

Effective Utilization of Information Technology Services by Employees in Public Sector: A Study of Geita District Council Tanzania

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ABSTRACT:

This study intended to assess the utilization of information technology services by employees in public sector through taking Geita District Council, Tanzania as a case study. The study aimed at examining the utilization of IT services as a tool to generate efficiency of work in order to find out IT services utilized by employees in the organization; it also investigates the role of IT sectors in developing the economy to pinpoint the problems that rise in regard to IT services and how far those problems are solved. The researcher used survey methodology to collect data and information using questionnaires and documents as tools in data collection. Participants involved in the study were managerial staff from departments and units found at Geita District Council. The collected data were analyzed by the help of SPSS software. The study identified that IT service in public sector plays a crucial role as it simplifies the procedures of processing, keeping, and recording of data. It enables the country to build a digital nervous system. Furthermore, the study observed that there are insufficient skilled system administrators in IT services, poor management as well as lack of training on system administration. The study recommends that District Councils should employ and train more system administrators, connecting all departments and units to the local network, establish adequate internet facilities, utilize internet facilities better, and provide backup service in order to enhance efficiency and effectiveness of IT.

Keywords: *Information technology, Public sector, Employees, utilization of IT, Employees efficiency*

INTRODUCTION

The emergence of information technology sets a new trend for the utilization of its services in public sectors. The advantage set by information technology is primarily seen in the cyberspace in the likes of e-businesses and other forms of rendering services to gain competitive advantage and sustainable growth.

Ishumi and Suzgo (2002) stated that many countries are becoming increasingly concerned with the rapid changes that are constantly occurring in almost all spheres of modern life. They argued that one of the consequent uses of

this kind of change has been an increasing demand for the new skills and attitudes in order to survive in the changing world.

Gorard et al. (2002) commented that ICT-based learning is seen as a particularly dynamic means of providing post-compulsory education functioning as “a catalyst” for educational diversity, freedom to learn and equality of opportunity

Concerning the explosion of IT and its roles to developing countries, COSTECH (2003) explained that, developing countries are aware of

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the powerful role that new Information Technology (IT) in access to information for education, good governance, economic and social development.

On the other hand, managers that gained competitive advantage are those that employ technology to leverage intangible and service resources. Since IT becomes a complex reality, there is a need for IT to be simplified in a way that it becomes more useful and adaptable to other sectors. IT simplification generates a smarter, faster, more efficient and better performance for the environment. Public sectors and other organizations want simple standards for computing on speed, innovation and efficiency. Governments want to invest in innovation, not maintenance and they want to spend their time and resources creating better services for their citizens. In this way, simplifying IT as a means for public sectors and government's competitive advantage is a gateway to innovation.

Tanzania has two fixed-line operators (TTCL and Zantel) and seven operational mobile networks with five additional players' license under a new converged regulatory regime. With four major operators (Vodacom, Zain, Tigo and Zantel), the mobile market was expected to break the 50% penetration barrier during 2010, but subscriber growth was expected to slow to 20%. At the same time, the average revenue per user (ARPU) continues to fall.

Tanzania's economy has been showing a growth rate of between 5% and 8% every year since 2000. The International Monetary Fund predicted only a moderate decline of GDP growth to 5% in 2009 as a result of the global economy crisis. Before, 7% and more was achieved again from 2011 onwards. Mining and tourism are the main industry sectors. However, the country continues to suffer from underdeveloped infrastructure, including roads, railways, electricity and telecommunications.

Statement of the Problem

Information Technology (IT) assists government authorities to transform the way they operate and support public service delivery initiatives and improved efficiency, functionality and / or automation. Government authorities in Tanzania have started using information technology to improve the quality and

effectiveness of services found in various departments in public sectors.

Geita District Council within four years back started utilizing Information Technology. The information technology was set to simplify services at various departments in that organization. Those services are internet facilities for communication, Auditing packages for auditors, Ms Office, Database, and backups for data recovery.

Several empirical studies have been done in the World and a little bit in Tanzania concerning the utilization of IT in public sectors. For instance the IT utilization among 230 business organizations in Malaysia (Valida et al., 1994); in this study, they concluded that the use of IT in Malaysian organizations was strategic in order to gain competitive advantage and that IT usage and integration were higher among organizations involved in providing goods and /or services comparative to manufacturing and distribution. (Longstaff, 1995) examined the use and potential abuse of information and communications technology to radically affect the nature of society; Burn (1990) studied the strategic use of IT in Hong Kong small and medium sized organizations; she surveyed three medium sized organizations and found that IT strategy was related to Porter and Miller (1983) model of competitive advantage who noticed that the great the information intensity, the great the potential for strategic use of IT in a business. Sparrow (1992) focused on informatization and the Public Sector, Augustino (2000) surveyed on the Examination of the use of Information Technology Applications for online Searching; Sirimanne (1996) assessed on the issue of information technology revolution.

Literature Review

Selected Empirical Studies on the Utilization of IT Services

In this section, there is presentation of some available empirical studies with respect to the utilization of information technology services by employees in public sector. This part is divided into three parts:

- i. Positive results of utilization of information technology by employees
- ii. Negative results of utilization of information technology by employees

iii. Utilization of Information Technology services in various sectors

Positive Results of Utilization of IT Services

The advantages of IT have been recognized worldwide and national policy makers have realized the potential of these to restructure organizations, promote collaboration, increase democratic participation of citizens, improve the transparency and responsiveness of governmental agencies, make health care more widely available, foster cultural creativity and enhance the social integration of individuals with different abilities and groups of different cultural background (Kozma, 2005). The policies crafted should aim at programs that promote economic and social growth in societies.

Now days, IT is seen as a way to promote educational change, improve the skills of learners and prepare them for the global economy and information society (Haddad and Draxler, 2002; UNESCO, 2002; McNamara, 2003; Kozma and Wagner, 2005). IT is used to improve delivery of and access to education. IT as focus of learning tends to improve the understanding of the learner, increase quality of education thereby increase the impact of education on the economy in public sectors. While basically IT based innovations can occur in classrooms, their linkage to national policies is essential to achieve intended social and economic outcomes by employees.

In managerial decisions, managers use IT to make decision by applying performance deficiency, where by actual performance being less than desired performance while actual performance being better than desired performance. In problem solving, managers use the process of identifying a discrepancy between actual and desired performance and taking action

to resolve it. This can be done by applying problem-solving approaches or styles, these approaches are problem avoider, which is inactive in information gathering and solving problems. Another approach is problem solver. This is the reactive in gathering information and solving problems. Another approach is a problem seeker which is the proactive in anticipating problems and opportunities and taking appropriate action to gain an advantage.

Another approach which a manager can use in decision making is the systematic versus intuitive thinking. Systematic thinking approaches problems are a rational, step-by-step, and analytical fashion. Intuitive thinking approaches problems in a flexible and spontaneous fashion. Multidimensional thinking applies both intuitive and systematic thinking while effective multidimensional thinking requires skill at strategic opportunism (John Wiley and Sons, 2004).

