

**A framework for e-records in support of e-government implementation in the
Tanzania public service**

By

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ABSTRACT

Effective e-records management is considered an integral part for successful implementation of e-government. While many previous studies have been carried out on e-government implementation, few investigated e-records management in supporting successful implementation of e-government in Tanzania with a view to developing the best framework. The specific objectives of the study were to: determine e-records readiness in the Tanzania Public Service; assess e-government implementation status in the Tanzania Public Service; establish the effectiveness of existing e-records legal, policy and regulatory framework in support of e-government; determine the e-records knowledge and skills of staff in the Public Service; find out the extent to which the National Archives (RAMD) is involved in the management of e-records and e-government implementation in the Public Service; and to develop a framework for the management of e-records and e-government implementation.

The study based on interpretive research paradigm and adopted qualitative research method. A sample size of 50 respondents was drawn from four public offices namely: the Ministry of Public Service (PO-PSM), Tanzania Communications Regulatory Authority (TCRA), E-Government Agency (e-GA) and the Records and Archives Management Department (RAMD). Data was collected through interviews and personal observation and was analysed using thematic analysis.

Findings revealed that although there is evidence of availability and use of e-records across government institutions in Tanzania, the e-records readiness and efficiency levels in support of e-government were low; the management of e-records is not yet streamlined to the majority registries; and e-Government implementation maturity level is low. Further findings indicated that the existing legislations, policies and regulations

are inadequate and ineffective particularly on matters relating to e-records management and e-government implementation; records personnel, action officers and IT staff were not conversant with procedures and practices of e-records management; and that, there is poor involvement of RAMD in ERM a situation that slows down implementation e-government.

The study concluded that, the current practices for managing electronic records in support of e-government implementation in Tanzania were inadequate. Even the existing national e-government strategy does not incorporate the management of electronic records as an important aspect towards successful implementation of e-government in the country. The study has recommended a framework for effective management of e-records in support of e-government implementation; e-records management training for records personnel, IT staff and secretaries; development of RAMD website; identification of ERM software specifications; customization of ISO standards to suit Tanzanian environment; amendment of the existing Archival legislation; and benchmarking from successful governments.

Keywords: public records, e-records, e-government, electronic records management systems, e-government maturity, digital repository

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DEDICATION

This work is dedicated to my beautiful wife Zatia R. Mgambo and my three wonderful children Derick, Lugano and Blessing.

DECLARATION

This is to declare that the work contained in this thesis under the title '**a framework for e-records management in support of e-government in the Tanzania Public Service**', is my original work except where due reference or acknowledgement has been made. The work has not been submitted either in whole or part to any other University or for any award.

SIGNATURE

DATE

Gwakisa A. Kamatula

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LIST OF ACRONYMS

CMS	-	Content Management System
EDMS	-	Electronic Document Management System
EDRMS	-	Electronic Document Records Management System
ERA	-	Electronic Records and Archives
ERM	-	Electronic Records Management
ERMS	-	Electronic Records Management System
ESARBICA	-	East and Southern African Branch of the International Council on Archives
ICA	-	International Council of Archives
ICT	-	Information Communication Technology
IFMIS	-	Integrated Financial Management System
IRMT	-	International Records Management Trust
ISO	-	International Standards Organisation
MDAs	-	Ministries Departments and Agencies
MER	-	Management of Electronic Records
NAA	-	National Archives of Australia
NARA	-	National Archives and Records Administration
NARS	-	National Archives and Records Service
NICB	-	National ICT Broadband
NIDC	-	National ICT Data Centre
NRAMP	-	National Records and Archives Management Policy
RAM	-	Records and Archives Management
RAMD	-	Records and Archives management Department
RM	-	Records Management
SADC	-	Southern Africa Development Community
TCRA	-	Tanzania Communication Regulatory Authority
TPSC	-	Tanzania Public Service College
UN	-	United Nations

UNDP - United Nations Development Programme
UNESCO - United Nations Education Social and Cultural Organisation
UNISA - University of South Africa
URT – United Republic of Tanzania

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

E-records and e-government have become common concepts in both developed and developing world today (IRMT, 2003; IRMT, 2009; Lemieux, 2016). "E-government is the use of Information and Communication Technologies to promote more efficient and effective government, and make it more accessible and accountable to the citizens. The characteristics of e-Government include: Electronic service delivery, electronic workflow, electronic voting and electronic productivity (UNESCO, 2005:5).

E-government implies the act of delivering services through the internet, telephone, information kiosks, wireless devices and other communication systems (Colesca & Liliana, 2009). E-government may be characterized as an innovative attempt to take advantage of ICTs to facilitate access to government information and services in order to support social, economic and political development, improve the quality of public services, provide an opportunity for government-to-government (G2G), government to business (G2B) and government to citizens (G2C) communication (UNESCO, 2005).

E-government is an enabler towards accelerating processes, delivering services to citizens and businesses, increasing transparency and accountability, while also lowering costs (United Republic of Tanzania, 2008). E-Government is about a government using computer technology, software and the Internet to manage and deliver services in three overlapping focal points: external interaction, connecting citizens and process improvement. According to the World Bank (2001), e-government

is when the government owns or operates systems of information and communication technologies that transform relations with citizens, the private sector and other government agencies so as to promote citizens' empowerment, improve service delivery, strengthen accountability, increase transparency, and improve government efficiency.

According to UNESCO (2005), e-government is concerned with the use of Information Communication Technologies to promote governments' efficiency and effectiveness as it makes them more accessible and accountable to the citizens. UNESCO (2005) identified four main characteristics of e-government including: (1) Electronic service delivery; (2) Electronic work flow; (3) Electronic voting; and (4) Electronic productivity.

Moreover, UNESCO (2005) suggests that although the entire gamut of e-government involves a large number of entities and processes, there are four primary types of interaction that form the foundation of e-government deployment. The said types of interaction are: (1) G2G: This is Government to Government interaction which involves sharing of data and conduct of electronic information exchange amongst various government departments and other entities. This exchange could be both intra and inter agency at the national level as well as exchanges among national provincial and local levels (UNESCO, 2005).

Another type of interaction is the G2C. This stands for Government to Citizen interaction where electronic dissemination of information and electronic delivery of services takes place hence fulfilling the primary objective of e-government. This form

of interaction is less time consuming and convenient as it allows online transactions such as obtaining certificates, reviewing licences, paying taxes/bills and applying for government schemes 24*7. Further, such an interaction enables citizens to participate in the process of policy formulation.

The third form of interaction as per UNESCO (2005) is the G2B. This is a Government to Business form of interaction. It involves improved and efficient procurement of goods and services by the government from the commercial business entities. G2B also includes sale of government goods to the public and has the potential for reducing costs through improved procurement practices and increased competition. UNESCO further denotes that the G2B type of interaction facilitates the exchange between the government and businesses regarding licences, taxation and policies issued for various sectors.

Lastly, it is the G2E type of interaction that forms the foundation of e-government. This is the Government to Employee interaction which covers employment opportunities, work guidelines, rules and regulations, benefits and pay structures for the government employees, employee welfare schemes, work rules and regulations, government housing etc. (UNESCO, 2005).

E-records are informational or data files that are created and stored in digitized form through the use of computers and applications software (State of California, 2002:10). E-records which are sometimes referred to as digital records are:

...records created, communicated and maintained by means of computer technology. They may be 'born digital' (created using computer technology) or they may have been converted into digital form from their original format (e.g. scans of paper documents (National Archives of Australia, 2014).

In electronic environment, records systems may be designed to register records through automatic processes transparent to the user of the business system (ISO 15489-1: 2016). Further, e-records can be recorded on a medium (IRMT, 1999; Saffady, 2002) such as magnetic tapes or disks. However, their status is not dependent upon medium. A review of literature indicate that, unlike paper records, e-records must be viewed as a logical rather than physical documents because for them to be read, an aid of computer hardware and software is necessary so as to interpret the codes used to present letters, numbers, and figures (IRMT, 1999). Sources of e-records include: computers and computer-like devices, scientific and medical instrumentation, communication equipment, video records and audio recorders (Saffady, 2002). Unlike paper based records, e-records are logical flow that require three major attributes namely: content, context, and structure. Content refers to what the records is about; context is the background information that helps explain the meaning of the document; and structure concerns the appearance and arrangement of the content.

Electronic records are important information resource because when managed properly, they can support organizational business operations (IRMT, 1999). Computer files may be categorized by the type of information they contain (Saffady, 2002:53). Based on this fact, (IRMT 1999:16; and Saffady, 2002:54-70) identified the following as key formats of e-records:

Databases: These are groups of related electronic records organised

and treated as a unit. They contain records that are subdivided into one or more data elements called fields, which store particular categories of information (IRMT, 1999; Saffady, 2002). Saffady (2002) further describe that, within the database, records are sequenced by values contained in a designated field described as *key fields, sort fields or sort key*. Saffady gives an example of a database for human resources application containing one record for each employee. within each record, such information as the employee's name, job title, office location, telephone number and home address may be stored in designated fields.

Text files: These are widely associated with word processing programs credited by desktop publishing and computerised typesetting programs, electronic mail systems, workgroup software, optical character recognition (OCR) products, and text editors of the type furnished as utility programs with some computer operating systems. As their name suggests, text files contain machine readable information in character-coded form represented by a predetermined sequence of bits, which constitute one byte of computer processible information. However, it is already common for a single word-processed document to include embedded elements created by other software applications.

Spreadsheet files: These are files that contain information stored in cells, which are formed by intersection of rows and columns in a tabular presentation. Cells may contain quantitative values, formulas, textual information (labels), or graphics along with formatting instructions (Saffady, 2002:59). IRMT (1999) refer this format of e-records as *Multi-dimensional documents* due to the fact that Some forms of electronic record can be represented in more than one way on the screen and on the printed page.

Image files: These are computer-processable, digitally coded images and machine-readable information that may be created by various programs and devices including:

- Computer-aided design (CAD) programs
- Computer painting, drawing, and other graphic arts software
- Software that produce slides, overheads, and other presentation aids
- Geographical information systems (GIS)
- Desktop publishing programs
- Spreadsheet programs that include business graphics components
- Software statistical and demographic analysis
- Scanners that generate digitized images from paper documents or microforms
- Digital cameras
- Fax modems and related software.

Image files may be reproduced in hard copies by printers, stored for later retrieval, incorporated into Web pages, added to highly formatted documents, transmitted to remote devices via telecommunication facilities, or otherwise processed for other purposes (Saffady, 2002:61-62).

E-records are the by-products of e-government (World Bank, 2002). This is why Wato (2006) rightly points out that issues related to e-records are inseparable from e-government issues. The electronic delivery of services to government, business and citizens produces electronic records be it in text, graphics, pictorial, audio or data as evidence of transactions. Such electronic evidence need to be retained as records which can demonstrate accountability and preserve reliable access and in turn support the e-government (Nkala, Ngulube & Mangena, 2012). This however, brings about tremendous challenges which need a sound framework that would safeguard the security, integrity, and authenticity of e-records.

1.2 Background information on participating institutions

This section provides a brief introduction to each of Four institutions that were involved in the study namely: Ministry of President's Office Public Service Management (PO-PSM); Records and Archives Management Department (RAMD); Tanzania E-Government Agency (e-GA) and Tanzania Communications Regulatory Authority (TCRA). The section outlines functions and roles played by each of them as explained in sub-sections below:

a) President's Office, Public Service Management (PO-PSM)

The president's office, Public Service Management (PO-PSM) is a Ministry under the President's Office. Formerly, it was known as Civil Service Department but later in

the year 2003, it was transformed to conform to the newly enacted Public Service Act No.8 of 2002. Along with the transformation, opportunity was taken to accommodate efficiency and effectiveness considerations in the management of the Public Service, in particular implementation of the on-going Public Service Reforms and in provision of its services (URT, 2016).

The vision of PO-PSM reflects the broader poverty reduction development agenda of the Government as stipulated in the National Strategy for Growth and Reduction of Poverty (NSGRP). The role of PO-PSM is to assist the Head of the Public Service (the Chief Secretary) in matters of personnel and administration pertaining to Public Service in the entire government system. The specific functions of PO-PSM are to embrace:

- i. Policies on Administrative, e-Government, Public Service Housing, Archives and Records Management and Human Resource Management and their implementation;
- ii. Administration of Public Service;
- iii. Performance contracts;
- iv. Human Resources Development and Planning;
- v. Payroll Management;
- vi. Public Service Ethics;
- vii. Management services, Public Service Performance improvement;
- viii. Establishment of Executive Agencies;
- ix. Retired State Leaders Services;

- x. Coordination of Accountability and Transparency;
- xi. Public Reforms;
- xii. Performance improvement and development of Human Resources under office; and
- xiii. Extra-Ministerial Departments, Parastatal Organizations, Agencies, Programmes and Projects (URT, 2016).

b) The Records and Archives Management Department (RAMD)

The Records and Archives Management Department (RAMD) of Tanzania is placed under the President's Office, Public Service Management (PO-PSM). Previously, the department was placed under the Ministry of Education and Culture. The department was then relocated to the President's Office, Civil Service Department following the restructuring of the records and archives services (A five-year report, 2003). The reasons behind the re-allocation were reforms that emphasised the need for merging the Records Management Unit from the Civil Service Department and the National Archives from the Ministry of Education and Culture. This came as a result of research conducted by Dr. Anne Thurston in the 1980s.

The need for a national archive arose from concern about the backlogs of inactive records that had accumulated in various government offices at the time of independence. Most of these backlog records were German archives and British Secretariat records, which were later inherited by the newly independent Government of Tanganyika. Most of the records were not in very good physical condition. This pressurised the Government to speed up the establishment of an archival institution. Thus, the records and archives service in Tanzania was

established in 1963 through Presidential Circular No. 7 of 1963, the main mandate of which was to facilitate the proper care and disposal of public records. However, the National Archive, as an institution, was not established until 1965 when an Act of Parliament (National Archives Act No. 33/1965) was passed. The Act empowered the National Archive to have access to all public records and preserve such records. During this period, the role of the National Archive was confined to handling non-current records, rather than current and semi-current records (Ede, 1994). In 2002, the Government passed the Records and Archives Management Act No. 3, which repealed the Records (Disposal) Ordinance of 1931 and the Amended National Archives Act No.33 of 1965, and formalised the position of the National Archive as the Records and Archives Management Division (RAMD), under the President's Office, Public Service Management.

The vision of the RAMD is to provide the highest standards of Records and Archives Management Services and to create public awareness on the importance of a written heritage for the nation. RAMD's Mission is to ensure the preservation of the archival heritage of Tanzania, to make government agencies accessible to the public, and to establish an efficient and effective records management system in the Government. The RAMD is responsible for providing effective guidance and supervision to government departments and other bodies subject to the Records and Archives Management Act No 3 of 2002. To support the ongoing Public Service Reform Programme (PSRP), the department has the following main functions:

- i. To ensure that all archival collections are properly acquired, described, and arranged, preserved, and accessed, and that the order in which this work is

carried out reflects customer demand, the intrinsic value of the archival groups, and optimal utilisation of resources;

- ii. To introduce modern records management systems to public service to increase government efficiency and accountability, as well as advising the government on best practices and establishing standards in keeping records in the public service.

c) Electronic Government Agency (e-GA)

E-Government Agency (e-GA) is a semi-autonomous institution established under the Executive Agencies Act, No. 30 Cap. 245 of 1997, with the mandate of coordination, oversight and promotion of e-Government initiatives. The Agency was established in implementation of a Cabinet decision made in 2004 and by Tanzania Presidential Instrument Government Notice No. 51 of 17/12/2010 that mandated President's Office, Public Service management (PO-PSM) to establish the focal point to coordinate the existing fragmented and isolated e-Government initiatives in Tanzania (URT, 2018).

Before the establishment of the Agency, ICT initiatives in the Government were coordinated and managed by the then Directorate of Management Information Systems (MIS), now Directorate of Information Communication Technology Systems (DICTS) under the President's Office, Public Service Management. e-GA became operational effective in April 2012 and was officially inaugurated in July 2012.

The Vision of e-GA is: *“To be the leading innovative institution, enabling the use of ICT for improving Public Service Delivery”*. Its Mission is: *“To create and provide an enabling e-service environment through promotion, coordination, oversight and enforcement of improved public service delivery”*.

In order to meet its vision and achieve its mission, the e-Government Agency has set six objectives, which when accomplished, will allow it to meet the service requirements of its stakeholders and customers. According to URT (2018), e-GA has the following objectives:

- i. To enhance the capacity of Public institutions to implement e-Government initiatives;
- ii. To improve Public access to e-service;
- iii. To improve sharing of ICT resources within public service;
- iv. To enhance coordination, management and compliance of e-Government initiatives in the public service; and
- v. To improve e-Government advisory, technical support and consultancy services.

d) Tanzania Communication Regulatory Authority (TCRA)

The Tanzania Communications Regulatory Authority (TCRA) is a quasi-independent Government body responsible for regulating the Communications and Broadcasting sectors in Tanzania. TCRA was established under the Tanzania Communications Regulatory Act No. 12 of 2003 to regulate the electronic communications, and Postal services, and management of the National spectrum in the United Republic of Tanzania. The Authority became operational on 1st November 2003 and effectively took over the functions of the now defunct Tanzania Communications Commission (TTC) and Tanzania Broadcasting Commission (TBC) respectively (URT, 2016).

TCRA's Vision is: *"To be a world-class Communications Regulator creating a level playing field among Communication Service Providers, and promoting environmentally friendly, accessible and affordable services to consumers."* Its Mission is: *"To develop an effective and efficient communications regulatory framework, promote efficiency among the Communications Services Providers, and protect consumer interests with an objective of contributing to socio-economic and technological development in the United Republic of Tanzania."*

TCRA has the following functions:

- i. To issue, renew and cancel licences;
- ii. To establish standards for regulated goods and services;
- iii. To establish standards for the terms and conditions of supply of the regulated goods and services;
- iv. To regulate rates and charges;
- v. To monitor the performance of the regulated sectors in relation to:
 - levels of investment;
 - availability, quality and standards of services;
 - the cost of services; and
 - the efficiency of production and distribution of services
- vi. To facilitate resolutions of complaints and disputes between operator vs operator and customer vs operator; and

- vii. To disseminate information about matters relevant to the functions of the authority.

1.2 E-government in Tanzania

Tanzania is one of the countries that strives to set and implement e-government strategies (United Republic of Tanzania [URT], 2008). The objectives of e-government in Tanzania include: improving service delivery, improve collaboration between government agencies, improve competitiveness, reduce transaction costs and provide forum for citizen's participation among others. Some of the services that are available on the Tanzania centralised web portal include: obtaining permits, obtaining certificates, paying utility bills and tax, e-banking, government announcements, forms and various information from ministries and departments (URT, 2013).

Moreover, various agencies are involved in e-government implementation by providing various e-services. Table 1.1 provides a summary of some public institutions that have currently implemented e-government services.

Table 1. 1 E-Government Services in Tanzania

Agency/Institution	e-Services Offered
Higher Education Student's Loans Board	<ul style="list-style-type: none"> • online loan application
Tanzania Revenue Authority (TRA)	<ul style="list-style-type: none"> • Register for Tax payer Identification Number (TIN) • Register for payment • Register for VAT • Customs licence • Cargo management system • Submit VAT return • Cargo tracking system
Tanzania ports Authority (TPA)	<ul style="list-style-type: none"> • Harbour view system • Shipping information • Cargo system • e-payment system
National Social Security Fund (NSSF)	<ul style="list-style-type: none"> • register for membership
Tanzania Commission for Universities (TCU)	<ul style="list-style-type: none"> • Registration in central registration system (CAS) • Foreign Award Assessment System (FAAS) • Programmes Management System (PMS) • CRMS system
Dar es Salaam Water and Sewerage Cooperation (DAWASCO)	<ul style="list-style-type: none"> • Register for Online Bill • Checking your Bill
Tanzania Electrical Energy Supply Company (TANESCO)	<ul style="list-style-type: none"> • Online Bills
Public Service Pension Fund (PSPF)	<ul style="list-style-type: none"> • Register for membership • Benefit calculator • membership log in • Register to PSPF mandatory scheme • Register to PSPF supplementary scheme
Tanzania Railway Limited (TRL)	<ul style="list-style-type: none"> • Train fair Check
Tanzania Police Force	<ul style="list-style-type: none"> • Reporting Crime

Source: Government portal at: <http://www.tanzania.go.tz>

1.2.1 Background to the statement of the problem: E-government and Public Service transformation strategy in Tanzania

Like other countries, the government of Tanzania strives forth to implement e-government across the country so as to improve service delivery, transparency and accountability. In order to fulfil this need, the government had redesigned a comprehensive Public Service Reform Programme (PSRP) whose implementation

started in 2000. The main focus of PSRP is to improve Ministries, Departments and Agencies (MDAs) service delivery and regulatory functions through a more efficient public service. PSRP which is spearheaded by PO-PSM is implemented in three phases namely: Phase I which was implemented from 2000 to June 2007 focused at instituting performance Management Systems; phase II whose implementation took place between 2008 and June 2012 aimed at enhancing performance and accountability. Phase III which was planned to operate from July 2012 to June 2017 was envisioned to improve quality cycles (URT, 2013). Unfortunately, PSRP phase III is yet to be implemented for unknown reasons.

1.2.1.1 The vision, mission and Core values of Tanzania public service

This Subsection explains the vision, mission and core values of the Tanzania Public Service. The vision of the President's Office, Public Service Management (PO-PSM) is:

To become a global institution of excellence enabling Public Service in delivering quality services thereby contributing to the achievement of high economic growth, reduction of poverty and better well-being of all Tanzanians by the year 2025 (URT, 2013).

Its mission is:

To ensure that the Public Service is effectively and efficiently managed through improved human resources management systems and structures (URT, 2013).

The core values of PO-PSM are as follows:

- *Pursuit of Excellence in Service:* Public servants will strive to achieve the highest standards in their work and to actively seek opportunities to improve those standards.
- *Loyalty to Government:* Public servants will loyally serve the duly elected Government of the day and will comply with the lawful instruction of their masters and managers.
- *Diligence to Duty:* Public Servants will attend regularly during their hours of duty and will devote themselves wholly to their work during this time;
- *Impartiality in Service:* Public servants will not engage in political activities at the work place, nor allow their political views to influence the performance of their duties.
- *Integrity:* Public servants will not seek or accept gifts, favours or inducements in the course of discharging their duties. They will not use public property or official time for their own private purposes.
- *Courtesy to all:* Public servants will treat their clients with courtesy. Public servants will regard themselves as servants of the Tanzanian people, and will be particularly considerate when dealing with vulnerable members of the public, such as the elderly, the poor, the sick and people with disabilities and other disabilities and other disadvantaged groups in society.
- *Respect of law:* Public servants will not commit any unlawful act in the course of their duties; and
- *Proper use of Official Information:* Public servants will not withhold information which the public has a right to know, nor information which is needed by Minister or other public servants. They will not divulge or misuse official information which is confidential (URT, 2013).

1.2.1.2 E-Government and Public Service transformation strategy

In order to fully embrace e-government, the government of Tanzania came up with a document which documented the objectives and strategies for effective implementation of e-governance (Kamatula, 2012). According to the United Republic of Tanzania, President's Office Public Service Management (2008), five e-government objectives were to be fulfilled by 2012 in Tanzania. These objectives and their implementation strategies are briefly discussed hereunder.

i. Institutional framework developed by 2012

The establishment of the framework was expected to increase the level of trust, confidence and willingness to invest and adopt e-Government applications and electronic services. With institutional framework, it was expected that the policy, legal framework, standards, guidelines and E-government Agency be in place by 2012. The strategies to meet this objective were: (1) to build a platform for e-Government services which will assist the government to develop sustainable e-Government initiatives in more integrated manner. The intention of this strategy was also to accelerate development of e-government through building a shared and secured platform. (2) To develop partnership framework for e-government. On this strategy, the government of Tanzania was to establish better and more constructive partnership between Government institutions and Non-State Actors on e-Government so as to provide improved environment for collaboration in developing e-government initiatives (URT, 2008).

ii. E-government infrastructure developed by 2012

According to URT (2008), the e-government network infrastructure based on ad hoc demand by individual departments that fall short of requirements for consumers and other stakeholders. The internal Government systems had limitation in terms of technology to support efficient and effective government service delivery system and a seamless service delivery platform to citizens. This being the case, the government of Tanzania set the objective of developing an E-government infrastructure to cut across all MDAs and LGAs. The strategy to fulfil this objective was putting in place a Secure Government Network which would address the concerns of both service providers within the Government and the recipients of public services. From this strategy, it was expected that all government institutions would be interconnected into independent Telecommunication Network by June 2012.

iii. Human Resources (HR) capacity improved by 2012

To improve the Human Resource capacity was another objective set by the government of Tanzania as strategy to embrace e-Government. This was important bearing in mind that effective implementation of e-Government depends on the capacity of citizens in the public service to manage and use e-government applications and services. The capacity in terms of ICT skills, utilization of available resources was seen very crucial to enhance e-Government implementation. The strategy for achieving this objective was to build e-government capacity through assessing current and future e-government needs, identifying capacity gaps to develop programmes, and taping knowledge through experience sharing in collaboration with various institutions inside and outside the Public Service.

iv. E-government awareness increased by 2012

The low awareness of the potential benefits and the wrong perception of e-government as being technology-based rather than service-oriented were seen to be one of a big hindrance to effective implementation of e-government. Likewise, the fact that most communications concerning e-government transactions were in most cases driven by IT professionals rather than owners of relevant business processes necessitated the need to increase awareness on e-government issues to the public hence cultivating acceptability of the e-Government agenda.

v. E-government services developed, improved and used by 2012

Tanzania Public Service is being accused of poor service delivery. Among other reasons, it is because the country is suffering by missing opportunities of improving public service delivery. In this regard, Tanzania faces a challenge of expanding access to improved e-services through government process re-engineering, taking into consideration the existing state of ICT tools, and using them to link community-based initiatives to e-government facilities with a corresponding increase of opportunities for more responsive service delivery (URT, 2008).

As discussed above, in 2008 the government of Tanzania has had come up with a document (e-government strategy) which documents the objectives and strategies for effective implementation of e-government. However, the document does not incorporate management of electronic records as a critical success factor for implementation of e-government strategy. This study will assess the implementation of these objectives. Should they all be fulfilled, e-government implementation agenda in the Tanzania public service would seem real.

1.3 Statement of the Problem

Effective management of e-records plays a tremendous role on e-government implementation. The government of Tanzania has been striving to adapt and implement e-government throughout the public service. The government for instance has: completed a feasibility study of designing government mini-data centre that is intended to host and operationalize various e-government systems; built the national optic fibre backbone to network all ministries, departments, agencies and regional administration for reliable internet connection; purposely established ICT departments in all public offices; and has successfully revamped the government portal. Some of the e-services that are currently operating include: online job applications, online registrations, tax payments, utility bills payments, obtaining permits, obtaining certificates, obtaining licences, government announcements, forms and various information from ministries and departments (URT, 2013). Despite these efforts, e-records generated by government departments as a result of e-transactions and website records, are not well managed.

Studies have been conducted on records management and e-government implementation in Tanzania at both Masters and PhD levels. Ndenje-Sichwale (2010) investigated "The significance of records management to fostering accountability in the Public Service"; Yonazi (2010) study focused on "Enhancing e-Government initiatives in Tanzania"; Komba (2014) study investigated "Adoption of e-Government services among citizens in selected Districts in Tanzania". The studies however, did not address the e-records management as a key aspect in e-government implementation. Previous studies for instance, missed out a discussion on the need for a sound regulatory framework for effective implementation e-records management for smooth

adoption of e-government; the need for adequate infrastructure for managing e-records created out of e-government; effective e-records management systems; legislation, policies, standards and guidelines. This study therefore sought to bridge such a gap by investigating on such aspects as: the legal mandate for the government-wide public e-records and information management; ICT infrastructure and capacity; government-wide e-records management standards and guidelines; government-wide digital preservation; policies and responsibilities for e-records; e-records products and technologies; resources and training; and the general awareness on issues pertaining to e-government.

The current study is expected to advance knowledge in the field of records management by establishing the fact that without a clear framework for managing electronic records in the public service, the expected quality, sustainable and reliable services offered through e-government platforms cannot be fully realised.

1.4 Purpose of the study

The study aimed at investigating on whether the existing e-records management promotes or undermines implementation of e-government with a view to develop a framework for effective management of e-records in support of e-government implementation in Tanzania.

1.4.1 Specific objectives

The specific objectives of the study were to:

1. Determine the e-records readiness in the Tanzania Public Service;
2. Assess e-government implementation status in the Tanzania Public Service;

3. Establish the effectiveness of existing e-records legal, policy and regulatory framework in support of e-government;
4. Determine the e-records knowledge and skills of staff in the Public Service;
5. Find out the extent to which the National Archives (RAMD) is involved in the management of e-records and e-government implementation in the Public Service;
6. Develop a framework for the management of e-records and e-government implementation.

1.4.2 Research questions

The study was guided by the following research questions:

1. What is the current status of e-records readiness and e-government implementation in the Tanzania Public Service?
2. Are there any legislations and policies on e-records management and e-government transactions in the Public Service of Tanzania?
3. To what extent is RAMD involved in the management of e-records in support of e-government implementation?
4. How best can e-records be managed in support of e-government implementation?

Table 1.2 provides a relationship between three things namely: Aims and objectives of the study, research questions and the possible relevant data collection instruments.

Table 1.2: The relationship between Aims and Objectives of the study, Research Questions and Sources of data

Research Objective	Research Question	Possible Sources of Data
To determine the e-records readiness in the Tanzania Public Service	What is the current status of e-records readiness and e-government implementation in the Tanzania Public Service?	Interviews and observations
To assess e-government implementation status in the Tanzania Public Service	Are there any legislations and policies on e-records management and e-government transactions in the Public Service of Tanzania?	Interviews and observations
To establish the effectiveness of existing e-records legal, policy and regulatory framework in support of e-government	To what extent is RAMD involved in the management of e-records in support of e-government implementation?	Interviews and observations
To determine the e-records knowledge and skills of staff in the Public Service	How best can e-records be managed in support of e-government implementation?	Interviews and observations
To find out the extent to which the National Archives (RAMD) is involved in the management of e-records and e-government implementation in the Public Service	-	Interviews
To develop a framework for the management of e-records and e-government implementation	-	Interviews and observations

1.5 Scope

At the time the study was at proposal stage, the United Republic of Tanzania consisted of 29 ministries (See Appendix1). This study had included two ministries and three government agencies namely: Ministry of Public Service Management; the

Ministry of Communication, Science and Technology; e-Government Agency (E-GA), Tanzania Communication Regulatory Authority and the Records and Archives Management Department (RAMD) respectively. These were selected because they are the key drivers regarding E-government and other ICT related issues for national development.

According to the Presidential order of 1993, the specific functions of the Ministry of Public Service Management includes to embrace: Administrative and personnel policy; Administration of Public Service; coordination of training and recruitment; improvement of efficiency and effectiveness delivery of service (URT, 1993). On the other hand, the Ministry of Communication, Science and Technology was key to the study based on its responsibilities and activities which are to: provide advisory services to Ministries, Departments and Regions It was evident that the Ministry of Communication, Science and Technology was directly concerned with matters related to the current study because its roles includes policy formulation, monitoring and evaluation, and regulatory and legal matters pertaining to communication, ICT, Science, Technology and innovation (URT, 2015). However, during data collection, the Ministry of Science and Technology had been fused into another ministry namely Ministry of Education, Science, Technology and Vocational Training. This was due to minimization of the government size from 29 ministries (during President Kikwete's regime) to only 19 ministries under President Magufuli (See Appendix 2).

Moreover, the study included the Records and Archives Management Division (RAMD) where the Director has been vested with power to control and monitor the management of public records in all formats in public organizations; the

Telecommunication Regulatory Authority (TCRA), an independent agency which was established for regulating and licensing of postal, broadcast and communication industries in Tanzania; The National E-government Agency (e-GA) which is an important organ that was established to ensure effective implementation of e-government all over the country.

