

# Limitations of E-Government Adoption by Local Governments: A Case Study of Ilala Municipal Council, Tanzania

Hanifa Mohamed Yusuf\*    Li Xiaoyun

College of Humanities and Development Studies, China Agricultural University, No.17 Qing Hua Dong Lu, Haidian District, Beijing 100083 P.R.China

## Abstract

Integration of advanced computing and communication in management of municipal council activities by developed countries (E-Government) greatly enhances service delivery. However, some developing countries such as Tanzania in Africa experience difficulties in applying this technology in management of municipal councils for better service delivery to its citizens. This article uses a simple multiple regression model to analyze some of the factors that limit adoption of E-Government by developing countries. The factors analyzed include legal, cultural, managerial, organizational and technological awareness. A survey of 120 respondents from Ilala Municipal council in Tanzania was used as a case study. The results indicate organizational and legal factors as the major impediments in adoption of E-Government by developing countries such as Tanzania. To overcome these impediments, developing countries should allocate enough finances to information and communication departments so as to accommodate training, system upgrade and policy implementation.

**Keywords:** E-Government; Local Government; Information and Communication Technology; Ilala Municipal Council; Tanzania

## 1.0 Introduction

Integration of information and communication technology in government activities (E-Government) in most developing countries is very slow and hardly applied (Esselat et al., 2002; Mambo 1999 & Baker 1993). Partly, the sluggishness in E-Government adoption can be blamed on over dependency to donor funding (Gichoya 2005; Henry 2008). Wamunza (1997) argues that, in such kind of projects donors determines the type of hardware and software application to be used. Hence, the involvements of donors in developing countries emanates from the need to get a strong hold of strategic sectors. Nevertheless, donor funding is an important aspect in adoption of E-Government by developing countries as it ensures access to the necessary equipment. In addition, municipalities in most of developing countries underutilize E-Government equipment due to the following identified problems (Gichoya 2005; Henry 2008; Po-Ling et al., 2015): lack of adequate software and hardware applications, inadequate funds, low level of technology, lack of technical support, lack of awareness and exposure on part of decision makers regarding to the importance of E-Government, weak infrastructure, poor coordination of E-Government projects, lack of adequate repair, maintenance and technicians. However, such problems can be country specific, hence this work intends to use a simple multiple regression model to analyze some of the factors that limit adoption of E-Government by developing countries. The factors analyzed include legal, cultural, managerial, organizational and technological awareness.

The local government in Tanzania was reintroduced under the Act of Parliament Number 7 of 1982 in 1984 (ALAT 2011). It has a wide range of responsibilities for the provision of essential services for citizens within their locality like providing legal documents such as business license, building permit and other social services such as health and education. Therefore, they are responsible for public funds collections through different sources such as taxes, levies, government subvention and other external support such as NGOs and donors. In order for the local government to enhance service delivery to its stakeholders efficiently and effectively, E-Government should play an important role (Gichoya 2005; Po-Ling et al., 2015). Specifically, E-Government can help in enhancing: the design and delivery of public services, the processes for engaging with stakeholders, an increase in efficiency and transparency so as to foster richer interactions with stakeholders.

A growing number of governments around the world are currently deploying Web 2.0 technologies in the workplace. This technology is referred to as E-Government 2.0 that links all stakeholders in a seamless network of resources, capabilities, and information exchange (Po-Ling et al., 2015). Nevertheless, building and adopting E-Government 2.0 is not easy. It is a strong and strategic tool for governance policy; as it will improve the efficiency and effectiveness of government functions and drive standardization. All agencies must manage the challenges and tensions they encounter. To develop broader and more integrated E-Government services, agencies must understand how information and communication technologies (ICTs) can support their business outcomes. In the process of transfer and adoption of ICT, local innovation and modifications of the imported software to fit own organization is important because it is an inclusive process between the technology and organization (Piotti 2007).

Different researchers have identified several benefits of using E-Government in the country such that the use of this technology may alleviate the problems that arise when manual financial systems involving transfer of

hard copies of financial transactions and records are used. The latter is accompanied with problems such as the loss of data, files and increased incidences of fraud. Aydin (2014) and Sherah et al. (2015), demonstrate that E-Government technology is characterized by low variable transaction costs and also may increase the ability of accessing large amount of customers without expanding the physical infrastructure. Furthermore, it fastens business transactions by communicating electronically because it shortens the lead time for product delivery, hence gaining competitive advantage over other products (Mirambo 2005). Through increased market share, improved competition among products, this technology can provide direct involvement with customers and reduce the involvement of middlemen. It also widens transparency, reduces corruption and bureaucracy as many of developing countries are facing this challenge (Gichoya 2005). In addition to that, the service providers and customers can evaluate their transactions and service histories through public feedback system (Silvia 2015).

