high in peri-urban compared with the rural population though with very insignificant difference. ??artin and Abbott (2011:19) found that the rural farmers in Kamuli district, which were funded by Volunteer Efforts for Development Concerns (VEDCO) relied highly on the usage of mobile phones for agricultural extension services.

According to Charles and Yoshida (2016:2) the usage of ICT in Uganda's health system dates back to the year 1998 or during the introduction of the mobile telephones and was adopted by the Ministry of Health in 2012 to be used by health practitioners. Kivunike, Ekenberg, Danielson and Tusubira (2009:6) observed that in the rural communities of Uganda, ICTs have been taken as quality of life indicator because it can be used to obtain information on good health practices, contact a doctor, be able to know where the drugs are and at what cost. Abandu and Kivunike (2017:122) add that the use of mobile phones (e-health) facilitates the sharing of health information and collection of patient data among others; they further suggest mobile phones be used in Uganda to mobilize mothers for immunization and other health services.

In education sector, ICT is being used in both primary and secondary level by the learners. This has been taken to the university levels such as the Uganda Technology and Management University, which developed monitoring and evaluation blended-learning model which uses ICTs and hence addressing the challenges in providing higher education in African countries ??Basheka, Lubega, & Baguma, 2016:83). This mode of learning can be done using internet, mobile phones, television sets, radio, video conferencing and others ??

5 Methodology

The study used a cross-sectional research design, which enabled the researchers to measure the population outcomes in a simultaneous manner (American Dietetic Association, 2011). Additionally, both quantitative and qualitative data was collected from a sample of respondents, which was agreeable with cross-sectional design (Graber, 2004). Jinja, Tororo and Soroti districts, covering district and sub county level were included in the study where data was collected using questionnaires and key informant interviews.

The sample size for the two data collection methods was arrived at separately where quantitative data target population was 360 members leading to the sample size of 313 as guided by Krejcie and Morgan (1970). The total number of respondents was 225 giving a response rate of 71.9% which is scholarly acceptable to be free of bias (Welch & Barlau, 2013; Baruch, 2013). The remaining 28.1% include the respondents who did not return questionnaires within the data collection period even after several reminders giving reasons such as the questionnaire got lost and he/she is very sick and cannot fill the questionnaire. Qualitative data collection method had a purposively selected sample of 8 with a response rate of 62.5% which was arrived when the responses reached a saturation point (Fusch & Ness, 2015).

Quantitative data was analysed using Statistical Package for the Social Sciences (SPSS) Version 22 which generated frequencies and percentages indicating which ICTs are most used by local governments. Qualitative data was collected by the use of interview guide through recording, was transcribed, processed by Microsoft word computer application and lastly analysed by the use of content analysis.

6 III.

7 Results and Discussion

The study sampled district public servants: technical and political team which groups are familiar with service delivery in the districts. The technical team performs most of the service delivery, while the political team provides policy creation and performance monitoring as mandated by the local government law and the constitution of Uganda. Eight four percent of the respondents (table 1) had attained tertiary education and were therefore competent to understand the questions. The questions used to find out use of ICTs were simple and clear and easy for the respondents to understand and give appropriate response. Quantitative raw data was checked for completeness and accuracy before the coded data was entered into SPSS software that was used for the statistical analysis; while qualitative data from the recorded interviews were transcribed using Microsoft word. The quantitative data was analyzed by multiple response analysis to generate cross-tabulation tables for descriptive statistics.

The question is, "Are ICTs technologies being used to enhance service delivery in local government?"

To attempt to answer this question 313 respondents were asked (225 responded) to indicate the main ways of communication in their departments from a suggested list.

Table ?? confirms the answer is, "yes". Table ?? show that 56.9% of the respondents indicated using telephones in their departments and 24% indicated use of email for communication. This study findings tie up with what (Mirembe, Obaa, & Ebanyat, 2016:15) reported that the most preferred ICTs for communication were mobile telephones, computers and internet at 40.5%, 21.3% and 20.1% respectively. However the findings show that; face-to-face interactions (87%) and formal meetings (80%) lead as the main ways of communications in the local governments. With the study findings indicating 24% use of email as a communication tool in Uganda local governments, could have emanated from the position pointed by the results of the earlier studies that; Africa has a low website connectivity and subscription which is at an average of only 26.7% and varies from country to country (Aquaro, 2012; Chattacharya, 2015:82) The results indicate that while traditional ways of communication, face-to-face interactions and formal meetings lead in use in office communication, the ICTs are also taking up their position and complementing coordination in the local governments. This is evidenced the qualitative finding, when responding to the question related to the current methodology of communication in the district compared to the past, one of the district high-ranking technical official said: "Communication..well, we are adhering to the current communication era in terms of using internet, phones, of course the internet is also in the phone, but we use internet both in the system and in the phone, social media like WhatsApp. We have a group of mail where we send messages to people at any time..to people that come for the meetings and give update. We have gone a step forward to ask departments who are implementing activities wherever they are to give an update of what they are doing. If I am monitoring a road for an example, as a senior officer, I will identify gaps on a road, take photos and put this on social media..you will be able to know that she or he did this today".