The respondents of the study included: Action officers including Human Resource officers and head of departments who make decisions in their day-to-day activities within public offices; records management staff who are the custodians and implementers of public records and documents management systems policies and guidelines. Other respondents included IT staff/system administrators who are experts in ICT and its related issues necessary for the management of e-records and the implementation of e-government within the public service. Further, the records managers and archivists from the Records and Archives Management Department (RAMD) were purposely picked due to their expertise, legal mandate and experience in providing advisory services to public offices concerning the management of records from their generation to final disposition. Other cadres such as drivers, office attendants, office secretaries and accountants were left out because they seemed to lack professional knowledge relevant to the study at hand.

1.6 Limitations and Delimitations of the Study

Limitations are potential weaknesses and are out of the researcher's control (Simon, 2011). Limitations may include such issues as budgetary constraints, unavailability of previous researches on the topic, and accessibility of respondents. Another common

limitation is time. A study conducted over a certain interval of time is dependent on conditions occurring during that time (Simon, 2011).

The delimitations on the other hand, refers to those characteristics which limit the scope and define boundaries of the study. Delimitations may for instance include the choice of objectives, the research questions, study population, and literature review (Creswell, 2009; Simon, 2011). Delimitations are within the control of the researcher contrary to limitations which are unpredictable and out of control of the researcher.

The current study was faced by three limitations. The first limitation was the challenge of obtaining research permission letters from some areas. Secondly, it was a very challenging situation to get access to some respondents particularly senior officers due to their busy schedules especially as they were trying to adjust themselves with the new government that came into power following the 2015 Presidential Elections of Tanzania. The third limitation was none participation of one ministry targeted by this study as it got merged with another ministry few days before the exercise of data collection began.

With regard to delimitations, the study adopted a qualitative approach in which the choice of objectives, research questions and interview schedules sought to explore various issues underlying the existing practices of e-records in support of e-government in the public service. Moreover, the scope of study did not include the general records but rather it focused on electronic records. The study employed purposive sampling to include respondents who were directly involved with issues of electronic records and e-government. In addition, the researcher included in the

sample some action officers from selected public offices so that they give opinion on adequacy of the existing electronic records management systems and practices.

Another delimitation was on the literature. The literature reviewed was only that discussed about the subject at hand. The literature discussed issues surrounding the management of records, particularly e-records and e-government around the globe including Africa.

1.7 Justification for the study

Many scholars have revealed that effective e-records management is necessary for successive implementation of e-government initiatives (Wamukoya & Mutula, 2005; Mnjama & Wamukoya, 2007; Ngulube, 2007; Nengomasha, 2008; Ngulube, 2010). This is why Ambira (2017) suggests that, empirical studies on the management of electronic records and e-government are essential to enable public policy makers to gain adequate understanding of electronic records in the context of e-government. Efforts to implement electronic records management and strengthen e-government should be backed by adequate research that provides strategic thinking, technical knowledge, and frameworks for ERM and best practices from other countries across the globe (Ambira, 2017).

The Tanzanian government is striving to embrace ICT throughout the public service so as to adopt e-government for efficiency and effectiveness of public service delivery. Despite such efforts, the management of e-records is not yet streamlined to the registries. Because of that, paper based records still dominate in public offices. Even when official emails are received, they are printed out and filed like other traditional records (URT, 2007). Similarly, e-records generated by government departments as a

result of e-transactions and website records, are not well managed. This study was therefore necessary to suggest an effective framework that would help into managing electronic records as by-products of electronic transactions in the e-government environment.

Lack of a solid legal framework through which e-records is to be managed, is evident in Tanzania. The Records and Archives Management Act No. 3, 2002 for instance, is inadequate and ineffective particularly on matters relating to e-records management and e-government initiatives. Similarly, the Tanzania Electronic Transactions Act of 2015 which recognises electronic records, seems ineffective as it does not provide any specific guidelines on how to achieve effective management of the electronic records. Other legal tools include the National Records and Archives Management Policy of 2011 and the national ICT policy of 2003, both of which do not provide guidance expected to entail assigning and defining responsibilities on e-records management and authorities to officers who directly come into contact with e-records. Based on these facts, a need for a clear and elaborate framework to ensure adequate management of electronic records to support e-Government in Tanzania was seen inevitable by the researcher of this study.

1.8 Significance of the Study

According to Creswell (1994:111), the significance of the study is concerned with three major questions namely: How is the study going to add scholarly research and literature in the field? How will it improve practice? And how would it improve policy? Based on its findings and a proposed framework for e-records management in support of e-government, the current study contributes to the existing body of

knowledge. The study has supplemented existing empirical studies on e-records and e-government in Africa like those of Mnjama & Wamukoya, (2006); Nengomasha (2009); Bwalya, Plessis, & Reinsleigh (2012); Mutula, (2013) and Ambira (2017). Unlike previous studies in this area, the study regards e-records and e-government as inseparable entities which need to be dealt with together. This is because the two depend on each other. While e-government transactions produce electronic records, and e-records document e-government transactions for evidence and accountability purposes. As such, a comprehensive framework is inevitable for all governments aiming at implementing effective and efficient e-records management and e-government initiatives.

Concerning the practice, the current study which has highlighted many challenges inhibiting effective management of e-records and adoption of e-government, has proposed a framework which emphasizes on practical integrations between e-records management and e-government. As observed by Ambira (2017), establishing the interaction points of managing ERM in business processes is fundamental in ascertaining technological solutions for both ERM and e-government that can accommodate that integration. In addition, the study has recommended practical training for all stakeholders including action officers, records personnel, IT staff and archivists so as to equip them with electronic records hands-on skills necessary for the full implementation of e-government. In a similar thoughts, Ngoepe (2017) observes that, both public entities and archival institutions should invest in capacity development, including training and provision of sustainable infrastructure required to preserve digital records.

With regards to improvement of the policy, it is hoped that this study will influence policy making with regard to e-records management and e-government implementation. This study has established that effective policies for both e-records management and e-government implementation are none existent. This is a bottleneck for the efficiency and effectiveness of e-records management hence hampering smooth implementation of e-government. This study is therefore significant under this aspect as it has highlighted the necessity for the government to formulate and populate such policies for the benefits of the wider community of the Tanzanian government.

1.9 Originality of the Study

Originality of the study mainly refers to the extent to which the study makes a significant and original contribution to knowledge of facts and theories in the field of study (Phillips & Pugh, 2005). A number of scholars including Cryer (2006) and Phillips & Pugh (2005) identify different characteristics constituting originality in research. These include: Carrying out empirical research that has never been done before; employing new research approaches; being cross-disciplinary and using different methodologies; taking a particular technique and applying in a new area; continuing a previously original piece of work; trying something in a particular technique and applying it in a new area; studying understudied areas; new and innovative use of data; new theory and trying out something in a particular country that has been previously done in other countries.

The originality of this study is based on an understudied area. The understudied area hereby refers to where a study is being conducted in a geographic region that has

been studied less on that topic. A review of literature sources in records management in Tanzania indicated that a lot has been written on records management including studies by: Manyambula (2000); Ndenje-Sichwale (2010); Marandu (2012); and Komba (2014). However, most of these studies basically focused on paper based records.

Few studies have had focused on e-records and e-government issues in Tanzania, established several challenges inhibiting effective e-records management and provided suggestions on what the government should consider to do for effective service delivery through e-government platforms. Despite the positive insights these studies have indicated, none of these studies seemed to consider proposing a framework that would guide the management of e-records in support of e-government. The current study therefore contributes to knowledge through which readers are would understand the importance of converging e-records aspects into e-government platforms for proper implementation and operations of e-government.

1.10 Organization of Thesis

The thesis comprises six chapters as outlined below:

Chapter one provides Background to the study and the research problem. The chapter provides the conceptual setting and highlights the various e-government frameworks reported in the literature. A discussion of e-government and public service transformation strategy in Tanzania is presented. Other themes covered in the chapter include the statement of the problem, research aim and objectives, research questions and significance of the study. Definition of key terms is also given.

Chapter two presents Literature review and the theoretical background of the study. The chapter discuss literature relevant to the study, focusing on related studies and their findings. It also contains a critical evaluation of existing theories and models related to the study. A discussion on records management models including: the records life cycle; records continuum; and the integrated approach is provided in details. Further, this chapter covered themes on e-government theories as propounded by the World Bank, UNESCO and IRMT. Other issues covered include the challenges of implementing e-government; and the legal and regulatory framework for e-government implementation.

Chapter three presents the Research methodology. This chapter covered a discussions on research design, target population, sampling procedure, data collection methods, and data analysis techniques. Other themes covered under this chapter include data validity and reliability, data presentation and analysis techniques, and ethical issues.

Chapter four presents Data presentation. In this chapter the data is presented following the order in which specific objectives of the study were formulated namely: e-records readiness in Tanzania public service; e-government implementation status in the Tanzania public service; effectiveness of e-records legal, policy and regulatory framework; knowledge and skills of public servants on e-records management; and the involvement of RAMD in e-records management and e-government implementation in the public service.

Chapter five presents Discussion of research findings. This involved a critical interpretation and evaluation of the findings. The findings were compared with those of previous research so as to contribute to better understanding of the research problem.

Chapter six presents a summary of findings, conclusions and recommendations. This chapter drew conclusions from the findings of the study, made recommendations and suggested areas for further research. In addition, the chapter provided a proposed framework for the management of electronic records in support of e-government in Tanzania.

1.11 Definition of key terms

This section clarifies the key terms used in this study so as to enable the reader to clearly understand the content of the study.

Archives: Documents acquired or received and accumulated by an individual or institution in the course of the conduct of affairs and preserved because of their enduring value or, the repository for records selected for permanent preservation (National Archives) (ISO 15489-1:2016).

Electronic Record: Record communicated and maintained by means of electronic equipment. It is a record created, housed or transmitted by electronic rather than physical means, and which satisfies the definition of a record. A record can consist of one or more objects, e.g. web page, file, folder, e-mail or document (Smith, 2007).

Electronic government (e-government): refers to the way in which governments use information and communication technologies to enhance transparency and accountability, and provide opportunities for people to participate in the democratic process by providing citizens and businesses with more convenient access to government information and services (URT, 2008).

Record Life Cycle: a model for managing records which portrays records as going through various stages or periods from record creation, receipt, use, storage, retention up to the time of disposal (Shepherd & Yeo, 2003).

Records: Documents regardless of form or medium created, received, maintained and used by an institution (public or private) or an individual in pursuance of legal obligations or in the transaction of business of which they themselves form a part or provide evidence (ISO 15489-1: 2016).

Records continuum: The concept in records management where records are seen as a continuous process where one element of the continuum passes seamlessly into another (Shepherd and Yeo, 2003).

Records Management: The field of management responsible for the efficient and systematic control of the creation, receipt, maintenance, use, and disposal of records, including process for capturing and maintenance of and information about business activities and transactions in the form of records (ISO 15489-1:2016).

Records Management Program: A planned, coordinated set of policies, procedures, and activities needed to manage organization's recorded information. It encompasses the creation, maintenance and use, and disposition of records, regardless of media (Robek et al.; 1995).

1.12 Chapter Summary

This chapter has discussed themes that could enable the reader understand what exactly the study is all about. The chapter has drawn a clear map of the study through various sections including: background to the study, e-government in Tanzania, statement of the problem, purpose of the study, and scope of the study. Other sections discussed involved the study limitations and delimitations, study justification, significance, originality, organization of the thesis and definition of key terms used in the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature relevant to the study including the study theoretical foundations. According to Robson (2011:51), the literature is what is already known, and written down, relevant to the current research project. Literature review may involve identifying, locating, and analysing documents containing information related to research problem. Such documents may include: articles, abstracts, reviews, monographs, dissertations, books, other research reports and electronic media. According to Creswell (2009), Robson (2011), and Creswell (2014), literature review puts together the literature on a topic of interest and among others:

- Helps the researcher examine the research problem from more than one angle as well as to anticipate the type of audience his/her study is out to address
- Helps convince readers that a researcher is familiar with previous works done in the area of study.
- Helps find useful examples and models that can enrich the research being undertaken.
- Exposes main gaps in knowledge and identifies principal areas of dispute and uncertainty.
- Compares the results of the study with previous findings.
- Helps to identify appropriate research methodologies and instruments.

The current study's literature review themes, were derived from the study objectives namely: e-government awareness, the significance of e-records in e-government

implementation, the legal framework for e-records and e-government implementation; e-government security issues, and challenges in implementing e-records in support of e-government. The study identified a number of literature sources, including journal articles, books, institutional websites, previous studies, statutory and legal documents, international and national standards, guidelines, professional groups, and academic works (thesis/dissertations). Further, the study reviewed e-records and e-government theories and indicated their relevance to the present study as presented in the discussion which follows.

2.2 Theoretical framework

This section provides a discussion of the theoretical frameworks that informed the present study.

The word theory has been defined by a number of scholars to mean a framework of ideas that provides an explanation of something. It is an explanation scheme comprising a set of concepts related to each other through logical patterns of connectivity (Mills & Birks, 2014; in Ngulube et al., 2015). In research, theories help researchers to draw conclusions, develop the body of knowledge and even generate more advanced and improved theories (Cozby, 2001; Stoner *et al.*, 2003; Kothari, 2004; Eagleton, 2008). Theories are further meant to:

- Provide tools for the interpretation of collected data;
- Prevent the fragmentation of knowledge by ordering;
- Give enquiry a focus; and
- Provide theoretical explanations and a deeper understanding of what is being investigated (Creswell, 2009; Neuman, 2007b).

In addition, Ocholla and Roux (2011) observe that a theory serves as a lens through which a researcher examines a particular aspect of his or her subject field. Theories serve four purposes including: description, explanation, prediction and control (Kemoni, 2008). In another line of thinking, Ngulube, Mathipa & Gumbo (2015:11) note that, the theory addresses the following questions:

- Where is the research coming from?
- How valid is a theory's proposition in the problem being investigated, or which theory is more robust than the others in explaining the phenomenon under investigation?
- How can a theory's propositions be utilised in the design and conduct of a study?

The current study reviewed a number of theories related to e-records management and e-government implementation namely: Frank Upward (1999), Records Continuum model; United Nations e-government maturity model (2001); World Bank E-government Handbook for developing countries (2002); UNESCO E-government Toolkit for Developing countries (2005); and the IRMT e-records readiness tool (2009). However, this study triangulated the IRMT E-records Readiness Tool (on electronic records management) and World Bank E-government Handbook for Developing Countries (on e-government implementation) as the theoretical frameworks of the study. The elements of these models were used to provide guidance of the study. Subsections below discusses these theories.

2.2.1 The Records Continuum Model

Shepherd and Yeo (2003:9) note that “the records continuum concept was developed in the 1980s and 1990s in response to criticisms of the life cycle models”.

It resulted in not only a critique of the life cycle model but in the definition of an alternative model of framework (Bantin, 1998). In this concept, the argument is that the record does not necessarily pass through three phases as is the case in the life cycle model. Rather, managing records is seen as a continuous process where one element of the continuum passes seamlessly into another. As cited in Shepherd and Yeo (2003), McKemmish (1997) argues that in the life cycle model, records are kept for organizational purposes during the early stages of their lives, and later in their final stages they become society's memory records as they become archives. Contrary to that, the continuum model proponents believe that records function simultaneously as organizational and collective memory of the society from the very early stage of creation.

Additionally, a continuum is something continuous of which no separate parts are discernible, elements are continuously passing into each other. The driving force behind the formulation of this model was the concern of the missing strategy for the archivists to intervene in the records management process from the creation stage especially for electronic records (McKemmish, 1997). Similarly, Upward (1998) contends that, the continuum model recognizes that, in the electronic age physical custody is no longer an essential element of preservation strategy.

Moreover, (Upward, 2001) reveals that, there are four coordinated and integrated dimensions in the continuum model. The first one is "to create" which encompasses the actors who carry out decisions, communications and acts in the organization. The second dimension refers to the "capturing" of records. This encompasses the recordkeeping systems of the organization which captures records in their daily

business transactions to serve as evidence of activities of a particular unit and organization as a whole. “Organising” is the third dimension of the continuum. This refers to the manner in which the organization or individual defines its recordkeeping regime which constitutes to the archive as memory of its business functions. The last dimension “pluralise” is concerned with how the archives are brought into an encompassing framework to provide a collective social historical and cultural memory of the corporate.

Commenting on the dimensions of continuum model, Shepherd and Yeo (2003) argued that, dimensions in the continuum are not time based, but rather they represent different perspectives on the management of records. They went on to say that, circles in the dimensions move out from the creation of records of business activities, to capturing of records as evidence to their inclusion in the formal system of organization’s records management, and lastly, the dimension considers the needs of society collective memory.

In summary, Xiaomi (2003) rightly differentiates between the records life cycle and the records continuum models as shown in Table 2.1.

Table 2. 1 Differences between Records Life Cycle and Records Continuum models

Model Aspect	Records life cycle model	Records Continuum Model
Origins	<ul style="list-style-type: none"> evolved from the need to effectively control and manage physical records after World War II 	<ul style="list-style-type: none"> evolving from the more demanding need to exercise control and management over electronic records for digital era
Elements of records definition	<ul style="list-style-type: none"> physical entity 	<ul style="list-style-type: none"> content context structure
Major concerns in records management	<ul style="list-style-type: none"> records-centred, product-driven focus on records as tangible physical entities, the physical existence of records themselves paper world 	<ul style="list-style-type: none"> purpose-centred, process and customer-driven focus on the nature of the records, the recordkeeping process, the behaviours and relationships of records in certain environments digital world
Records movement patterns	<ul style="list-style-type: none"> time-based: records pass through stages until they eventually die, except for the chosen ones that are reincarnated as archives time sequence: records processes take place in a given sequence 	<ul style="list-style-type: none"> multi-dimensional: records exist in space/time not space and time simultaneity: records processes can happen at any point in the record's existence, or even precede it
Recordkeeping perspectives	<ul style="list-style-type: none"> exclusive single purpose organizational or collective memory current or historical value 	<ul style="list-style-type: none"> inclusive multiple purposes can be organizational and collective memory can have current, regulatory and historical value from the time of creation simultaneously not sequentially
Recordkeeping process	<ul style="list-style-type: none"> There are clearly definable stages in recordkeeping and they create sharp distinctions between current and historical recordkeeping 	<ul style="list-style-type: none"> The recordkeeping and archiving should be integrated
Criteria for selecting archives	<ul style="list-style-type: none"> currency or historical value 	<ul style="list-style-type: none"> continuing value, including current and historic value
Time of archival appraisal	<ul style="list-style-type: none"> end of records movement 	<ul style="list-style-type: none"> from beginning to end
Role of records professional	<ul style="list-style-type: none"> passive and reactive locked into custodial role and strategies 	<p><i>Proactive-post custodians:</i></p> <ul style="list-style-type: none"> recordkeeping policy makers standard setters designers of recordkeeping systems and implementation strategies consultants educators/trainers advocates auditors
Records management tasks	<ul style="list-style-type: none"> things are done to the records in fixed stages, in a given sequence by particular professional group records managers and archivists have no business directing what records an organization creates; they are relegated to receiving the physical objects once created fragmented and desperate accountability of creators, users, records managers and archivists 	<ul style="list-style-type: none"> integration of business process and recordkeeping processes-the task can happen in almost in any sequence by any professional group records managers are accountable for not only the maintenance, but also for the creation of evidence of organization's purposes and functions integrated framework for the accountabilities of players and partnerships with other stakeholders

Source: *Xiaomi (2003).*

Although the records continuum theory addresses management of electronic records by managing e-records as a continuous process where one element passes seamlessly into another; the Records Continuum Model did not form the study theoretical foundation since it does not address issues of electronic government.

2.2.2 The IRMT E-readiness Tool

E-records are the recorded information, documents or data that provide evidence of policies, transactions and activities carried out in e-government and e-commerce environments (IRMT, 2009). However, the management of e-records is associated with many challenges ranging from inadequate infrastructure, absence of legislation, organizational policies, low awareness of the role of records management in support of good governance, absence of core competencies, lack of appropriate facilities and absence of migration strategies among other issues. As such, IRMT developed an e-records assessment tool that could assist governments and agencies to assess their e-records readiness against internationally accepted standards. The IRMT (2009) is convinced that the e-records readiness tool can assist organizations to develop plans and strategies with which to improve records management in both paper and digital format in a bid to implement effective e-government.

IRMT (2009) observes that, adequate infrastructure for managing e-records created out of e-government services is very crucial. Similarly, the records and information classification schemes and retention and disposal schedules are also necessary for protecting e-records so that they remain complete evidence of organizational business transactions. Without proper protection and preservation of such format of information, the likelihood of jeopardising the substantial investment required to launch e-

government services. Further, the government may face increased operating costs; gaps in recorded memory; reduced public access to entitlement and erosion of the rights; inability to comply with laws and policies; weakened capacity for decision making; increased legal, financial and political risk; and reduced transparency, accountability and trust (IRMT, 2009:2). Based on these facts, the E-Readiness Tool was designed to be used along with existing e-government readiness tools to permit a high-level assessment of the infrastructure and capacity necessary for the management of records and information in electronic environment. The tool provides a risk assessment of e-records readiness both at government-wide, national level and the agency specific level.

The IRMT tool consists of twelve key components of e-readiness out of which six components address national, government-wide e-readiness; and the other six components addressing agency-specific e-readiness. The national, government e-readiness components include (IRMT, 2009:2-14):

- Legal mandate for the government-wide of public records and information
- Legal framework for e-commerce activities
- Freedom of information and protection of Privacy Legislations
- Government-wide ICT infrastructure and Capacity
- Government-wide e-records management standards and guidelines; and
- Government-wide digital preservation strategy.

The agency e-records readiness consists of six components including:

- Policies and responsibilities for records and information management;
- Tools and procedures for records and information management;

- E-records management products and technologies;
- Resources and training for records and information management personnel;
- Internal and public awareness of records and information management; and
- Compliance with records and information management policies and procedures.

Below is a discussion of the key aspects of the IRMT (2009) e-readiness tool and its relevance to the current study.

The first aspect of IRMT (2009) e-readiness tool is on the legal mandate for the management of public records. IRMT (2009) observes that, since e-government services produce e-records that document government transactions and online activities

Another aspect of IRMT (2009) relates to activities that are nowadays carried out online. The IRMT (2009) e-readiness tool calls for governments to adopt laws that would establish rules for e-transactions.

Moreover, freedom of information and protection of privacy legislations makes another aspect of the IRMT e-readiness tool. Such is important as it supports accountability, transparency and ant-corruption measures. Further, freedom of information and protection of privacy legislation would empower citizens with a mechanism to hold their governments accountable by requesting information about official activities; and would provide assurance that personal information are protected. Otherwise, digital information will be manipulated and misused by ill minded people (IRMT, 2009).

According to IRMT (2009), reliable and secure ICT infrastructure is something e-government initiatives cannot succeed without. It is therefore important for government and agencies to employ competent ICT staff as well as implementing good practices for network and system administration. Such will provide the basic platform for successful e-government and e-records programmes, hence reducing the possibility of the loss and corruption of e-records.

Similarly, IRMT (2009) rightly observes that government agencies must adhere to e-records standards and functional requirements to ensure that ICT systems consistently create, capture, organize, store, search, retrieve and preserve e-records and protect their integrity and trustworthiness.

In another scenario, IRMT (2009) observes that each government agency should establish internal policies and responsibilities for records and information management in a form that suits its internal organizational structure, culture and resources. Such would enable staff to apply external laws and standards to the agency's specific business functions and processes.

The e-records management products and technology is another important aspect covered in the IRMT e-readiness tool. This follows the fact that, the technological development in ICTs, has necessitated the mushrooming of a number of technologies and products for managing e-records and digital information including but not limited to: Records Management Application (RMA) Software, Electronic Documents and Records Management (EDRM) systems, Enterprise Content Management (ECM) systems or Information Life Cycle systems (ILC).

The present study considered the IRMT e-readiness tool relevant to the present research because the tool addresses important aspects for effective e-records management as well as e-government implementation strategies. The IRMT e-readiness tool addresses issues that would assist governments and organizations in developing plans and strategies with which to improve the management of electronic records in a bid to implement effective e-government. For instance, IRMT (2009) observes that government agencies must adhere to e-records standards and functional requirements to ensure that ICT systems consistently create, capture, organize, store, search, retrieve and preserve e-records and protect their integrity and trustworthiness. These were among the key issues that the current study was researching on. Therefore, the IRMT e-readiness tool served as a guidance through which the researcher based on when assessing various aspects regarding e-records and e-government in the public service of Tanzania.

2.2.3 World Bank E-government Handbook for Developing Countries

World Bank (2002) declared that there is no e-government theory; knowledge comes from practice; excellence comes from best practices. This entails that, as of now, there is no comprehensive theory of e-government. As such, it is right to note that e-government concepts are informed by circumstances, practices and experience. The design of effective e-government systems as a result of ICT are guided by a sound legal framework and strategies that are meant to simplify service delivery to the public and elimination of unnecessary government bureaucracies.

The World Bank E-government Handbook of 2002, was designed to catalogue and present key resources on e-government implementation in the developing world.

According to World Bank (2002), E-government is the use of information and communications technologies (ICT) to transform government by making it more accessible, effective, and accountable. E-government includes:

- providing greater access to government information;
- promoting civic engagement by enabling the public to interact with government officials;
- promoting civic engagement by enabling the public to interact with government officials;
- making government more accountable by making its operations more transparent and thus reducing the opportunities for corruption; and
- providing development opportunities, especially benefiting rural and traditionally underserved communities (World Bank, 2002:8).

This handbook saves an important framework for the current study as it offers a concrete guidance to government officials and other stakeholders in the developing world Tanzania included. The handbook presents a roadmap for policy makers who consider e-government as a mechanism for reform. It therefore shows how it can be done, considering the realities and challenges that can be faced. However, World Bank (2002) cautions that, although E-government can facilitate change and create new, more efficient administrative processes; it is not a panacea as it will not solve all problems of corruption and inefficiency, nor it will overcome all barriers to civic engagement. Similarly, it is rightly observed that, e-government does not happen just because an organization buys more computers and puts up a website. Rather, e-government requires planning, sustained dedication of resources and political will (World Bank, 2002).

Various governments have different strategies to build e-government. However, countries that began with smaller projects in phases are identified as most successful. In this regard, World Bank (2002) divides the process of e-government implementation into three main phases. According to World Bank (2002:10):

"These phases are not dependent on each other, nor need one phase be completed before another can begin, but conceptually they offer three ways to think about the goals of e-government" (World Bank, 2002).

The three e-government phases proposed by World Bank (2002) are:

Phase I: Publish - using ICT to expand access to government information

This involves the process of publishing government information online, beginning with rules and regulations, documents and forms. This is an important phase of e-government which seek to disseminate information about government and information compiled by government to as wide as an audience as possible. This enables citizens and businesses to readily access government information without having to travel to government offices, standing on long lines or pay bribes to be served.

For effective implementation of the *Publish Phase*, the World Bank (2002:10) recommends governments to:

- Begin with a strategy to get information online, with appropriate milestone;
- Post information of value to people in their daily lives, and emphasize local language content.

- Consider a mandate that all agencies publish a specified range of information online.
- Seek attainable results using available resources.
- Design sites so they are easy to maintain, and sustain funding to ensure that information is updated regularly.
- Focus on content that supports other goals, e.g. economic development, anti-corruption, attracting foreign direct investment.

Phase 2: Interact - broadening civic participation in government

This is a second phase of e-government implementation where the government involves citizens in the governance process by engaging them in interaction with policy makers throughout the policy cycle and at all levels of government. Interactive e-government involves two way communications, starting with basic functions like email contact information for government officials or feedback forms that allow users to submit comments on legislative or policy proposals. This phase may also include the creation of citizen/government forums where people can exchange ideas, broaden public awareness of issues and establish new opportunities for activism not constrained by distance (World Bank, 2002). In this particular phase, governments are advised to:

- Show citizens that their engagement matters, by informing them of the outcomes of their online comments.
- Break down complex policy issues into easy-to-understand components.
- Be proactive about soliciting participation; use traditional media to publicise online consultations.
- Engage citizens collaboratively in the design phase.

Phase 3: Transact - making government services online

At this phase, governments create websites that allow users to conduct transactions online. Governments are expected to make use of the internet to offer various online services. Transact website offers a direct link to government services available at any time. In this regard, citizens can use the opportunity of the available technically enhanced websites to conduct complete and secure transactions on-line, without necessarily visiting the government office 24/7. The important drivers at this phase are cost savings, accountability through information logs and productivity improvements. Recommendations for successful implementation of this phase three of e-government include:

- Target audiences that will have immediate use for the online services.
- Enlist the support of those who will be using the site and address the concerns of government workers whose role will change as a result of the innovation.
- Integrate e-government with process reform, streamlining and consolidating processes before putting them online.
- Recognize that initial investments in transact systems can pay off over time in terms of cost savings and increased revenue.
- Create a portal for transact services (World Bank, 2002).

This study found the World Bank e-government Handbook for Developing Countries relevant to the current research as it explicitly explains the key phases of e-government implementation in developing countries, Tanzania included. Contrary to other models of e-government, the World Bank Handbook tool presents a roadmap for policy makers who consider e-government as a mechanism for reform. The

handbook provides that e-government does not happen just because an organization buys more computers and puts up a website. Rather, e-government requires planning, sustained dedication of resources and political will, all of which aims to improve public services. This was in line with the current study's objectives particularly on the existing status and strategies for e-government implementation within the public service. Other related e-government models are discussed in the following subsections.

2.2.4 United Nations E-government Model

The United Nations e-government maturity model (2001) proposed a five stage model with the focus on web based public service delivery. The model stages include: (1) *Emerging web presence* - this is the initial stage where government websites provides mostly basic and limited static information with less options for citizens. (2) *Enhanced web presence* - this where there are improvements of government websites in terms of providing dynamic, specialized and regularly updated information. This stage includes web features such as search facilities, on-line help, and site maps. (3) *Interactive web presence* - here, users and service providers are connected to government portals where search facilities and accessibility of various forms are enhanced. (4) *Transactional web presence* - this stage allows two-way interactions between the citizen and the government; users can conduct complete on-line transactions including buying and selling activities. The last stage (5) is *Seamless/Networked web presence* - this is the most sophisticated level of e-government service delivery; all services and functions across all government levels are integrated; citizens can access any kind of services from a central location at any given time.

The United Nations E-government Model did not form part of the current study's framework because, the proposed five stage e-government maturity model appeared to be complex and not very clear as compared to the three phases of the World Bank Handbook (2002). For instance, it could be difficult to differentiate between stage 1 (*emerging web-presence*) and stage 2 (*enhanced web presence*). In addition, the United Nations Model compels that one stage must be completed before the other could be implemented. Such may delay the implementation of e-government initiatives. With the World Bank theory, there is no need for one phase to be completed before another can begin.

2.2.5 UNESCO E-government Toolkit for Developing Countries

UNESCO (2005) developed an e-government Toolkit which also demystifies maturity phases of e-government among others. The toolkit offers an action framework involving all stakeholders in developing nations and guide them through various phases of their development. The toolkit addresses all possible aspects for initiating, implementing and sustaining e-government programmes and discusses the e-readiness in terms of technology, infrastructure, capacity and legislative and regulatory framework in developing countries. UNESCO (2005) suggests a four phased e-government maturity model for developing nations which was developed by Gartner Group in 2000.

The phases in this model include: (1) *Information*: this phase entails the usage of ICT especially internet to expand access to government information. Such is believed to enable fast dissemination of government information to global audience. To enter in this phase, developing countries should set up a National Portal that will provide

comprehensive access to online information including but not limited to: Nation profile, parliament, constitution, Executive, government publications and services. According to UNESCO (2005), the National Portal shall enable citizens to access government information without visiting offices, standing in long queues or resort to malpractices to get services they want. Complex bureaucracy and corruption is said to be minimized should a nation implement this initiative. (2) *Interaction*: this phase entails to enhancing the public involvement in the process of government where people can submit their queries and grievances through emails, or specially designed forms to air out their views and opinions and help in policy formulation. Such saves a lot of time services are provided on a 24*7 basis (UNESCO 2005). (3) *Transaction*: this phase involves establishing websites and other applications with which to citizens may exchange information online and get details of the procedures involved. In this phase, citizens are able to avail the service such as online bookings and payment of travel tickets, payment of taxes, land registration, payment of utility bills online in a complete sense. The last phase in this model is (4) *Transformation*: this phase entails the stage where the government has gone through the full transformation process and all citizen services are made available online through a single virtual. Citizen's services are fully integrated hence removing the demarcation lines between ministries, departments and agencies and clustering services along common needs (UNESCO, 2005).