Although Ilala municipal council have good mission, vision and strategies to attain their objectives, for years service delivery have been deteriorating due to number of problems which include poor management of information technology. That leads to a minimum cost of collection of income in order to finance development projects and service delivery (Mang'waru 2005). Therefore, this study specifically focuses on the use of E-Government to enhance municipal councils to provide expected services within its jurisdiction. This is because several studies indicate that if this technology could be used efficiently and effectively it will enhance the service delivery of any organizations (Dos Santos 1991). A number of governments especially in developed countries are using Web 2.0 technologies to convert themselves from government to citizen oriented organizations (Zhinjie 2014; Po-Ling et al., 2015). Furthermore Victorian Division of the Institute of Municipal Management (IMM) in the late 1980's formed the idea that an important factor in the improvement of local government practices was the excellent to which councils could electronically share quality information.

Regardless of its importance to government and its institutions, most recent studies focus on ICT applications in terms of E-Commerce than E-Government in different sectors such as health, small and medium enterprises, social trust in business, transportations and logistics (Aydin 2014; Zhinjie, 2014; Sherah et al., 2015; Po-Ling et al., 2015; Wen et al., 2015; Silvia 2015; Qihui 2015; Miao et al., 2015; Su et al., 2015; Martin et al., 2015). As stated earlier, the broad objective of Ilala municipal council as derived from the vision and mission statements is to attain improved livelihood of Ilala residence. Therefore, due to its complex and huge responsibility of Municipal Council to the people in its jurisdiction, focus on application of E-Government cannot be disputed.

## **2.0 Materials and Methods**

### **2.1 Description of study area**

Ilala municipal council is one of the four municipalities of Dar es Salaam city; other municipal councils include Temeke, Kinondoni and Dar es Salaam city council. According to the recent census of 2012 the total population of the district is 1,195,936 people while male are 581, 184 and female 614, 752 (NBS, 2015). The municipal is divided in to 26 wards. Ilala municipality has an area of 210 km<sup>2</sup>; it lies between Longitude 39° and 40° East between 6° and 7° south of the Equator. On the Eastern part it borders Indian Ocean for a distance of 10 km. On its Southern part it borders Temeke municipality, while in western it borders Kisarawe district and in northern part it border Kinondoni Municipality. Ilala municipal council was selected as a study area because of its strategic location and it is highly populated area. It is the residence of most Government Ministries and institutions, National referral hospital (Muhimbili), Dar es Salaam international airport, High court of Tanzania and some universities campuses. Furthermore it is the city centre which comprises business centers of the country such as Kariakoo, Kivukoni, Mchafukoge, Buguruni, Upanga, Vingunguti and Kisutu.

