Information Communication Technology Training as A Prerequisite for E-Government In County Governments Of Kenya

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Abstract: Today, the Kenyan government has invested and endeavored to embrace electronic government (e-government) in almost all ministries to enable speedy service delivery and enhance transparency and accountability by eliminating inefficient processes and bureaucracies as much as possible. However, Information Communication Technology (ICT) professionals are lacking skills to manage these projects. The general objective of this study sought to investigate ICT training as a requirement for e-government in Trans Nzoia and Kisumu county governments. This paper assesses the ICT training needs among staff working in Trans Nzoia and Kisumu County governments. Interviews and Document reviews from both case counties and national governments are the data collection methods. The study is underpinned by Structuration theory, from the field of sociology and a constructivist paradigm approach is employed. Purposive sampling technique is used targeting participants in the two county governments. Thematic Analysis's procedures and processes are adopted for data analysis. The findings contribute to knowledge in ICT training and capacity building discipline within the context of Kenyan government both national and county. We recommend a comprehensive and coherent approach to ICT training and capacity building at all educational tiers, country wide roll out of ICT infrastructure and its support for e-government to be fully embraced.

Keywords: ICT, training, e-government, County government, Structuration theory

1. INTRODUCTION

WSIS states, "Everyone should have the necessary skills to benefit fully from the Information Society [23]. Therefore, capacity building and ICT literacy are essential". Thus, it is important to look into sector policies and see how they intend to address human resource training, initial and continuous teacher development, as well as research, evaluation, and monitoring [23]. Private and public organizations form a substantial constituent of the global economy. This is because the importance of ICT for organizations (e.g. private and public) cannot be questioned and several organizations lead in the design and support of ICT implementations [20]. However, to maintain professional relevance, it is important that employees undergo a process of continuous learning and training within the organizations [18]. It appears that organizations face difficulty in developing and implementing adequate ICT training programs [2]. In the Kenyan ICT context, ICT training is lacking despite the efforts being made by the government at both the county and national governments.

Singapore, as it adheres to a developed strategic framework, has mobilized available human and capital resources to build new capability and capacity to sustain the operation of e-Government portal [11]. Capacity and capability imply receiving, filtering, digesting and managing information technology. Singapore must nurture and maintain its IT to continuously improve the living standards of Singaporeans, and to help Singapore meet international standards in public administration. In Sri Lanka, an objective of the ICT Human Resources Development Programme is to inculcate skills and competencies pertinent for the management of e-government projects [9]. Mauritius fares well in ICT literacy outreach as a result of a comprehensive and well-thought-out strategy in ensuring that not only relevant ICT literacy/proficiency programs are offered but also free ICT facilities with broadband access are made available throughout the country [16].

Kenya today is embracing Integrated Financial Management Information Systems (IFMIS) to oversee the implementation of a unified financial management system and its adoption across all Government departments. In empowering IFMIS end users, the National Treasury/IFMIS Department established IFMIS Academy as a key capacity building institution

for IFMIS users [12].

The Information Communications Technology Authority (ICTA) of Kenya collaborates with academia and industry to develop structured ICT training for professionals geared towards building technical expertise with high-end skills, competencies and experience required to implement flagship ICT projects [10]. Kenya has government training institutions like the Kenya School of Government (KSG) located in Nairobi, Mombasa, Eldoret, Embu, Baringo, and Matuga. The ICT courses offered by KSG are ICT seminars for top managers, computer application skills for managers, advanced computer skills for secretaries, computer-based record management, computer networking for e-government, Statistical Package for Social Sciences (SPSS) and cyber-crime courses Kenya School of Government [13]. Kenya has also initiated the Digital Literacy Program for schools. This program coordinated at the Ministry of ICT together with the Ministry of Education and other key stakeholders provides ICT tools to primary school learners, and ensures curriculum and other learning resource books are availed through multiple electronic platforms [19]. The government, however, is facing challenges in implementing these initiatives although some progress has been made [13].

Capacity is the ability of individuals, institutions and societies to perform functions, solve problems, and set and achieve objectives in a sustainable manner [21]. Within the public service, typical aspects of capacity are: the quality of public servants, organizational characteristics, the diffusion of ICTs among organizational units, the intergovernmental relations, and the style of interaction between government and its social and economic environment [3]. Capacity Building consists of three elements namely; establishing institutional framework, engaging personnel with requisite experience, and upgrading skill sets through training. The policy thrust in Capacity Building should provide for equitable access to ICTs enabled education and training in all parts of the country including disadvantaged communities. Policies and regulatory mechanisms should be in place to help manage operations in the ICTs sector [14].