However, UNESCO Toolkit was not applied in the current study as the researcher thought it was not detailed and elaborative enough. Instead, the World Bank Handbook theory of 2002, was found suitable for the current study.

2.3 Electronic records and its related systems

This section discusses the concepts, systems and technologies related to electronic records. The section covers conceptualization of key terms including: electronic records and electronic records management.

2.3.1 The concept of electronic records

The US National Archives and Records Administration (NARA, 2012) defines an electronic record as "any information that is recorded in a form that only a computer can process and that satisfies the definition of a record." It is a record on electronic storage media, produced, communicated, maintained and/or accessed by means of electronic equipment (ISO 16175-1 2010; Smith, 2007). An e-record can consist of one or more objects, e.g. web page, file, e-mail or document (Smith, 2007). One of the key distinctions between electronic records and records stored on paper or microfilm is that information stored on paper or microfilm can be read by the human eye whereas an electronic record is invisible and indiscernible to a user until the system produces an image or sound (McLeod & Hare, 2010; Franks, 2013).

Depending on how they are created, by whom and where they are within the records management life cycle; electronic records reside in a variety of devices and locations. Electronic records can be created away from the office and stored on USB flash drives, tablets, or smart phones. Similarly, employees may store records on personal computers (PCs) hard drives, network drives, and compact discs [CDs]. For public records in a digital format, it is imperative that control measures including access monitoring, user verification, authorized security are implemented to protect electronic records (Saffady, 2002; Franks, 2013; ISO 15489-1: 2016).

The application of electronic means of interaction between organizations and their stakeholders provides a great opportunity to improve business activities in terms of efficiency and effectiveness in business transactions at individual and government level, hence adding value to the administration of governments and organizations (Mnjama and Wamukoya, 2006). However, a number of challenges concerning the management of electronic records have been identified by many scholars. The challenges include but not limited to: technological obsolescence; risks to reliability and authenticity; loss of security and privacy; technological dependence; decentralisation of information; increased security risk of data and records in e-format; inadequacy of e-records management specialists; increased costs; weak and out-dated legislative framework; and insufficient infrastructures and systems (Mnjama & Wamukoya, 2006; Keakopa, 2009; Negomasha & Ngulube, 2010; McLeod & Hare, 2010; Luyombya, 2011; Nkala, Ngulube & Nangeana, 2012; Mokwevho & Jacobs, 2012; Ambira 2017).

Duranti (2010) observed that the biggest challenge confronting the digital systems is the creation and maintenance of reliable records and preservation of their authenticity over time. This is the reason why Lemieux (2016) established that, although many countries are transforming from paper-based to digital systems through the application of ICTs; this has brought about the deterioration in the quality, management and accessibility of recorded information. Patterson & Sprehe in Ambira (2017) pointed out that, the challenges of e-records management are contributed by the fact that many information technology systems designed in many organisations and governments, neglect electronic records management aspects. The majority of governments and organizations do seldom incorporate records

management functionality when planning for ICT and e-government systems. Even archival institutions which have been mandated with responsibilities to oversee the management of public records, are normally not involved from early stages of planning and designing. As a result, the creation, capturing and protection of e-records are put at risk (Navin, 2009; Nengomasha, 2009; IRMT, 2011; Luyombya, 2011).

The ISO 15489-1: 2016 provides that, in electronic environment records systems may be designed to register records through automatic processes which may involve brief descriptive information or metadata about the record and assigning the record a unique identifier within the system. Without the involvement of records management professionals, this would not be effectively realised. As such, organisations would end up with systems that are generating huge volumes of electronic records that could hardly be managed, protected, retrieved and disseminated for decision making (IRMT 2011; ISO 15489-1: 2016). Subsections below provides a detailed discussion on ERM and its related technology and systems.

2.3.2 Electronic records management (ERM)

ARMA International (2012) defines the term *electronic records management* in two different scenarios. In scenario one, ERM is defined as an application of records management principles to electronic records; and in scenario two, ARMA International (2012) defines ERM as the management of records using electronic systems to apply records management principles.

Different scholars in the field of records and archives management use the terms Electronic Records management (ERM) and managing electronic records (MER) interchangeably. However, Loring (2010) makes a distinction between the two terms. According to Loring (2010), ERM is about the use of electronic capabilities to manage records in both electronic and paper formats. In this line of thinking, ERM includes automation of paper records management processes as well as management of digital records through ICTs. This explanation conforms with the clarification provided by NARA (2000), where it was clarified that the word *electronic* in ERM refers to automation, not to the nature of the record. On the other hand, management of electronic records (MER) is a specialized segment of electronic records management that focuses purely on management of digital records. This implies that ERM is a broader concept under which MER becomes a subset.

The current study preferred to use the ERM as a broader concept to include procedures and practices of managing digital records as well as the processes of digitization and automation of business functions, which is currently taking place within the Tanzania public service as it strives to implement e-government initiatives. However, the researcher used the term MER in some scenarios when explaining issues related to records born digital. According to Mcleod & Hare (2010:16), 'born digital' records are those which are created by computers which process data as numeric value, expressed in binary digits.

2.4 Technology and records management

In recent years, the world has witnessed development of software products which are specifically designed for managing records. As result of such technological

advancement, it has become inevitable for many authors and experts in the field of records and archives management to agree that technology is central as: a driver, the underlying infrastructure, the creating, access and storage medium for e-records (NARA, 2000; Saffady, 2002; McLeod & Hare, 2010; Franks, 2013; NAA, 2015). It is also clear that, technology can offer part of the solution to recordkeeping through a range of software systems. However, organizations need to consider how to ensure that recordkeeping becomes a natural, effective and efficient part of business operations (McLeod & Hare, 2010). Subsections below discuss various types of software systems for managing records. These systems include: File management systems (FMS); document imaging system (DIS); electronic document management systems (EDMS); electronic records management systems (ERMS); electronic document and records management systems (EDRMS); enterprise content management systems (ECMS); and digital repositories (DRs).

2.4.1 File management systems (FMS).

File management systems (FMS) are electronic systems used for managing records particularly paper based records. The system is commonly used for tracking file movements and for retention management (McLeod & Hare, 2010). Details about files/letters received and the stages of processing are registered in this system. The major benefits of FMS are:

- Immediate availability of information compared to manual tracking;
- stock of pending files;
- Status of pending files
- Availability of reports on various dimensions (based on different parameters)
- Easy retrieval of reports with minimum input data;

- Quick delivery of detailed reports.

However, a number of File Management Systems have now been developed to link to the electronic document management systems (EDMS) (McLeod & Hare, 2010).

2.4.2 Document imaging systems (DIS)

The Document Imaging Systems (DIS) are applications specifically designed for digitizing documents. DIS gives users ability to import documents in various ways ranging from scanning single documents to batches of documents through document scanners, indexed based set of values and store on electronic storage media for access or preservation (Null, 2013). In addition, DIS allows for some formatting after which the documents can be stored in storage media

2.4.3 Electronic document management systems (EDMS)

As their name implies, EDMS core functionality is not recordkeeping rather they focus on information access as they provide creation and management controls, such as use of standard templates for different types of documents, audit trails of who created and who has used or changed the document, and version control (McLeod & Hare, 2010). EDMS were developed to improve productivity by eliminating the time consumed in moving paper files from one action officer to another as well as help avoid the risks associated with handling of manual records. A crucial feature in EDMS is availability of workflows through which documents move from one action officer to another. As documents move across the workflow, EDMS allows editing or commenting on documents. Further, EDMS are currently embedded with capabilities for accepting documents in different formats as well as capturing documents from various sources like scanning, emails, templates and desktop

integration. Similarly, many EDMS have capabilities to safeguard the security of records by imposing access controls to records and technical features like encryption.

2.4.4 Electronic records management systems (ERMS)

ARMA International (2012) refers an electronic records management system (ERMS) as a system consisting of a software, hardware, policies, and processes to automate the preparation, organization, tracking and distribution of records regardless of media. Unlike EDMS, ERMS are purely dedicated to management of documents classified as records. A key feature of ERMS is its ability to sustain the fixity quality of records. This means that ERMS do not allow for alterations of documents once they have been captured in the system. They seek to ensure the record remains fixed and any alterations or amendments generate another version of the record, which is also captured and stored as a different record (Ambira, 2017:104). The primary management functions of an ERMS are categorizing and locating records and identifying records due for disposition. ERMS which is sometimes referred to as a records management application (RMA), observes the principles of records management as it includes features related to the capture, description, management, storage and dissemination of records in electronic form. In addition, ERMS includes the retention and disposal schedule (Franks, 2013). Further, an ERMS enhances retrieval as well as disposition of the electronic records in its repository based on accepted principles. Moreover, some of the ERMS in the market permit integration with workflow modules to provide the benefits of automated workflows (Ambira, 2017).

Different organizations may have different ERMS depending on their organizational needs and functionality of their products. Examples of ERMS include Knowledge

Repository Information System (KRIS) developed by SQL View Pty Ltd of Singapore. It is however important to observe key features required for effective management of e-records before purchasing any particular ERMS. Franks (2013:151) identified typical functions of an ERMS that need to be observed before making a decision to acquire an electronic records management solution. These include:

- Marking an electronic document as a read-only electronic record
- Protecting the record against modification or tampering
- Filing a record against an organizational file plan or taxonomy for categorization
- Marking records as vital records
- Assigning disposal (archival or destruction rules) to records
- Freezing and unfreezing disposal rules
- Applying access and security controls
- Executing disposal processing (usually an administrative function)
- Maintaining organizational/historical metadata that preserves the business context of the record in the case of an organizational change
- Providing a history/audit trail.

Wiggins (2002) provides differences between ERMS and EDMS in table 2.1.

Table 2.2 Differences between ERMS and EDRMS

ERMS	EDRMS
Records are pieces of recorded information providing evidence relating to business transactions	Documents are coherent units of information meaningful to their relevant users
Administrative control	Operational control
Physical storage	Workflow
File classification	Indexing
Retention	Revision and version control
Statutory and regulatory requirements	Operational needs
Storage media	Information content
Integrated series	Individual items

2.4.5 Electronic document and records management systems (EDRMS)

An EDRMS is a result of an integration of EDMS and ERMS functionalities (Franks, 2013). Various scholars agree that, EDRMS are currently the most popular technologies for managing electronic records as they form both the benefits of operational efficiency through workflows while still providing capabilities for professional records management (McLeod & Hare, 2010; National Archives of Australia, 2011; New South Wales Government, 2012; Franks, 2013; Codafire, 2015).

The emergence of EDRMS in the market was triggered by a technical report, *ANSI/AIIM/ARMA TR48-2006: Revised Framework for Integration of Electronic Document management Systems and Electronic Records Management Systems*, which proposed three approaches to implementing an integration of an electronic document management system (EDMS) with an electronic records management system (ERMS). The first model illustrated the integration of a stand-alone EDMS with a stand-alone ERMS. In this model (Franks, 2013) the EDMS interface and repository/server are used to manage documents produced in other systems, whereas documents considered records but residing in the EDMS could be classified as records by linking them to an ERMS folder. The second and third models portray a full-featured EDRMS which came as result of acquisitions of ERMS by vendors of EDMS so that the component of records management could be added.

EDRMS is specifically designed to manage the integrity of, and provide desktop access to information using existing office application such as email, collaborative

work systems and other applications already installed (Provincial Archives of Saskatchewan, 2016). As highlighted above, the EDRMS combines document management and records management functionality. According to Provincial Archives of Saskatchewan (2016), this functionality may include among others:

- registers and organizes documents in a secure central repository
- captures metadata such as creator(s), dates, versions, etc.
- facilitates retrieval
- allows monitoring of access and use of documents
- allows records to be classified and retention periods assigned according to specific records schedules
- applies appropriate security classifications and ensures integrity and authenticity
- provides appropriate audit trails

Moreover, an EDRMS can integrate and interface with existing paper filing system to: capture the creation of paper records; maintain and manage metadata on paper records; facilitate access and retrieval; track movement of physical files; manage physical storage facilities; and manage the retention and disposition of paper records (Queensland State Archives, 2010; Provincial Archives of Saskatchewan, 2016).

The principle of EDRMS is such that when a document is still a work-in-progress, it is managed under the document managed component of the EDRMS where it moves across the workflows until it reaches the final status where the transaction has concluded and the document becomes a record of evidence of that transaction. At this stage, the document, now a record, moves to the ERMS component which

ensures it remains fixed and applies retention policies on the document. In the event the record is to be called again for action, it is moved from the ERMS component to the EDMS component for action and back to ERMS for storage and retention (Navin, 2009; Smith, 2009; Queensland State Archives, 2010; Ambira, 2017).

Therefore, by providing one platform for automation of business processes for records management and the actual management of the records, an EDRMS can increase business efficiency, provide greater accountability and reduce business risk. Moreover, by ensuring that official public records are appropriately managed, secured and accessible; an EDRMS software can assist organizations in complying with legislative requirements. However, Provincial Archives of Saskatchewan (2016) cautions that, an EDRMS alone cannot address records management requirements. As an enabling technology, an effective implementation of EDRMS must be based on an established records management programme, including approved retention schedules, policies and procedures. Tools and training will be necessary to guide change management. Similarly, the majority of offerings in the current EDRMS market will not provide the following types of functionality:

- Managing structured data stored within line-of-business systems (Human Resource of Finance Systems)
- Managing the dynamic life cycle of web pages or systems
- Providing advanced document management
- Establishing records management controls (Provincial Archives of Saskatchewan, 2016).

Examples of EDRMS software includes but not limited to: Live Link and e-Docs by Open Text Corporation; Total Records and Information Management (TRIM) developed by Hewlett Packard; Objective by Objective Corporation, Documentum by EMC Corporation and FileNet by IBM (Queensland State Archives, 2010).

2.4.6 Enterprise content management systems (ECMS)

Although ECM goes back almost thirty years to the introduction of computer networks and document scanners, in early 2000s web content and websites as a corporate asset came under control of ECM (Franks, 2013). An ECMS is much more focused on collaboration and sharing of information. In CMS, the process is less important and as a result, documents tend not to be automatically routed on workflows. Although ECMS are more people-driven unlike EDMS or EDRMS which are process-driven; they are relevant to every business and there are a variety of ways in which they can be integrated with electronic records management functions (Franks, 2013).

Moreover, ECMS are the software used to manage information shared on social media and other web-based content. Unlike any other systems above, ECMS work with unstructured information in which users are allowed for online publishing of content, editing content, deleting content, customization of content presentation, search and retrieval, user interaction, which makes ECMS online-based systems. That is the reason why TechTarget (2011) defines a ECMS as a system “used to manage editorial content of a web-site”. A good example is the SharePoint 2010 which allows users to view content and declare records, apply retention schedules,

move records to an archive, place legal holds to traditional content, web content, or social content (Boag, 2009; McLeod & Hare, 2010; Franks, 2013).

2.4.7 Digital repositories (DRs)

Digital repositories are designed to primarily provide storage of digital content. The invention of DRs follows the fact that many organizations and individuals, now create much of their documentation digitally. Meanwhile, many governments have passed legislations that require organizations to effectively preserve information held digitally. Failure to preserve such information could have serious consequences. Digital repositories therefore, are like libraries specifically designed for storing digital contents generated out of business transactions in organizations. The design of DRs is such that they accept content and permit its description and storage and provide mechanisms for searching and retrieval. Unlike ERMS, EDMS and EDRMS, DRs do not have workflows and do not allow any modification of documents but just for users to access and use the content. Most DRs in use have been designed on open-standard technology so that it becomes easier to import and export various formats of digital information (University of Cambridge, 2012; University of South California, 2012).

2.5 Information creation and capture in the digital era

Franks (2013:57) established that, the amount of information created worldwide in digital format surpassed 1.8 zettabytes during 2011. It was further pointed out that, by 2020, the world will generate 50 times that amount through various devices including: remote sensors, online retail transactions, text documents, e-mail messages, web posts, camera and video images, computers running large scale

simulations, and scientific instruments such as particle accelerators and telescopes. Subsections below provides a discussion on the creation and capturing of e-records; records management metadata, and electronic data and system migration.

2.5.1 Creating and capturing e-records

All records including business e-mail and other electronic records, must be created or received within an approved records management system. As a result of advances in technology, the methods used to create and capture records have changed compared to the previous ones. At one time, organizations had limited tools with which to create records and only a few people within the organization were authorized to create records. In the previous technology, an executive would dictate a letter to a secretary who would type information onto paper for him to sign before the original correspondence would be mailed to the recipient (Franks, 2013). With the introduction of computer technology, networking and Wide Web to date, records creation has been simplified and can be done by all staff. However, the creation of e-records must be impacted by the degree of automation applied and knowing what records to create. Knowing what records to create involves:

- Using work process analysis to identify the records needed to document business or work processes;
- Understanding the legal and regulatory requirements that impact the organization, including internal policies, procedures, and directives; and
- Assessing the risks of failing to create.

Capturing a record means ensuring that the record becomes fixed so that it cannot be altered or deleted. Records are normally captured by a records system in order to: establish a relationship between the record, the creator, and the business context

that originated it; place the record and its relationship within a records system; and link it to other records. The main things to remember about records creation and capture are:

- To create or capture the records your office needs to document operational and business processes, and for evidentiary, transparency and accountability purposes
- To save or file records along with others that support the same task
- Not to file duplicates, personal papers, reference materials or publications
- To develop rules and procedures so that everyone knows what kind of records need to be created and kept as evidence of that work or to inform it again in the future (UN, 2010; Franks, 2013).

Records creation and capture can be practiced as a deliberate action after the event, such as documenting the minutes of a meeting from recordings made during the meeting. According to Franks (2010:61), records capture can occur manually after creation when using a paper-based filing system, for instance when an email message gets printed and filed. Likewise, records can be automatically captured at the time of creation, if using an electronic records management system (ERMS). In such a scenario, Franks cites an automatic transfer of an e-mail to the server (repository) as an example. In addition, UN (2010), identified different ways of creating and capturing e-records including the following:

- Handwriting notes
- Completing forms and templates
- Creating and transmitting an email
- Creating word processed documents

- Creating a memorandum or note for file
- Taking photographs (digitally or traditionally)
- Making video tapes, DVD and traditional video recordings
- Making audio tapes, CD and other audio recordings
- Entering data into a database.

2.5.2 Records management metadata

ISO 15489-1:2016 describes metadata as data describing context, content, and structure of records and their management over time. In paper records, metadata such as author, subject, and title of records are always implicit in the records and are used to index records for filing. In contrary, metadata in digital records needs to be explicitly documented in order to describe the context, content and structure of records and their management throughout their cycle (Franks, 2013; ISO 15489-1:2016).

Metadata in records is crucial as it defines a record at the time of capture in order that that it is fixed into the business context and management control is established over it. Included in the metadata are information about the context of records creation, the business context, and the agents involved, as well as metadata about the content, appearance, structure and technical attributes of the records themselves. Moreover, as observed by Franks (2013:73), metadata ensures the authenticity, reliability, usability and integrity of the record and can be used as evidence of business transactions and activities. This implies that organizations will be at risk unless they capture and manage metadata along with the record. Based on this fact, authors including Smith (2007) and Franks (2013) observe that:

Information captured as records should be linked with metadata that categorizes the records' specific business context when the records commit an organization or individual accountable, or document an action, a decision, or a decision making process.

Based on the importance of metadata, ISO 15489-1:2016 describes three specific international standards related to the management of metadata for records. These include:

- *ISO 23081-Part 1: Principles:* This standard sets the framework for creating, managing and using records management metadata and explains the principles governing them.
- *ISO 23081- Part 2: Conceptual and implementation issues:* This is a technical specification that supports the standard, but does not prescribe a specific set of metadata elements. Further, the standard does not identify generic types of metadata that fulfil the requirements for managing records.
- *ISO 23081-Part 3: Self-assessment method:* ISO 23081 part 3 provides guidance on conducting a self-assessment on records metadata created in relation to the creation, capture, and control of records. The standard is designed to identify organizations' current state of records metadata readiness and the risks associated with the current state and to give direction on how to improve the organization's readiness.

2.6 A review of empirical studies on the management of e-records in the context of e-government

This section presents a review of empirical studies which provide a global picture on

issues related to e-records and e-government adoption. The review covers studies conducted globally, within SADC Countries, and Tanzania as discussed in the following subsections.

2.6.1 Global studies on e-records and e-government

In 2009, Xiaomi conducted a study titled "the electronic records management in e-government strategy" in which the U.S, New Zealand and UK were selected as case studies. The study findings revealed that, effective e-records management (ERM) strengthens e-government services as it supports organizational business continuity, security and risk management, legal compliance and accountability, evidence-based decision making and transparency, good governance and public trust, good performance and government capability building (Xiaomi, 2009). Similarly, a study by Xiaomi, Sun & Zhang (2011) which investigated on the current trends and future directions of electronic records management (ERM) in e-government, indicated that current ERMS in different organizations have limitations either from IT perspectives or records and archives management perspectives. Further, among other issues the study established that:

- ERMS is the key component of ERM in e-government and that, future directions of ERMS would be adapted to be closely connected with government processes to support evidence-based governance and collaborative services.
- Current trends of ERM in e-government are going toward multidisciplinary and collaborative approaches to ERM

- Future directions of ERM in e-government would be toward meta-synthesis management, integration of multidisciplinary and collaborative approaches to enhance efficiency of both ERM and e-government services.

Moreover, Xiaomi (2009) established that, the management of e-records in the U.S is integrated into a mission-focused framework and the Federal Enterprise Architecture so as to improve government performance under enterprise-wide ERM system guidance in adherence to ERM policy that cuts across the Federal government. According to NARA (2005), electronic records and archives (ERA) is one of the U.S strategic initiative to authentically preserve and effectively facilitate provision of access to unique and valuable records of the U.S Government, and transition government-wide management of the lifecycle of all records in the context of e-government free from dependence on specific hardware or software.

Moreover, Xiaomi (2009) revealed that, in UK, effective ERM are seriously taken as a means for effective e-government implementation. Information including digital records are managed as an asset as it supports: efficient joint working, information exchange and inter-operability between government organizations, evidence-based policy making by providing reliable and authentic information for various use throughout government operations and transactions (Xiaomi, 2009). However, managing electronic records is associated with a number of challenges including the difficult of ensuring that the content, context and structure of digital records are preserved and protected. This may hamper the authenticity, reliability and trustworthiness of such format of records over time (Xiaomi, 2009).

2.6.2 E-records and e-government issues within the Southern Africa

Development Community (SADC) Region

With an increase of digital information, or e-records that document the government transactions and online activities, it is imperative that governments ensure that the legal and regulatory frameworks are in place for effective management and implementation of both e-records and e-government. Like in manual systems, the electronic delivery of services to business and citizens produce electronic records as evidence of business transactions. The evidence needs to be retained as records which can demonstrate accountability and preserve reliable access (Nkala, Ngulube & Mangena, 2012). Consequently, Mnjama and Wamukoya (2006) observed that, the emergence of e-government has resulted in the creation of e-records and the information they contain is indeed valuable asset that must be managed and protected. They further asserted that, e-records provide essential organizational activities, transactions, decisions and support business functions and are critical for the assessment of organizational performance. Hence, without effective system to manage them, governments cannot be held accountable for their decisions and actions and the rights and obligations of citizens and corporate bodies cannot be upheld. In support of this view, Nkala, Ngulube & Mangena, (2012) opine that, the intended benefits of e-government will be compromised unless there is adequate infrastructure for managing the e-records that will be created.

Consequently, it is important to note that quality records in any format are essential for making right decisions and taking appropriate action (Mukwevho & Jacobs, 2012). Moreover, for e-records to be useful, it should include all metadata aimed at

providing the completeness and trustworthiness of the information in such a format. IRMT (2009) pointed out that a list of metadata elements in an e-records are important to ensure improved access to information. It is therefore suggested that, traditional records and information management tools such as classification schemes, and disposal schedules are still important tools to ensure that e-records remain protected and reliable evidence. This calls for governments to properly address e-records issues as a component of e-government. Government can face increased operating costs, gaps in recorded memory, reduced public access to entitlements and the erosion of rights, inability to comply with laws and policies, weakened capacity for decision making, increased legal, financial and political risk and reduced transparency, accountability and trust (Mnjama and Wamukoya, 2006). Nengomasha (2009) did a study under the title "A Study of Electronic Records in the Namibian Public Service in the Context of E-government". The study findings indicated that, e-government in the Namibia Public Service was in the initial phase of implementation and has led to an increase in the creation of electronic records. However, the study by Nengomasha (2009) revealed that the status of records management in the Namibian Public Service was very poor. Such a situation was necessitated by the officer's lack of understanding of what records are and their importance; inadequate legal and regulatory environment; failure to follow laid down procedures and standards; absence of records management disaster plan including digital preservation strategy and inadequate resources including skilled personnel for the management of records in both paper and electronic format (Nengomasha, 2009). In addition, Nengomasha (2009) concluded that Namibian's e-government initiatives were not supported by a strong records management programme.

A study by Ngoepe & Keakopa (2011) noted that, the recent technological advancement that have impacted on how public records are created and managed, have raised a number of challenges to the traditional means of recordkeeping in South Africa. The authors observed that, the identification and transfer of digital records from public institutions into archival custody has not happened in any systematic manner because the national archival system lacks capacity in terms of infrastructure and skilled personnel to effectively facilitate long-term preservation of such information of enduring value. In such instances, digital records are left to the creating agencies to manage and preserve them even though they also lack the required infrastructure as well as knowledge and skills (The Archival Platform, 2015).

Consequently, Keakopa (2009) and Kemoni (2009) have argued that South Africa is the most advanced African country in the implementation of software applications for managing electronic records. This observation is supported by Katuu (2012b) who reported findings of a survey of South African institutions which aimed at investigating the implementation of software applications to manage digital records. The findings revealed that, by 2010 more than 40% of South African institutions had five or more years of practical experience. Moreover, the survey revealed that various South African institutions were using different modules including: Document management, imaging and workflow within their applications either as open source or proprietary software (Katu, 2012b:50-51).

Ginindza (2011), presented study findings at the annual ESARBICA proceedings held in Mozambique. The study investigated on the state of e-government in Swaziland with a goal of establishing the extent to which Swaziland had made

progress regarding e-Government initiatives. Ginindza (2011) revealed that, the country had developed an appropriate ICT policy hence promising a favourable climate that would enhance the development and implementation of e-Government in Swaziland. Further, the study findings indicated that, Swaziland has already embarked on a number of e-government initiatives such as information services where a government website to which different categories of government information are posted. However, Ginindza (2011) observed that the government website was static and was seldom updated and not citizen-centric. This implies that, the country's e-government was still at the infancy stage of development as per United Nations model of e-government. This study suggested for the development of an e-government policy, e-government strategy, e-government programme and attending to broadband issues as matters of priority should Swaziland aim to effectively adopt e-government.

Despite the many advantages of e-government implementation as pronounced by different scholars from different schools of thought, the awareness of the majority Africans on e-government issues is questionable. A study by Bwalya, Plessis & Reinsleigh (2012) for example established that about 49% of respondents on e-government awareness in Zambia were not at all aware of e-government services in Zambia. On the other hand, only (30%) were slightly aware of e-government services in the country.

A study by Nengomasha (2009) reveal that Namibia has not yet enacted a freedom of information law. Namibia has enacted a new digital signature/e-commerce at bill

stage though. The government of Namibia is working on a legal framework to regulate electronic transactions and commerce hence promoting ICTs usage.

Karokola and Yngstring (2009b) reveals that with e-government implementation, information assets are likely to be exposed to current and emerging security risks and threats. The study further observed that e-government maturity models lack built-in security services, technical and non-technical. Karokola and Yngstring (2009a) went further to note that information security is an essential tool for managing security risks and threats in any environment. In ensuring security of information in e-government environments, an involvement of employees at all levels (strategic, tactical and operational) is required. Security ensures confidentiality, integrity and availability of critical information assets being stored, processed and transmitted within and between e-government domains (Karokola and Yngstring (2009b). It is generally observed that, in order to foster secure e-government services and consequently create confidence and trust among e-government stakeholders; reasonable efforts should be taken by governments to enhance security services in e-government services.

A study by Bwalya, Plessis & Reinsleigh (2012) identified challenges that face e-government implementation in Zambia to be: lack of ICT skills, lack of readily available and affordable internet access points, lack of e-government services relevant to the local context, lack of user-friendly e-government platforms; risk of information ending up in the hands of unauthorised individuals, fear of change on the part of the customer and /or government staff; limited experience in interacting with ICT platforms and the internet, non-availability of native language (mother tongue) option on the website, which could help the customer to perform tasks better; lack of protection of the end

user in the online environment; and lack of awareness campaigns on the benefits of engaging in e-government. These challenges cut across in almost all Sub-Saharan African government.

Experience from various organizations and literatures rightly indicate that records provide citizens with the means of holding the government accountable for its conduct but also to safeguard their individual rights. Basing on this fact, many countries have set forth policies, legislations, procedures and standards with which to facilitate smooth management of records that document evidence of business transactions. From experiences of other countries relevant legislations include the records and archives laws, e-commerce laws, freedom of information and data protection laws (Nengomasha, 2012). With new concepts of e-records and e-government as a result of ICTs driving force however, effective legal framework is a challenge in many countries. In most cases particularly in the developing world there exists weak laws on e-records and e-government, weak ICT policies, insufficient strategies and procedures for implementation of e-government etc.

2.6.3 E-Records and E-Government in the East African Community Region

Luyombya (2010) conducted a study which went by the title "Framework for Effective Public Digital Records Management in Uganda". His study raised many issues about the way digital records were being created, maintained and used, including possible lines of action to resolve existing digital records management (DRM) problems. The study also considered how the DRM services and practices used elsewhere could be adopted to suit the Uganda Public Service (UPS). The study findings revealed that, the problems with DRM due to the absence of ICT facilities with recordkeeping

functionality, lack of clear policies, guidelines and procedures, and to the fact that the Uganda Records and Archives legislation is not fully implemented and not fully enforced. In addition, it was revealed from this study that the lack of reliable power supply and insufficient funds and human capacity, contributed to the DRM problems. In order to ensure accountable government for citizens of Uganda in a digital world, Luyombya (2010) recommends for the need of formal legal infrastructure; the need for establishing a national archives with appropriate policies, procedures and guidelines; and the development of both robust DRM infrastructure and skilled human resource capacity.

A study by IRMT (2011) in the East African Community (EAC) which comprises five member states, including Tanzania, Kenya, Uganda, Rwanda and Burundi; aimed at analysing the role of records management in ICT/e-Government and FOI initiatives; the level at which such initiatives are at risk because of poor record-keeping; and the nature of the regulatory framework for record-keeping that is responsible for ensuring that records support the ability of ICT/e-Government in achieving their goals (IRMT, 2011). The study findings indicated that, four member states governments in the East African region had made substantial investments in ICT procurement and deployment aggressively pursuing ICT and e-government initiatives, and have designed ICT strategies to support national development, improved work processes and employment creation. This implies that, East African region countries, at different stages and though, are embracing e-Government initiatives designed to harness the power of internet for effective delivery of services to the general public (IRMT, 2011).

Despite good strides that EAC has made towards ICT/e-Government implementation, IRMT (2011) reported that, there is little evidence to indicate that any of the countries are incorporating the functionality for records management in the planning for ICT/e-Government. Similarly, archival institutions in each of member state, seem not to be involved on issues pertaining to the life cycle of electronic records being generated and captured in electronic systems as a result of e-transactions (IRMT, 2011). In other words, ICT systems being implemented in EAC lack records management requirement hence risking the proper capture and protection of e-records. The study also revealed a number of challenges facing e-government initiatives including: inadequate qualified staff, insufficient financial resources and shortage of electricity in some areas.