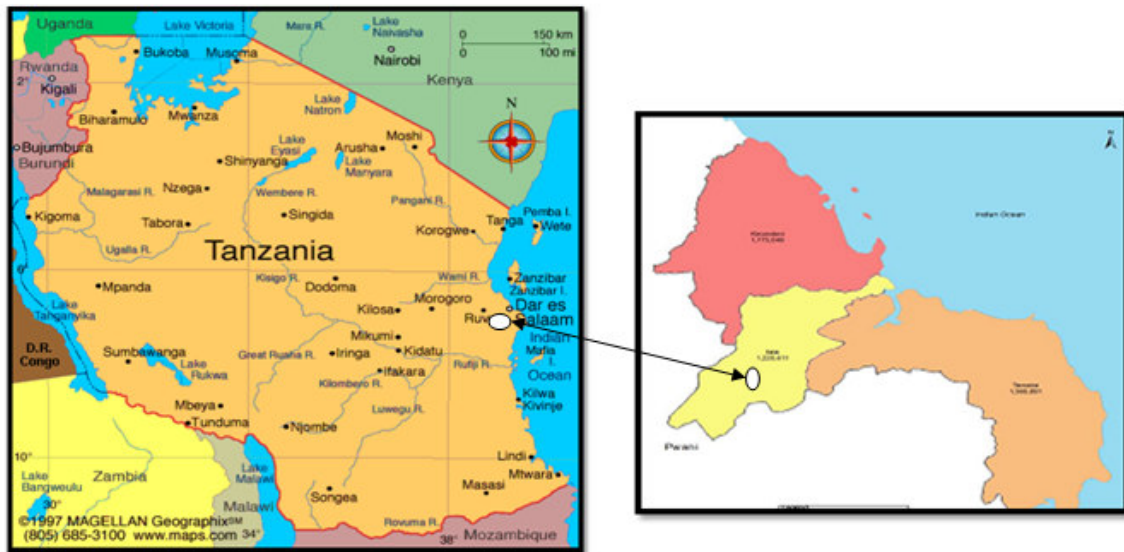


Fig 1. A map showing the study area, Ilala municipal council in Tanzania

## 2.2 Data collection and sampling process

Both primary and secondary data were used in this study. Document analysis and structured questionnaires were applied for data collection. Furthermore, random sampling technique was employed to select 120 employees from different departments as respondents from Ilala Municipal Council. Top executive leaders of Ilala municipal council (Mayor, Deputy Mayor and Municipal Director) were then interviewed as key informants. On the other side, secondary data was collected through various sources such as academic journals, textbooks, university thesis, websites and documents from municipal council.

## 2.3 Data analysis

Simple multiple regression technique with the help of a software package for statistical Sciences (SPSS) was used for data analysis. The general Simple multiple regression model was given by:

$$\gamma = \beta_0 + \beta_1\alpha_1 + \beta_2\alpha_2 + \beta_3\alpha_3 + \dots + \beta_m\alpha_m + \epsilon \dots \dots \dots (2-1)$$

Where,  $\gamma$  is the dependent variable.

$\beta_0, \beta_1, \beta_2, \beta_3, + \dots + \beta_m$  are regression coefficients.

$\alpha_1 + \alpha_2 + \alpha_3 + \dots + \alpha_m$  are different variables explaining the value of  $\gamma$ .

$\epsilon$  is the random error in  $\gamma$ .

Thus, the model of equation in this study was:

$$\text{Adoption of e-government} = \beta_0 + \beta_1\alpha_1 + \beta_2\alpha_2 + \beta_3\alpha_3 + \dots + \beta_m\alpha_m + \epsilon \dots \dots \dots (2-2)$$

Where:  $\alpha_1$  is organizational factors.

$\alpha_2$  is managerial factors.

$\alpha_3$  is technological factors.

$\alpha_4$  is legal environment.

$\alpha_5$  is cultural factors.

## 3. Results and discussion

### 3.1 General characteristics of respondents

The variables of respondents considered in this study include age, gender, education level, and marital status. The information in **Table 1** provides the profile of the sample surveyed.

**Table 1. The respondent's profiles from Ilala Municipal Council, Tanzania**

Variables	Frequency	Percentage
<b>Age of Respondents in years</b>		
18-30	61	50.8
31-40	47	39.1
41-50	11	9.2
50+	1	0.8
<b>Gender of Respondents</b>		
Male	46	38.3
Female	74	61.7
<b>Education of Respondents</b>		
University Education	94	78.3
College Education	15	12.5
Secondary Education	11	9.2
<b>Position held by Respondents</b>		
Municipal mayor	1	0.8
Deputy mayor	1	0.8
Municipal director	1	0.8
Head of sections and departments	26	21.6
Other employees	91	75.8

### 3.1.1 Age distributions of the respondents

Data from the study shows that, respondents which range between the ages of 18 to 30 and 31 to 40 who responded to questionnaires make 89.9% of all respondents (**Table 1**). This might be due to the reasons that ICT is a new technology in Tanzania as it started after trade liberalization in 1986 while effective usage started in 1993 when the ban on importation of computers was lifted. To encourage the importation and usage of computers, the government of Tanzania abolished the import tax (Masalu 2005).

### 3.1.2 Gender distribution of the Respondents

Both female (61.7%) and male (38.3%) responded to the questionnaires (**Table 1**). Majority of the respondents were female; probably due to the nature of the work available in the municipal council as most of the task is non muscular. Furthermore, the efforts of the government to encourage women to have equal opportunity to access formal employment have shown success.

### 3.1.3 Education of respondents

Three categories of education levels were considered in respondents profiles. At least 78.3% of respondents acquired university education while 12.5% hold college education and 9.2% hold secondary education (**Table 1**). The percentage of respondents having university education is higher than other levels; this is an added advantage for municipal council to adopt E-Government because at that level of education majority have basic knowledge of ICT and its applications. Otherwise, the level of education might limit respondents from using this technology.