Negative Results of Utilization of IT Services

While the benefits of these technologies have been acknowledged, there have been some constraints of adoption especially in developing countries. The constraints are many and they include access to computers (email and internet), affordability of computers and connectivity, telephone and electricity infrastructure, computer literacy, expertise, etc. (Davis and Danning, 2001; Knowlton and Knowlton, 2001; Oliver et al., 2001; Gumbo, 2003; Sibiya, 2003). While such problems have been acknowledged, the main reasons behind the slow pace of adoption have been identified as lack of effective policies on ITs (Kaino, 2004). Many countries have outlined the significance of these technologies and much of these policies have remained on paper without committing enough resources to policies in public sectors (table 1).

Table 1: Internet users and population statistics for Africa

AFRICA REGION	Population (2011 Est.)	Pop. % of World	Internet Users, 31-Dec-11	Users % World	Face book 31-March-12
Total for Africa	1,037,524,058	15	139,875,242	6.2	40,205,580
Rest of World	5,892,531,096	85	2,127,358,500	93.8	795,319,700
World Total	6,930,055,154	100	2,267,233,742	100.0	835,525,280

Source: Internet World Stats – December, 2011

The Utilization of IT Services in Various Sectors

Information Technology has made us completely dependent for even the simplest day to day tasks. It is dynamic and vast and its absence for a day leaves a severe effect on us. Internet being the simplest form of IT has a major role to play in our daily lives. IT has become the backbone of every organization as well as household.

IT in the Banking Sector

The banking sector is an example in which information-technology infrastructures have had implications on the economic development of many nations in the developing world. It is important to note that the banking industry was one of the very first to utilize information technology back in the 1960s, and has thus a record of influencing the development process through the technology (Okpaku, 2003).

However, some of the implementations of information technology in the banking sector in the context of developing nations are often hindered by a number of challenges, including (but not limited to) lack of stability of the legislation, weak financial sector, poor technological infrastructure, and relatively small Internet and computer penetration (Gurau, 2002).

IT in the Travel and Tourism Sector

The travel and tourism sector all over the world has benefited a lot from the development of IT industry. One can avoid the crowd and lengthy procedures of booking air or railway tickets. One can choose from the best deals and book tickets online from the comfort of their living room.

The tourism industry can be seen as one of the first business sectors where business functions are almost exclusively using information and communications technologies (ICT) (Garzotto et al., 2004). Information Technology (IT) has played an important role in the development of tourism. Computerized Reservations Systems (CRS) were among the first applications of IT worldwide.

Travel revenues on the Internet have consistently ranked highly in comparison with other goods and services (Kadison et al., 1998). The reasons cited for this prominence relate to the richness and currency of information

provided online and the breadth of the audience as well as the intensity of competition and the emergence of new players with countless web sites supported by efficient transaction support. Online technologies within the tourism industry have significantly impacted on communications, transactions and relationships between the various industry operators and with the customer, as well as between regulators and operators (Sheldon, 1998; Werthner and Klein 1999; World Tourism Organization, 1999; Sharma et al., 2000; Galloway et al., 2004).

IT in Business Enterprises

IT plays a major role in simplifying various organizational processes. Most business enterprises rely on the power of information technology for carrying out their daily tasks conveniently and faster. IT makes complex procedures easier, faster and also helps a lot in avoiding redundancy. IT lets individuals to access necessary data, ensuring the safety of confidential ones. Textile products, along with music and video, books and magazines and software, imports raw materials and exports finished products are among of the leading consumer products sold over the Internet (Scupola, 2002).

Application and use of ICTs and e-business strategies vary widely across sectors. Internet e-commerce can enable businesses to reach a wider and possibly more targeted range of customers either locally or globally, either in B2B transactions (automobiles, textiles) or B2C transactions (textiles, tourism, parts of retail and finance e.g. banking, insurance, on-line brokerage). When firms perceive a higher level of market opportunities, they commit more resources to ICTs and e-business where this is appropriate (Smith and Brynjolfsson, 2001).

IT in Education

The field of education has also been blessed with the benefits of IT. Online application to universities, checking results, study materials and much more has made the reach of education broader and easier (Cloke and Sharif, 2001).

The use of Information Technology is becoming an integral part of education in many parts of the globe (Leidner and Jarvenpaa, 1993; Kuntoro and Al-Hawamdeh, 2003; Sala, 2004). Tanzania is not left behind as ITs gradually finds

its way into the educational systems (Darkwa and Eskow, 2000; Darkwa and Mazibuko, 2000; Brown, 2002) despite chronic limitations brought about by economic disadvantages (Adesola, 1991). Fundamentally, education is a discipline like any other; it is a branch of human knowledge, which is basically concerned with getting the young in the society prepared when they come of age (Ezewu, 1983). According to Gbamanja (1989) education is a process which seeks to change the behavior of a learner. Overall, behaviorist view education as the process of changing the behavioral patterns of people. Behavior in this sense refers to the way we change the learner, his or her thinking, his or her feelings and his or her overt actions (Hergenbahn and Olson, 1997).

IT in Health Care

Information technology is increasingly applied in the health sector. Basic applications of information and communication technologies to the health sector include electronic medical records, hospital information systems, the setup of Intranets and secure Extranets via the Internet, and for sharing information among institutional and individual participants in health sector, the use of public networks such as Internet to distribute information, health decision-support expert systems, the provision of remote diagnostics via telemedicine, and community health information system for local, regional and national health planning (Miller and Sim 2004) (table 2).

Table 2: Internet usage and population growth in Tanzania

Year	Users	Population	%Penetration
2000	50,000	14,712,000	0.3
2002	500,000	13,874,610	3.6
2005	820,000	12,247, 589	6.7
2009	520,000	41,048,532	1.3
2011	4,932,535	42,746,620	11.5