A study by Ambira (2017) under the title "A framework for managing electronic records in support of e-Government in Kenya". The study investigated how the management of electronic records supported e-government in Kenya with a view to develop a best-practice framework for managing e-records in support of e-government. The specific objectives of the study were to: ascertain current status of management of e-records in government ministries in Kenya; determine the current level of e-government utilization; establish the effectiveness of existing practices for management of e-records in supporting e-government; identify challenges faced by ministries in management of e-records that could impact on implementation of e-government; propose recommendations that could improve management of e-records in ministries to support e-government effectiveness and develop a framework for management of e-records in support of e-government. The research findings indicated that: the general status of managing e-records in government

ministries is inadequately positioned to support e-government; utilization of e-government in Kenya had grown significantly and more ministries were adopting e-government services; although some initiatives have been undertaken to enhance e-records management, the existing practices for managing e-records require improvement to ensure they adequately support e-government; there exists several challenges in the management of e-records that impact on implementation of e-government. The study concluded that the current practices for managing electronic records in support of e-government implementation were not adequate.

Based on the study findings, Ambira (2017:265) provided the following recommendations: development of a robust policy, regulatory and legislative frameworks to inform management of electronic records; development of standards and best practices for managing e-records; integration of e-records management in e-government systems designs; consideration of e-government in all e-records management initiatives; development of a clear strategy for e-records management in Government; capacity building on both e-records management and e-government; improved engagement between e-records and e-government stakeholders to achieve collaborative approach between the two; enhance ICT infrastructure across Government; adoption of one robust EDRMS for Government; increased funding for electronic records and e-government initiatives (Ambira, 2017).

2.6.3 The management of e-records and e-government implementation in Tanzania

Karokola and Yngstring (2009a) conducted a study under the title "A framework for securing e-Government Services: A case of Tanzania". The goal of this study was to

propose a framework that would facilitate government organizations to effectively offer appropriate secure e-government services. In his study, Karokola and Yngstring (2009a) observed that, there are a number of security issues and challenges, technical and non-technical, which affect secure e-government services (implementation and service delivery). The research results revealed such challenges as: security services are implemented in an ad-hoc manner; personnel in IT security were not adequately trained; existence of low level of security awareness among some IT personnel and users of e-government services; and lack of management support and budgetary and economic issues that affect the procurement of security services measures. In addition, it was learned that e-government implementation and service delivery is heavily guided and benchmarked by e-government maturity models (eGMMs).

Lowry (2012) revealed that, although the Tanzanian Government seems to be committed towards employing e-government as a tool for socio-economic growth in the public and private sector; its National Archives is lacking a designated digital records unit, a digital repository or a dedicated budget to support such initiatives. As a result, all digital records remain in the hands of creating agencies where their survival is at high risk. Moreover, Lowry (2012:435) identified such challenges facing the Tanzanian National Archives (RAMD), concerning digital records including:

- Unavailability of digital preservation strategy to ensure that digital records remain accessible for as long as they are needed
- Lack of guidance on key issues, including classification, naming conventions and titling to support accurate retrieval
- Inadequate training in digital records management

- The missing of the standardized guidance on functional or system requirements and records management input to IT processes
- Lack of formal business continuity plans or assessments of the risk to digital records caused by, for instance, power failure or surges, system or telecommunications breakdowns, computer malfunctions or data input errors
- There is no education for users in identifying what digital records are pertinent to the organization's business
- Lack of off-site back-up and storage
- Lack of print and file policy to ensure that significant records are placed on the relevant registered files until digital records management is introduced.

Komba (2014) conducted a study titled "Adoption of e-Government Services among citizens in the selected Districts in Tanzania", aimed at assessing factors that influence citizens adoption of e-government in Tanzania. The study was conducted based on the fact that, although the Tanzanian government has been making efforts to provide its information and services through the use of information and communication technology, e-government adoption has been quite slow. Research results indicated that, social influence determines adoption of e-government in Tanzania. According to Komba (2014), social influence may refer to the degree to which peers influence use of the system. This implied that, e-government adopters were influenced by positive messages from their social networks, hence a strong behavioural intention to adopt the e-government systems. The study therefore recommended that a similar study (e-government adoption G2C) be conducted using different models of e-government so as to identify factors which influence the adoption of e-government in Tanzania.

Ndenje-Sichwale (2010) conducted a study for her PhD at the University of KwaZulu-Natal under the title "The Significance of Records management to Fostering Accountability in the Public Service Reform programme of Tanzania". This study aimed at investigating the extent to which records management practices fostered accountability in the Public Service Reform Programme (PSRP) in some selected ministries in Tanzania. The study based on the fact that, it is essential for government ministries to ensure that records are properly managed at every stage so as keep evidence of organizational business transactions and the efficient and effective public service delivery. The research findings after data analysis, revealed that: records in some government ministries were not properly managed to foster accountability as they lacked records retention schedules and systematic disposal of records resulting in heavy congestion of records and poor retrieval of information; lack of registry mission statements; lack of records management policy and insufficient budget for registry sections. In addition, disaster and security control measures for records and archives did not form part of the records management considered important in government ministries of Tanzania (Ndenje-Sichwale, 2010). With regards to utilization of ICTs in the management of records, it was evidenced that, despite the existence of computers in some registries, only few computers were being used to create records. As such, the National Archives and registry personnel faced challenges in the management of electronic records. The findings further indicated that the levels of skills and training for the majority of registry personnel was relatively low.

Based on the findings, Ndenje-Schwale (2010) recommends the restructuring of records management systems including: the development of records management policies so as to accommodate the changes brought about by technology; allocation of dedicated budgets for registries; providing up-to-date training to registry personnel; and establishment of an integrated approach so as to accommodate records in both formats. Moreover, the national Archives (RAMD) is advised to undertake a survey to determine the volume of electronic records created in the government.

Marandu (2012) investigated on "the role of Records Management in the Implementation of Freedom of Information Legislation at the Ministry of Information, Culture and Sports-Tanzania. The major findings indicated that: Records management could be a prime driver towards fostering the implementation of freedom of information legislation; the policy for managing records was lacking; records management personnel and senior officers were poorly trained in records management; RAMD was not playing any meaningful role in advising the ministry on the management of electronic records. Based on these findings, Marandu (2012) recommended that: RAMD and the top management in the MoICS to develop policy, standards, guidelines and the procedures to guide the management of records. Further, the study recommended for a review of the existing records management legislation so as to address the overall management of digital records.

Another related study was conducted by Yonazi in 2010. This study with the title "Enhancing the Adoption of e-Government initiatives in Tanzania". This study established that, although the application of ICT in public sector is envisioned to

facilitate social and economic growth, citizen adoption rate of e-government initiatives in Tanzania was low. Yonazi (2010) further observed that, e-government has the potential to facilitate social economic improvement in developing countries if e-government initiatives will be adopted by citizens. In addition, Yonazi (2010) revealed that, developing citizen-adoptable e-government initiatives in developing countries is challenging due to the fact that each country has its unique contextual issues to be considered. In that regard, the study identified issues influencing the adoption of e-government initiatives in Tanzania. Further, the study developed and evaluated guidelines for enhancing e-Government in Tanzania which will help facilitate the identification, planning, development, and implementation of e-Government initiatives that are likely to be adopted by the citizens in Tanzania and other countries with related contexts (Yonazi, 2010).

Consequently, Dewa & Zltinikova (2014) did a research with the Title "Citizens' Readiness for e-Government Services in Tanzania". The general objective of the study was to identify the degree of the citizens' readiness for e-Government services in Tanzania. The study findings indicated that, the majority of citizens were not yet ready to adopt e-government services. Generally, the study indicated that the majority citizens were not yet ready to adopt e-Government services because of the following reasons:

- improper and limited access to the ICT infrastructures especially in rural areas;
- citizens resistance towards adopting digital technology;
- lack of citizens' awareness about available e-government services;
- citizens preference of using the face-to-face service delivery;
- poor ICT skills; and

- absence of trust and confidence towards the information security measures used to protect e-Government services.

Based on these findings, Dewa & Zltinikova (2014) recommended that, more time and efforts are required for creating an enabling environment for citizens' readiness to adopt e-Government services in Tanzania. Specifically, the study recommended the government to:

- make more efforts in supporting the design of e-Government services which would be delivered through both mobile phones and computers;
- allocate a reasonable budget which would enable public organizations to acquire a satisfactory bandwidth capacity so as to improve the download capacity and speed of e-Government services delivery;
- promote the internet usage by providing technical and financial assistance for the establishment of community telecentres, public Internet access centres, Internet cafes and ICT clubs which could be run by private and public sectors jointly;
- publicise the available e-Government services and improve ICT infrastructure;
- provide students at schools and universities with ICT skills at different stages of the education system;
- make intensive advertising campaigns for e-Government services delivered by public organizations in all mass media to create awareness about the e-services

2.7 Chapter summary

This chapter has presented a review of literature related to the current study. Various issues and practices regarding electronic records and e-government adoption were squarely discussed and analysed. A theoretical framework and how it guides this study has also been provided. Other issues covered under this chapter include: The concept of e-records, technology and records management, electronic records systems and software; information creation and capture in the digital era; and records management metadata. A review of empirical studies has provided a global picture covering studies conducted in the U.S, UK, New Zealand SADC Countries, and the East African region.

Generally, literature findings has indicated that majority citizens especially in Africa were not yet ready to adopt e-Government services because of: improper and limited access to the ICT infrastructures especially in rural areas; citizens resistance towards adopting digital technology; lack of citizens' awareness about available e-government services; citizens preference of using the face-to-face service delivery; poor ICT skills; and absence of trust and confidence towards the information security measures used to protect e-Government services.

This study identified a gap that could not be filled by almost all of the previous studies. The missing aspect that was evident in the literature was lack of an effective framework which could provide a proper guidance on how to integrate electronic records management (ERM) into e-Government initiatives. The current study therefore, sought to fill this gap by presenting a framework (as adapted from Ambira, 2017) for effective management of e-records in support of e-government implementation in the Tanzania public service.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter presents the philosophical foundations of research methodology adopted namely positivist and interpretivist research paradigms. Qualitative research paradigm which is the dominant research design is described. Other aspects covered in this chapter include: study target population, sampling procedure, justification of sample size, data collection methods, data validity and reliability, ethical considerations and presentation and analysis of data. Chapter summary is also provided.

3.2 Methodological Context

Different scholars have identified various dimensions to describe and theoretically classify research studies (Panahi, 2014). Many popular methodology textbooks use common dimensions including: paradigm, logic of reasoning, outcome of research, purpose of the study, methodological approaches and time periods of the study (Neuman, 2007a; Tripord & Bender, 2010; Babbie, 2011; Creswell, 2014; Yin, 2014). These dimensions provide an appropriate lens through which a study can be better approached and described (Panahi, 2014:65). This section presents the study dimensions in which the current study is positioned.

3.2.1 Paradigm

A paradigm is a basic set of beliefs that guide action (Lincoln & Cannella, 2014). A paradigm encompasses four terms including: ethics (axiology), epistemology, ontology and methodology. Ethics ask "How will I be as a moral person in the

world?" Epistemology ask "How do I know the world?" "What is the relationship between the enquirer and the world?" Ontology raises basic questions about the nature of reality and the nature of the human being in the world. Methodology focuses on the best means of gaining knowledge about the world (Lincoln & Cannella, 2014:189). Creswell (2014:6) uses an alternative term "worldview" instead of paradigm to refer to a general philosophical orientation that a researcher brings to the study. He suggests individuals preparing research proposals or plans to make explicit the larger philosophical ideas they espouse so that it helps them explain why they chose qualitative, quantitative or mixed methods approaches for their research. According to Creswell (2014), there are many research paradigms or worldviews in the literature including: positivism, constructivism, interpretivism and pragmatism. In this context however, only positivism and interpretivism are discussed.

Positivism had been for many years, the standard philosophical view of natural science. Comte came up with the philosophy of positivism in the nineteenth century. Positivism paradigm asserts the deterministic and empiricist philosophy, where causes determine effects, and aims to observe, quantitatively measure and predict relationships between variables (Hamersley, Mackenzie & Knipe, 2006). Positivists believe that social phenomena, like objects in natural sciences (e.g. physics and chemistry), can be treated in the same way (Lather, 2006). This view is sometimes called the scientific methods, or doing science research (Robson, 2011; Creswell, 2014). Positivists treat social reality as being absolute and independent of the observer's perceptions. The positivists' notion is that science becomes credible and possible because every scientist looking at the same bit of reality sees the same

thing (Myers, 1997; Neuman, 2007b; Robson, 2011). Other positivists' philosophical standpoints include:

- Objective knowledge (facts) can be gained from direct experience or observation, and is the only knowledge available to science. Invisible or theoretical entities are rejected.
- Science separates facts from values; it is value free.
- Science is largely based on quantitative data, derived from the use of strict rules and procedures, fundamentally different from common sense.
- All scientific propositions are founded on facts. Hypotheses are tested against these facts.
- The purpose of science is to develop universal causal laws. The search for scientific laws involves finding empirical regularities where the two or more things appear together or in some kind of sequence.
- Cause is established through demonstrating such empirical regularities or constant conjunctions - in fact this is all that causal relations are (Robson, 2011:21).

Generally, positivists' studies formulate and examine hypotheses and causal relationships, consider quantifiable measures of variables, and involve generalization about a phenomenon from a sample to the whole population of the study. However, the positivism paradigm is criticised in number of issues including the question of separating the researcher from what is being researched as the researcher can observe without allowing values and interests interfering; and the notion of absolute truth of knowledge when studying the behaviour and actions of humans (Phillips & Burbules, 2000; Robson, 2011).

On the other hand, interpretivism is a way to gain insights through discovering meanings by improving comprehension of the whole phenomena. The assumption under interpretive is that the whole needs to be examined in order to understand a phenomena (Corbin & Strauss, 2008). Interpretivists assume that social reality is not independent of peoples' interpretations and experiences. Rather, they believe that is always subjective and socially constructed by humans (Myers, 1997; Klein & Myers, 1999; Neuman, 2007a). Contrary to positivists, interpretivists believe that knowledge about social world can only be obtained by getting inside the world of those producing knowledge. In this paradigm there is acknowledgement that facts and values cannot be separated and that understanding is prejudiced as it is situated in terms of the individual and the event (Cousin, 2005; Elliot & Lukes, 2008). The underlying assumption on interpretivism is that all respondents involved in the study including the researcher, bring their own unique interpretations of the world to the research. As such, researchers need to be open to the attitude and values of the respondents, and suspend prior cultural assumptions (Hamersley, Mackenzie & Knipe, 2006). Further, interpretivists argue that, since human beings think and reflect, scientific methods are inappropriate for the study of society. Unlike objects in nature, human beings can change behaviour should they know they are being observed. However, interpretive approach in research is being criticized that it does not allow for generalizations because it encourages the study of small number of cases that do not apply to the whole population (Creswell, 2003; Lather, 2006).

Based on the review of the two research philosophical assumptions above, an interpretive paradigm seems more appropriate to achieve the goals of the study. Making it an interpretive, it allows for a deeper understanding of the phenomenon at

hand as it relies on analysing and interpreting the respondents' experiences and meanings related to the study. In addition, the researcher is also part of the research process as required by interpretive epistemology.

3.2.2 Logic

Philosophical considerations also demonstrate the logic of the study. There are two major types of reasoning in studies. These are inductive method and deductive method. Inductive takes a "bottom-up" approach that emphasizes drawing up conclusions and building theories through observations of events. In contrast, deductive method takes a "top-down" approach in which a study is conducted by first formulating hypotheses and developing a prior-model and then empirical data is collected to confirm or reject the prior-model (Neuman, 2007a). Positivist studies are predominantly deductive whereas interpretative studies are inductive by nature. This study therefore applied inductive method in which empirical data on the phenomenon under the study, and a conceptual framework model was developed through analysis of data collected.

3.2.3 Approaches

Research approaches are plans and procedures for research that span the steps from broad assumptions to detailed methods of data collection, analysis, and interpretation (Creswell, 2014:3). There are three research approaches namely: qualitative, quantitative, and mixed methods (Neuman, 2007b; Babbie, 2011; Creswell, 2014). Subsections below presents a brief discussion on each of the three.

3.2.3.1 Qualitative approach

Qualitative research approach is concerned with non-statistical methods of inquiry and analysis of social phenomena in which themes and categories emerge through analysis of data collected through interviews, observation, videotapes and case studies (Creswell, 2009). It is an approach for exploring and understanding the meaning of individuals or groups ascribe to a social or human problem involving in-depth interviews, observations and document reviews (Dawson, 2002; Creswell, 2014). Qualitative research approach emphasizes acquiring and analysing qualitative data or meanings (words and sentences) in order to answer the "how" and "why" research questions related to the phenomenon under the study (Babbie, 2011). Furthermore, the process of research as cited by (Creswell, 2014:3) involves emerging questions and procedures, data typically collected in the respondent's setting, data analysis inductively building from particulars to general themes, and the researcher making interpretations of the meaning of the data.

3.2.3.2 Quantitative approach

Quantitative research is an approach for testing objective theories by examining relationship among variables (Creswell, 2014:5). In Quantitative study researchers collect facts and study the relationship of one set of facts to another using techniques that are likely to produce quantified and generalizable conclusions (Bell, 2005). In other words, quantitative research uses quantitative data or numerical and measurable data with accompanying statistical analysis to answer the research questions of "what" and "how many" about the phenomenon under the study (Babbie, 2011). Quantitative researchers have assumptions about testing theories deductively, building in protections against bias, controlling for alternative

explanations, and are able to generalize and replicate the findings (Creswell, 2014:5).

3.2.3.3 Mixed method

Qualitative and quantitative approach might sometimes be employed together to answer a specific research questions, this is called mixed method research. This approach involves collecting both quantitative and qualitative data, integrating the two forms of data, and using distinct designs that may involve philosophical assumptions and theoretical frameworks. Researchers using this approach assume that, the combination of qualitative and quantitative approaches provides a more complete understanding of research problem than any of the two former approaches alone (Creswell, 2014). The general differences between mixed methods, qualitative and quantitative approaches are summarized in Table 3. 1.

Table 3. 1 Differences between Qualitative, Quantitative and Mixed Methods

Qualitative	Quantitative	Mixed methods
Based on meanings derived on numbers	Based on meanings expressed through words	Based on meanings expressed from both numbers and those expressed through words
Data is numerical and standardized, collected using pre-determined instrument	Data is non-standardized such as interview, document, observation data	Multiple forms of numerical and qualitative data is collected
Data is analysed using statistical methods	Data is analysed through the use of conceptualization and interpretation	Both statistical and qualitative approaches are used for data analysis

Adapted from Creswell, 2009; Sanders, Lewis & Thornhill, 2009

Based on the above discussion, this study employed a qualitative approach since it was mainly looking at the viewpoints, perceptions and experiences of respondents on electronic records management and e-Government implementation within the

Tanzania public service. In addition, this approach was deemed appropriate because is more flexible and allows for methods to be devised as the research progresses (Struwing & Stead, 2001).

3.3 Research Design/Approach

A research design can be thought of as the structure of research. It is the “glue” that holds and structures all the elements in a research project together and shows how all the major parts of the research work together in addressing the central research questions (Kombo and Tromp, 2006). It is the scheme, outline or plan that is used to generate answers to research problems (Orodho, 2003).

This study adopted a case study. This design was preferred as it allows for an in-depth investigation of the problem at hand. A case study is suitable when the research being conducted is an in-depth study of less than 50 cases (Mouton, 2001). This research will be carried out in five institutions in which two government ministries will be included.

According to Yin (2003) as cited in Nengomasha (2009), evidence gathered from multiple case studies is more robust than from a single case study and such provides a basis for generalization. However, the case study approach draws attention to a number of problems or disadvantages. For example, some scholars question the value of the study of single events and point out that it is difficult for researchers to cross-check information. Further, others express concern about the possibility of selective reporting and the resulting dangers of distortion and that generalization of findings from a case study is not always possible (Bell, 2005). In this study, proper

research planning and implementation will be conducted in order to avoid or minimize such shortcomings, as asserted by Yin (2003) in Nengomasha (2009).

3.4 Target population

According to Babbie (2004), a study population is an aggregation of elements from which a sample is selected. Babbie further notes that an element of the study is that unit of which a population is comprised and which is selected in a sample, distinguished from units of analysis, which are used in data analysis. According to the Tanzanian Government Portal (2015), the Government of Tanzania comprised of 29 Ministries (See Appendix 1) before the 2015 general elections. After the Tanzanian general elections of October 2015, the new government remained with only 19 ministries (See Appendix 2). However, the elements of analysis of the current study included the: Ministry of President's Office Public Service Management (PO-PSM); Ministry of Communication, Science and Technology; Records and Archives Management Department (RAMD); Tanzania E-Government Agency (e-GA) and Tanzania Communications Regulatory Authority (TCRA).

Out of 29 ministries only two were involved in the study. The Ministry of Public Service Management was selected among others because it is a parent ministry under which policies, rules, procedures and systems related to public service were initiated for other ministries to adopt. Even matters related to e-records management and e-government were placed under RAMD and e-GA which formed part of agencies under PO-PSM respectively. Similarly, the Ministry of Communication, Science and Technology served an important element of analysis

as it was directly concerned with all matters related to science and communication technology in the country.

3.5 Sampling Procedure

Sampling is a process of selecting units (e.g. people, organizations) from a population of interest so that by studying the sample one may fairly generalize the results back to the population from which they were chosen (Kothari 2004; Neuman, 2007a; Creswell 2009). The main sampling techniques include probability sampling and non-probability sampling. In probability sampling which is also known as 'random sampling' or 'chance sampling', every item of the universe has an equal chance of inclusion in the sample. In this category, the researcher may use such sampling techniques as simple random sampling, systematic sampling, stratified sampling, or cluster sampling (Babbie, 2011, Robson, 2011).

Non-probability sampling procedure is that which does not afford any basis for estimating the probability that each item in population has a chance of being included in the sample (Bryman, 2012). Non-probability sampling which is also known as deliberate sampling, purposive sampling or judgemental sampling may employ techniques such as convenience sampling, judgemental sampling, quota sampling and snowball sampling.

This study used purposive sampling which is a non-probability sampling technique. Purposive sampling is type of sampling where items of the sample are selected deliberately by the researcher and his choice concerning the items remains supreme (Neuman, 2007a; Creswell, 2009; Robson, 2011). In purposive sampling, the

researcher purposely targets a group of people believed to be reliable for the study. It is further observed that; “the power of purposive sampling lies in selecting information rich cases for in-depth analysis related to the central issues being studied” (Kombo and Tromp, 2006: 82).

In this study a sample of 50 respondents out of a sample of 105 were selected to be interviewed. The criteria for such a selection bases on the fact that in non-probability sampling the researcher may purposely select particular units on the basis that the small mass selected out of huge one will be typical or representative of the whole (Babbie, 2012; Bryman, 2012; Creswell, 2014). The selection of respondents purposely depended on their knowledge, position, and responsibilities relating to the study at hand. Table 3.2 describes the sampling frame and the study population sample.

Table 3.2 Sampling frame and study population

Sampling Frame	Sample	Total	Number selected
Ministry of Public Service Management	Action officers	20	5
	Records management personnel	5	3
	IT staff	4	2
Ministry of Communication, Science and Technology	Action officers	20	5
	Records management personnel	5	3
	IT staff	4	2
Electronic Government Agency (E-GA)	CEO	1	1
	Action officers	5	3
	Records Management personnel	1	1
	System administrators	2	1
Records and Archives Management Department (RAMD)	RAMD Director	1	1
	Assistant directors	4	4
	Archivists	6	3
	Records managers	5	3
	IT staff	2	2
Tanzania Communications Regulatory Authority (TCRA)	Action officers	10	5
	System administrators	5	3
	Records mgt. personnel	5	3
TOTAL		105	50

3.6 Justification of sample size

There has been a debate on an acceptable sample size when conducting a research. A sample size ranging from three to 25 respondents can be appropriate for qualitative research (Creswell, 1998; Baker & Edwards, 2012). Some scholars further suggest that, what is important in qualitative research design, is to ensure that samples are large enough to uncover all of the perceptions that might be important in the study. In this regard, it is cautioned that if the sample is too large data becomes repetitive (Mason, 2010). In other words, it can be suggested that an ideal sample size should be able to provide a suitable representation of the phenomenon at hand. This study therefore considered the sample size of fifty as ideal to provide required data for analysis and presentation.

3.7 Data collection methods

In this study, interviews and personal observations were employed to collect data. In research, the use of various methods to collect the same data is highly commendable. This multi-method approach is known as *triangulation*. Bell (2005:116) points out that, "the key to triangulation is to see the same thing from different perspectives and thus to be able to confirm or challenge the findings of one method with those of another". In the same vein, Aina (2004) affirms that triangulation helps to validate data that are collected from various sources. As such, the researcher believes that these methods will be more suitable for the data collection because triangulation improves on data quality by filling in the gaps that may be left out by other data collection methods. A study on the preparation for electronic records management at Moi University by Kemoni and Wamukoya (2000)

also used a combination of these instruments. Each of these data collection instruments are further discussed below.

3.7.1 Interviews

Interviews were the dominant tool to collect data for this study. An interview is a data gathering method in which data is gathered through discussion or a question-response session. Interviews can either be structured where a set of predetermined questions and highly standardized techniques of recording are used; or unstructured whereby a flexibility of approach to questioning is allowed (Kothari, 2004). This study employed structured interviews to solicit data on issues pertaining to the existing practices and regulatory framework guiding the management of e-records and implementation of e-government in the Tanzania public sector. Interview sessions involved action officers, records personnel and IT staff from PO-PSM, e-GA, TCRA and RAMD. Onyango (2002) stated that interviews are likely to consist of detailed descriptions of people's activities, actions and the full range of interpersonal interactions and organizational processes that are part of observable human experience. According to Moore (1987), this method provides an opportunity to obtain qualified answers from the respondent by probing and prompting. Interview complements the questionnaire as it can obtain more personal and somewhat confidential information which an interviewee may not want to write on a questionnaire. During the interview session, the interviewer gets an chance to explain questions not understood on the questionnaire and where necessary, the researcher may probe beyond some initially superficial responses and to follow leads and clues in a way that is not possible in questionnaires, or mere observation (Oyiti, 1998). The researcher is however aware that interviews have the following

drawbacks: The respondent may feel as if he/she is under investigation and is being probed thus may become hostile; certain types of respondents such as important officials or executives may not be easily approachable; the method is relatively more-time-consuming especially when the sample is large; and respondents may give imaginary information just to make the interview interesting and impress the researcher.

3.7.2 Personal observation

Personal observation is a tool that provides information about actual behaviour. This method refers to gathering data through physical check-ups of the activities or processes. Bell (2005:184) asserts that “observation can be useful in discovering whether people do what they say they do, or behave in the way they claim to behave”. According to Onyango (2002: 92), observation can be categorised into two: respondent observation and non-respondent observation. Respondent’s observation is structured and non-respondent observation can either be obtrusive or un-obtrusive. In the non-participatory observation a researcher collects data undisguised but does not directly participate in the activities. Non-participatory un-obtrusive observation is when the researcher is involved in the activities under disguise.

In addition, Kombo and Tromp (2006) asserted that, in structured observation the focus is on a small number of specific behaviour patterns and only those appearing on a pre-defined observation list are recorded. Structured observation can be criticized as being subjective and biased as one decides on the focus rather than allowing the focus to emerge (Bell, 2005). On the other hand, in unstructured

observation, the observer takes the position of an onlooker where data is collected in the form of descriptive accounts. Kombo and Tromp (2006:96) argue that “unstructured observations are helpful in understanding behaviour patterns in their physical and social context.” Despite its many advantages, observation as a data collection tool has the following disadvantages: it is time consuming; the observer may lose the objectivity to the extent he participates emotionally; the problem of observation–control is not solved; and it may narrow-down the researcher’s experience (Kothari, 2004).

This study used the non-participatory obtrusive observation. An observation checklist was used indicating the items to be observed, observation details and corresponding remarks. The researcher had the opportunity to inspect the practices of managing e-records, assess the infrastructure necessary for e-government, security and facilities. The reasons for choosing this method is that it gives the researcher the opportunity to experience the system used and it eliminates bias from respondents. The method also validates the facts obtained from other data collection tools.

3.8 Data Collection Procedures

The data for this study was collected using structured interviews and personal observations. Interview schedules were conducted into three separate groups including Action Officers, Records Staff and IT staff. Interview sessions with Action Officers and IT staff were conducted in English because this group proved to be fluent in English as compared to the Records staff. For records staff, interview schedules were translated into Kiswahili so as to ensure that the researcher gets the required data for the study. To ensure that the translated interviews were understood

by respondents, the researcher involved a language expert and translator for comments and improvements. Appointments with respondents were scheduled in advance to allow any necessary preparations and arrangements. All interviews were held at office premises of respondents. A digital recorder was used to capture all responses from interviewees which was later saved in a computer ready for data transcription and analysis.

With regards to personal observations, an observation checklist was prepared for each observable item. Prior arrangements were then made with responsible persons whose assistance on the ground yielded sufficient data for the study. Data from personal observation was recorded against each item listed in an observation checklist. The data was then systematically transcribed and analysed.

3.9 Reliability and validity

Reliability and validity are important data quality control measures in research. Reliability refers to consistency of measures and how replicable they are, that is the degree to, which an instrument measures the same way each time it is used under the same conditions with the same subjects (Hoyle, Harris & Judd, 2002 as cited in Nengomasha, 2009). Two pertinent issues worth considering regarding reliability include: First, the researcher should consider whether the measuring instrument or process give the similar or nearly similar results in different periods. Second, is to consider whether the measuring instrument or process is capable of remaining stable when the test is replicated (Creswell, 2009; Babbie, 2011). Similarly, validity is important to data quality control. It refers to the strength of the researcher's conclusions, inferences or propositions.

It is therefore imperative that the data collected and methods employed in collecting the data are reliable and valid. The reliability and validity of this study was firstly ensured through triangulation (using more than one data collection instrument) as well as piloting data collection instruments prior to data collection. Randomization of questions which measure the same construct, and comparing different sources of data was also employed for increased reliability and validity.

3.10 Data analysis

Data analysis allows researchers to sum up observations so that they can find answers to research questions. It is a critical step in a qualitative study that involves organization, examination, interpretation, and sense-making of the data and also reporting the findings in an understandable way. There are a variety of data analysis approaches for qualitative studies depending on the research design. Some of the most common data analysis for qualitative data include: data display and analysis in which three major phases of qualitative data analysis are suggested by Miles and Huberman (1994). The phases include: (1) *Data reduction* - which refers to the process of selecting, focusing, simplifying, abstracting and transforming. The data is condensed for manageability purposes and transformed so as to make them intelligible in terms of the issues being addressed. At this phase the data analyst decides which data to be singled out for description as per principles of selectivity. (2) *Data display* - this goes a step further beyond data reduction to provide an organized, compressed assembly of information to enable conclusion drawing. At this phase data is displayed in word or diagrammatic form to allow the analyst to begin to discern systematic patterns and interrelationships. (3) *Conclusion drawing and verification* - this is the third and last step of data analysis which involves

stepping back to consider what the analysed data mean and to assess their implications for the questions at hand (Miles and Huberman, 1994; Creswell, 2009). The processes in data display and analysis in qualitative study goes hand-in-hand with revisiting the data many times for verification purposes.

Other data analysis procedures suggested for qualitative research include: template analysis, thematic analysis, analytic induction, discourse analysis, and narrative analysis (Saunders et al., 2003; Bryman, 2012); grounded theory approach (Corbin & Strauss, 2008). However, it is worth noting that, despite the diversity of qualitative data analysis methods, most of them share common features such as summarizing, categorizing, and structuring of meanings (Saunders et al., 2009).

As highlighted above, based on research design employed in a study, different types of qualitative data analysis might be employed. In this study, qualitative data from interviews and personal observation were analysed using thematic coding analysis approach. This technique can be used as a realistic method which reports experiences, meanings and the reality of respondents (Robson, 2011). Keywords and themes that emerged from data were grouped or classified as guided by research objectives.