### 3.1.4 Position of respondents in municipal council

The respondents' position in the municipal council is shown in **Table 1**. The quality of the answers depends on the level of the respondent in the organizational hierarchy or structure. The respondents from senior positions in the municipal council are depicted to make 24.2% and other employees are 75.8%. Such respondents are the decision makers of the municipal council. The general respondent's profiles are presented in **Table 1**.

## 3.2 Factors Limiting Adoption of E-Government in Municipal Councils

This subsection presents and discusses the results from simple multiple regression technique with the help of the software package for statistical sciences (SPSS). The results reveal factors limiting municipal councils in adopting E- Government.

**Table 2: Analysis of limiting factors in adoption of E-Government by Ilala Municipal Council, Tanzania: Coefficient correlations**

Model	Managerial factors	Legal environment	Cultural factors	Organisational factors	Technological factors
Managerial factors	1.000	-0.008	0.062	-0.318	-0.158
Legal environment	-0.008	1.000	0.132	-0.009	-0.234
Cultural factors	0.0062	0.132	1.000	0.018	0.151
Organisational factors	-0.318	-0.009	0.018	1.000	-0.115
Technological factors	-0.158	-0.234	0.151	-0.115	1.000

**Table 3: Analysis of limiting factors in adoption of E-Government by Ilala Municipal Council, Tanzania: Coefficient of the Model**

Model	Coefficients <sup>a</sup>											
	Un-stan. coeff		Stan.Coeff		95% confidence interval for B			Correlations		Collineality Statistics		
	B	Std. Error	Beta	t	Sig.	Lower bound	Upper bound	Zero-order	Partial	part	Toler.	VIF
(constant)	1.025	0.468		2.189	0.031	0.098	1.952					
Technological	-0.10	0.120	-0.008	-0.086	0.932	-0.249	0.228	0.061	-0.008	-0.008	0.848	1.179
Organisational	0.163	0.087	0.183	1.878	0.063	-0.009	0.334	0.195	0.173	0.170	0.862	1.159
Legal environment	0.133	0.74	0.171	1.810	0.073	-0.013	0.280	0.167	0.167	0.163	0.909	1.101
Cultural	0.097	0.99	0.092	0.988	0.325	-0.098	0.293	0.045	0.092	0.089	0.932	1.072
Managerial	0.039	0.144	0.027	0.274	0.785	-0.245	0.324	0.092	0.026	0.05	0.845	1.183

a= Dependent Variable

Organisational and legal factors are the only factors which limit the adoption of E-Government in municipal councils. While other factors such as cultural, technological and managerial factors are not statistically significant to be among the factors which limit the adoption of this technology in the municipal council. Organisational and legal factors limit the adoption of E-Government in municipal council due to the fact that most municipalities are not having enough facilities and equipments especially computers related to the activities and the number of employees using them. Furthermore, accessibility of the available facilities is limited to some of the employees. This situation lead to application of paper work based traditional system to store data in different departments and sections. This situation might also be contributed by hampered efforts to modernize the technology due to uncoordinated planning and lack of indigenous personnel.

As observed from respondents' profile (**Table 1**), majority of respondents have university education (78.3%) which is an indication that they have an elementary knowledge of ICT and application. However, our survey indicates that ICT knowledge is almost the new phenomenon to most of the staffs and customers who are practically the core actors in municipal council. In this case, the application of ICT is still in initial stage in most of the municipalities. Moreover, frequent access and usage of the information system will easily expose the inherent system problem and hence calls for prompt rectification actions so as to ensure continual returns from usage of the system (Mbamba 2003).

Although regulations on ICT equipments and facilities have been modified such as ban on import duties, poor communication infrastructure, lack of reliable funds, licensing fee, high installation and electricity cost, maintenance and internet cost are still high and unreliable. Therefore it hinders the adoption of this technology to municipal council. On the other side challenges that did not contribute to the limitation of E-Government in municipal councils are lack of awareness of technology on the part of management. The study observes that most of the top management and other employees are fully aware of the benefits of E- Government. However, the study by Galilava (1996) on usefulness of the information system concluded that, Tanzania top officials have not yet recognised the strategic potential of ICT. That means the organisations are far from harnessing the information system revolution.

#### 4.0 Conclusion and Recommendations

This study identifies organizational and legal factors to limit adoption of E-Government by municipal councils of Tanzania specifically Ilala municipal council. Since municipal councils are vital factor in the social, economic and political structure of the economy; it remains close to the people in value and proximity. If ICT is properly used in municipal councils, poverty can be reduced, people can be empowered, and build capabilities and skills as well as networks.