Source: ITU 2012

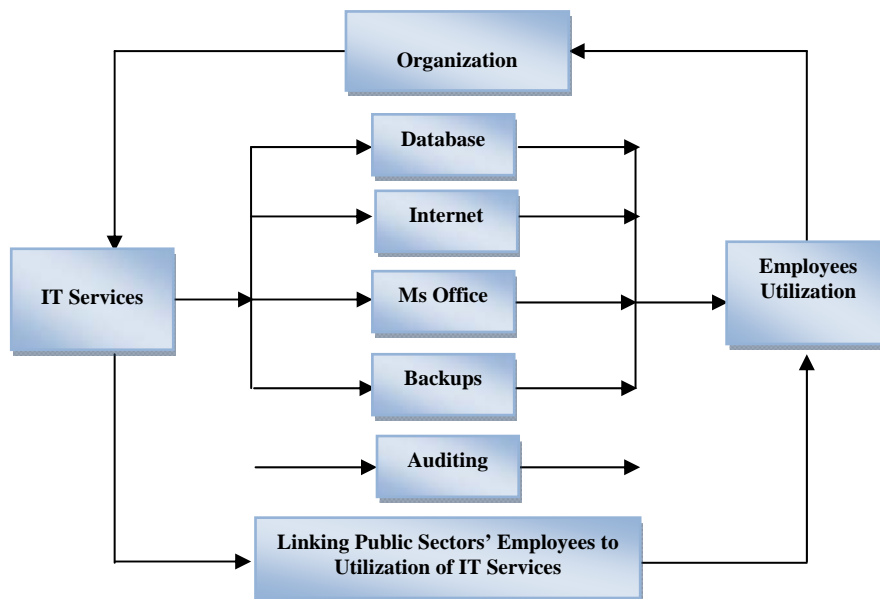


Figure 1: The conceptual framework
Source: Field work February, 2012

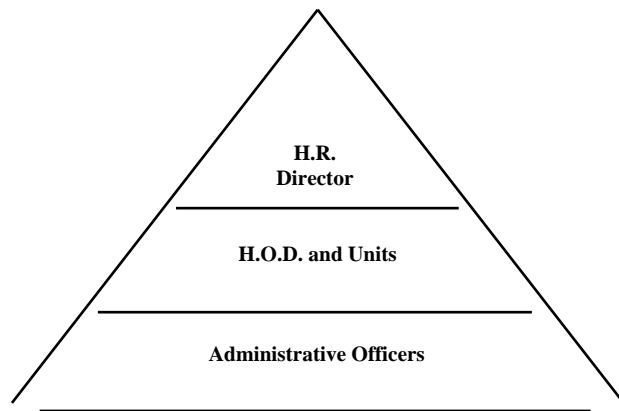


Figure 2: Managerial levels at geita district council (public sector)

Source: Field work February, 2012

Technology Management

The world is witnessing a technological revolution with far greater impact than the Industrial Revolution. The consequent changes in economic growth and social behavior are bound to be drastic. The Industrial Revolution, which started in the British Midlands in the eighteenth century, transformed the western countries economy, and work patterns, from an agricultural base to an industrial base. The release of steam power and the use of mechanical implements to supplement human power changed production and transportation habits. These changes resulted in a radical improvement in workers' productivity and created major economic growth in industrialized countries. Social and work habits also changed. The factory system emerged. It brought people from the farms to work in concert in clustered communities (Cadbury, 1995) (figures 1 and 2).

Objectives

Along with the above general objective, the study intends to meet the following specific objectives:

- i. To examine the utilization of IT services as a tool to generate efficiency of work
- ii. To find out IT services utilized by employees in the organization

To investigate the role of IT sectors in developing the economy

- iii. To find out the problems that arise with the use of IT services and how those problems are solved.

Research Questions

This study seeks to answer the questions raised here:

- i. How does the utilization of IT services generate efficiency of work in the organization?
- ii. What are the IT services utilized by employees in the organization?
- iii. What are the roles of IT sector in developing the economy?
- iv. What are the problems which arise with the use of IT services and how are those problems solved?

RESEARCH METHOD

Area of the study

The study was designed to cover the departments and units in Geita District Council as a public sector to access whether the utilization of IT services by employees in those departments and units is available. The proposed areas of research were the following departments and units namely Administration and Human Resource Management, Planning, Statistics and Evaluation, Finance and Trade, Health, Environmental and Sanitation, Primary Education, Secondary Education, Water, Agriculture, Irrigation and cooperatives, Livestock and Fishing, Land and Natural

Resources, Community Development, Social Welfare and Youth. The units were Legal Service Unit, Internal Audit Unit, Procurement Management Unit, and Information and Communication Technology and Public Relation Unit. The choice of this population was due to the possibility of such sector having employees that use information technology services. The study covered all employees who are required to utilize IT services in different departments at the organization. This gave responses as attitude towards the utilization of IT services by employees. In addition, the selection of the study depends on various justifications such as financial support, immediacy, possibility to get access to data and information and suitability of the study.

Research Design

The research design here was a survey which was conducted at Geita District Council - Mwanza. The survey which adopted in this research is a literature survey which is a secondary data search (library search). This survey generates data through a perusal of the various documentations such as journals, books and internet and conference proceedings. The structured questionnaires which were used in this study are the primary vehicle of data gathering in sampling human population. In designing a questionnaire, each question passed this test in order to provide information.

Populations, Scope and Limitations

Best and Khan (1998) have stated that population is the entire group of individuals, firms, plants or things that have one or more characteristics in common that are of interest to the study.

At Geita District Council, there are other organizational companies which provide service to the citizens. These are communication companies like AIRTEL, TIGO, VODACOM, TTCL and ZANTEL. Also, there are banks which are located at township namely NMB, CRDB, NBC and Postal Bank. Other banks are in the process of establishment, like AZANIA Bank. Also, there is a large investment on minerals known as Geita Gold Mine.

Population Survey

This is the survey which was conducted to the intended population leading to the selection of respondents. The selection of the respondents represented the total population so as to come up with the valid data for the study. The area covered were departments and units from Geita District Council. The study was conducted from the Department of Administration and Human Resource Management; Department of Planning, Statistics and Evaluation; Department of Finance and Trade; Department of Health; Department of Environmental and Sanitation; Department of Primary Education; Department of Secondary Education; Department of Water; Department of Agriculture, Irrigation and Cooperatives; Department of Livestock and Fishing; Department of Land and Natural Resources, and from Department of Community Development, Social Welfare and Youth. The study also was conducted from Legal Service Unit, Internal Audit Unit, Procurement Management Unit, and ICT and Public Relation Unit.

Sample Size

For this study, total employees from various departments and units in Geita District Council were 500. A sample of twelve departments and four units was drawn up from more than nineteen departments and units found in Geita District Council. Out of 500 employees, a sample of 10% was selected to give 50 respondents to represent the total employees. This is due to time management, cost, and availability of data from those departments.

This sample was drawn from the managerial levels as follows: twelve departments and four units namely Administration and Human Resource Management, Planning, Statistics and Evaluation; Finance and Trade, Health, Environmental and Sanitation, Primary Education, Secondary Education, Water, Agriculture, Irrigation and cooperatives, Livestock and Fishing, Land and Natural Resources, Community Development, Social Welfare and Youth, Legal Service Unit, Internal Audit Unit, Procurement Management Unit, and Information and Communication Technology and Public Relation Unit.

Data Collection Methods

Data was collected from both primary and secondary sources. Collection of primary data comprised methods of structured questionnaire while collection of secondary data comprised documentary review.

The main technique of data collection employed in this study was the structured questionnaire, then fifty (50) questionnaires was conducted to Managerial staff in sixteen (16) departments and units.

Apart from using questionnaire as the approach of data collection, the method was supplemented by documentary review. The researcher employed this strategy to gather data and information on current issues producing various reports (table 3).