In Kenya, the majority (55%) of the youth seeking for employment are between the ages of 21-25 years old. 57% of the unemployed youth lack ICT training. Out of the remaining 43% that have ICT training, 28% have basic computer application packages such as Microsoft office [22]. According to the Ministry of Information, Communication and Technology, there is demand for local high-end ICT professionals from National and County Government that aim to provide e- government services and to automate their internal processes.

Governments both at national and county levels have made huge strides towards the adoption of ICT; however, there is dearth of ICT professionals in the county governments of Trans Nzoia and Kisumu for example.

In this paper we assess ICT training needs as an enabler of good governance in Trans Nzoia and Kisumu county governments. The results contribute to deeper understanding of ICT training in Government of Kenya as it strives to be a leader in the region.

2. OVERVIEW OF STRUCTURATION THEORY

Anthony Giddens, is regarded as one of the worlds' most cited sociologists [1]. As Roberts and Scapens note: "Through being drawn on by people, pattern and shape structures themselves are, however, reproduced only through interaction [17]. Explanations of social phenomena must thus refer to both the role of human action and the effects of existing institutional properties. The approach of Giddens' structuration theory argues that action and structure operate as a duality, simultaneously affecting each other [6]. Giddens defines structure as 'rules and resources recursively implicated in social reproduction; institutionalized features of social systems have structural properties in the sense that relationships are stabilized across time and space' [7]. The structuration-type theory advances our understanding of the use of ICT in the government sector as it provides a means of handling the complexity of the interactions between citizens, organizations, the government and other industry sectors, within the national and international context.

Giddens opines that structure is similar to language [6]. While speech acts are situated temporally and contextually and involve dialogue between humans, language exists outside of space and time. Language is a condition for achievements of dialogue and language is sustained through the ongoing production of speech acts. Social actions are temporary and contextually involve human interaction. Social structures conditions these social practices by providing the contextual rules and resources that allow human actors to make sense on their own acts and those of other people. Conceiving of structure in this way acknowledges both its subjective and objective features. Structure does not merely emerge out of subjective human action; it is also objective because it provided the conditions for human action to occur. Structure provides the means for its own sustenance and structure and action constitute each other recursively. Structuration theory recognizes that "….man actively shapes the world he lives in at the same time as it shapes him" [7].

From structuration theory, the training issues build on what Giddens calls Communication dimension: the structure of *Signification*, modality of *Interpretive schemes* and interaction of *Communication* in depth. The structure of *signification* is available to the social actor as *interpretative scheme(s),* the structure of *domination* is available as authoritative and allocative *resources* through which power can be exercised and the *legitimation* structure is available as norms, which allow for the *sanctioning* of conduct [8].

Interpretive schemes is defined by Giddens as the "standardized, shared stocks of knowledge that humans draw on to interpret behavior and events, hence, achieving meaningful interaction". It is through ICT training that humans are able to interprete their lived experience with interaction of ICT to create structure of *Significance* [6].

3. Problem Formulation

The Kenyan government in recent years has initiated some capital investment towards the setting up and installation of ICT infrastructure through establishment of ICT training programs. ICTs are about information flowing faster, more generously, and less expensively throughout the planet. As a result, knowledge is becoming an important factor in the economy, more important than raw materials, capital, labor, or exchange rates [4]. As much as the Kenyan government is investing heavily on ICT, training must be a prerequisite to manage and maintain the modern systems that are associated with dynamic changes over time. Kenya needs ICT professionals to take advantage of established ICT infrastructure.

4. Methods

4.1 Participants

Using purposive sampling method, we interviewed a sample of fourteen top and middle level management employees from both counties. They were eight males and six females. A pilot study of two participants was done and they were isolated from the final research. All participants were employees with daily duties using ICT devices. Secondly, the participants must have been employees of Trans Nzoia and Kisumu counties or national government employees attached to these counties.

4.2 Research Design

This study adopted a qualitative case study research design. The strengths of a qualitative design is that it emphasizes people's lived experience of a phenomena. A case study was adopted because a county is bounded by time and place (boundary) and this paper was a multiple case study.

4.3 Measures

Interviews, observations and document reviews were used as data collection methods. Face-to-face interviews and observations were the primary data collection methods. In-depth interviews were conducted and audio-recorded through a laptop and later keenly transcribed into word documents. For observations, notes taking were done in the event of observations. Document reviews are secondary sources of data

collections. They represent variety of non-personal documents such as minutes of meetings, agendas of such meetings and office memos. In the Kenyan context, government circulars, specific ministry master plans and any other official correspondences were perused to give more information on the use of ICT innovations and or applications.

4.4 Procedures

Consent was sought from Trans Nzoia and Kisumu county governments, particularly the offices of County Commissioners and County Directors of Education of both counties respectively. Data collection started immediately. Top and Middle level management employees from both counties were targeted on a voluntary basis. Confidentiality, the principle of anonymity and the right to de-briefing to participants are examples of ethical issues spelled out before interviewing commenced.