It is also worth noting, as asserted by Ngulube (2015) that, during the process of data analysis, the process involved iterative (i.e. moving backwards and forwards), revolving around research questions or theoretical frameworks identified from literature and reducing the data into segments and groupings, which was finally be linked to the literature and theory during data interpretation.

Finally, interview results were presented using relevant and substantive quotations. There was a deliberate use of the 'voice' of various respondents by clearly stating whose opinion was being represented. According to Luyombya (2010), the use of quotations, reproducing the words of respondents communicates their attitudes and depth of feeling while simultaneously advancing the argument made. Themes of varying size, words and phrases connected to e-record management and e-government implementation strategies were connected to identify relevant subject areas in the data.

3.11 Pre-testing Research Instruments

Piloting is testing draft research tools on limited samples before using them in the field so as to enable the researcher to decide what works, what doesn't work and what can be done differently (Theis, 2003). Bell (2005:147) rightly observed that "all data-gathering instruments should be piloted to test how long it takes to complete them, to check that all questions and instructions are clear and to enable you to remove any item which does not yield usable data."

Basically, pretesting seeks to find out if: respondents understand the questions being asked in the same way, respondents are willing to answer the questions, the terminologies are understood by all, and the questions ask what the researcher think they are asking (Collins, 2003; Creswell, 2003; Kothari, 2004; Bell, 2005). In other words, pretesting enables the researcher to identify potential problems with data collection instruments and find possible solutions prior to actual data collection. Pre-testing gives an opportunity to see what questions work well, what questions can be eliminated, what questions sound strange and what questions can be eliminated.

Responses obtained after pre-testing helps in recasting, rephrasing or even removing questions that are not clear hence improving reliability and validity of the data to be collected in the main study. In support of this argument, Converse and Presser (1986) observed that a pre-test is a critical examination of your survey instrument that will help determine if your survey will function properly as a valid and reliable social science research tool. Based on this fact, the researcher conducted a pilot study at the Regional Administrative Secretary's office in Dar es Salaam. The responses obtained helped in recasting questions that were not clear. A pilot study helped the researcher to get the bugs out of the instrument thus; respondents in the main study did not experience any difficulties in responding to questions posed to them. Further, the researcher tried to be as much explicit, unambiguous, and less complicated when formulating interview questions.

Many literatures offer limited guidance with respect to sample size for pilot studies. According to Sheatsley (1983) & Sudman (1983), the rule of the thumb is to test on at least 12-50 people. Others recommend obtaining 10 respondents (Nieswiadomy, 2002) Or 10% of the final study size (Lackey & Wingate, 1998). The question about who should participate in a pre-test survey varies as well. Some researchers call upon experts in a given field to identify problems (Expert-Driven Pre-tests) while others use Respondent-Driven Pre-tests where administration of the pre-test survey to friends and colleagues is encouraged. However, it is recommended that the most useful pretesting is often done on a small sub-sample of the sample population (Ferketich, Phillips & Verran, 1993). This study used expert-driven-pre-test.

Pre-testing of study tools was conducted between 22nd June and 30th August 2015. A sample of 13 pre-testers was purposely sampled hence constituting 26% of the main study sample. It included experts in the field of information technology and IT Law; scholars and practitioners in the field of records and archives management, and action officers in public offices. A pre-test guide was supplied to respondents who agreed to participate together with interview schedules and study objectives.

The pre-testers were kindly asked to assess and give their views regarding the clarity and adequacy of questions; appropriateness of terminologies used; whether there are misspelt and ambiguous words; and whether interview questions could address the study objectives as expected by the researcher. Further, the aims of the pilot study were:

- to develop interview questions that would be a useful and reliable instrument for data collection for the main study;
- to gain experience through small scale sampling,
- to find out if it would be possible to conduct interviews with respondents, and;
- to test if the instruments of data collection will address the aims of the main study (Totemeyer, A. *et al.*, 2014).

In pre-testing the current study instruments, the researcher gained quite a good experience. For instance, the researcher came to know how long it takes to complete interviews and confirmed that all questions and instructions are clear and could yield usable data in the main study. Further, it was learnt to plan reasonable time for data collection as many respondents could not be easily found for interviews. The responses obtained helped in recasting questions that were not clear thus

respondents in the main study would not experience any difficulties in answering questions from the interviewer. Table 3.3 describes a summary of the pre-test sample.

Table 3.3 Research Pre-test Sample

Institution	No. of pre-testers	Area of expertise
RAMD	3	Records and Archives mgt.
University of Botswana	1	Records and archives mgt
TPSC	1	IT
Mtwara RAS's Office	7	IT, Records mgt.& Administration
University of Mzumbe	1	IT Law
Total	13	

3.12 Pre-test Feedback

Three types of respondents including the experts in the field of records and archives management, system administrators and action officers were involved during pre-testing exercise. Generally, the tools proved to answer most of the research questions particularly on issues regarding e-records readiness and e-government implementation status; e-records legislations and policies; involvement of the national Archives in support of e-government implementation and the general framework for e-records management in support of e-government. Sub-sections below discusses the findings in each category of respondents.

3.12.1 Pilot feedback from records personnel

Four records staff were approached and supplied with the pilot guide, interview and objectives at the Regional Administrative Secretary's Office responded by providing constructive feedback. With regards to terminologies used in the tool, two records staff were not very familiar with terms e-government and e-records hence needed explanations where the other two staff were of the view that the interview schedule

was clear and understandable. Further, the records personnel suggested that there was a need to supply the same schedule to personal secretaries of senior officers because they were the ones who dealt with e-records in the form of official emails and other e-documents.

3.12.2 Pilot feedback from system administrators

During pilot study, two system administrators were approached. With regards to the flow of questions and concepts used, they felt that they were sufficient and reflected the study objectives. Further, they were satisfied that the tool was able to answer research questions. One respondent however, remarked that the question on strategies to ensure accessibility of electronic information was not very clear whether it focused on individuals or institution as a whole.

3.12.3 Pilot feedback from action officers

Four out of thirteen respondents approached were action officers in public offices. On whether the interview schedules were appropriate, two of respondents were satisfied with the tools, where the other two observed that the questions were too many and some of them not clear. They also felt that some words e.g. e-government and e-records were not familiar to them hence needed to be revised into a simpler language. For instance, one respondent remarked "I don't understand what e-records and e-government really mean; can you revise them into a simple language?"

3.12.4 Pilot feedback from scholars (experts)

One of the methods advised to use in piloting tools is to call upon experts in a given field to identify problems with questions or response options in a survey (Presser and Blair, 1994). In this regard, two experts in the field of records and archives management and IT law from University of Botswana and University of Mzumbe respectively were asked to assess the tools in relation to the study. One expert in records and archives management had a feeling that some questions were ambiguous hence needed rephrasing. For instance, for the question that asked "*How are e-records classified?*" the comment was: "*Look at this again, classified according to security levels or in terms of arrangement and organization?*" Moreover, he found out that some questions were redundant. For instance for a question that read "Do you have an organizational website with updated information?". His comment on this was "*It is assumed you would have checked on the availability of this yourself*".

On the clarity and flow of questions, this expert suggested for a rephrase and spelling correction on some questions and terms respectively. For example, one question in the schedule read "*Do you have any central system for storage?*" His suggestion was to rewrite "*What kind of storage (if) any is available for storage?*".

On the other hand, the IT Law expert from Mzumbe University felt that since my research was looking at a framework and not legal framework, the interview schedules designed reflected key issues and could yield usable data in the main study. He added that among my respondents sampled, I should purposely select at least one lawyer whom will explain well on questions concerning legislations and policies on e-records and e-government transactions in Tanzania. Tables 3.4 and 3.5

provide samples of verbatim pre-test comments and summary of comments from respondents approached respectively.

Table 3. 4 sample of verbatim pre-test comments from experts on clarity and flow of questions

Respondent 1	"Look at this again, classified according to security levels or in terms of arrangement and organization?"
Respondent 2	"the word e-records is not familiar to ordinary people? you better use the word electronic documents instead"
Respondent 3	"the link between e-records and e-government is not clearly indicated in the schedule."

Table 3. 5 Summary of comments from respondents

Respondent's category	Comments	Action taken
Records personnel (to what extent does the current e-records legal framework promote or hinder e-government implementation?)	I have heard about e-government but I am not very much aware with the concept unless you explain to me what it means and its relationship with e-records management	An explanation was given and understood.
System administrators (Do you have electronic systems currently running in the organization? If Yes please name them	Rephrase to read: What kind of electronic systems do you currently have in the organization?	The suggested rephrase was adopted
Action officers (What factors explain the current form of e-government interaction?)	I don't know because I am not even sure I understand what it means by e-government. You should refer back to the background of e-government systems to create awareness first before asking the current status and the way forward	This was left to be explained during interview sessions in the main study
Scholars in the field (Question: Do you archive e-records of enduring value? If Yes please explain)	Rephrase for clarity: How are electronic records with enduring value archived	The question was rephrased as suggested

The pilot revealed some pitfalls that need to be rectified for improvement.

- Some vocabularies were not familiar to some respondents. Terms like records continuum, archives, disposition, e-government and e-records. These were

however clarified verbally and were clearly understood and responded accordingly.

- Some questions were not clear thus needed to be recasted.
- Some respondents complained that the tool was too long and unfriendly.

The researcher

- simplified the English wording but not so much as to jeopardise the study aims;
- recasted unclear questions; and
- reduced the number of unnecessary questions.

3.13 Ethical considerations

Ethical issues in research is about being clear about the nature of the agreement the researcher enters into with his/her research subjects or contacts (Bell, 2005). According to Blaxter et al. (2001) in Bell (2005), ethical research involves getting the informed consent of those you are going to interview, question, observe or take materials from. Other ethical issues include respecting respondents anonymity, not posing questions that cause psychological harm to respondents, not using data collected for other purposes apart from research, accurately portraying and presenting research findings, avoiding data fabrication and falsification, avoiding plagiarism and following research protocols. As per UNISA (2012), ethical considerations were kept in mind by the researcher during both planning and execution of the research. That is why any form of copying (including electronic sources) is unacceptable and cannot be tolerated at UNISA.

In this study, ethical issues were maintained by ensuring that respondents know exactly what will be involved in the research. They were notified that participation is voluntary and that they are free to refuse to answer any questions. Moreover, plagiarism was avoided by acknowledging all used sources by referencing. Confidentiality of collected data from the studied organizations was considered by providing anonymity to sources of information. Moreover, biasness was avoided during data collection, processing and analysis. In addition, this research complied with the Tanzania National Research and Development Policy of 2010 which among other issues insists that ethics in research should take into account such matters as protection of research subjects, and safeguarding environments; acknowledging sources; copyrights and patents; integrity in connection with fabrication of data, cheating and non-transparency; disclosure of confidential information; plagiarism and falsification (URT, 2010). Permission to conduct research was sought from the targeted organizations before any data collection began.

3.14 Originality of the study

The study supplements other studies conducted in the Tanzania Public Service. The study suggests that e-records and e-government issues need to be dealt with together because they are inseparable entities. This follows the fact that e-government transactions generate large volumes of e-records that document evidence of e-transactions. As such, the study suggests among other things that the Tanzanian government assesses her e-records readiness as it develops plans and strategies to implement e-government. There should also be a framework that covers both e-records management and e-government services for successful implementation of e-government. The government for instance must strive to adopt laws that would

establish rules for e-transactions, e-commerce and the use of e-signatures as an important step to ensure that evidence of online transactions are admissible before courts of laws for the protection of the rights and responsibilities of parties involved. The study findings contribute to knowledge or insight in the field of information science.

CHAPTER FOUR

DATA PRESENTATION

4.1 Introduction

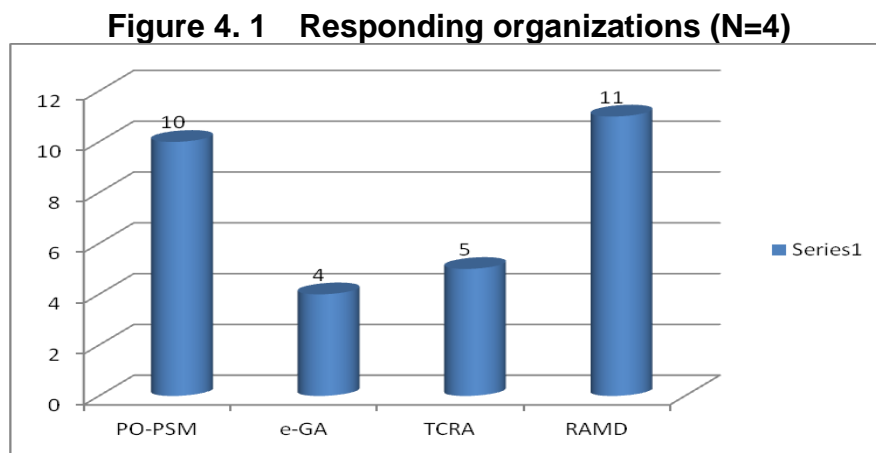
The chapter presents the results of the data obtained through interviews and personal observation collected from action officers, records staff, system administrators, archives staff from elements of the study including: the Ministry of Public Service Management, the Tanzania Telecommunication Regulatory Authority, the National Archives of Tanzania (RAMD), and the Tanzania Electronic Government Agency (EGA).

The findings of this study are responses to the specific objectives of the study namely:

1. determine the e-records readiness in the Tanzania Public Service;
2. assess e-government implementation status in the Tanzania Public Service;
3. establish the effectiveness of existing e-records legal, policy and regulatory framework in support of e-government;
4. determine the e-records knowledge and skills of staff in the Public Service;
5. find out the extent to which the National Archives (RAMD) is involved in the management of e-records and e-government implementation in the Public Service and;
6. develop a framework for the management of e-records and e-government implementation.

4.2 Response rate and respondents' Profile

The target population was 50 respondents from five key purposively sampled organizations. These included the Ministry of President's Office, Public Service Management (PO-PSM); Ministry of Communication, Science and Technology; e-Government Agency (e-GA); the Tanzania Telecommunication Regulatory Agency (TCRA), and the Records and Archives Management Department (RAMD). Figure 4.1 presents a summary of responding organizations.



This section presents the interview response rate and a description of the respondents' profile.

4.2.1 Response rate

Four (80%) out of five sampled organizations participated in the study with a total number of 30 respondents where 10 (33.3%) were from PO-PSM; 4 (13.3%) from e-GA; 5 (16.7%) from TCRA, and 11 (36.7%) were from RAMD. A total number of 30 interviewees including 10 (33.3%) action officers, 8 (26.6%) records staff, 6 (20%) IT staff, 3 (10%) archivists and 3 (10%) records managers effectively participated in the

face-to-face interview sessions, hence 60% interview response rate size. The response rate of 50(100%) was not reached due to the fact that, some respondents had travelled on-duty where others were reported to have tight schedules according to their positions. However, since Babbie and Mouton (2011) regarded a response rate of 50% adequate, 60% as good and 70% very Good; the researcher of this study regards the rate size of 60% as sufficient. Table 4. 1 provides a description of the response rate.

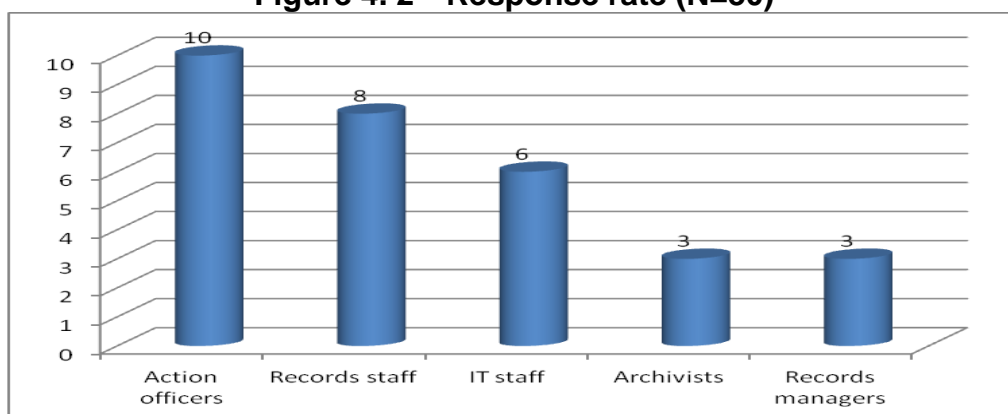
Table 4. 1 Response percentage (N=5 Cadres)

Respondents' cadre	Expected No. of respondents	Actual No. of respondents	Percentage per cadre
Action officers	24	10	33.3%
Records Staff	10	8	26.6%
IT staff	10	3	20%
Archivists	3	3	100%
Records managers	3	3	100%
TOTAL	50	30	100%

Source: Field Data, 2015/2016

Figure 4.2 indicates the distribution of the respondents and their response rate.

Figure 4. 2 Response rate (N=30)



Source: Field Data, 2015/2016

4.2.2 Respondents' profile

As indicated in subsection 4.2.1, a total number of 30 interviewees participated in interview sessions including 10 action officers, 8 records staff, 6 IT staff, 3 archivists and 3 records managers. Out of 10 action officers, six held Directorial positions, two held managerial positions, and the other two were heads of their respective departments. In addition, all action officers held Master's degree in different areas of expertise. For records staff, all of them held diploma certificates in records management and had a work experience ranging from one year to 12 years. Records managers and archivists from RAMD held master's degree in records and archives management. For IT staff/ system administrators, they held bachelors and masters in IT or Computer science and had a working experience ranging from six months to five years. Based on the respondents' designations, academic qualifications and working experience, the researcher was confident to yield rich information that would help answering research questions of the current study as provided in sections below.

4.3 E-records readiness in the Tanzania public service

The first objective of the study sought to determine e-records readiness in the Tanzania public service. With regards to this objective, a number of related questions were asked to action officers, records staff, system administrators/IT staff, RAMD staff and e-Government staff. Subsections below present data for each cadre of respondents, based on questions related to objective one.

4.3.1 Data from action officers.

Question one on the action officers interview schedule (See Appendix 8) inquired

about the functions of their Departments or ministries. The functions of action officers from PO-PSM and TCRA were cited as follows:

Tanzania Communications Regulatory Authority (TCRA) - To regulate the postal, electronic communications and broadcasting industries including monitoring the implementation of ICT applications in the United Republic of Tanzania.

Department of Management Systems' Standards (PO-PSM) - Design, review and installation of performance management systems in Ministries Departments and Agencies (MDAs), Local Government Authorities (LGAs) and Public Institutions (PIs); design, review and facilitate improvement of business process in MDAs, LGAs and PIs; design review and disseminate management standards in MDAs, LGAs and other PIs.

Department of policy Development (PO-PSM) - Preparations of staff circulars on salaries and allowances, analysis of wages trends, preparation of establishment policies and regulation and to monitor and implement pay policies.

Question two for action officers required them to state the objectives of e-government. Three respondents indicated that e-government was meant to improve and simplifying service delivery to the citizens; while the other three thought that e-government was all about online service delivery for quick and effective government service provision. The third question required respondents to state the extent to which e-government strategy (if any), addresses e-records as a result of e-service delivery. The study results indicated that six action officers out of ten were not even aware that e-government strategy exists, so they could not even state the extent to which it addresses e-records. Four action officers who participated in this study revealed that, the extent at which e-government strategy addresses e-records is very low. In his words one respondent said:

...the e-government strategy of 2008 has no impact on e-records management because it does not seem to incorporate the management of electronic records as an important aspect towards successful implementation of e-government in the country. Even as you go through the objectives of e-government strategy, e-records is none of them.

Moreover, when action officers were asked to identify the kind of challenges their offices faced in managing e-records, they mentioned a number of challenges including: absence of laws on e-records management, inadequate ICT tools and infrastructures, unreliable power supply, low internet connection, inadequate skills on e-records management among public employees, absence of effective e-records policies, standards and guidelines; and low awareness of the public on the importance of e-records and e-government initiatives.

4.3.2 Data from records staff

Questions 1-14, 23 and 24 in the interview schedule for records staff focused on e-records readiness. The first question asked respondents to indicate if they handled any e-records in their registries. The study findings on this question indicated that only 1(12.5%) records staff out of eight confirmed that they handled e-records at their registry. The respondent further revealed the type of e-records that they handled including emails, text files, databases, websites records, image files and video and audio recordings. However, this respondent revealed that they were not involved in handling official e-mails. Seven (87.5%) of records staff who participated in this study indicated that they were never involved with e-records management at all. Instead, personal secretaries were the ones who handled such information in their personal folders. The emails were sent through personal disposable email accounts under companies such as yahoo, Hotmail and Gmail.

Question four sought to determine whether the records staff were being involved in the management of e-records during their continuum; and explain the extent of their

involvement with regard to the creation, capture organizing and pluralism aspects. The study results indicated that out four public institutions sampled, only TCRA was involved in managing e-records as per the continuum model. It was further revealed that TCRA had installed an Electronic Document and Records Management System (EDRMS) which enabled them to manage their e-records.

Records staff were probed to indicate the extent of the records staff involvement with regard to aspects of creation, capture, organizing and pluralism. Interview findings reveal that all records staff were involved at creation stage, all institution's information was processed at the registry. For paper records, a scanner was used to scan all incoming mails, which would then be entered into the EDRMS (capturing), whereby a document is connected through relationships with other documents, with sequences of actions. Then after, an e-file would be sent to the accounting officer for preview. After preview, the accounting officer would then electronically direct files to responsible action officers through LAN for actions or opinions. Further results revealed that, the records personnel could monitor the movement of a particular file online and could tell whether actions have been undertaken or not. Should a particular file be delayed more than three days, a reminder in red signs would appear on the officer's computer screen. After decision has been made on files, it was reported that the action officers would direct the e-documents to the registry for storage in the system (organizing). However, the study learnt that the last dimension of the continuum model (pluralisation), had never been practiced.

Question five sought to elicit information from respondents regarding the kind of storage available for e-records. This was followed by another related question which

aimed to establish on how e-records were classified in terms of security levels, arrangement and organization. Again it was only one office which could respond to these questions because it was the only one practicing e-records management. With regards to e-records storage, the study findings indicated that all electronic records were being stored in the EDRMS within the organization. About e-records classification in terms of security levels, it was learnt that passwords and special permission from the system administrator was required for an individual to access a particular information. In addition, it was revealed that an audit trail system and quality management system were installed so as to monitor and keep track of any alteration, deletion or removal from storage. Concerning the available e-records classification system or file arrangement and organization, study findings indicated that they adopted the manual records classification system where folders of similar subjects were used to store information with related issues. The folders were then arranged electronically based on the sequence of their files' key words. However, it was discouraging to note that, despite the availability of the EDRMS, emails were not accommodated in the system and all confidential records were treated manually.

Question six (which was also asked to other respondents), sought to establish if respondents had any strategies in place for long term preservation of e-records. Respondents indicated that, apart from the dependence they had on the EDRMS for storage of their records, they also used off-site backup systems. Question seven sought to establish if records of enduring value are archived. It was revealed that there was no special procedure used, rather such records were archived on institutional server. Similarly, the study findings indicated that the records that were not being used or required were just archived in the system until further notice. In addition, records

staff were asked to identify the kinds of audit trail systems existing for e-records. Question 9 required respondents to indicate if there existed any audit trail system for e-records. Findings revealed that there is an inbuilt audit trail for e-records to keep track of any e-records alteration, deletion or removal from storage. Further, it was reported that the audit trail could tell who tried to do what in the system and at what time.

On the question of the existing application software for managing e-records, it was revealed that there existed Electronic Document and Records Management System (EDRMS). On this aspect, one records staff from TCRA cited that:

We purchased an EDRMS from South Africa which was modified by our IT guys to accommodate our institutional needs.

We have an audit trail system and quality management system which were installed so as to monitor and keep track of any alteration, deletion or removal of records from storage without permission.

Records staff was requested to state on how the current status of e-records management promote or hinder e-government implementation in Tanzania. For public offices that have not yet installed any e-records management system, it was revealed that the current status of e-records management was hindering e-government implementation strategies because all decisions and services were conducted manually. One respondent observed that:

To be honest, e-records management projects which were supposed to a key driver on e-government implementation strategies, are too weak to promote e-government in Tanzania. Instead, we are witnessing the dwindling of e-government initiatives due to lack of government seriousness in terms of human capital, ICT tools and facilities, systems, policies, procedures and guidelines with which e-records management as a process could enhance effective implementation of e-government.

In addition, another respondent cited that: "Most public institutions still rely on manual records and physical contacts to provide services to the public contrary to the propagated e-government practices. Such practices hinder e-government adoption in Tanzania."

Moreover, question 13 sought to establish on how the current status of e-records management promote or hinder e-government implementation in the public service. Their responses were of two folds. For offices that had no e-records management systems, they were of the view that the current e-records practices hindered e-government implementation in Tanzania. On the other hand, responses from TCRA records staff where an EDRMS was operating, indicated that the current status of e-records promotes e-government implementation as all services were being provided electronically. They further revealed that, by automating their communication systems, there was effectiveness and efficiency in service provision because information retrieval was just by a click of the button.

Question 14 sought respondents' views on existence of policy on e-records and e-government. The findings indicated that currently the national e-records management policy is lacking. All of the records staff reported on the availability of the National Records and Archives Management Policy (NRAMP) of 2011 but one respondent observed that: "...the policy does not provide guidance which is expected to entail assigning and defining responsibilities on e-records management responsibilities and authorities to officers who directly come into contact with e-records."

Likewise, a comprehensive e-records management guideline was reported to be none

existent in all offices that participated in the study. It was however noted that, there existed two guidelines namely; the Registry Procedure Manual, 2005; and the Guideline for procedures of managing Personnel records in the Public Service, 2013. These two guidelines seemed to accommodate some aspects of electronic records. For instance, the Registry Procedure Manual has a small section that provides for procedures of managing official emails. In addition, the records personnel observed that the Tanzania Registry Procedure Manual of 2007 was meant for paper based records. It therefore lacks important aspects concerning e-records management procedures and processes as per records continuum model.

In question 23, the records staff were asked to indicate if they faced any challenges in managing e-records. Respondents cited the following challenges:

- i. insufficient ICT tools;
- ii. unreliable power supply;
- iii. low internet connection;
- iv. inadequate skills on e-records management; and,
- v. lack of effective e-records policies, standards and guidelines.

In question 24, respondents were asked to provide recommendations on how to enhance the management of e-records in support of e-government implementation in Tanzania, the following were cited:

- i. formulation of e-records management policies, standards and guidelines to cut across the public service;
- ii. training for both action officers and records staff;
- iii. installation of all necessary ICT tools in support of e-records management; and,

- iv. Improvement on power supply and internet connections in public offices and the country at large.

4.3.3 Data from system administrators/ IT staff

Question one for system administrators required them to state the mandate of their units. The study findings indicated that system administrators/IT staff were concerned with systems management including securing LAN in which firewall, web content filtering and antivirus installations. Further, the study revealed that this cadre of employees were responsible for setting strong passwords on WAN or important computers. Question two required them to state whether their units were concerned with management of e-records during their continuum, it was revealed that such was not part of their job description.

Question three requested respondents to explain on how the management of e-records supports e-government. It was revealed from all of the majority of participants that, they were not sure how the management of e-records supports e-government because they were not conversant with the processes and procedures involved in the life cycle of public e-records. One respondent however, explained that:"...the proper management of e-records ensures the availability of information in digital format which fuels e-government practices. Without the availability of reliable electronic information, electronic transactions and e-services would be incomplete."

Moreover, respondents in Question six were asked to identify the kind of electronic systems they currently had in their organization. They cited the following as the available electronic systems in public offices:

- i. the Government Mailing System (GMS);

- ii. the Human Capital Information Management System (HCIMS);
- iii. the Strategic Budget System (SBAS) and,
- iv. the Integrated Financial Management System (IFMS).

Table 4.2 describes the running electronic systems

Table 4.2 Examples of Information Systems in the Tanzania Public Service

Information System	Purpose of the System
Human Capital Information Management System (HCIMS)	To provide payroll management and processing Human Resource Management, control and monitoring systems
Strategic Budget System (SBAS)	To help Government institutions with the preparation of government annual budget;
Integrated Financial Management System (IFMS)	To assist the Government entities to initiate, spend and monitor their budgets, process their payments and manage reports on their activities.
Government Mailing System (GMS)	To solve the existence of common problems of scattered, unsecured, and unreliable e-mail communications within public institutions;

Source: Field Data 2015/2016

In addition, Question Seven asked respondents of this cadre to identify strategies they used to ensure accessibility of electronic information overtime. The findings revealed that, they ensured the availability of network connection; maintenance of system software, installation and updating anti-virus; making back-ups of information and assisting end users of ICT facilities and application systems. It was also revealed that for security of e-records within their premises, physical burglary doors were fixed in server rooms, anti-virus software and cyberoams were also installed in all computers holding government information. Further, encryption, and the use of strong passwords were identified as other means being utilized for preserving records in e-format. However, it was interesting to note that, ICT staff and records personnel never collaborated with regards to official public e-records management.

Moreover, system administrators/IT staff were required to identify security standards that their offices had in place on issues associated with online transactions. Responses to this question revealed that, currently there were no established security standards for online transactions. Instead, official email accounts were insisted for any official communications. When they were asked to identify the responsible body overseeing the design and implementation of electronic information systems, it was learnt that the current systems were superimposed by the PO-PSM, therefore it was the same ministry that oversees the implementation of the systems. About how such a body related with the records management unit, it was revealed that PO-PSM is the parent ministry of all public offices and each public office in which records management units are part, is responsible to it.

With regards to the forms of electronic records generated and/or received at their organizations, text files, databases, emails, audio visual documents and website records were mentioned. Further, the study wanted to know from system administrators/ IT staff if there were any business functions that have been automated in their ministry/department/agency. The results on this indicated that, the payroll management and processing of Human Resource Management, control and monitoring systems through the HCIMS; and financial transactions through the IFMS were the only automated business. Furthermore, when the study requested system administrators to explain how they ensured transmission of data was secure, once again the use of anti-virus software, strong passwords, encryption and cyberscams were mentioned.

The last question aimed to establish the challenges that users of the system in public offices encounter which could impact on e-records creation and maintenance. The respondents mentioned the following challenges:

- i. Some action officers were technophobic, hence they do not feel comfortable to use ICT tools and systems to pursue their work;
- ii. Some government officers lacked basic computer skills;
- iii. Unavailability of related legislations, policies, standards and guidelines;
- iv. Lack of a solid structure/framework through which e-records is to be managed;
- v. Inadequate ICT infrastructure to support e-records rollout;
- vi. Low capacity skill levels on e-records management and other ICT related issues among action officers;
- vii. Weak legislation and regulatory framework on electronic records; and,
- viii. Absence of defined standards and best practices to guide management of electronic records.

4.3.4 Data from RAMD staff

An interview schedule for the Records and Archives Management Department (RAMD) staff consisted a number of questions which related to the first objective of this study. Question one required the RAMD staff to state the mandate of RAMD. One respondent noted: "RAMD is mandated to provide expert guidance and oversight on the creation, management and permanent preservation of all official records in Tanzania".

Another informant cited: "The national archives has legal mandate for issuing and

approving records retention and disposition schedules that indicate which categories of government records must be preserved permanently. It also determines how long specific types of public records must be retained before they may be disposed of".

Another question required RAMD staff to state whether the National archives was involved in advising MDAs to manage e-records. On this one, the results indicated that, although there is evidence that MDAs are generating e-records as a result of e-transactions; RAMD has not been able to render advice on best practices on e-records to such public institutions.

When required to comment on the status of e-records management in the Tanzania Public Service in aspects strengths, weaknesses, opportunities, and threats. Study results indicated that, the availability of pieces legislation and policies related to e-records; and infrastructures and ICT facilities such as the optic fibre backbone were strengths. On weaknesses, the study indicated inadequate skills on ERM among public servants, unavailability of government-wide ERM system, lack of standards and guidelines, inadequate budget, unreliable power and internet connections. Meanwhile, insufficient security measures, uncoordinated preservation measures and obsolesce of both software and hardware were reported to be among threats to e-records. Moreover, RAMD identified a number of opportunities on effective ERM which included, the formulation of ERM policy, standards and guidelines; reliability of electricity by taming other potential sources such as solar power, wind and natural gas; strengthening RAMD in terms of budget, facilities, skilled manpower and space; and capacity building on ERM to both users, creators and custodians of e-records.