(DMO), one was the environmental officer (EO), two were Forest Officers(FO), one was a Geologist, three were the Human Resource Officers (HRO), two were System Administrators (SA), one was a lawyer, one of them was a Legal Officer (LO), one was a Livestock Officer(LO), one was a Midwife, one was a Medical Officer (MO), two of them were Nursing Officers (NO), three of them were the Pharmaceutical Technologists (PT), two of them were Pharmacists, one was the Planning Officer (PO), two were Procurement and Supply Officers (PSO), two of them were the Statistical and Logistic Officers (SLO), two of them were Statisticians, one was the Town Planner (TP), one was a Treasurer (DT) and one was the Water Engineer (WE).These respondents participated in the study through questionnaires.

RESULTS AND DISCUSSION

Profile of Respondents

This study comprised of fifty respondents, two of them were agricultural officers, three of them were auditors, four of them were community development officers (CDO), three were clinical officers (CO), two were primary district academic officers (DAO-primary), one of them was the primary district academic and vocational officer (DAVO-primary), one was a secondary district academic officer (DAO-secondary), one was the secondary district education officer (DEO-secondary), one of them was a primary district education officer (DEO-primary), one was a district medical officer

Age of Respondents

In the question of age of respondents, ten (10) respondents were between 21-30 years of age which contributed to 20%. Twenty four (24) respondents were between the ages of 31-40 years which contributed to 48%. Sixteen (16) respondents were between 41-60 years of age and contributed to 32%. This contributed to the total of fifty (50) respondents who responded to this question. This shows that among of 50 respondents, employees between the ages of 31-40 years are majority followed by employees of the ages between 41-60 years, while the group between the ages of 21-30 years is the minority.

Table 3: Category of respondents

Levels of Management	Designation	Frequency	Percent
Top Level Management	Human Resource Director (HRD)	1	2.0
Middle Level Management	Human Resource Officer, District Treasurer, DEO-Primary, DEO-Secondary, District Medical Officer, District System Administrator, Lawyer, District Procurement and Supply Officer	9	18.0
Lower Level Management	Geologist, Agricultural Officer, Auditor, Community Development Office, Clinical Officer, Primary District Academic Officer, Secondary District Academic Officer, Primary District Academic and Vocational Officer, Environmental Officer, Forest Officer, Human Resource Officer, System Administrator, Legal Officer, Livestock Officer, Midwife, Medical Officer, Nursing Officer, Pharmaceutical Technologist, Pharmacist, Planning Officer, Procurement and Supply Officer, Statistical and Logistic Officer, Statistician, Town Planner, and Water Engineer	40	80.0
Total		50	100.0

Department / Unit of Respondents

In the question of departments and units, respondents were asked to mention which department or unit they belonged to, out of fifty (50) respondents, three (3) respondents were from the Department of Administration and Human Resource Management, thus contributed to 6%. Two (2) respondents were from the department of Agriculture, Irrigation and Cooperatives thus contributed to 4%. Four (4) respondents were from the department of Community Development, Social Welfare and Youth thus contributed to 8%. Three (3) respondents were from Environmental and Sanitation thus contributed to 6%. One (1) respondent was from the department of Finance and Trade thus contributed to 2%. Thirteen (13) respondents were from the department of Health thus contributed to 26%. Two (2) respondents from ICT and Public Relation Unit thus contributed to 4%. Three (3) respondents from

Internal Audit Unit thus contributed to 6%. One (1) respondent from the department of Land and Natural Resources thus contributed to 2%. Two (2) respondents from Legal Service Unit thus contributed 4%. One (1) respondent from the department of Livestock and Fishing thus contributed 2%. Four (4) respondents from the department of Planning, Statistics and Evaluation thus contributed to 8%. Six (6) respondents from the department of Primary Education thus contributed to 12%. Two (2) respondents from Procurement Management Unit thus contributed to 4%. Two (2) respondents from department of Secondary Education thus contributed to 4%. One (1) respondent from the department of water thus contributed to 2%. This shows that employees from health department showed positive response in participation of filling the questionnaires, since about 26% of all respondents participated in the study (table 4).

Table 4: Department / unit of respondents

Department/Unit	Frequency	Percent
Administration and Human Resource Management	3	6.0
Agriculture, Irrigation and Cooperatives	2	4.0
Community Development, Social Welfare and Youth	4	8.0
Environmental and Sanitation	3	6.0
Finance and Trade	1	2.0
Health	13	26.0
ICT and Public Relation Unit	2	4.0
Internal Audit Unit	3	6.0
Land and Natural Resources	1	2.0
Legal Service Unit	2	4.0
Livestock and Fishing	1	2.0
Planning, Statistics and Evaluation	4	8.0
Primary Education	6	12.0
Procurement Management Unit	2	4.0
Secondary Education	2	4.0
Water	1	2.0
Total	50	100.0

Source: Field work February 2012

The Presence of Internet Facilities at the Organization

This shows that there are no internet facilities at the organization because over 50% responded to NO. It seems that there are few internet facilities found at the organization but they are not utilized by employees due to lack of knowledge.

IT Services Found at the Organization

The response showed that 2% responded to auditing; another 2% to auditing and database; other 2% responded to auditing, database, and Ms office; 2% responded to backups; 6% responded to database; 2% responded to database and Ms office; 4% responded to

internet; 8% responded to internet, auditing, database, Ms office and backups; 8% responded to internet, database, and Ms office; 8% responded to internet, database, Ms office, and backups; 14% responded to internet, and Ms office; and 42% responded to Ms office (table 5).

Years of Use of IT Services at the Organization

It shows that 40% of the respondents responded to more than one year but less than two years, 58% of the respondents responded to more than two years, while 2% did not respond to the question. Number of years to when the organization started using IT (table 6).

Table 5: IT services found at the organization

IT services	Frequency	Percent
Auditing	1	2.0
Auditing, Database	1	2.0
Auditing, Database, Ms Office	1	2.0
Backups	1	2.0
Database	3	6.0
Database, Ms Office	1	2.0
Internet	2	4.0
Internet, Auditing, Database, Ms Office, Backups	4	8.0
Internet, Database, Ms Office	4	8.0
Internet, Database, Ms Office, Backups	4	8.0
Internet, Ms Office	7	14.0
Ms Office	21	42.0
Total	50	100.0

Source: Field work February, 2012

Table 6: IT services utilized by employees

IT services	Frequency	Percent
Auditing	1	2.0
Internet, Database	1	2.0
Internet, Ms Office	10	20.0
Internet, Ms Office, Auditing, Database, Intranet	2	4.0
Internet, Ms Office, Database	7	14.0
Internet, Ms Office, Intranet	1	2.0
Ms Office	25	50.0
Ms Office, Auditing, Database	3	6.0
Total	50	100.0

Source: Field work February, 2012

Good Access of Employees to the Internet

The result shows that some employees at the organization use internet while some of them do not use it. According to respondents, the percentages of YES and NO are almost the same while respondents who responded to I DON'T KNOW are not sure whether employees at the organization have good access on the internet. This is to say that some of employee at the organization do not access internet at all.

The Use of Database in Record Keeping and Accounting Data

The researcher wished to know whether the organization uses database in keeping records of their clients, staff, activities and interventions, develop records, and other types of accounting data. It indicates that 44% of respondents responded to YES, 40% responded to NO, while 16% responded to I DON'T KNOW.