4.5 Data Analysis

In this paper, data analysis means understanding the ways county employees use and make sense of innovative applications, but also identifies and defines the patterns that emerge from that meaning making process. Thematic Analysis which is a type of qualitative analysis was applied. [15] model of Thematic Analysis was adopted comprising of three link stages: data reduction - "A form of analysis that sharpens, sorts, focuses, discards, and organizes data in such a way that "final" conclusion can be drawn and verified"; data display – "displaying the data in a variety of ways e.g. tables, figures and theme maps" and data conclusion – "ideas to generate meaning from the data and they include: the notation of any patterns or themes / Grouping or establishing categories of 'information that can go together".Extracts of this thematic analysis is contained in Table 1 and 2 respectively.

Table 1: Sample of Unordered list of responses to interview open-ended questions

Participant responses	
They initially resisted new system but later accepted	INT 3/ INT 1
We have a website with a lot of information about the county	INT 1
Our county has not integrated much in ICT	INT 5
The SMS platform not being used much despite mobile phones	INT 3
Citizens use emails to make inquiries or feedbacks	INT 1
National government use emails to inform on seminars/workshops/circulars etc	INT 1/INT 3/INT 2

Table 2: Sample Categorization of responses to Interview open ended questions

Inductive responses	Participant responses
Capacity building/Training Only two ICT professionals in my ministry	INT 3
Some staff are qualified but cannot handle practicals	INT 4
IFMIS should have started as a pilot in few counties	INT 2
Lack of competent staff to run ICT equipment /systems	INT3
ICT directorate not fully fledged still under Education Ministry. More than 90% of staff used typewriters; Today most of them are still challenged	INT 3

As stated earlier, 'data conclusion' is considering ideas to generate meaning from the data and they include the notion of any patterns or themes and grouping them. From the study, ICT Capacity building and training emerged as a major theme. This theme was compared with the literature as shown in the following section under where it either supported or disputed findings.

5. Study Findings

The guiding theoretical framework for this study was Structuration theory which emphasizes that structures enable and constrain three basic aspects of (inter)action: Communication, the exercise of Power, and the Sanctioning of conduct. Each of these three basic activities relates to a particular structural dimension: Communication to the structure of signification, Sanctioning to the structure of legitimation, and power 'plays' to the structure of Domination [5].

There was evidence of structuration theory through the Communication dimension: the structure of *Signification*, modality of *Interpretive schemes* and interaction of *Communication* in the study findings. In concurring with study findings, ICT training is linked with *Interpretive schemes* defined by [5] as the "standardized, shared stocks of knowledge that humans draw on to interpret behavior and events, hence, achieving meaningful interaction". It is through ICT training that humans share stocks of knowledge and stored, for instance, by Knowledge Management for future use. There was evidence of training, seminars, workshops and capacity building organized events periodically by national government for employees.

The Kenyan government also supports and builds capacity of the employees in both county and national governments of Kenya. For example: the IFMIS department, see [12], offers training in all ministries and government agencies to facilitate use of the system by all employees and the Ministry of Education, Science and Technology facilitates ICT training and capacity building initiatives for teachers in primary schools. IFMIS, concurs with this finding [12].

Kenya must emphasize training and capacity building to attain the goal of being a nation that is strategically positioning herself as a technological hub in Africa. Strategic capacity is seriously lacking in Africa and hence a huge constraint in keeping up with technological innovations and global competition. ICT training is still an impediment to the diffusion of ICT in Kenyan county governments calling for practical measures to speed up the process.

6. Conclusions and Recommendations

We have shown that the government of Kenya has made progress in ICT training and capacity building initiatives considering that Kenya is relatively young country and our counties in particular that were established in 2010 effectively became operational only in April-2013. Hence, the full potential of ICT has not been realized to date. Although efforts have been made towards ICT training, there is need to focus on the youth who form the largest percentage of the Kenyan population. The government of Kenya is making positive strides on ICT implementation longitudinal studies are required.

In recommendations, ICT Training and capacity building should be implemented from primary schools, secondary, tertiary colleges and at university levels. This means that the government through Ministry of Education should come up with ICT curriculum that addresses the above levels of training and capacity building in a systematic and coherent manner. The government should emphasize the need for employers to continue training and building capacity of their employees. The solutions to these issues require goodwill by leaders in government, employees, citizens and the private sectors.

For all employees of governments, training and capacity building is essential in order to maximize use of ICT for good governance. Citizens of Kenya are urged to embrace ICT as the government makes strides to provide ICT which enables service delivery anywhere, at any time and in an instance.

7. ACKNOWLEDGEMENTS

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