Moreover, RAMD staff were asked to explain if there were any ERMS running in the Public Service. The findings indicated that, although there is no single official e-records management system running in public offices, some MDAs are managing e-records using various systems which operate in 'silos' as they were either purchased from system vendors or developed by own IT staff to suit their institutions. For public institutions without any ERMS, it was evident from the study findings that the management of electronic records was on ad hoc bases and haphazard hence leading to a fragmentation of digital public records. Because of that, the study required to know how the National Archives was preparing the Ministries and Departments to manage e-records in support of e-government. The study findings indicated that, RAMD in collaboration with e-GA and PO-PSM has developed a system named as "e-Office" which is currently installed at the Ministry of Transport and Works as a pilot. The system is expected to be rolled out in all public sector offices should it be approved to have met the requirements and standards. Further, RAMD is undertaking digitization project throughout the public service in which MDAs participate.

The study wanted to know from RAMD about the challenges that the National Archives face with regards to e-records management in support of e-government implementation in the public service. The results revealed a number of challenges including: Lack of national-wide e-records management policy, standards and guidelines; limited skills on e-records management for both users and information managers; inadequate ICT infrastructures and tools; lack of interoperable information systems in the public service; lack of effective e-records storage facilities; inadequate skills and facilities to address issues related to preservation e-

records across the public service. In addition, insufficient budget allocated to RAMD and the high labour turnover at RAMD were identified as challenges for effective implementation of e-records management in support of e-government implementation.

The last question required respondents to give recommendations to enhance effective e-records management and e-government implementation in the public service. Study findings indicated that, the formulation of policy and standard guidelines on e-records management; capacity building for e-records creator, users, custodians and archivists; installation of effective and interoperable ERMS across the public service; Improvement in ICT infrastructure and facilities; adequate funding; and government support and e-records buy-in agenda were recommended for effective e-records management and e-government implementation. Furthermore, it was suggested that reliability of power and internet connection need to be taken seriously for effective e-records management in support of e-government implementation.

4.3.5 Data from e-Government Agency (e-GA)

E-Government Agency (e-GA) staff were also asked questions related to e-records readiness in the public service. The first question that required them to explain the extent to which the current e-records management status support or undermine e-government implementation strategy. Results from this question indicated that very few public offices have e-records management systems in place, but they operate in 'silos'. They cannot communicate to each other. On the other hand the majority public institutions still use manual systems. Because of that, the status of e-records

management practices in the public service is very low to the extent that it greatly undermines the implementation of e-government. When asked to explain the extent to which the current national ICT policy give guidance on issues pertaining to e-records and e-government, the findings on this indicated that although the ICT policy seems outdated, but it paved a way for a legal framework on e-records and e-Government embracement that the Government of Tanzania currently has. Furthermore, the policy directs public and private institutions to invest in infrastructures and ICT tools necessary for e-records management and e-government implementation. In his words, one of the officers at e-GA observed that:

...looking at the vision and mission statement for instance, one could see that the policy points out the need to provide for a conducive legal and regulatory framework for public and private infrastructure investment in e-Commerce capacity building, human capital development, ICT tools development including software and hardware, which are key to the whole issue of e-records and e-Government implementation.

Moreover, the study wanted to know e-GA's strategies in place for the long term preservation of e-records which are a direct product of e-government. The findings indicated that, e-GA has facilitated construction of the National Internet Data Centre (NIDC) in Dar es Salaam as part of implementation of the National ICT Broadband backbone (NICBB). According to one senior officer from e-GA, the NIDC provides state-of -the-art infrastructure with a network platform for big data, cloud computing, data mining and other similar data services to be hosted from government and business institutions. Additionally, it was learnt that e-GA was in its final stages to install a Modular Data Centre to serve as a Disaster Recovery for government information under the NIDC. In addition, it was noted that, e-GA is implementing the Government Network (GovNet) for secure data, voice and video communications

where a total of 72 MDAs have been already connected, and the connection of 77 Local Government Authorities is underway.

Consequently, study respondents from e-GA were asked to describe the challenges (if any) of preserving electronic records. They identified various challenges such as:

- i. lack of approved e-records policies;
- ii. procedures, practices, principles and standards;
- iii. scattered and uncoordinated efforts;
- iv. suboptimal infrastructure; and
- v. lack of reliable digital repository and limited Human Resource capacity.

When asked to explain how these challenges undermine the management of e-records, it was reported that authenticity, reliability, trustworthiness and future availability of government information in digital format are not certain. An additional question asked e-GA respondents to give recommendations to enhance the management of e-records in support of e-government in the country. As such, one respondent from e-GA recommended that:

There is need for the government to have a comprehensive e-records and e-Government policy and legal framework that will provide guidance in the implementation of both e-government and e-records in a more coordinated manner". In addition, the Government needs to adequately provide logistic, facilities, infrastructures, skilled manpower and financial support to ensure a systematic and effective implementation of e-records and e-government initiatives are realised.

Question 16 required e-GA respondents to describe the kind of training e-GA was offering to ministries, departments and agencies (MDAs) in the area of e-records management. The findings however, indicated that, e-GA does not provide training to MDAs on e-records management. Rather, the agency provides training on how to

manage Government Portal Content. On top of that, it was evidenced that e-GA facilitates the Government in addressing ICT gaps in infrastructure, skills and devices through advisory and technical support. Furthermore, the study results indicated that, given its mandate e-GA provides technical support and advisory services relating to e-government and e-records to RAMD. With regards to the availability of procedures and policies for the disposal of e-records that no longer support e-government, it was indicated that they were none existent as yet.

4.4 E-government implementation status in the Tanzania Public Service

The second objective of the study sought to determine the current status of e-government implementation in the public service of Tanzania. Data for this objective were obtained from e-GA staff, system administrators, action officers, and records staff as presented in subsections below.

4.4.1 Data from e-Government Agency (e-GA)

The first question posed to e-GA staff sought to identify the objectives of e-government in the Tanzania. The respondents cited e-GA's objectives including:

- i. improving and simplifying service delivery to the public and elimination of unnecessary government bureaucracies;
- ii. improving interactions between Government and MDAs, Government and citizens, Government and business industry;
- iii. empower citizens through access to information;
- iv. increase transparency and accountability; and
- v. increase revenue growth and bring about less corruption while also lowering costs of operations.

Question two required e-GA to reveal its action plan to ensure effective implementation of e-government in Tanzania. The study findings indicated that, e-GA has developed a five year strategic plan to give guidance in implementing and improving ICT and e-government related initiatives in the country. It was further learnt that, in aligning with Government initiatives of using ICT as an enabler for transforming its business operations, the Agency has prioritized the following areas of focus for facilitating better service delivery to the public:

- i. To utilize best practices and benchmarks in e-government initiatives from developed and developing countries with similar socio-political and economical environment to Tanzania;
- ii. To consolidate an electronic path that guarantees public participation whereby citizens and citizen groups interact actively with responsibility and authority as partners on the same level as the government in socio-economic and political matters;
- iii. To facilitate expediting of service delivery to citizens through enhanced channels in fast and less cost in voice and mobile solutions;
- iv. To invest in human resource capacity building and public awareness at all levels;
- v. To adopt "Go from simple to complex" implementation approach;
- vi. To venture in revenue generation to sustain Agency's operations;
- vii. To facilitate the Government in addressing ICT gaps in infrastructure, skills and devices through advisory and technical support;
- viii. To improve the United Nations Index to two (2) digits in the next evaluation and as a country become among the best 50 by 2017.

Question four sought to establish the current levels of e-government interaction from e-GA respondents. It was revealed that, there was a good interaction between Governments to Government; Government to Citizens; Government to Employees. Their observation based on the presence of government information in the Government web portal for public consumption. Another related question was posed to determine e-government maturity level that the country has currently reached.

Informant response is cited verbatim below:

...the first phase was 'information' where public offices could just post information about the available services online for public consumption, the communication was one direction. But currently we are in phase two 'interaction', where online communication is two way traffic between public offices and citizens.

Question six required e-GA staff to state as to how their office supports e-government implementation strategies within the public service. The findings indicated that, the agency is responsible to enhance and facilitate the use of modern ICT for managerial and administrative purposes, access to information and resource sharing within Government and provide improved services to the public. In addition, it was revealed that e-GA has prepared a Five Year Strategic Plan that among other things, articulates the objectives and strategic interventions to realise the above stated objective. Furthermore, it was reported that, the Agency prepares an annual business plan that articulates specific strategies and interventions that are to be implemented annually to achieve the intended results regarding e-government implementation across the public service.

The study sought to know the existing strategies by e-GA in order to bring awareness to the majority Tanzanians about e-government transformation. In the words of one senior officer at e-GA, he revealed that:

...we have taken a number of strategic, tactical and operational measures to ensure dissemination, sensitization and advocacy of e-government related initiatives to the general public. Strategically, e-GA has developed its communication strategy that embodies a number of interventions that are being interpreted and implemented in the Annual Plan. At operational level, the agency has been using platforms like TVs, Radios, leaflets, conferences and seminars etc. For instance, a recent endeavour was the conclusion of the first e-Government conference held in Arusha. The conference drew about 770 key public officials including Accounting officers, Heads of ICT entities as well as Information, Education and Communication Officers from various public institutions.

Respondents were asked to identify challenges that face e-GA in rolling out e-Government initiatives in Tanzania and cited the following:

- i. Absence of appropriate ICT governance structures and processes across the entire Government institutions;
- ii. Inadequate common standards and guidelines for adoption and implementation of interoperable, secure, reliable and cost effective e-Government solutions;
- iii. Inadequate framework to govern the involvement of stakeholders in e- Government initiatives;
- iv. Absence of policy guidance on how e-Government can be managed;
- v. Inadequate policy and regulatory frameworks and capacity to ensure information security;
- vi. Inadequate resources investment in ICT capacity building in public institutions;

- vii. Inadequate and unreliable infrastructures such as last mile connectivity, power supply, internal network and transmission ways; and
- viii. Lack of coherent legal, regulatory and institutional framework for efficient and effective e-Government adoption and implementation.

Lastly, e-GA staff were asked to identify the kind of services that citizens can access online through e-GA's website. The results on this indicated that, through e-GA website, people can access the parliamentary online information system; register for online Bills; and register complaints on various government issues. In addition, the study results indicated that various publications were posted on the web for citizens' consumption. Some of the publications included national policies such as the ICT policy; e-GA's Five Year Strategic Plan; the national constitution draft; e-GA's client service charter and e-GA's services booklet.

4.4.2 Data from system administrators/IT staff

Question four required system administrators to explain the e-government initiatives (if any) that are taking place in their organizations. Installation of ICT tools such as computers, internet connections, teleconferencing facilities and in-house training on ICT and its related services were identified as e-government initiatives. Further, it was indicated that, ICT units had been developed in their organizations with the role of ensuring the availability of network connection; maintenance of system software, installation and updating ant-virus; making back-ups of information and assisting end users of ICT facilities and application systems. Question 14 requested system

administrators to identify measures that were in place to ensure the security and integrity of electronic records. Typical remarks made regarding this question included:

- i. physical burglary doors were fixed in server rooms;
- ii. anti-virus software and cyberoams were installed; and
- iii. encryption, and the use of strong passwords were being used.

When they were asked to identify e-government services that are currently online in question Five, respondents indicated that to date people can pay tax, apply or renew licences, pay for insurance, pay for water and electricity bills, read Government reports, have access to Acts, policies and various Government circulars, and application for job through the Public Service Recruitment Secretariat (PSRS) portal.

Describing the procedures for online payment, one respondent remarked:

...in order to make water bills payment online, one needs to register for the service by filling in an online customer registration form in which particulars such as account number, full name, mobile number and e-mail address are required. After registration one can login into the system and check balances or pay his/her bill from wherever location in the world as long as there is internet connection.

In addition, the study findings indicated that, Mobile money services including Z-Pesa, provided by Zantel mobile phone company; M-Pesa, from Vodacom; Tigo-Pesa from Tigo; Easy-Pesa provided by Zantel; Airtel money by Airtel company; enable citizens who have registered for mobile money service in any of these mobile phone companies, to make payments for services such as electricity and water through their mobile phones deposited with money. The mobile money services are also linked up with a customer's bank account, from which he/she can draw money

directly to his mobile phone in as much the same way as a bank account debit card, and can therefore manage his payments through his handset.

Moreover, online job application requires individual candidates need to create account in the Public Service Recruitment Secretariat (PSRS) portal. The applicants are then required to activate their accounts by submitting personal CVs with details including: contacts, academic qualifications, language proficiency, working experience, training and workshops attended, computer literacy, referees, attachments (academic certificates) and declaration. Then after, a subscription to **No. *152*00#** is suggested, for job alerts which will be notifying the applicant through his mobile phone whenever job vacancies appear. To apply, the applicant logs in, reads the job advertisement, indicates the position he/she applies for, attaches necessary documents, and submits. He /she will be then be notified on his successful or failure online.

Other online government services identified by this study included: Tax and insurance payments, application or renewal of licences. In paying taxes for instance, it was revealed that, initially tax payers are required to sign up to the system (create account) and fill in the following information:

- Tax payer Identification Number (TIN);
- Password of at least six characters alphanumeric;
- Password confirmation;
- E-mail address of the taxpayer to be used for correspondence including getting acknowledgement, status of payments, getting password e.tc.

- Reliable contact mobile telephone numbers, to be used for sending short messages (SMS); and
- Hint security questions and answers to remind the taxpayer about password in case it is forgotten.

At the completion of the account creation, the taxpayer will then be prompted to login into the system using TIN and password registered. After login the taxpayer will be able to access the menu 'Register a Payment' which include: domestic taxes, motor vehicle, customs and fuel levy, depending on a tax that one wishes to pay. The taxpayer can then select one to four types of tax he/she wants to pay at once, and will have to capture the following information: Payment type (transfer from my account or direct deposit); name of account holder(s)-this is the title from which the funds are transferred; bank Account number; name of the commercial bank; total amount; currency; To-this is the respective TRA Commissioner's account name maintained at the Bank of Tanzania (BOT) to which the funds are transferred. Finally, the system automatically assigns a Control Number to that transaction. It is this Control Number that is quoted by Commercial Banks when transferring tax to BOT. A soft copy receipt is then provided via the email account.

4.4.3 Data from records staff

Question 15 in the interview schedule for records staff asked them to identify the laws that they were aware of that govern e-government services in Tanzania. Study results indicated that none of the respondents from this cadre was aware of any of such laws. Similarly, when they were asked to explain the extent to which the current e-records legal framework promote or hinder e-government implementation (question 16); they indicated that the law on e-records management was non-

existent. In addition to that, one respondent said: "The only law that I am aware of is the Records and Archives Management Act of 2002. However, this the law doesn't cover issues of e-records".

4.4.4 Data from Action Officers

Question 2-13 of the interview scheduled for action officers focused on the e-government implementation status their respective offices. Question two required them to identify the objectives of e-government. Although the majority could not clearly state objectives, it was reported that e-government aims at improving service delivery, transparency efficiency and effectiveness of business transactions between government agencies, citizens, employees and business sector. For further clarification, one responded that: "e-government is meant to provide forum for citizens' participation in government decisions".

Question three asked respondents to explain the kind of e-government strategy that exists within the public service, the response from one respondent cited the following:

- i. the ongoing frequency of ICT trainings to employees;
- ii. installation of ICT facilities in public offices; and
- iii. e-government awareness programmes.

Another respondent mentioned:

- i. the establishment of e-government Agency;
- ii. the enactment of the cyber law; and
- iii. enactment e-records transaction.

As a strategy for e-government implementation in the public service, the Tanzanian government developed an e-government implementation strategy 2008. Similarly, the establishment of circulars and directives from the government concerning ICT were identified as a strategy. However, the rest of action officers were not aware of any clear strategy.

When action officers were asked (question Four) to state the extent that e-government strategy address e-records as a result of e-service delivery, the majority of respondents had no idea as to how e-government strategy address e-records. One respondent could however reveal that ICT trainings, installation of ICT facilities and the enactment of legislations and formulation of circulars related to e-government and e-records to some extent address issues of e-records.

Question Five of the interview schedule for action officers required them to state how e-government strategies support or hinder e-workflow in their offices. The study findings indicated that, since such strategies were not well known and inadequate, e-workflow is hindered as most public offices lack comprehensive e-records management systems. And for those with systems, they work in silos and cannot communicate to each other.

The study through question Six sought to establish the kind of government services that were available online. Responses from all action officers were as follows:

- online applications;
- access to various policies, regulations, and circulars;

- advertisements and employment opportunities; and
- tax and bills payments.

When action officers were asked to comment on forms of e-Government interactions in Tanzania (Question Seven), 6(60%) respondents were not aware of any interaction and only 4(40%) could indicate that there was a fair interaction between Government to Government; In addition, question Eight required action officers to identify the factors that explain the current form of e-government interaction. The findings on this indicated that factors explaining the current form of interaction were the presence of government information in the Government portal for public consumption. Further, they could also even mention the existing transactions between the four agents of e-Government. However, the respondents asserted that, since paper transactions dominate in most government business and given the limited access to internet, and unreliable electricity supply, it will take time for the government of Tanzania to go full electronic.

In another scenario, respondents through question number 10 were asked to comment on the status of the maturity phase of e-government as they apply to Tanzania in terms of: Information, interaction, transaction and transformation. Seven action officers had a view that e-government maturity status in Tanzania was at its very infancy stage (information) whereas Three respondents indicated that the status of e-Government in Tanzania was between Phase One (information) and Two (interaction). In his words, one officer explained that:

...the first phase was 'information' where public offices could just post information about the available services online for public consumption, the communication was one direction. But currently we are in phase

two 'interaction', where online communication is two way traffic between public offices and citizens.

In addition, the study revealed that the last two e-government maturity phases (transaction and transformation) are yet to be achieved in Tanzania, even though electronic transactions are conducted in some cases. Moreover, this group of respondents were asked to identify factors that explain the current state of e-government maturity phase in Tanzania. The study findings indicated that, the presence of government information in the Government portal for public consumption and the existing transactions between the four agents of e-Government in the country were the factors explaining the current status of e-government maturity.

4.5 Effectiveness of e-records legal, policy and regulatory framework

The third objective of the study sought to establish the effectiveness of existing e-records legal, policy and regulatory framework in support of e-government. The findings on this objective were obtained from interview sessions with the records staff.

4.5.1 Data from the records staff

Questions 14, 15 and 16 that appeared in the interview schedule for records staff, were the only questions which sought to determine the effectiveness of e-records legal, policy and regulatory framework in the public service. Question 14 required records staff to describe the laws that govern e-government services in Tanzania. The study findings indicated that, the records staff had no idea of any existing law governing e-services in Tanzania. One respondent remarked that: "I am not aware of

any existing law that governs e-records or e-government in Tanzania. I am afraid none of them has already been enacted."

Another respondent cited: "In Tanzania, weak legislative framework for electronic records is a big challenge towards effective implementation of both e-records management and e-government initiatives".

Question 15 sought to establish the policies or guideline are in place regarding e-records and e-government issues in Tanzania. The study findings indicated that currently there are no specific policies for e-records and e-government implementation. Instead, government use circulars and guidelines which are being issued by the government from time-to-time in providing institutional and operational guidance and compliance with regard to e-Government implementation initiatives in the public service. Respondents however could identify two policies which to some extent, indicated the government's commitment towards e-records management and e-government implementation for improved e-service delivery. The policies included the National Records and Archives Management Policy (NRAMP) and the National ICT Policy. It was revealed from the study that, the NRAMP policy issue, objective and statements indicate the good will of the government with regards to effective management of e-records. Its effectiveness and efficiency was however not recognized. The respondents mentioned the following weaknesses of NRAMP:

- i. the policy is still questionable does not reflect specific values, principles, aims and objectives of electronic records management;

- ii. the policy does not seem to provide required guidance which is expected to entail assigning and defining responsibilities on e-records management responsibilities and authorities to officers; and
- iii. NRAMP was as general as it lacks focus on important guidance and directives on the requirements for e-records management.

These remarks were in line with the ISO 15489-1:2016) which posits that legislative and policy frameworks are necessary for providing guidance for the successful creation, processing, storage and preservation of records and archival materials.

Question 16 in this aspect asked respondents to state the extent at which the current e-records legal framework promote or hinder e-government implementation. It was revealed that the only law that the records staff were aware of concerning e-records was the Records and Archives Management Act of 2002. However, they remarked that:

The law is inadequate and ineffective particularly on matters relating to e-records management and e-government initiatives. Similarly, the Tanzania Electronic Transactions Act of 2015 which recognises electronic records, seems ineffective as it does not provide any specific guidelines on how to achieve effective management of the electronic records.

Moreover, it was established in this study that, comprehensive e-records management standard guidelines throughout their continuum was non-existent across the public service. It was noted that the Registry Procedure Manual, 2005; and the Guideline for procedures of managing Personnel records in the Public Service, 2013 were found not to sufficiently cover the requirements for management of electronic records. However, it was evident from the results that, the government through e-GA in collaboration with RAMD was in its final process of developing a

number of standard guidelines including: e-Government interoperability framework; e-Government information Architecture; e-Government Infrastructure architecture; e-Government integration Architecture; e-Government security Architecture; and Guidelines and Standards for Integrated Health Facility Electronic Information Management system.

4.6 Knowledge and skills of public servants on e-records management

The fourth objective of the study thought to determine knowledge and skills of public servants on e-records issues. Interview questions related to this objective were directed to action officers and the records staff. The findings are reported in subsections below.

4.6.1 Data from action officers

Questions 11, 12 and 13 sought to obtain data from action officers on knowledge and skills of public servants on e-records management. Specifically, question 12 requested action officers to identify resources and skills that their Ministries or departments would require so as to effectively manage e-records and successfully implement e-government. The respondents mentioned the following:

- i. effective e-records management facilities including e-records systems, trained manpower, policies, standards and guidelines; and.
- ii. skills on ICT and ERM for both records staff and action officers in organizations.

Question 12 sought data on whether respective offices had regular budgets to support records and information management programmes and staff training. The results indicated that, few public offices have such a budget. On the other hand,

most public offices have insufficient budget to support records management programmes as well as staff training on the same. One senior action officer admitted that: "based on a meagre budget allocated to ministries and departments, records programmes and trainings are normally accorded a low priority. It only occurs by chance for records staff to attend trainings".

Moreover, question 13 aimed at seeking information from action officers regarding the kind of training that RAMD conducts in the management of electronic records in their organizations. It was revealed that, RAMD has never conducted any training on e-records. In addition, it was indicated that, although there is evidence that public institutions in Tanzania are generating e-records as a result of e-transactions; RAMD has not been able to render advice on best practices on e-records to public institutions as required by the Records and Archives Management Act, 2002.

4.6.2 Data from Records staff

Questions 17, 18, 19, 20 and 21 sought to obtain data from records staff on knowledge and skills of public servants on e-records management. Question 17 sought to solicit data on the records personnel entry qualifications into job. The study findings revealed that their entry qualifications were either a certificate or Diploma in records management from any recognized institution. However, all records staff who participated in the study had qualifications of a Diploma in Records Management attained from the Tanzania Public Service College (TPSC). When they were asked to identify the kind of formal training in e-records management, it was revealed that they only had theoretical training on e-records which was part of the curriculum during their Diploma program at the college.

Moreover, question 19 required respondents to comment on the adequacy or inadequacy of their training with regard to the management of e-records. On this aspect, all respondent remarked: "the training on e-records is inadequate as a result of insufficient curriculum for records management modules particularly on e-records management which more theoretical than practical". As such, it was evident that most of them had inadequate knowledge and skills on issues pertaining e-records and its related systems including, metadata identification in e-records, procedures for e-records storage, distribution and disposition.

Question 20 was posed to records staff to identify the kind of skills that their offices or themselves in particular would require so as to effectively manage e-records in support of e-government. The findings indicated that, there was a crucial need for records staff to attend training on e-records management with its related ICT skills.

They specifically identified gaps in:

- i. identifying metadata in e-records;
- ii. procedures for e-records storage; and
- iii. distribution and disposition of e-records.

With regards to whether the current levels of staff training promote or hinder e-government implementation as asked by question 21 in interview schedule for records personnel, only one respondent from TCRA indicated that e-government implementation was being promoted. On the other hand, the rest of the respondents revealed that low level of training in e-records issues hindered e-government implementation in the public service and the country at large.

The last question (question 22) in relation to objective four, requested respondents to explain the level of participation of RAMD in the management of e-records in the public sector. It was revealed from study results that RAMD has not been able to even render advice on best practices on e-records to public institutions to ensure the capture, preservation and continued accessibility of records identified of having archival value.

4.7 The involvement of RAMD in e-records management and e-government implementation in the public service

The fifth objective of the study sought to find out the extent to which the National Archives (RAMD) is involved in the management of e-records and e-government implementation in the Public Service. Questions regarding this objective were posed to three cadres involved in this study including action officers, records staff and RAMD staff as presented below.

4.7.1 Data from Records staff

Question 22 was the only question that sought data from records staff on the level of RAMD's involvement in the management of electronic records of public offices. The findings indicated that, although there was evidence that public institutions in Tanzania were generating e-records as a result of e-transactions; RAMD has not been able participate in rendering any advice or directives on best practices on e-records to public institutions. As such, it was noted that public institutions were currently managing e-records at their own initiatives as RAMD has not yet provided

standard guidelines on e-records. Confirming on this, one senior records staff cited that:

...when our institution wanted to buy and install an e-records management system, we called RAMD for some professional advice but didn't turn up. We therefore went ahead and purchased an EDRMS which was modified by our IT guys to accommodate our institutional needs.

Further findings indicated that RAMD has not yet been able to receive, maintain and preserve any electronic records from the public sector contrary to the mandate bestowed to it. As a result, e-records were being handled at individual MDAs with unregulated metadata to describe their structure and content. In support of these findings, one senior records manager reported that: "...RAMD has had done a great job in the general management of paper records where appraisals were conducted and new keywords system was installed in all Ministries. But when it comes to e-records, nothing as yet has been done".

Questions 1, 2, and 6 sought to obtain data from RAMD staff on the involvement of RAMD in managing e-records and e-government implementation in the Public Service. Question one sought to determine the mandate of the National Archives. It was revealed from the study findings that, section 6 (1) of the Records and Archives Management Act, 2002; gives RAMD the responsibility to contribute to the efficiency, effectiveness and economy of the Government of URT by:

- a) ensuring public offices follow good record keeping practices;
- b) establishing and implementing procedures for the timely disposal of public records of no continuing value;
- c) advising on best practices and established standards in record keeping in the public service; and

- d) establishing and implementing procedures for the transfer of public records of enduring value for preservation in the National Archives or such any archival repository under the control of the Director.

In question two, RAMD staff were asked to state whether the national archives was being involved in advising Ministries/Departments and Agencies to manage e-records. The results on this indicated that, RAMD has not done what it was supposed to do in advising public institutions regarding e-records management. This was further evidenced by the fact that, some public institutions have initiated or adopted e-records management software of which neither RAMD nor e-GA has vetted and approved. One RAMD informant noted: "RAMD is not involved in the e-records management initiatives in the public institutions. The only projects that we are involved is the ongoing digitization of records throughout the public service".

Question six inquired from the respondents on how RAMD was preparing the Ministries and Departments to manage e-records in support of e-government. The respondents cited the following:

...RAMD conducts short course and sensitization programmes on records management within which the importance and challenges of e-records management are covered.

...in collaboration with e-GA and PO-PSM, RAMD has developed a system called 'e-Office' which is currently installed at the Ministry of Transport and Works as a pilot. The system is expected to be rolled out in all public sector offices for easy management of e-records in the public sector.

...in collaboration with e-GA, RAMD was in its final touches to develop the so called e-Government interoperability framework- standards and guidelines.

4.8 Chapter Summary

This chapter has the presented findings of the study as obtained from the interviews conducted with action officers, records staff, archivists, records managers and IT staff from PO-PSM, TCRA, e-GA and RAMD.

Findings revealed that there is evidence of availability and use of e-records across government institutions in Tanzania. However, it was established that the e-records readiness and efficiency levels of e-records management in support of e-government were low. This was evidenced following unavailability of important tools and procedures including: lack of policies, standards and procedures, inefficient legislations, inadequate ICT tools and infrastructures, limited knowledge and skills for both action officers and records personnel. As such, the levels of e-government maturity is was found to be low.

Moreover, it has been established throughout the chapter that the involvement of RAMD in advising and ERM implementation is not encouraging. Weaknesses in systems and capabilities for managing and archiving digital records in public offices have been revealed. The next chapter (five) presents a discussion of these findings.

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.1 Introduction

The chapter presents discussion of research findings. Creswell (2014), contends that this section of the thesis enables the researcher to report on how the results answered the research questions. Kothari (2007) asserts that it is only through interpretations that the researcher can expose relations and processes that underlie the findings. University of Southern California (2013) points out that the objective of the interpretation and discussion chapter should be to:

- i. reiterate the research problem;
- ii. explain the meanings of the findings;
- iii. relate the findings to similar studies;
- iv. consider alternative explanations of the findings; and
- v. acknowledge the study's limitations.

The discussion of findings is based on the following themes based on data sourced in line with research objectives namely:

1. E-records readiness;
2. E-government implementation status;
3. Effectiveness of existing e-records legal, policy and regulatory framework in support of e-government;
4. E-records knowledge and skills of staff; and
5. Role of the National Archives (RAMD) is involved in the management of e-records and e-government implementation in the Public Service.

5.2 E-records readiness

When action officers from PO-PSM, TCRA and E-GA were asked to state the extent to which e-government strategy addresses e-records as a result of e-service delivery, 6 action officers reported to be unaware that e-government strategy exists. As such, they could not even state the extent to which it addresses e-records. On the other hand, 4 action officers reported that, the extent at which e-government strategy addresses e-records is very low. One respondent could even describe that the current national e-government strategy does not incorporate the management of electronic records as an important aspect towards successful implementation of e-government in the country.

Data from e-GA staff revealed that, in supporting e-Government implementation strategies within the public service, e-GA has completed a feasibility study of designing government mini-data centre that is intended to host and operationalize various e-government systems. According to e-GA, the mini-data centre will improve availability of e-government applications and provide consolidated hosting and management of e-Government applications which are currently fragmented. On top of that, respondents reported that e-GA has completed designing and developing a platform for mobile service delivery that enables government institutions to establish and render mobile services solution to citizenry.

5.2.1 Types of e-records generated and managed in public offices

In an effort to identify the knowledge and skills of respondents, the study thought to identify the types of e-records in respective public offices. The findings revealed that since at least every public office had adopted ICT as a tool in its business operations,

the public service generate a good volume of e-records. Further, it was established that while some public institutions have automated its business processes, others remained manual though they generated and maintained some records in e-format.

The study findings established that the types of e-records in the public service included emails, text files, databases, websites records, image files and video and audio recordings. However, it was interesting to learn that with exception of TCRA, records personnel in other offices were not directly involved with e-records. It was reported such format of records were normally dealt with by secretaries and IT staff. It was further revealed that, in rare cases an email for instance could be printed out and brought to the registry for filing procedures as required by the Records Procedure Manual. This could mean that, despite the government's efforts to embrace ICT tools across the public offices, the management of e-records is not yet streamlined to the registries. This situation seems to be contributed by the slowness of the government in enforcing and implementing standards, guidelines, procedures and policies related to electronic records management.

It was also evident that government institutions lack recommended e-records management systems and qualified personnel as key factors towards e-government initiatives. Because of that, data from the records personnel and e-GA staff revealed that, despite the positive steps taken by the Tanzanian government towards e-Government implementation strategies, currently the voluminous e-records generated by government departments as a result of e-transactions and website records, are not being systematically managed. In such a situation, the danger of losing valuable government information over time is so evident.