These results show that the organization has got database but it is not utilized properly by employees. This is why the percentage of YES and that of NO are nearly equal. So the use of database in record keeping of data, developing records, and other types of accounting data are used in the organization to some extent. There are just few departments in the organization

which utilize database service. In addition to that, the researcher wished to know whether the use of database increase efficiency, effectiveness, and performance of work.

It shows that 84% of the respondents responded to YES, 2% responded to NO, while 14% responded to I DON'T KNOW.

The Benefits of Using IT Services in the Organization

Employees said that there are a lot of benefits of utilizing IT services in the organization. Many of them said that IT saves time. This is because IT service simplifies most of manual work done by employees. Other employees said that IT reduces paper work; because the works which had to be scribed on papers will be reduced. Another benefits mentioned by respondents is that IT replaces manual record of keeping and accounting since the work which had to be recorded manually and kept in hard copy files is recorded and kept in soft copies. Some respondents argued that IT reduces the work load that is the load of the work which has to be done by employees is reduced, for example, the use of auditing software, SPSS, and other services done through computers (table 7).

Table 7: The benefits of using IT services in the organization

Benefits	Frequency	Percent
IT saves time	20	40.0
IT saves time, Reduces paper work	1	2.0
IT saves time, Reduces paper work, Replaced manual Record keeping and accounting, Reduces workload	17	34.0
IT saves time, Reduces workload	1	2.0
IT saves time, Replaced manual record keeping and accounting, Reduces workload	3	6.0
Reduces paper work	5	10.0
Reduces workload	2	4.0
Replaced manual record keeping and accounting	1	2.0
Total	50	100.0

Source: Field work February, 2012

IT Training Becomes Useful Tool to the Organization

The researcher wanted to know whether IT training provided by various institutions was a useful tool to the organizations. It shows that 66% of the respondents responded to YES, 4% responded to NO, while 30% responded to I DON'T KNOW.

The Use of Auditing Software

The researcher wished to know whether auditing software is used at the organization. It indicates that 36% of the respondents responded to YES, 28% responded to NO, while 36% responded to I DON'T KNOW. The result shows that auditors at the organization use auditing software at a reasonable number during the auditing process, since 36% of the respondents responded to YES. But those who responded to I DON'T KNOW we're not sure either the use of auditing software at the organization is utilized or not.

Auditors at the Organization Use Accounting Packages in Auditing

This results show that auditors at the organization use accounting packages like EPICOR, TALLY, or QUICKBOOK in auditing. More than 50% of the respondents at the organization said that auditors use those accounting packages. Those who responded to I DON'T KNOW were not sure whether auditors use accounting packages or not. But those who did not respond to this question contributed to 2% of the respondents. These happened because they do not have knowledge about the term accounting packages since these are the packages which are used by auditors.

Summary on the Assessment of the Utilization of IT Services

The above results show that still employees are not given the opportunity to utilize IT services at the organizations. If employees do not know the essence of utilizing IT services, then it is difficult for them to make IT services as among of the important services to be utilized. The first objective of this research needed the researcher to examine the utilization of IT services as a tool to generate efficiency of work. The results have shown that there are

weaknesses in the use of IT services to generate efficiency of work to employees.

The use of database in keeping records of clients, staff activities and interventions, develop records, and other types of accounting data increases efficiency, effectiveness, and performance of work. The researcher discovered that employees who utilize database were 44% of all respondents at the organization. These increases efficiency, effectiveness, and performance of work to some extent. But on the other hand, the efficiency obtained does not give good performance to the organization during utilization of IT services as a tool to generate efficiency of work.

Problems with Regard to Database and Internet Service

This results show that public sector employees face problems regarding to the use of database system and internet service in their everyday activities. This is shown by the 72% of YES response.

Problems Arising to Be Solved by Responsible Authority

The findings show that there is little doubt in respect of the availability of responsible authority that solves the problems that arise regarding the use of database system and internet service. That is, the problems arising from the use of database system and internet system are solved by responsible authority. 2% of the respondents did not respond to the question, this shows that they are not sure to whether those problems are solved by responsible authorities or not.

Evaluation on the Problems of the Utilization of IT Services

Evaluation will not be effective if the highlighted shortcomings are not solved by the responsible persons. The first thing to look is the identified problems and who is responsible for the solution, then how far they have gone towards the solution of those problems. The council has not fully implemented the utilization of IT services to employees as it was predicted during data analysis. The following are the weaknesses noted:

- ✓ System Administrators are not adequately

trained enough to provide services to the organization and even those few which are present do not play their role to the organization.

- ✓ There is no training of system administrators at the organization so IT services seems to be underutilized since no system administrators to assist that services.

CONCLUSION

Utilization of IT Services

Utilization of IT services at Geita District Council plays a big role to employees. There are benefits of utilizing IT services in the organization, such as IT saves time due to simplifying most of the manual work. Also IT reduces paper work because the work which has to be scribed on papers is reduced. IT replaces manual record keeping and accounting, IT reduces work load and the use of IT software in accounting and auditing of public transactions. Examples, on this are the use of auditing software, SPSS, and other services done through computers.

IT Services Utilized by Employees

In district councils, there are IT services found to be utilized by employees in their daily life activities. These are software auditing, Database system, Ms Office, Internet, and Backups of data and Information. Based on the literature, the researcher perceived that IT has been seen as a way to promote educational change, improve the skills of learners and prepare them for the global economy and information society.

The Role of IT Sector in Developing the Economy

The major role of the IT sector in developing the economy in public sector is to enable the country to build a digital nervous system in order to improve the way people live, learn, and work. Other roles include buying goods and services online, helps in sending emails to donor agencies for support, sending messages across the globe to loved ones, IT brings about new jobs, IT improves the lives of the people and IT improves the economic lifestyle of the people.

With this boom, communication for developmental issues has been strengthened. However, there have been some setbacks in terms of Internet literacy and accessibility

(Lister, 2002). Not everyone in the third world has the knowledge and ability to use the computer, let alone owning one. This entire notion of the digital divide has affected development adversely (Wilkins, 2000).

Problems Rise with the Use of IT Services and How They Are Solved

During the utilization of IT services, some problems which arise are frequent system breakdowns, system not a user friendly, takes long time to process data, and complicated to use. Also there are problems that need external assistance which are updating antivirus and breaking down and slowness of the system. In addition to that, sometimes the technical problems take within a week to be solved. Other problems are inadequacy knowledge of system administrators in providing service, lack of training of system administrators, underutilization of IT facilities at the organization, back-up service not well provided by the system administrators, and underutilization of internet and auditing software by employees and auditors at the organization.

In discussing the utilization of IT service in the public sector, further efforts are needed in terms of increasing employees' participation in IT services. The level that employees utilize IT services is not enough to guarantee objectivity, autonomous and consistency of IT service. The researcher found out that most of employees between the ages of 41-60 years are the ones, who are not utilizing IT services well. This is because students who completed higher education at that time when information technology was not yet implemented in Tanzania were not taught ITs. Therefore there is a need to involve those employees to utilize IT services by providing them with the refresher courses which can be done at their organizations by the help of system administrators, otherwise they can join IT training from various institutions in order to bring about efficiency and effectiveness on utilization of IT services in public sectors.