The study results agree with that of Arrett, Davidson, Prabhu and Vargo (2015:136) good so that the government monitors its money. But the way the system works? payments which can be done in a day can be pushed to a week; they say the system is not working?. and when it comes to paying salary the personnel officer has to travel to Kampala because the system has failed here and even when he goes it Kampala the system again does not work".

The study findings also revealed that the respondents who acquired at least diploma level of education are the most users of telephone and emails indicating 86.5% and 96.7% respectively. This findings agrees with Deen-Swararray (2016:31), Deen-Swararray argued that educational attainments is only one indicator that could be used to assess the ICT access and usage, and further advised that; to comprehensively address digital exclusion challenge, multiple aspects of literacy should be examined. One of the respondents when asked how service delivery can be improved in the district alluded to this finding by saying;

"we want central government to help us with new technical people, some of these people have been in the service for long, there are new technologies coming, let them for refresher courses so that they move together

with the world, because now most things have changed, that is what we are looking at?.these new technologies can easily be sustained and implemented here”.

IV.

8 Conclusion

ICTs have been adopted in the formal communication in the local governments to coordinate activities and have improved performance in service delivery. The ICTs are not meant to replace traditional communication ways, face-to-face interaction, hard copy memos, publications etc. but to complement them and better communication. The ultimate beneficiary of this ICTs adoption and advancement are the communities that get better services and the public servants as well because they will feel fulfilled for their work once their performance rating goes high.

The implications of results are that, while the benefits of adoption of ICTs is without doubt the challenges on infrastructure and low rates of connectivity by the masses still limit use of ICTs for service delivery. However, as more people acquire telephone and internet services, and more interface ICTs applications are introduced like creation of platforms where people can text in information and get information, the benefits of ICTs will continue to improve service delivery.

ICTs are a strong political power because it gives tools to the masses to demand transparency and accountability from the local governments. By use of telephone, email, internet in social media the masses can provide information to authorities as a feedback, and mobilize themselves for mass actions to seek for services. The findings of this study agree with findings from earlier studies. ICTs function in local governments for sharing information (Abandu and Kivunike, 2017:122); this is evidenced by a statement from one of the respondents who said they use it for relaying project monitoring data. Like in monitoring road construction works a spot needing attention is photographed and its picture is circulated through internet to the relevant authorities for remedial actions. The adoption of ICTs remains low for various reasons which situations was observed in Zambia as well ??Bwalya, 2017:2), which may be explained by ICT illiteracy and low economic development. Airtime and internet rates are still high and unaffordable by an average person and this highly hinders connectivity and usage on the ICTs.

The study concentrated on district technical staff and political leaders but did not include the G recipients of the services, who are the masses. It would be interesting to find out adoption of ICTs by the masses for use in demanding for services, and assess the quality of service that is being provided by the local governments. The perspective of the masses is missed out in the study, although an attempted was made to include the political leaders who are the representatives of the masses.

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10 Global Journal of Management and Business Research

Volume XVII Issue II Version I Year () ¹

development (United Nations, 2012; Ayman & Abdel-Azim, 2016:11 and Zakaria, 2015:16).

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Figure 1:

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ICTs have led to improved productivity and efficiency in service delivery. When asked whether the new current communication technologies have helped the district to achieve performance, one of the respondents retorted that;

”? really it is very helpful for achieving performance because there? people are accounting for their where-about, if I tell you that I am going to the field and I am not actually in the field ? will not be able to send you pictures of where I am ?that is accountability good enough to know that I am in the field”.

Study findings in the literature reviewed (Bwalya, 2017:2; Bankole and Bankole, 2017:501) pointed out factors such as lack of required infrastructure, low ICT literacy rates, cultural beliefs and low economic development to be hindering adoption of ICTs. The study findings agree with the previous literature, when asked about the challenges the district is facing in using ICTs, one of the respondent expressed some frustration by saying; ”?.then now the new system which has been introduced, I hear for monitoring? it’s called what?...Integrated Financial Management System (IFMS)?this systems are frustrating local governments. I know it is

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Figure 2:

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