With regards to e-records management at TCRA, the study indicated that an EDRMS was installed and used. When the study wanted to know as to how classification e-records in terms of security and arrangement was conducted, the results indicated that passwords and special permission from the system administrator was required for an individual to access a particular information. On top of that an audit trail system and quality management system were installed so as to monitor and keep track of any alteration, deletion or removal from storage. The classification system in use was adapted from the manual records classification system where folders of similar subjects were used to store information with related issues. The folders were then arranged electronically basing on the sequence of their files' key words. However, it was discouraging to note that, despite the availability of the EDRMS, all confidential records were treated manually. Also it was noted that the EDRMS does not accommodate emails. Therefore all institutional emails are currently being handled by the Director General's personal secretary, a situation similar other public offices without an ERM software. When asked about strategies for long term preservation of e-records, the respondent indicated that they used off-site backup system; and the records that were not being used or required were just archived in the system until further notice.

The proliferation of digital information in public offices requires employees to be equipped with information and records management skills that can promote records creation, capture, management, use and re-use in electronic environments (Svärd, 2014:6).The study findings established that all records staff who participated in the study had qualifications of a Diploma in Records Management attained from the Tanzania Public Service College (TPSC). However, the study revealed that, the

majority among them had inadequate knowledge and skills on issues pertaining e-records and its related systems including, metadata identification in e-records, procedures for e-records storage, distribution and disposition. It was further identified that, the reason behind such incompetence was contributed by insufficient curriculum for records management modules particularly on e-records management which was reported to be more theoretical than practical. This observation conforms to Mnjama & Wamukoya's (2007) study when they pointed out that, even though many governments have tools and procedures for managing paper records, electronic records and images management is still lacking. In Uganda Luyombya (2010) evidenced that there is shortage of skills across the public service. He further observed that, records managers lack adequate technical knowledge on how to manage digital systems. As a result, few records managers are able to contribute in ICT discussions especially on issues related to the establishment of digital records solutions.

Katuu (2015) conducted a study on the development of archives and records management education and training in Africa. This study among other things argued that, although there exists in Africa a variety of institutions offering qualifications in archives and records management, its impact on quality is questionable. The doubt on the quality of education and training in African Universities offering archives and records management programmes (ARM) is based on the number of challenges including: low numbers of qualified staff; virtually non-existent research; poor quality of education materials and outmoded programs; and education methodologies based on the model of rote memorization that does not encourage critical thinking, problem solving and creativity (Katuu, 2015). Based on these weaknesses, Katuu (2015: 11-

12) contends that, there have been efforts to develop educational materials on various areas such as the training in Electronic Records Management (ERM) which was developed by IRMT. Despite these efforts, the study revealed that, an initiative that has not been achieved in East African region is a centre of excellence for digital records management.

Based on the study results in this sub-section, it would mean that, the government efforts on e-records management implementation would be useless if the 'half cooked' records personnel are not given practical training on ERM. This should go along with a review of curriculum on ARM which seem to concentrate more on theories than practical. In addition, top management buy-in agenda on e-records seem to be lacking.

The study also thought to identify whether action officers who are also key players in official records for various transactions and decision making, have adequate knowledge and skills on e-records. The findings indicated that, although most action officers were computer literate, they lacked knowledge on technical issues related to e-records management. Svärd (2014:92) also observed similar results in Sweden where officers were never informed about how they should handle such records. Instead, records management training course were only offered to registrars in municipalities who were directly involved with public records management. Related results were reported by Nkala, Ngulube & Mangena (2012:114) when they submitted that staff members at NAZ have limited skills and knowledge in managing e-records, despite the fact that most of them are computer literate. Study results further indicated that, some government officers with networked computers on their

tables could not even draft an email without assistance. Others were reported to misuse the installed ICT facilities by conducting personal activities such as playing games and informal communications through social networks such as facebook, Twitter and others. On the other hand, the ICT professionals in public service were identified to lack required knowledge and skills on records management. They denounced that although they were IT experts, they had not got any training on records management hence they were not conversant with processes and procedures involved in the life cycle of public records.

It would seem from the results that, most public servants including action officers are not conversant with procedures and practices of e-records management. This suggests that, effective implementation of e-records management systems will not be successful unless all stakeholders are acquainted with the techno-how on the same. To achieve this, training on ERM is important along with policies, standards and guidelines that would provide responsibilities and directives to all responsible staff.

5.2.2 Existence of ICT infrastructure

The study findings established that the government of Tanzania has harnessed ICT and its related tools in a bid to adopt e-government throughout the public service. This was evidenced by data from 6 action officers who reported that the government has built the national optic fibre backbone to network all ministries, departments, agencies and regional administration hence making it possible to connect them with internet which enables them to install and utilise modern technology communication facilities such as teleconferencing services; four IT staff who reported that the government has

purposely established ICT departments in all public offices; three e-GA officers who reported that the government has successfully revamped the government portal which was developed in 2010 under the domain name **www.egov.go.tz**. One officer from e-GA confirmed that:

...the new government portal with the domain name **www.tanzania.go.tz** is a single electronic window web-enabled interface that provides comprehensive, accurate and reliable one stop centre for information and services from government institutions. This is a positive step towards e-government implementation in our country because institutions and the general public can now share and access information more easily from anywhere in the world as long as they are connected to the internet.

However, in recent times the agenda of national government websites has broaden to also include a focus on citizen participation in democratic processes and inclusiveness. This calls for governments to go beyond the use of websites and embrace the use of social media and mobile platforms to promote participation and inclusion (Lemieux, 2016). In a different line of thinking, Humphrey (2002) cautions about the fluidity of web pages which can be available today and gone tomorrow. It is estimated that the life span of websites is roughly 44 days should they not be regularly updated (Mnjama, 2014:161). It was also evident that e-records in many public offices were being handled with unregulated metadata to describe their content, structure and context. As such, their trustworthiness and the possibility of their future accessibility is doubted.

5.2.3 Availability of ICT tools

The availability of ICT tools is the basic underlying factor for e-records management (ERM) (Luyombya, 2010). The data from 3 RAMD staff and 4 IT staff indicated that the government of Tanzania has made commendable efforts on the aspect of ICT

tools due to the fact that, at least all public offices were installed with a number of ICT tools including: computers, Local Area Networks, internet facilities, fax machines, printers, telephones and have functioning ICT departments. However, it was evident that some public offices were more equipped in terms of technological infrastructures, ICT facilities and competent staff while others were lagging behind. Similarly, facilities for storage of digital records, including digital repositories were not yet available. These results concur with the ones by Wamukoya & Lowry (2013:156) who disclosed that within MDAs in Kenya, Uganda and Tanzania; the facilities for managing records as per international standards and good practice are lacking; digital records are stored in various recording media in computer rooms with poor environmental controls and with little documentation which endangers their continued accessibility. These results would mean that, even though the government of Tanzania has tried to indicate embracing ICT in its offices, very little has been done in favour e-records management. Perhaps a good explanation for such situation could be little awareness on the importance of e-records management; lack of priority accorded to e-records management issues; lack of adequate strategies and insufficient budget allocated to the department responsible for the management of public records in the country.

In Uganda, Luyombya (2010:158) revealed similar weaknesses when he observed that, the Uganda Public Service (UPS) lacked adequate digital records management (DRM) equipment and facilities, a factor that hampered the generation and management of electronic records. Luyombya (2010) identified lack of awareness of the benefits of DRM services as a reason behind the absence of adequate DRM equipment and facilities. A study by Kalusopa & Ngulube (2012) revealed that fax, telephone, and cell phone were the dominant ICT facilities that have been adopted and

were being used by labour organizations in Botswana, whereas internet was slowly being adopted. Consequently, Nasieku (2012) reported that Moi University had inadequate ICT infrastructure and resources to cater for e-records management. The factors for such inadequacy were lack of adequate funds to purchase hardware and software, the benefits of using ICT to manage records was not well recognized and lack of administrative will for making policy decisions regarding the management of e-records at Moi University. Unavailability and unreliability of ICT and telecommunications networks and computers, and lack of optimization of the existing infrastructure such as mobile phones, were seen as inhibiting factors for effective e-Government adoption initiatives in Tanzania by Yonazi (2010).

With regards to websites, the study established that four out of five public institutions under the study, had developed their institutional websites. This would confirm that the government generates electronic information and communicates with the public through these websites. The study further revealed that RAMD has not yet created its own website, instead some pieces of its information were made available in the website of the parent ministry. This is contrary to best practice where national archives is expected to be involved in managing records generated by websites.

Mnjama (2014:165) pointed out that there is a general agreement that archival websites must provide basic information about themselves, their holdings and other information which may enable the user to determine whether a visit to the institution is worthwhile. Further, it was revealed that the available government websites including the government portal, provides information about government, Acts, policies, directories, announcements, and downloadable forms. Additional information include

details on the available services provided by public institutions; and information on the procedures and requirements to consider when looking for services from public institutions. It was therefore established that, the websites evolution stage was between publish and interactive stages. No transactions are possible yet through the government portal.

The same results were established by Yonazi (2010) when he observed that, all 30 institutional websites he evaluated were at between publish and interaction stage, no transaction services had been implemented. Information about government ministries and departments and their activities; downloadable forms, policies, speeches, laws and few searchable databases were identified to be the existing information on websites (Yonazi, 2010). This suggests that, a lot is yet to be done by the government so as to fully embrace ICT tools for e-Government implementation in the country.

5.2.4 The role of records personnel and IT staff in ERM

The study results indicated that out the four public institutions, only records personnel from TCRA were involved in managing e-records as per the continuum model. TCRA has installed an Electronic Document and Records Management System (EDRMS). It was evident from the results that, at creation stage, all institution's information was processed at the registry. For paper records, a scanner was used for scanning all incoming mails, which would then be entered into the EDRMS (capturing) whereby a document is connected through relationships with other documents, with sequences of action. Then after, an e-file would be sent to the accounting officer for preview. After preview, the accounting officer would then electronically direct files to responsible action officers through LAN for actions or opinions. Further results revealed that, the

records personnel could monitor the movement of a particular file online and could tell whether actions have been undertaken or not. However, the study established that the last dimension of the continuum model (pluralisation), had never been practiced. An explanation to this could be due to the fact that through EDRMS, TCRA is creating, using, maintaining, and archiving all of its e-records on its institutional server. In this regard, no digital archives has ever been transferred to the national archives for preservation. The reason behind this could be archives' insufficient capacity in terms of technology, skills and facilities such as digital repository to receive and preserve digital archives from public institutions.

Despite the initiatives taken by TCRA on e-records management, the study established that emails were not being captured into the system as part of official records. For instance official emails sent to the Director General were being handled by his personal secretary. For other employees, it was learnt that they managed official emails at their own discretion. Responses from other records personnel from other organizations that participated in this study indicated that, they were never involved with e-records management at all. Some of their offices were not even installed with any ICT facilities for that purpose. Regarding official emails management it was identified that, personal secretaries were the ones who accessed and stored such information in their personal folders. And in most cases these emails were sent through personal disposable email accounts under companies such as yahoo, Hotmail and Gmail. This would mean that, emails were not given the required attention.

Similar results were observed by Kalusopa & Ngulube (2012) when they noted that, emails remained a big challenge in labour organizations in terms of recordkeeping. In

this study it was revealed that there were no policies or procedures on the use and management of emails. As such users created and disposed of emails and their attachments mainly at their own discretion. Some organizations archived emails in personal folders while others printed and filed messages that were considered important. A study by Svärd (2014) also revealed related results as she pointed out that, although municipalities in Sweden had fully developed registry functions to capture most public records, the management of emails was still problematic. It was identified by Svärd (2014) that, emails in municipality 'C' were not regarded as official records, and the privatization of email boxes implied that most email were not captured.

IT staff were asked to confirm their role with regard to ERM during their creation, capture, organizing and pluralism. The results indicated that IT staff were only concerned with systems management including securing LAN in which firewall, web content filtering and antivirus installations were conducted. Further, the IT were responsible for setting strong passwords on WAN or important computers. When asked about the responsibilities for the oversight of designing and implementation of information systems, it was learnt that the current systems were superimposed by the PO-PSM, therefore it was the same ministry that oversees the implementation of the systems. It was revealed that there was no structured cooperation between IT staff and records management personnel. As a result, the management of e-records as per continuum model which advocates for inclusion of different expertise is not being observed in the public service. A study by Svärd (2014) indicated that the issue of ignoring collaborations in managing e-records is also existing in some developed countries like Sweden. The exclusion of important expertise such as archivists and IT

specialists from information planning projects, may lead to unsuccessful projects.

5.2.5 Availability and application of e-records management software

The findings indicated that currently, there was no single official e-records management software installed in public offices. Rather it was observed that at present, government Ministries, Departments and Agencies (MDAs) manage e-records using some software which were either purchased from system vendors or developed by own IT staff to suit their institutions. A good example could be cited from TCRA where an EDRMS is used. This implies that for government institutions to manage their e-records using different systems and software, the question of interoperability could be problematic leading to fragmentation of public digital records. The existing software which operate in 'silos' may not as well, necessarily provide for adequate preservation of e-records for future use. The study results however indicated that, RAMD in collaboration with e-GA, were working on a prototype of an e-office system to be rolled out throughout the public service as a means to mitigate the prevailing weakness. Meanwhile, an idea to purchase a comprehensive e-records management system was being considered should the budget allow.

Study results further indicated that, the government has successfully procured and installed some 'piece meal' software which are limited to specific types of digital information thus leaving other types of recorded communications unmanaged and, ultimately, unreliable or inaccessible electronically. These software include the Government Mailing System (GMS); the Human Capital Information Management System (HCIMS); the Strategic Budget System (SBAS); and the Integrated Financial Management System (IFMS). This study concurs with Luyombya (2010:159) study

which cited EDRMS as one of the important digital records management which was missing in several ministries. It was further reported that most of ministries in Uganda were neither networked nor interconnected with digital systems a situation which led to a wide incompatibility of technological systems, even within the same ministry. The fragmentation of information and lack of coordination between different arms of Government were also pointed out by Luyombya.

5.2.6 Preservation of e-records

E-records created as a result of e-government activities should be made accessible and usable for as long as they are required for business, legal or historical purposes. E-records are fragile and their integrity depends on the ever changing hardware and software. Unless e-records are carefully protected, governments will be unable to guarantee their availability, authenticity and usability over time (Ngulube, 2012; Mnjama 2014; Lemiux 2016). Study findings indicate that, all of the Four public offices under the study had no sufficient strategies for the long-term preservation of public information in electronic environment. Similar results were reported by Wamukoya & Lowry (2013:154) as they pointed out that national archives and MDAs in the East Africa region have not yet established standards for the archival management and digital preservation of valuable digital records. While digital preservation standards such as the Open Archival Information System Standard (OAIS) and specifications for trusted digital repositories were in the market, none of the East African region countries has considered for testing and adaptation (Wamukoya & Lowry, 2013).

Respondents of this study assumed that system administrators or new technologies

will take care of e-records so that they can be accessible over time. With regard to the mandate of ICT departments in public offices, it was revealed that IT staff also sometimes called system administrators were only responsible for: ensuring the availability of network connection; maintenance of system software, anti-viruses installation and updating; information back-ups and providing assistance to end users of ICT facilities and application systems. Further, it was revealed that for security of e-records within their premises, physical burglary doors were fixed in server rooms, anti-virus software and cyberoams were installed. Information encryption and the use of strong passwords were identified as other means being utilized for preserving records in e-format.

Consequently, study results indicated that despite the fact that the national archives (RAMD) has been formally mandated with responsibility of preserving public records in all paper formats; it was evident that insufficient budget, inadequate skills and facilities to address issues related to preservation e-records across the public service were among factors inhibiting RAMD from developing and implementing mandatory government-wide standards for file formats, storage media and preservation metadata to be used in government computer systems. Because of that, the study results indicated that, RAMD hardly provides advice and assistance for government departments that wish to convert, migrate, copy, store or emulate e-records.

Many countries have undertaken extensive digitization programs (Ramathakwana; Hamooya & Njobvu in Lemiux, 2016). The study results revealed that the government of Tanzania through RAMD has recognized the need to digitize vital public records as one means of preserving them. Preparations for digitization were underway while

modern digitization equipment including scanners, high capacity servers and microfilm machine were already installed at the National Records Centre (NRC) located in Dodoma, the capital city of Tanzania. However, Katuu (2012a) cautions that, digitization technology in itself is not a technology for management and preservation of records and information. Negative outcomes for countries which embarked on digitization include loss of access to trustworthy original records, uncertainty about the integrity of digital surrogates, and loss of irretrievability of digital copies of records (Lemieux, 2016). In agreement with this fact, Wamukoya & Lowry (2013:154) alluded to the fact that, the integrity of many digitization projects is being placed at risk because the source paper records are poorly organized. In that regard, "digitization has proven to be no panacea nor has it addressed the need to manage new records and information generated in digital format" Lemieux (2016:13).

With regards to e-records preservation strategies, (Ngulube, 2012:129) said: "Identifying, collecting and storing online publications and organizational records will be a futile exercise if strategies such as developing trusted digital repositories are not devised". The study results on this particular aspect indicated that, the National Internet Data Centre (NIDC) has been constructed in Dar es Salaam to provide an infrastructure with a network platform for big data, cloud computing, data mining and other similar data services to be hosted from government and business institutions. However, it is worth noting that, digital technologies present technological challenges for the long-term preservation of data. The challenges include: obsolescence of software and hardware, media failure, vulnerability of e-records, communication error, operator error, economical failure, and organizational failure (Ngulube, 2012). Moreover, it was revealed from this study that, the government is finalizing an

installation of a Modular Data Centre to serve as a Disaster Recovery for government applications under the NIDC for the purpose of preserving its records emanating from online transactions.

5.2.7 Challenges inhibiting effective e-records management in the public service

The results indicated that the responsibility for managing e-records was not clear as records and IT staff denied to be responsible for the management of e-records in their respected offices. Information systems and standards were inadequate and limited skills on e-records management to both users and information managers were real. Other challenges identified on this aspect included: unreliable power supply, low internet connection, absence of effective e-records policies, standards and guidelines; and low awareness of the public on the importance of e-records and e-government initiatives. IRMT (2003) pointed out that electronic records poses many challenges including the following: lack of awareness of the importance of e-records and the danger associated with their loss (e.g. the loss of evidence, risks to entitlements, lack of accountability for the management of e-records, complex, fragmented and incompatible information systems and standards (e.g. computer systems, metadata standards, and fragile, quickly changing record media, formats and storage systems (the e-preservation challenge. Other challenges include unconnected or poorly integrated paper and electronic records and duplicated e-records (where is the complete file, the right version, lack of e-records skills (among both users and information managers, and limited collaboration among information professions (records managers, archivists, librarians, IT specialists, web content managers.

The study results established that unreliable power was one of the challenges for effective e-records programme in public offices. It was revealed that, the United Republic of Tanzania faces an energy shortage particularly in electricity because there exists insufficient power generation capacities, as well as inadequate transmission and distribution of infrastructure.

E-records management policies are such an important component in determining factors for successful creation and management of e-records. In spite of the difficulties in managing electronic records, managing records in compliance with legislation and policies is not an option but an obligation for public sector bodies (Samwel et al., 2012). Despite these facts, the study findings indicated that currently there are no specific policies for e-records management in the public service. Instead, government use circulars and guidelines which are being issued by the government from time-to-time in providing institutional and operational guidance and compliance with regard to e-Government implementation initiatives in the public service. This would therefore mean that public offices in Tanzania are creating, organizing, maintaining and disseminating their digital records using personal initiatives without any guidance. In this regard, it can be interpreted that, the management of e-records is not sufficient and security of such information is endangered.

The study established that, there were no government-wide official standards for e-records management or metadata. This explains why Wamukoya and Lowry (2013:154) asserted that, the national archives of Tanzania, Uganda and Kenya have yet to adopt the ISO standards on records management and standard

functional requirements for the management of records in ICT systems. This would mean that, government institutions are creating and managing their digital records by their own initiatives without common standards. As a result, the existence a low and fragmented e-records management initiatives cannot be avoided. Further, this implies that the authenticity, reliability and trustworthiness of government information in digital format are not guaranteed. It was also evident from the results that, the long-term preservation of e-records is endangered because, metadata and compatibility elements for future accessibility might be missing in the absence of standards.

Similarly, Yonazi (2010) revealed that, activities involving guiding and regulating e-government initiatives in Tanzania were not yet implemented. Because of that, Yonazi (2010:61) revealed fragmented initiatives as each government institution attempted to implement its own e-service. Yonazi study was conducted six years back, but the same results appear today, very distressing. This sends a signal that the government is not serious enough to make transition to e-environment. The current study also concurs with earlier study by Kalusopa & Ngulube (2012) which pointed out that, despite the use of computer technology in labour organizations in Botswana, there were no institutional procedures that guide the filing, arrangement and disposition of electronically created documents. They further argued that, labour organization are no different from many other organizations around the world that are on transition to electronic environment while the standards and guidelines on e-records are yet to be established.

It has been established in this study that, currently there are no comprehensive e-

records management guidelines thus making the entire process of managing e-records throughout their continuum haphazard across the public service. It was however noted that, there existed two guidelines namely; the Registry Procedure Manual, 2005; and the Guideline for procedures of managing Personnel records in the Public Service, 2013. These two guidelines seemed to accommodate some aspects of electronic records. The Registry Procedure Manual has a small section that provides for procedures of managing official emails. The manual directs action officers whom official emails are sent to, to get them printed then capture them in the manual filing system similar to traditional paper records. This would however seem inappropriate because an email ceases to be an e-record as soon as it gets printed out (URT, 2005).

Tshotlo & Mnjama (2006:30-32) reported a number of with regards to e-records guidelines at Gaborone City Council which included; lack of records management policies to guide the creation, storage, access, retention and disposal of records. Kalusopa & Ngulube (2012) confirmed that, there were no evidence of well-defined procedures to guide the creation of e-records in most of labour organizations in Botswana. They further observed that, institutions' guidelines on filing, arrangement and disposition of e-records were lacking. Similarly, a study by Svärd (2014:138) in Sweden reported that, even though Swedish municipalities had positive information culture, they faced a number of challenges including but not limited to, email management, lack of electronic archives, and lack of system integration of which affected the achievement of holistic records management environment and a well-functioning information infrastructure.

5.3 E-government implementation status in the Tanzania public Service

Data for this objective was sourced from action officers and Tanzania E-GA staff. Data from e-GA revealed that the role of e-GA was to foster the innovative and viable use of modern information and communication technology (ICT), thus substantially contributing to the Tanzanian Government's vision of becoming a better, more effective government which provides innovative public service delivery enabled by ICT. In this regard, it was further reported that e-GA provides training on how to manage Government Portal Content; facilitates the Government in addressing ICT gaps in infrastructure, skills and devices through advisory and technical support; and provides technical support and advisory services relating to e-government and e-records to RAMD. In U.S.A, the office of E-Government and information Technology develops and provides direction in the use of Internet-based technologies to make it easier for citizens and businesses to interact with the Federal Government, save taxpayer dollars, and streamline citizen participation (U.S.A, 2002). Regarding the role of E-Government in South Africa, the Gauteng E-Government is mandated to rollout core network infrastructure that will connect all government buildings, Thusong Centres, urban renewal zones and targeted economic zones so as to provide citizens with state-of-the art Information Technology infrastructure that connects them to improved service delivery and greater economic opportunities (RSA, 2016).

With regards to e-GA's objectives, data from e-GA revealed a number of objectives including to: improve and simplify service delivery to the public and elimination of unnecessary government bureaucracies; improve interactions between Government and MDAs, Government and citizens, Government and business industry. In

addition, e-GA staff revealed that e-Government aimed to: empower citizens through access to information, increase transparency and accountability, increase revenue growth and bring about less corruption while also lowering costs of operations.

The study indicated that e-Government implementation maturity level is low. One of the reasons for such a situation might be contributed by the fact that some stakeholders are not involved in the process. A study by Ndlou (2004) which included 15 case studies in developing countries (Argentina, Brazil, Chile, China, Colombia, Guatemala, India, Jamaica, Philippines) which had implemented e-government initiatives; revealed that the ability of developing countries to reap full benefits of e-Government is hampered by the existence of a myriad of political, social and economic hindrances. In Africa, the key challenges to implementation of e-Government include: (1) the development of information and communications infrastructure; (2) human resources development and employment creation; (3) the current African position in the world economy; and (4) insufficient legal and regulatory frameworks and government strategy (Cogburn and Adeya (1999: vi). Similarly, Rangarirai et al. (2010) reported that in South Africa the implementation of e-government is problematic due to the fact that (1) some stakeholders had a distorted perception of the value of e-government projects (2) citizens were not meaningfully consulted and (3) the tasks were not properly coordinated. It is therefore suggested that, there is a need to meaningfully engage with various stakeholders as they need to understand the benefits and the nature of e-government projects.

Ngoepe & Saurombe (2016:24) asserted that the national archives Acts in most of the Southern African Development Community (SADC), are silent on records that appear in other media including electronic. They further argued that, with exception of the South African Archival legislation, there was no other archival legislation which indicates that electronic transactions are admitted as evidence in courts of law in SADC countries. In addition, all the pieces of legislation except that of South Africa do not provide the definition of electronic records but instead include it in the broader definition of a record (Ngoepe & Saurombe, 2016:37). A study by Luyombya (2010:129) also revealed that the Uganda National Records and Archives Act does not define digital records specifically, but includes them within the broader definition of a record. However, it is worth noting that, although most archival legislations seem to exclude provisions on e-records, many countries within SADC region are enacting legislations that would help in governing electronic transactions. For instance, in 2015 the United Republic of Tanzania passed the Electronic Transaction Act. Similarly, Botswana has an Electronic Communications Act, 2014.

The study results further indicated that, the consequential amendments on section 48 of the Tanzanian Electronic Transaction Act, 2015, took care of an existing gap in the definition of the word record in the principal archival legislation by inserting words "or electronic" so now it reads:

a record is any recorded or electronic information regardless of form or medium created, received and maintained by an institution or individual under its legal obligations or in the transaction of business and providing evidence of the performance of those obligations or that business (URT, 2015).

Despite these amendments, the Tanzania National Records and Archives Act, 2002 does not have provisions that provide directives, guidelines, and policy or legislative

requirements to assist government institutions manage electronic records effectively. In contrary, the South African National Archives Act, 1996 provides Section 13(2) (b) (ii) and 13(2) (b) (iii) which clearly states that the national archivist shall: determine the conditions subject to which electronic records systems shall be managed; and records may be reproduced electronically (RSA, 1996).

A study by Yonazi (2010:27) rightly observed that, citizens will be attracted to adopt e-government initiatives when they perceive that the government is adequately prepared to serve them electronically. Otherwise, citizens will be unlikely to seek or receive government e-services are not formalised and legalised (Yonazi, 2010:59) Similarly, one of the major functions that TTMS performs is to collect, generate and detail all records as a result of voice or SMS communications and money transactions. These are e-records. By collecting and maintaining them automatically, evidence of any communication through telephone is captured and can be retrieved when required. Such builds confidence for citizens to conduct their business electronically.

The Tanzania National Records and Archives Management policy issue, objective and statements indicate the good will of the government with regards to effective management of e-records. However, the effectiveness and efficiency of the policy is still questionable as it does not reflect specific values, principles, aims and objectives of electronic records management. Likewise, the policy does not seem to provide required guidance which is expected to entail assigning and defining responsibilities on e-records management responsibilities and authorities to officers who, by one way or the other come into contact with e-records in their business transactions. This

is contrary to ISO 15489-1: 2016) which posits that legislative and policy frameworks are necessary for providing guidance for the successful creation, processing, storage and preservation of records and archival materials. The study results indicated that NRAMP was as general as it lacks focus on important guidance and directives on the requirements for e-records management.

A current study by Mosweu, Bwalya & Mutshewa (2016:48) revealed similar results when it observed that the Botswana National Archives and Records Service (BNARS) policy was general and inadequate to guide the management of electronic records. In addition, the study has revealed that, since its formulation in 2011, the policy statements, particularly on capturing e-records in record keeping systems with sufficient information (metadata); development and approval of standards, procedures and guidelines for the management of electronic documents; and migration electronic records to new generation of systems are yet to be realised in the Tanzania Public Service. This suggests that, the majority of existing e-records in public offices, and the ones that are increasingly being generated, are likely to become unavailable or inaccessible in the future.

5.4 The contribution of RAMD in e-records and e-government in the public service

The study also sought to determine the attempts being taken by RAMD to embrace e-records management and e-government implementation in the public sector. The study results indicated that, although there was evidence that public institutions in Tanzania are generating e-records as a result of e-transactions; RAMD has not been able to fulfil its responsibilities as stated above.

Nkala, Ngulube & Mangena (2012) contended that government departments in Zimbabwe were managing e-records according to systems that best suits their institutions due to many factors including lack of skills among NAZ staff and standards required for proper e-records management. The National Archives of Zimbabwe (NAZ), does not have adequate infrastructure including hardware and software to cater for e-records preservation (Nkala, Ngulube & Mangena, 2012). Mutsagondo & Chaterera (2014) also pointed out related study findings when they reported that NAZ lacked capacity to hold deposited electronic storage devices.

The National Archives of Malaysia (NAM) has had assumed a leading role in governing the management of e-records from creation till disposition in the public sector. More importantly, NAM took initiatives to develop and implement the e-Strategy for Preservation of Government Records and Archives (e-SPARK), a project which was carried into two phases (Shafie, 2007).

5.5 Chapter Summary

This chapter has discussed the research findings that were presented in Chapter Four. It has been established that the current national e-government strategy does not incorporate the management of electronic records as an important aspect towards successful implementation of e-government in the country. The chapter has also highlighted on the fact that, although many public institutions generate a good volume of e-records, they are currently being mismanaged because the majority public servants had inadequate knowledge and skills on issues pertaining e-records and its related systems including, metadata identification in e-records, procedures for e-records storage, distribution and disposition.

Moreover, it has been established in this chapter that the management of e-records in the Tanzania Public Service is being inhibited by a number of challenges including: inadequacy or absence of information systems and standards; unreliable power supply, low internet connection, absence of effective e-records policies, standards and guidelines; and low awareness of the public on the importance of e-records and e-government initiatives. In addition, the study indicated that the Tanzania e-Government implementation maturity level is low, a situation that is contributed by a number of challenges including among others: absence of appropriate ICT governance structures and processes across the entire Government institutions; inadequate common standards and guidelines for adoption and implementation of interoperable, inadequate framework to govern the involvement of stakeholders in e-Government initiatives; and absence of policy guidance on how e-Government can be managed.

The next chapter provides conclusions, summary and recommendations on what the Tanzanian Government can do to effectively manage e-records in a bid to successfully implement e-government initiatives. It also proposes a framework for e-records in support of e-government implementation in the public service.

CHAPTER SIX

SUMMARY OF RESEARCH FINDINGS, CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

The chapter provides summary of research findings, conclusion and recommendations. Summary of research findings is based on data presented in chapter four [data presentation]. The study conclusion are derived using data sourced in line with research objectives. Recommendations of the study are based on what research findings revealed and responsibility for their implementation provided as well as benchmarking them against best practice. A framework to guide effective implementation of e-records and e-government within the Tanzania Public Service is provided. Finally, the chapter provides suggestions for further research.

6.2 Summary of the study findings

The summary of findings are presented according to objectives of the study as indicated in the presentation which follows.

6.2.1 E-records readiness in the Tanzania Public Service

Study findings revealed some action officers in the public offices were not aware of any existing e-government strategies, and that the extent at which e-government strategy addresses e-records is very low. In supporting e-Government implementation strategies within the public service, the e-Government Agency of Tanzania (e-GA) has completed a feasibility study of designing government mini-data centre that is intended to host and operationalize various e-government systems.

The study findings revealed the types of e-records in the public service include emails, text files, databases, websites records, image files and video and audio recordings. It was further established that with exception of TCRA, records personnel in other offices were not directly involved with management of e-records, but office secretaries and IT staff were the ones involved in dealing with official records in an electronic format. The management of e-records in public offices was haphazard. Despite the government's efforts to embrace ICT tools across the public offices, the management of e-records is not yet streamlined to the registries. E-records generated by government departments as a result of e-transactions and website records, were not well management during their continuum.