#### References

- ALAT (2011) Association of Local Authorities in Tanzania "State of Local Democracy and good Local Governance in Tanzania (Ld & Glg)" [http://www.clgf.org.uk/userfiles/1/file/The\\_State\\_of\\_Local\\_Governance\\_and\\_Good\\_Local\\_Governance\\_in\\_Tanzania\\_2011.pdf](http://www.clgf.org.uk/userfiles/1/file/The_State_of_Local_Governance_and_Good_Local_Governance_in_Tanzania_2011.pdf)
- Aydin, E. et al., (2014), "The Relationship between Globalization and E- Commerce: Turkish Case", *Procedia and Behavioral sciences* (150) 1267-1276.
- Baker, S (1993), *The survey of Information Technology in Tanzania*, Commission for Science and Technology, Dar es Salaam.
- Dos Santos, B (1991), "Justifying Investments in New Information Technologies", *Journal of Management Information Systems*, Vol 7(4).
- Esselat et al., (2002), "Towards e-commerce in Africa: A perspective from three country studies. The South African Journal of Information and Communication 2(1), Johannesburg, Wits University.
- Galilava, M (1996), "Usefulness of MIS as Perceived by Top Managers" Un published MBA dissertation,

- University of Dar es Salaam.
- Gichoya D (2005) "Factors Affecting the Successful Implementation of ICT Projects in Government" The Electronic Journal of e-Government 3(4)175-184.
- Henry, L (2008), "Information and Communication Technology for Future Health Systems in Developing Countries", *Social Science & Medicine* (66) 2122-2132.
- Mang'waru, W (2005), "The Use of Information Technology to Improve Property Tax Collection", Un published MBA dissertation, University of Dar es Salaam.
- Mambo, H (1998), "An Investigation into the Development of a computer Library network among Institutions of Higher Learning in Tanzania", Un published MBA dissertation, University of Dar es Salaam.
- Martin F. et al., (2015), "E-Commerce Trends and Impacts across Europe", *International Journal of Economics*, (170)357-369.
- Masalu D. (2005), "Evolution of Information and Communication Technology in Tanzania and its Impact on Ocean data and Information Management", *Ocean & Coastal Management* (48)85-95
- Mbamba, U. (2003), "Problems and perspectives of information Systems Management in Small and Medium Enterprises in Tanzania", *Theoretical Foundations, Licentiate Documents*, University of Umea, Sweden.
- Miao C. et al., (2015), "Developing Focal Capabilities for E-Commerce Adoption: Aresource Orchestration Perspective", *Management &Information* (52)200-2009.
- Mirambo R. (2005), "Problem of Small and Medium Enterprises in the Adoption of e-commerce in Tanzania". Un published MBA dissertation, University of Dar es Salaam.
- NBS (2015) Retrieved from <http://www.nbs.go.tz/> on 10 Dec 2015
- Per Tidemand et al., (2010), "The impact of Local Government Reforms in Tanzania 1998-2008" REPOA, Special Paper 10/1, Dar es Salaam.
- Piotti, B. et al., (2007), "Public Health care in Mozambique: Strategic Issues in the ICT Development during Managerial Changes and Public Reforms", *International Journal of Medical Informatics* 76S (S) S 184-S195
- Po-Ling S. et al., (2015) "An implementation framework for E-Government" *Telematics and Informatics* (32) 504–520.
- Qihui L. et al., (2015), "Effect of E-Commerce Channel Entry in a two – echelon Supply Chain: A comparative Analysis of Single – and dual- Channel Distribution systems", *International Journal of Production economics* (165)100-100.
- Sherah et al., (2015), "E-Commerce Technology Adoption: A Malaysian Grocery SME Retail Sector Study", *Journal of Business Research* (68) 1906-1918.
- Silvia B. (2015), "On the Efficacy of Imperfect Public- Monitoring of Seller Reputation in E-Commerce", *Electronic Commerce Research and Applications* (14)75-80.
- Su X. et al., (2015), "Efficient Intermodal Transportation Auctions for B2B E-Commerce Logistics with Transaction Costs", *Transportation Research Part B* (80)322-337.
- Wamunza, A. (1997) "Information Technology Transfer policy Issues and Development in Tanzania: A Case Study" Phd Dissertation, The University of North Carolina at Chapel Hill.
- Wen G et al., (2015), "The Impacts of Social Trust on Open and Closed B2B E-Commerce: A Europe-based Study", *Information & Managements* (52) 151-159.
- Zhinjie L.(2014), "An empirical Investigation of user and System Recommendations in E- Commerce" *Decision Support systems* (68) 111-124