Technology Development Recommendations

The researcher recommended the councils to develop partnerships with IT industry in terms of technology consultancy, computers and networking equipments, telecommunications, database management and hosting, servers,

security, firewalls, and software maintenance. The findings have shown that there are limited partnerships.

Furthermore, the curriculum developers and higher institutions should make sure that the curriculum should change with the changing world of science and technology. Graduates and other students from higher institutions have the ability of utilizing information technology after completing their education. The curriculum should be redesigned so that every student from those higher institutions learns and gets IT knowledge which can help him to utilize IT services in work places.

District Councils should provide local networks which can enable other departments and units found in to access IT services. Therefore, it is recommended to install network facilities in Government authority.

RECOMMENDATIONS

Managerial Recommendations

In order to enhance utilization of IT services at the district councils, the following recommendations to the management of district councils are made:

- i. To train system administrators so as to assist the services and enhance efficiency and effectiveness in the organization.
- ii. Providing refresher courses on IT services to employees so as to empower them on utilizing well internet facilities found at the organization.
- iii. System administrators provide well back up service so as to secure all file data and information.
- iv. Auditors to use auditing software in their process of auditing at the organization.
- v. Employees to have good access on the internet service in order to come up with a new knowledge and build up their careers.
- vi. System administrators make regular check up on the system and maintain it so as to reduce frequent system breakdowns of database and internet service at the organization.

Suggestions for Future Research

This study surveyed a small sample. It surveyed only sixteen departments and units among nineteen departments and units found at Geita District Council Tanzania in order to represent the population.

The study could have been enhanced had it covered a larger sample. Therefore, future researchers can expand the research on utilization of IT services by employees to different district councils, organizations, NGOs, and other institutions found in Tanzania.

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REFERENCES

- Adesola, A. O. (1991). The Nigerian University Systems: Meeting the Challenges of Growth in Depressed Economy. *Higher Education*, 21 (1), pp. 121- 133.
- Akpan, P. I. (2003). Basic-needs to Globalization: Are ICTs the Missing Link? *Journal of Information Technology for Development*, 10 (4), pp. 261–274.
- Antonelli, C. (1991). *The Diffusion of Advanced Telecommunications in Developing Countries*, Paris: Organization for Economic Co-operation and Development (OECD).
- Anyamele, S. C. (2004). Institutional Management in Higher Education: A Study of Leadership Approaches to Quality Improvement in University Management-Nigerian and Finnish Cases, Unpublished Doctoral Dissertation, University of Helsinki, Finland.
- Augustino (2000). Examination of the use of Information Technology Applications for online Searching, Unpublished MA (Information) Thesis: University of Dar-es-Salaam.
- Best, J. W. and Kahn, J. V. (1998). *Research Education*, 8th ed. Boston: Allyn and Bacon.

- Bradford, M. and Florin, J. (2003). Examining the Role of Innovation Diffusion Factors on the Implementation Success of Enterprise Resource Planning Systems. *International Journal of Accounting Information Systems*, 4 (3), pp. 205-225.
- Brailer, D. J. and Terasawa, E. L. (2003). Use and Adoption of Computer-Based Patient Records in the United States: A Review and Update, California Healthcare Foundation. March 28. Oakland, CA.
- Brown, I. (2002). Individual and Technological Factors Affecting Perceived Ease of Use of Web Based Learning Technologies in A Developing Country. *Electronic Journal of Information Systems in Developing Countries*, 9 (5), pp. 1-15.
- Burn, J. M. (1990). The Strategic Use of IT in Hong Kong Organizations: An Analysis of Applications in Small to Medium Sized Organizations, Proceedings of International Conference on IT.
- Cerf, V. (1999). The Internet Is for Everyone. On the Internet, July–August, 8–9.
- Cloke, C. and Sharif, S. (2001). Why Use Information and Communication Technology in Schools? Some Theoretical and Practical Issues. *Journal of Information Technology for Teacher Education*, 10 (1/2), 7-18.
- Cooper, R. B. and Zmud, R. W. (1990). Information Technology Implementation Research – A Technological Diffusion Approach. *Management Science*, 36 (2), pp. 123-139.
- Corn Ford, T. and Smithson, S. (1996). *Project Research in Information Systems: A Student's Guide*. London: Macmillan Press Ltd.
- COSTECH (2003). Progress Report to International Development Research Centre (IDRC) on Sengerema Telecentre Project, Evaluation Report to the Project of 2003.
- Darkwa, O. K. and Eskow, S. (2000). Creating an African Virtual Community College: Issues and Challenges. *First Monday*, 5 (11).
- Darkwa, O. and Mazibuko, F. (2000). Creating Virtual Learning Communities in Africa: Challenges and Prospects. *First Monday*, 5 (5).
- Davis, M. and Danning, K. (2001). Transition to Virtual Learning. *Association for Learning Technology Journal*, 9 (2), pp. 64-75.
- Dimaggio, P. J. and Powell, W. W. (1983). The Iron Cage Revisited - Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review*, 48 (2), pp. 147-160.
- Dogac, A., Kabak, Y., Laleci, G., Sinir, S., Yildiz, A., Kirbas, S. and Gurcan, Y. (2004). Semantically Enriched Web Services for the Travel Industry. *SIGMOD Rec.*, 33 (3), pp. 21-27.
- Ebeling, M. (2003). The New Dawn: Black Agency in Cyberspace. *Radical History Review*, 87, pp. 96-108.
- Economist (2006). From Online to Helpline. 380 (8489), p. 58.
- Eder, L. B. and Igbaria, M. (2001). Determinants of Intranet Diffusion and Infusion. *Omega-International Journal of Management Science*, 29 (3), pp. 233-242.
- Ezewu, E. (1983). *Sociology of Education*. Lagos: Longman Group.
- Fielden, J. (1998). Collaboration in Administrative Computing: The Issues. *Association of Commonwealth Universities (ACU)*, ABCD, 134, pp. 18-21.
- Galloway, L., Mochrie, R. and Deakins, D. (2004). ICT-Enabled Collectivity as a Positive Rural Business Strategy. *International Journal of Entrepreneurial Behavior and Research*, 10 (4), pp. 247-59.
- Garzotto, F., Paolini, P., Speroni, M., Proll, B., Retschitzegger, W. and Schwinger, W. (2004). Ubiquitous Access to Cultural Tourism Portals. *Paper Presented to Database and Expert Systems Applications*, 15th International Workshop on (DEXA'04), Zaragoza, Spain, August 30 - September 03, pp. 67-72.
- Gbamanja P. T. (1989). *Essentials of Curriculum and Instruction, Theory and Practice*. Port Harcourt: Pam Unique Publishing Company.
- Gibbs, L. J. and Kraemer, K. L. (2004). A Cross-Country Investigation of the Determinants of Scope of E-Commerce Use: An Institutional Approach. *Electronic Markets*, 14 (2), pp. 124-137.
- Gorard, S., Selwyn, N. and Williams, S. (2002). Establishing an Inclusive Society: Technology, Social Exclusion and UK Government policymaking, Available: <http://www.leeds.ac.uk>
- Gumbo, S. D. (2003). Utilization of ICT as Tools and Resources for Teaching and Learning at the Midlands State University in Zimbabwe. in Proceedings of the 11th Annual Conference on Improving Cooperation among Researchers, Policy Formulators and Implementers of Policy in Mathematics, Science and Technology Education, SAARMSTE, Putsoa, B. et al. ed., pp. 47-55.
- Gurau, C. (2002). Online Banking in Transition Economies: The Implementation and Development of Online Banking Systems in Romania. *International Journal of Bank Marketing*, 20 (6), pp. 286–296.
- Gromov, R. (1995). History of the Internet and www: The roads and Crossroads of Internet History. Available: <http://www.netvalley.com/intval.html> (November 19, 2004).
- Hage, J. (1980). *Theories of Organizations: Forms, Process and Transformation*, New York: John Wiley and Sons.
- Heeks, R. (1999). *Development Informatics: Information and Communication Technologies, Poverty and Development*, Institute for Development Policy and Management. Manchester.

- Hergenbahn, B. R. and Olson, M. H. (1997). *An Introduction to Theories of Learning*, 5th ed., Upper Saddle River, NJ: Prentice Hall.
- Hsu, P. F., Kraemer, K. L. and Dunkle, D. (2006). Determinants of E-business Use in US Firms. *International Journal of Electronic Commerce*, 10 (4), pp. 9-45.
- Ishumi, A. and Suzgo, N. (2002). *Philosophy of Education: An Introduction to Concepts, Principles and Practice*. Dar-es-Salaam University Press Ltd.
- Iskandar, B. Y., Kurokawa, S. and Leblanc, L. J. (2001). Business-to-Business Electronic Commerce from First - and Second - Tier Automotive Suppliers' Perspectives: A Preliminary Analysis for Hypotheses Generation. *Technovation*, 21 (2001), pp. 719-731.
- Janesick, V. J. (1998). The Dance of Qualitative Research Design: Metaphor, Methodology, and Meaning. In Norman K. Denzin and Yvonna S. Lincoln (eds.), *Strategies of Qualitative Inquiry*, Sage Publications, International Educational and professional Publisher, Thousand Oaks, London, New Delhi.
- Joppe, M. (2000). The Research Process. Available: <http://www.ryerson.ca/~mjoppe/rp.htm> (February 25, 1998).
- Kadison, M., Lieu, K. C. and Levin, K. (1998). On-line Retail Strategies, Forrester Report 1/1. <http://www.forester.com> (April 1998).
- Kaino, L. M. (2004). Analysis of ICT Availability: Utilization and Policy in Botswana Schools. *African Journal of Educational Studies (AJES)*, 3 (1), pp. 287-308.
- Khandwalla, P. (1970). *Environment and the Organization Structure of Firms*, McGill University, Montreal, Faculty of Management.
- Kamel, S. (1995). Information Superhighways, a Potential for Socioeconomic and Cultural Development. In M. Khosrowpour ed., *The 6th International IRMA Conference Proceedings: Managing Information and Communications in a Changing Global Environment*, pp. 115-124.
- Kamel, S. (1998). Building the African Information Infrastructure. In P. Banerjee, R. Hackney, G. Dhillon, and R. Jain ed., *Business Information Technology Management: Closing the International Divide*, New Delhi: Har-Anand Publications, pp. 118-144.
- Kamel, S. (2001). The Information Society in Egypt. In G. Nulens, N. Hafkin, L. V. Audehove, and B. Cammaerts, ed., *The Digital Divide in Developing Countries: Towards an Information Society in Africa*, Brussels: Brussels University Press, pp. 299-313.
- Knowlton, D. S. and Knowlton, H. M. (2001). The Context and Content of Online Discussions: Making Cyber-Discussions Viable for Secondary School Curriculum. *American Secondary Education*, 29 (4), pp. 38-52.
- Kombo, D. K. and Troup, D. L. A. (2006). *Proposal and Thesis Writing: An Introduction*. Nairobi: Paulines Publications.
- Koontz, H. and O'Donnel, W. (2007). *Principles of Management*, New Delhi: TMH.
- Kouakou, K. (2003). *Human Capital Development, Education and ICT and Africa*, Africa Dot Edu. New Delhi: Tata McGraw-Hill.
- Kuntoro, R. D. and Al-Hawemdeh, S. (2003). E-Learning in Higher Institution in Indonesia. *Journal of Information and Knowledge Management*, 2 (4), pp. 361-374.
- Leidner, D. E. and Jarvenpaa, S. L. (1993). The Information Age Confronts Education: Case Studies on Electronic Classroom. *Commonwealth Higher Education Services*, 4 (1), pp. 24-54.
- Li, Y. H. (2008). An Empirical Investigation on the Determinants of E-Procurement Adoption in Chinese Manufacturing Enterprises. 2008 International Conference on Management Science and Engineering (15th), California, USA, Vol.: 1/2, Conference Proceedings, pp. 32-37.
- Longstaff, T. R. W. (1995). *Computer Recording, Analysis, and Interpretation*, New York: Oxford University Press.
- Lund, H. (1998). *Joining Hands: A Survey of Non-Academic Collaboration between Commonwealth Universities*, Commonwealth Higher Education Service.
- McCormick, P. (2002). Internet Access in Africa: A Critical Review of Public Policy Issues. *Comparative Studies of South Asia, Africa and the Middle East*, 22 (1/2), pp. 140-144.
- Miller, R. H. and Sim, I. (2004). Physicians' Use of Electronic Medical Records: Barriers and Solutions. *Health Affairs*, 23 (2), pp. 116-126.
- Moodley, S. (2002). Connecting to Global Markets in Internet Age: The Case of South Africa Wooden Furniture Producers. *Development Southern Africa*, 19 (5), pp. 641-658.
- Nua Research (2000). How Many Online? Available: <http://www.nua.com/surveys/>
- Nwuke, K. (2003). *Higher Education, Economic Growth, and Information Technology in Africa*, Some Challenges and Issues. Africa dot Edu., New Delhi: Tata McGraw- Hill.
- OECD (2002). *The Impacts of Electronic Commerce on Business: Summary*.
- DSTI/ICCP/IE (2002). 5/FINAL, OECD, Paris.
- Okpaku, J. O. (2003). *Information and Communication Technologies for African Development—an Assessment of Progress and Challenges Ahead*, United Nations Information and Communication Technologies Task Force ed., Series 2, New York: United Nations.
- Oliver, M., Bradley, C. and Boyle, T (2001). The

- Distributed Development of Quality Courses for A Virtual University. *Association of Learning Technology Journal*, 9 (2), pp. 16-27.
- Osunkunle, O. (2008). Information and Communication Technology (ICT) and Higher Education in South Africa: An Inter-Institutional Analysis. A paper presented at the International Conference on Technology, Education and Development. Valencia, Spain.
- Porter, E. M. and Millar, E. V. (1983). *How Information Gives You Competitive Advantage*, New York, USA.
- Powell, W. and Dimaggio, P. (1991). *The New Institutionalism in Organizational Analysis*, Chicago: Univ. of Chicago Press.
- Press, L. (1999). Connecting Villages: The Grameen Bank Success Story. On the Internet, July–August, pp. 32–37.
- Rogers, E. M. (1995). *Diffusion of Innovations*, 4th ed., New York: The Free Press.
- Sala, N. (2004). Web Based Teaching and Learning: Two Swiss Examples, Proceedings of the 2004 IRMA International Conference, USA.
- Saunders, M., Lewis, P. and Thornhill, A. (2000). *Research Methods for Business Studies*, 2nd ed. Harlow: Prentice Hall.
- Sciadas, G. (2002). Monitoring the Digital Divide, An ORBICOM-CIDA Project Report. Quebec, Canada: National Research Council Canada (NRC).
- Scott, W. R. (2001). *Institutions and Organizations*, 2nd ed. Thousand Oaks, CA, Sage Publications.
- Scott, W. R. and Christensen, S. (1995). *The Institutional Construction of Organizations: International and Longitudinal Studies*, Thousand Oaks, CA, Sage Publications.
- Scupola, A. (2002). Adoption Issues of Business-to-Business Internet Commerce in European SMEs, in Proceedings of the 35th Hawaii International Conference on System Sciences 2002, Available: <http://www.hicss.hawaii.edu/diglib.htm>
- Seels, B. and Richey, R. C. (1994). *Instructional Technology: The Definition and Domains of the Field*, Association for Educational Communications and Technology: Washington DC.
- Sharma, P., Carson, D. and DeLacy, T. (2000). National Online Tourism Policy Initiatives for Australia. *Journal of Travel Research*, 39 (2), pp. 157-162.
- Sheldon, P. J. (1998). *Tourism Information Technology*, New York: CABI Publishing.
- Shelly, G. B., Cashman, T. J. and Vermaat, M. E. (2002). *Discovering Computers 2003: Concepts for a Digital World Complete*, Thomson Learning, USA.
- Sibiya, T. G. (2003). Information and Communication Technology and Education. In Proceedings of the 11th Annual Conference on Improving Cooperation among Researchers, Policy Formulators and Implementers of Policy In Mathematics, Science and Technology Education, SAARMSTE. Putsoa, B. ed., pp. 26-32.
- Silverman, D. (1993). *Interpreting Qualitative Data: Methods for Analyzing Talk, Text and Interaction*, Sage Publications: Londres.
- Sirimanne, S. (1996). The Information Technology Revolution: What about the Developing Countries? CIDA International Development Information Centre: Development Express, No. 04. Paper Published on the World Wide Web.
- Smith, M. D. and Brynjolfsson, E. (2001). Consumer Decision-Making at an Internet Shopbot: Brand Still Matters. *The Journal of Industrial Economics*, 49 (4), pp. 541-558.
- Soares-Aguiar, A. and Palma-Dos-Reis, A. (2008). Why Do Firms Adopt E-Procurement Systems? Using Logistic Regression to Empirically Test a Conceptual Model. *IEEE Transactions on Engineering Management*, 55 (1), pp. 120-133.
- Sparrow, M. K. (1992). Informing Enforcement, Informatization and the Public Sector, University of Manchester, Precinct Centre, Manchester, M13 9GH, UK.
- Stake, Robert E. (1998). *Strategies of Qualitative Inquiry*, Norman K. Denzin and Yvonna S. Lincoln ed., Sage Publications, International and Professional Publisher, Thousand Oaks, London, New Delhi.
- Srivastava, M. and Raghunathan, V. (2008). *Embedded Computing: A Systems Approach (Series on Integrated Circuits and Systems)*, New York: Springer Verlag.
- Starbuck, W. H. (1976). *Organizations and Their Environments*, Chicago: R. and McNally.
- Steinberg, J. (2003). Information Technology and Development Beyond. *The Brookings Review*, 21 (2), pp. 45–48.
- Teo, H. H., Wei, K. K. and Benbasat, I. (2003). Predicting Intention to Adopt Interorganizational Linkages: An Institutional Perspective. *MIS Quarterly*, 27 (1), pp. 19-49.
- Thompson, J. D. (1967). *Organizations in Action*, New York: McGraw-Hill.
- Thong, J. Y. L. (1999). An Integrated Model of Information Systems Adoption in Small Businesses. *Journal of Management Information Systems*, 15 (4), pp. 187-214.
- Tornatzky, L. and Fleischer, M. and Chakrabarti, A. K. (1990). *The Process of Technology Innovation*, Lexington, MA, Lexington Books.
- Valida, A. C., Leng, A. C., Kasiran, M. K., Hashim, S. and Suradi, Z. A. (1994). A Survey of Information Technology Utilization among Business Organizations in Malaysia, Proceedings of International Conference on IT, KL: Malaysia.
- Vaus, D. (1996). *Survey in Social Research*, 4th ed. London: UCL Press Ltd.

- Wenn, A., Tatnall, A., Sellitto, C., Darbyshire, P. and Burgess, S. (2002). A Sociotechnical Investigation of Factors Affecting I.T. Adoption by Rural Gps, in Information Technology in Regional Areas, *Using IT: Make IT Happen*, Online, Rockhampton, Queensland Australia.
- Werthner, H. and Klien, S. (1999). *Information, Technology and Tourism: A Challenging Relationship*, Springer Computer Science, Vienna, Austria: Springer.
- Werthner, H. and Klein, S. (1999). ICT and the Changing Landscape of Global Tourism Distribution. *Electronic Markets*, 9 (4), pp. 256-262.
- Wilkins, K. (2000). *Redeveloping Communication for Social Change: Power, Theory, and Practice*, Boulder: Rowman and Littlefield Publishers, Inc.
- World Bank (2003). *ICT and MDGs—A World Bank Group Perspective*, Washington D.C.: World Bank Group.
- World Tourism Organization (1999). *Marketing Tourism Destinations Online: Strategies for the Information Age*, Madrid: Unpublished Report.
- Zhu, K., Kraemer, K. L. and Xu, S. (2006b). The Process of Innovation Assimilation by Firms in Different Countries: A Technology Diffusion Perspective on E-Business. *Management Science*, 52 (10), pp. 1557-1576.
- Zikmund, W. M. (1984). *Business Research Methods*. Chicago: The Dryden Press.

Websites

- <http://www.internetworldstats.com/pr/edi049.htm>
(February 2012).
- <http://www.internetworldstats.com/stats.htm>
(March 2012).
- <http://www.internetworldstats.com/af/tz.htm>
(April 2012).
- http://www.economywatch.com/world_economy/tanzania/ (May 2012).