The study further established that records personnel, action officers and IT staff were not conversant with procedures and practices of e-records management and had inadequate knowledge and skills pertaining to e-records and its related systems including, metadata identification in e-records, procedures for e-records storage, distribution and disposition.

The study established that ICT professionals lacked required knowledge and skills on records management because they had not got any training on records management hence they were not conversant with processes and procedures involved in the life cycle of public records.

The study revealed that RAMD has not yet created its own website, instead some pieces of its information were made available in the website of the parent ministry. As revealed in this study, at least all public offices sampled were running websites.

In this regard, RAMD need to have a website through which the management and preservation of public records generated by public institutions' websites as a result of e-transactions would be enhanced. Similarly, as a general agreement, archival websites must provide basic information about themselves, their holdings and other information such as the importance of harnessing e-government for delivery of government services.

Study indicated that, the government has procured and installed some 'piece meal' software which cut across throughout the public service but are limited to specific types of digital information. These software include the Government Mailing System (GMS); the Human Capital Information Management System (HCIMS); the Strategic Budget System (SBAS); and the Integrated Financial Management System (IFMS).

On the aspect of preserving e-records, the study indicated that, all of the Four public offices under the study had no sufficient strategies for the long-term preservation of public information in electronic environment. Moreover, it was revealed from this study that that although the national archives (RAMD) has been mandated with responsibilities of preserving public records in all formats; this institution is yet to develop and implement mandatory government-wide standards for file formats, storage media and preservation metadata to be used in government computer systems.

The study established challenges faced by records custodians and users that inhibit effective management e-records management throughout the public service. These included: inadequate information systems and standards; limited knowledge and skills on managing e-records; absence of e-records policies and low awareness on the importance of e-records and e-government initiatives

6.2.2 Status of E-government implementation in the Tanzania

The study indicated that e-Government implementation maturity level is low at between stage One (Publishing) and stage Two (Interactivity). The results indicate that Records and Archives Management Act of 2002 was inadequate and ineffective particularly on matters relating to e-records management and e-government initiatives. The study findings further revealed that currently there are no specific policies for e-government implementation. Instead, government use circulars and guidelines which are being issued by the government from time-to-time in providing institutional and operational guidance and compliance with regard to e-Government implementation initiatives in the public service.

6.2.3 The effectiveness of existing e-records legal, policy and regulatory framework in support of e-government

The study findings indicated that, the Records and Archives Management Act of 2002 was the only law that the records staff were aware of concerning public records management. The law was inadequate and ineffective particularly on matters relating to e-records management and e-government initiatives as it does not have provisions that provide directives, guidelines, and policy or legislative requirements to assist government institutions manage electronic records effectively. Likewise, the Tanzania Electronic Transactions Act of 2015 which recognises electronic records, does not provide any specific guidelines on how to achieve effective management of the electronic records.

With regards to policies related to e-records and e-government, this study revealed that currently there was no public office with a functioning policy to guide the

management of electronic records. The study indicated that, the current National Records and Archives Management Policy (NRAMP) of 2011 does not reflect specific values, principles, aims and objectives of electronic records management. In addition, it was the view of this study that the policy does not seem to provide required guidance which is expected to assign and define responsibilities and authorities on e-records management to public officers.

It was established in this study that, comprehensive e-records management standard guidelines throughout their continuum was non-existent across the public service. It was noted that the Registry Procedure Manual, 2005; and the Guideline for procedures of managing Personnel records in the Public Service, 2013 were found not to sufficiently cover the requirements for management of electronic records.

However, it was evident from the results that, the government through e-GA in collaboration with RAMD was in its final process of developing a number of standard guidelines including: e-Government interoperability framework; e-Government information Architecture; e-Government Infrastructure architecture; e-Government integration Architecture; e-Government security Architecture; and Guidelines and Standards for Integrated Health Facility Electronic Information Management system.

6.2.4 Knowledge and skills of public servants on e-records management

The findings indicated that, at least all records staff who participated in the study had qualifications of a Diploma in Records Management attained from the Tanzania Public Service College (TPSC). It was further revealed that, the training on e-records was inadequate due to insufficient curriculum for the records management programme particularly on e-records management modules which was reported to

be more theoretical than practical. As a result, it was evident that most of records personnel had inadequate knowledge and skills on issues related e-records management systems including, metadata identification, and procedures for e-records storage, distribution and disposition.

It also emerged from this study that, action officers who are also key players in official records for various transactions and decision making, were lacking adequate knowledge and skills on e-records management. On the other hand, the ICT professionals in public service were identified to lack required knowledge and skills on records management. They denounced that although they were IT experts, they had not got any training on records management hence they were not conversant with processes and procedures involved in the life cycle of public records.

Moreover, study results indicated that most public offices had insufficient budget to support records management programmes as well as staff training on the same. It was further revealed that, based on a meagre budget allocated to ministries and departments, records programmes and trainings were normally accorded a low priority as compared to others training programmes.

6.2.5 The contribution of RAMD in e-records and e-government in the public service

The study results indicate that, although there was evidence that public institutions in Tanzania are generating e-records as a result of e-transactions; RAMD has not developed policy and guidelines for management of e-records in the Tanzania public sector.

The inability of RAMD in fulfilling its mandate especially on management of e-records is attributed to factors such as inadequate skills on e-records management among RAMD staff, lack of government-wide e-records management policy, guidelines and standards on e-records, inadequate facilities and budgetary considerations. High staff turnover at RAMD was reported to be one of the contributing factor to unsatisfactory fulfilment of RAMD obligations.

6.3 Conclusion

This section presents conclusions based on the following sub-themes: E-records readiness in the Tanzania Public Service; Status of E-government implementation in Tanzania; the effectiveness of existing e-records legal, policy and regulatory framework in support of e-government; knowledge and skills of public servants on e-records management; and the contribution of RAMD in e-records and e-government in the public service.

6.3.1 Conclusion on E-records readiness in the Tanzania Public Service

The research findings revealed that at least every public office in Tanzania had adopted ICT as a tool in its business operations hence generating a good volume of e-records. The study findings established that the types of e-records in the public service included emails, text files, databases, websites records, image files and video and audio recordings. However, e-records readiness in the Tanzania public Service was found to be very low. Government institutions lacked recommended e-records management systems and qualified personnel. As a result, the voluminous e-records generated as a result of e-transactions and website records, are poorly managed.

An outstanding observation established that, records personnel, action officers and IT staff were not conversant with procedures and practices of e-records management and had inadequate knowledge and skills pertaining to e-records and its related systems including, metadata identification in e-records, procedures for e-records storage, distribution and disposition. It also appeared from the study that the management of e-records is not yet streamlined to the registries. As a result the majority records personnel in public offices were not directly involved with e-records. Instead, office secretaries and IT staff were the ones involved in dealing with official records in an electronic format.

The findings further established that, the Tanzania public service faces a number of challenges related to e-readiness including: absence of laws on e-records management, inadequate ICT tools and infrastructures (both hardware and software), unreliable power supply, low internet connection, inadequate skills on e-records management among public employees, absence of effective e-records policies, standards and guidelines; and low awareness of the public on the importance of e-records and e-government initiatives.

Therefore, it can be concluded from the findings that despite the existing government efforts in adopting ICT technology in its business operations in Tanzania, strategies and initiatives to manage records in electronic format are inadequate. The current public institutions' practices in managing e-records do not guarantee the authenticity, reliability and accessibility of public e-records in support of e-government adoption in Tanzania.

6.3.2 Conclusion on the Status of E-government implementation in Tanzania

The study findings indicated that, the e-Government implementation in Tanzania aimed to: improve and simplify service delivery to the public and elimination of unnecessary government bureaucracies; improve interactions between Government and MDAs, Government and citizens, Government and business industry; empower citizens through access to information, increase transparency and accountability, increase revenue growth and bring about less corruption while also lowering costs of operations. However, was established that although the majority of public offices had running websites, e-Government implementation maturity level was low at between stage One (Publishing) and stage Two (Interactivity).

Study findings revealed a number of challenges inhibiting effective e-government implementation in Tanzania including: absence of appropriate ICT governance structures and processes across the entire Government institutions; inadequate common standards and guidelines for adoption and implementation of interoperable, secure, reliable and cost effective e-Government solutions; inadequate framework to govern the involvement of stakeholders in e-Government initiatives; absence of policy guidance on how e-Government can be managed; inadequate policy and regulatory frameworks and capacity to ensure information security; inadequate resource investment in ICT capacity building in public institutions; inadequate and unreliable infrastructures such as last mile connectivity, power supply, internal network and transmission ways; and insufficiency of coherent legal, regulatory and institutional framework.

The findings also revealed that the presence of government information in the new Government portal that provides comprehensive, accurate and reliable one stop centre for information and services from government institutions; and the completion of a feasibility study for designing government mini-data centre that intends to host and operationalize various e-government systems demonstrated the government commitment towards e-government implementation for improved service delivery to its citizens.

It can therefore be concluded that the current status of e-government implementation in Tanzania is at low level. The study however confirms that, the ongoing government strategies and commitment towards harnessing e-government initiatives will positively elevate the current status to an improved status for effective e-service delivery.

6.3.3 Conclusion on effectiveness of existing e-records legal, policy and regulatory framework in support of e-government

The study findings established that, the Records and Archives Management Act of 2002 was inadequate and ineffective as it does not have provisions that provide directives, guidelines, and policy or legislative requirements to assist government institutions manage electronic records effectively. Further findings indicated that, the Tanzania Electronic Transactions Act of 2015 lacks provisions for specific guidelines on how to achieve effective management of the electronic records.

Moreover, it was revealed from study findings that the National Records and Archives Management Policy (NRAMP) of 2011 does not reflect specific values,

principles, aims and objectives of electronic records management. In addition, it was the view of this study that the policy does not seem to provide required guidance which is expected to assign and define responsibilities and authorities on e-records management to public officers.

It also emerged from the findings that, comprehensive e-records management standard guidelines throughout their continuum was non-existent across the public service. The Registry Procedure Manual (2005); and the Guideline for procedures of managing Personnel records in the Public Service (2013) were found insufficiently covering the requirements for management of electronic records.

However, it was evident from the results that, the government through e-GA in collaboration with RAMD was in its final process of developing a number of standard guidelines including: e-Government interoperability framework; e-Government information Architecture; e-Government Infrastructure architecture; e-Government integration Architecture; e-Government security Architecture; and Guidelines and Standards for Integrated Health Facility Electronic Information Management system.

It was therefore the conclusion of this study that the existing legal, and regulatory framework governing e-records management in support of e-government implementation inadequate and ineffective as it lacks directives, guidelines, and policy or legislative requirements to assist government institutions manage electronic records effectively. It was however evident from the findings that the government of Tanzania is making efforts to develop standard guidelines for governing e-government issues in the public service.

6.3.4 Conclusion on Knowledge and skills of public servants on e-records management

The findings indicated that, although records staff who participated in the study had qualifications of a Diploma in Records Management, most of them had inadequate knowledge and skills on issues related e-records management systems including, metadata identification, procedures for e-records storage, distribution and disposition. It emerged from the study findings that the training on e-records was inadequate due to insufficient curriculum for the records management programme particularly on e-records management modules which was reported to be more theoretical than practical.

It was further revealed that, although most action officers were computer literate, they lacked knowledge on technical issues related to e-records management. Similarly, the ICT professionals in public service were reported to lack required knowledge and skills on records management. They denounced that although they were IT experts, they had not got any training on records management hence they were not conversant with processes and procedures involved in the life cycle of public records.

It can therefore be concluded from this study that, despite the prevalence of electronic records throughout the public service, most public servants including action officers are not conversant with procedures and practices of e-records management. This suggests that, effective implementation of e-records management systems will not be successful unless all stakeholders are acquainted with the techno-how on the same. In addition the government efforts on e-government

implementation would not be achieved if the existing gaps in ERM skills among stakeholders are not mitigated.

6.3.5 Conclusion on the contribution of RAMD in e-records and e-government in the public service

The study findings indicated that the generation of e-records as a result of e-transactions in public institutions in Tanzania were evident. However, the study established that RAMD has not been able to render advice on best practices to ensure the capture, preservation and continued accessibility of records identified of having archival value. RAMD seemed to have neglected some of its responsibilities as the e-records policies, procedures, systems, standards and practices designed to assist the creators, custodians and users of such records.

The reasons behind RAMD's failure towards fulfilling its legal responsibilities as identified by this study included: inadequate skills on e-records management among RAMD staff, lack of government-wide e-records management policy, guidelines and standards on e-records, inadequate facilities and slim budget allocated for RAMD business. In addition, the study indicated that high labour turnover at RAMD was a contributing factor to unsatisfactory fulfilment of RAMD obligations.

The findings also established that RAMD has not yet been able to receive, maintain and preserve any electronic records from the public sector because it does not have specialised equipments to cater for the expected high volumes of e-records. In that case, it was evident that e-records were being handled at individual MDAs with unregulated metadata to describe their structure and content.

It can therefore be concluded by this study that the low capability of RAMD in terms of infrastructure, tools and standard guidelines puts public digital records at the risk of being unauthentic, untrustworthy and inaccessible. Measures being undertaken by the government to enhance management of electronic records as a strategy to necessitate e-government in the country are not adequate. The availability e-records policies, procedures, systems, standards and practices designed to assist the creators, custodians and users of such records are crucial in realising proper management of e-records and eventually e-government implementation.

6.4 Recommendations

In order to enhance effective e-records management and e-government in the Tanzania public Service, the following recommendations are suggested:

6.4.1 Recommendations on the management of e-records generated in public offices

Research findings indicate that some public institutions have automated its business processes, while others remained manual though they generated and maintained records in e-format. However, records personnel in other offices were not directly involved with e-records. Instead, such format of records were normally dealt with by secretaries and IT staff. It was also evident that government institutions lack proper e-records management systems and qualified personnel as key factors towards e-government initiatives.

It is therefore recommended that records personnel, IT staff and secretaries should be trained on how to deal with electronic records. The training should be conducted

by the Tanzania Public Service in conjunction with RAMD, e-GA and any other external organizations proven to have necessary technology to cover such gaps as: hands on skills on creation, preservation, dissemination and disposition of records in a digital format. Further, knowledge and skills on issues pertaining e-records and its related systems including, ERM security, metadata identification, procedures for e-records storage, distribution and disposition need to be covered to mitigate the existing knowledge and skills gap.

The proliferation of digital information in public offices requires employees to be equipped with information and records management skills that can promote records creation, capture, management, use and re-use in electronic environments (Svärd, 2014:6). Since the majority records staff had inadequate knowledge and skills on issues pertaining e-records and its related systems including, metadata identification in e-records, procedures for e-records storage, distribution and disposition; trainings especially practical trainings on e-records are recommended by this study. The training should avoid methodologies based on the model of rote memorization that does not encourage critical thinking, problem solving and creativity (Katu, 2015). E-records management training should adhere to ISO 15489-1: 2016 standards which stipulates that:

...programmes for training in requirements for records management and specific practices should encompass the roles and responsibilities of, and be addressed to, all members of management, employees, contractors, volunteers and any other individuals responsible for the whole or part of a business activity of an organization in making records during their work and in capturing those records into records systems...

While training programmes can be designed and set up by institutions in cooperation with external organizations, ERM training materials can be adopted from IRMT. In

addition, ERM training to staff should go along with development of policies, standards and guidelines that would provide responsibilities and directives to all responsible staff in organizations. This should be spearheaded by e-GA in collaboration with RAMD.

It was evident from the study results that many public institutions have developed websites through which they generate electronic information and communicate with the public. However, it was revealed that RAMD has not yet created its own website. This study recommends RAMD to develop its own website so that it gets involved in managing public records generated by websites. Further, there is a general agreement that archival websites must provide basic information about themselves, their holdings and other information which may enable the user to determine whether a visit to the institution is worthwhile (Mnjama 2014). Nevertheless, cautions about the fluidity of web pages which can be available today and gone tomorrow should be taken care of by the government. It is estimated that the life span of websites is roughly 44 days should they not be regularly updated (Mnjama 2014:161).

The availability of ICT tools is the basic underlying factor for e-records management [ERM] (Luyombya 2010). However, it was evident that some public offices were more equipped in terms of technological infrastructures, ICT facilities and competent staff while others were lagging behind. Similarly, facilities for storage of digital records, including digital repositories were not yet available. This study therefore, recommends that e-GA should take initiatives to equip all public offices with recommended ICT tools and facilities that would enable effective management of e-records from the time of creation to their final disposition including digital repositories which are currently

missing.

The findings indicated that currently, there was no single official e-records management software installed in public offices. Rather it was observed that at present, government Ministries, Departments and Agencies (MDAs) manage e-records using some software which were either purchased from system vendors or developed by own IT staff to suit their institutions. It is therefore recommended that the government through RAMD and e-GA identifies specifications for e-records management software and instruct all public offices to purchase and install them. Such would enhance the uniformity and interoperability of information systems throughout the public service.

The findings of this study seem to indicate that, public offices under the study had no sufficient strategies for the long-term preservation of public information in electronic environment. This study therefore, recommends that RAMD which is mandated to oversee the management of all public records, should observe the digital preservation standards such as the Open Archival Information System Standard (OAIS) and the specifications for trusted digital repositories which are in the market and adapt them for effective preservation of public records in a digital format.

Standardized archiving systems like OAIS supported by e-records management policies, standards and guidelines would help into harmonising e-records management and e-government implementation across government institutions. Specification and functional requirements for digital archiving ensure effective e-records capture hence fulfilling the requirements for e-government. Being an open

source software as it is, the OAISS can be standardized by RAMD in collaboration with e-GA to facilitate the exchange of information and a uniform metadata across the Tanzanian government entities. As such, digital archiving system will provide for long-term preservation of electronic records hence supporting e-government over time.

6.4.2 Recommendations on E-government implementation status in the Tanzania public Service

The study findings indicated that e-Government implementation maturity level in Tanzania is low at between stage One (Publishing) and stage Two (Interactivity) as per World Bank E-Government Model (2003). Based on that, the study recommends for the adaptation and customization of the existing ISO Standards and Guidelines to suit the Tanzanian environment hence enhancing the adoption and implementation of interoperable, secure, reliable and cost effective e-Government solutions which are currently missing. Furthermore, policy and regulatory frameworks and capacity to ensure information security should be developed by the President's Office, Public Service Management (PO-PSM) in cooperation with RAMD and e-GA. This policy should cover such elements as: requirements for ERM systems for e-government adoption, ICT infrastructure requirements, long-term preservation of electronic records, web-based records management, framework for integrating electronic records in e-government, common data to be shared across government, partnership between RAMD, e-GA and records management professionals.

It was established by this study that, the Tanzania National Records and Archives Act, 2002 does not have provisions that provide directives, guidelines, and policy or

legislative requirements to assist government institutions manage electronic records effectively. In this regard, the study recommends some amendments in the legislation so as to provide directives, guidelines, and policy statements that would enhance effective e-records management. The amendments should be initiated by RAMD to capture various issues regarding e-records management including: a clear definition of e-records, provisions that clearly state the responsibilities of both the national archives (RAMD) and the records creating agencies (public institutions) on ERM from creation to disposition. The amendments should also include provisions that provide directives, guidelines, and policy or legislative requirements to assist government institutions manage electronic records effectively.

The proposed amendments will enhance e-records management in support of e-government in the following ways:

- *Definition of e-records:* The current definition of 'a record' as provided by the Records and Archives Management Act, 2002; does not specifically mention electronic records. Instead, e-records are included in the broader definition of a record where a phrase '*...recorded information regardless of form or medium...*' is assumed to have accommodated e-records. It is the view of the researcher that, such definition makes it difficult for e-records to be given a serious attention as compared to paper records. A clear definition of e-records and its elements need to be provided in the legislation so as to give e-records a status they deserve.
- *Provisions that clearly state the responsibilities on ERM:* Clear description of responsibilities on ERM issues for all stakeholders including RAMD, records officers and action officers in public institutions will ensure adherence to

procedures for e-records management practices from creation to the final disposition.

- *Directives, guidelines, and policies:* These provisions in the legislation will help into defining procedures for effective management of e-records within the public service. Similarly, terms and conditions accompanied with penalties for defaulters will oblige stakeholders of e-records to abide to rules and procedures for effective management of public records.

6.4.3 Recommendations on the role of RAMD in e-records management and e-government implementation in the public service

It has been established throughout this study that RAMD has not been able to render advice on best practices on e-records to public institutions to ensure the capture, preservation and continued accessibility of records identified of having archival value. The reasons for such a failure would seem to be inadequate skills on e-records management among RAMD staff, lack of government-wide e-records management policy, guidelines and standards on e-records, inadequate facilities.

This study therefore recommends the following:

- RAMD should design a special training programme for its staff to be equipped with skills on ERM. The package should cover on issues pertaining e-records and its related systems including, metadata identification in e-records, procedures for e-records storage, distribution and disposition. The training will be able to enhance e-records in such a way that respondents will now be able to create, manage, store, distribute and dispose of e-records. Effective management of e-records would ensure the availability of recorded information generated as a result of e-government transactions.

- In collaboration with e-GA, RAMD should adapt and customize the existing government-wide e-records management policy, guidelines and standards; to suit the Tanzanian environment. Such would facilitate effective e-records management and e-government implementation.
- To identify and adapt policies, guidelines, processes and procedures to preserve electronic records in the public sector. These tools would help into efficiency in terms of: records capture, metadata identification, security and integrity of records, preservation of the electronic records and digital archiving. The adaption and customization of these tools will be the responsibility of RAMD and e-GA.
- The government should take initiatives to benchmark with similar government institutions where e-government initiatives have been implemented for successful implementation of e-government. Malaysia and Singapore are examples of countries that are known to have successfully implemented such programmes.

6.5 Proposed framework for e-records management in support of e-Government in the Tanzania Public Service

From the study findings and recommendations, this study comes up with a framework for e-records management in Tanzania a key output of the study. The study has established that effective management of electronic records is a key driver to e-government efficiency in Tanzania. The proposed framework therefore provides a structure that can enable a collaborative approach between e-government services and e-records management practices in Tanzania. The framework is meant to ensure that there is an effective management of e-records hence supporting e-government.

The framework was adapted from Ambira (2017) whose study was looking at “A Framework for management of electronic records in support of e-government in Kenya.” Although most of the elements of from Ambira’s framework seemed to fit in this study, the researcher added or made some improvements on the same. For instance on the element of *e-government design*, Ambira suggests that the primary objective is service delivery. The current study improved on the objective by adding the word *effective service delivery*. This implies that, even before e-governance implementation, the government still serves her citizens. Therefore, e-government comes in just to improve service delivery especially when e-transactions are conducted in an effective manner as compared to manual systems.

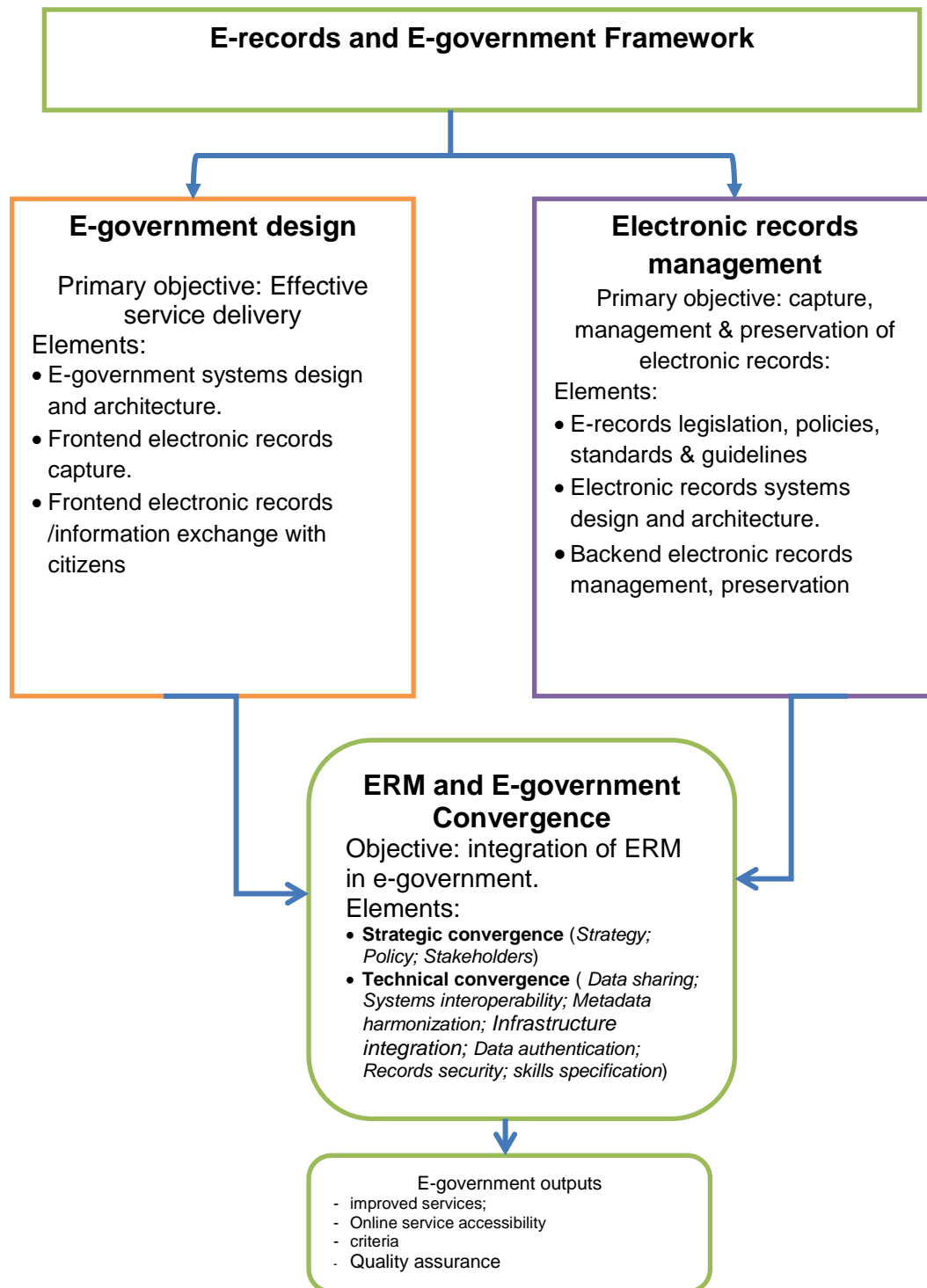
In another scenario, Ambira (2017) proposed the management of electronic records as one of the major components of the framework. In this component Ambira (2017:338) identifies only two elements of this component namely: “Electronic

records systems and architecture, and backend electronic records management preservation”. The proposed construct from the researcher on this particular component was an addition of *e-records legislation, policies, standards and guidelines* as crucial elements for effective management of e-records. The researcher was of the view that, without these governing tools, the management of e-records may become disastrous.

Moreover, this study has introduced new constructs that Ambira’s study missed out in the component of *Responsibilities and implementation*. According to Ambira (2017:346), the implementation of the model in Government shall be a joint responsibility between the records management officers (RMOs) and the ICT officers. This study suggests that the implementation of the model in the public sector should be a joint responsibility between the e-Government Agency (e-GA), Heads of Public institutions and Parastatals in collaboration with the Records and Archives Management Department (RAMD). Junior supporting staff including records management officers (RMOs), Office secretaries and the IT staff shall be supporting the implementation.

Figure 6.1 presents a framework for e-records management in support of e-government as adapted from Ambira (2017).

Figure 6. 1 Proposed framework for management of electronic records in support of e-government in Tanzania



6.5.1 Key Components of the Framework

This section explains the key components of the framework. Within the proposed framework, effective service delivery has been considered as the main purpose of e-government. On the other hand, the e-government platforms form the frontline that interfaces with the citizens while ERM systems form the backend operations that support e-government to serve the citizens effectively. The framework considers e-records management as a crucial factor in facilitating e-service delivery.

6.5.2 E-government Strategy

E-government strategy plays an important role in defining a strategic focus for e-government design and delivery in a country. The e-government strategy should be developed to define the following:

- The objectives of e-government.
- The scope of e-government across government functions and the extent to which e-government would transcend government services.
- Success measures for government, citizens and businesses.
- Services to be delivered on e-government.
- The growth plan for the e-government penetration in government.
- Policies, standards, best practices and legislative anchors of e-government.
- Infrastructure and key players (and partners) in e-government.
- Model of e-government delivery.
- Standardisation of e-government services across the Government institutions in Tanzania.
- The role of electronic records management in supporting e-government.

6.5.2.1 E-government Design

The e-government design component would define service delivery specifications within e-government.

Three elements would constitute this component, namely: e-government systems design and architecture; frontend electronic records capture and frontend electronic records /information exchange with citizens.

The e-government systems design and architecture refers to the development, implementation and configuration of the e-government platforms. This element would provide technical specifications and requirements for the e-government platforms. It will also look at e-government models, e-government readiness, and ICT infrastructure for e-government. It is at this stage that the e-government requirements on electronic records will be determined to scope what e-data and records will be required to support the service including the desired formats of the records.

Frontend data capture refers to defining the parameters for capturing data by citizens onto the e-government. It would be concerned with the design of the e-government interface to enable online capture of data onto e-government system by citizens. Whereas this is an element on the design and configuration of e-government platform, it is a key element from ERM viewpoint because it is at this stage that issues of metadata and interfacing with other systems for data capture are defined. The design of interface should be simple for ordinary citizen to use. It should also be versatile to be applicable on both computers and mobile devices.

Frontend records/information exchange with citizens relates to citizens being able to pull data from the e-government platform. It would therefore concern itself with the capability of the e-government platform to output required data to citizens. This would include issues like the formats of display, exportation of data into other formats, interfacing with citizen emails, linking with mobile devices and general interactivity between the citizen and the e-government service in exchanging information. The development of the e-government component will be the responsibility of e-Government Agency (e-GA).

6.5.2.2 The component of E-records Management.

This component defines the requirements for effective ERM that would ensure adequate management of electronic records within the e-government environment. A Situational analysis by the government through RAMD, and E-GA should be conducted to analyse the existing position of e-records in the public service. They should involve other stakeholders including records professionals, archivists, ICT experts, librarians, accounting officers and the general public, the government should identify the strengths, weaknesses, opportunities and threats of e-records. When designing the ERM component, the following technical requirements should be considered:

- Capture of various formats of records.
- Metadata of records.
- Security and integrity of records.
- Retention-scheduling of the electronic records.
- Appraisal and disposition of the electronic records.
- Authentication of records.
- Interoperability with business systems to avoid duplication of data.

- Preservation of the electronic records.
- Accessibility and dissemination of electronic records
- Digital archiving.
- The principles and functional requirements for electronic records management systems.

6.5.3 Management of Electronic records and E-government Convergence

The convergence point is the point at which the unique requirements defined at e-government and ERM components are merged to build a harmonised approach to e-government service delivery. Duplicate requirements are merged. Complementary requirements are identified for alignment. Supplemental requirements are identified to define areas of efficiency and economy. Unique requirements are determined and their relationship with the rest established. The convergence should be on two fronts: strategic and technical convergence.

1. Strategic convergence

Strategic convergence refers to the blending of e-government objectives and ERM objectives as contemplated in the e-government and ERM components' scoping to provide guiding principles that inform the direction of e-government implementation. A working partnership between RAMD and e-GA is necessary so as to anchor ERM into e-government and e-government into ERM and provide strategic view of ERM into the e-government environment. Key outputs of strategic convergence will be:

- Harmonised strategy that capture the requirements for both e-government and ERM that define the relationship between the two.
- Policy directions for aligning ERM and e-government.

- Clear definition of ERM and e-government stakeholders and their respective roles in driving effective e-government.
- Standards, models and best practice indicators for managing electronic records within the e-government space.
- Framework for collaboration between electronic records and e-government stakeholders
- Specification of ownership of the ERM functions within e-government in line with the e-government service delivery objectives.
- Benchmarks for electronic records services that would help enhance quality of ERM.

Strategic convergence should be a shared responsibility between e-government professionals and records management professionals. These would be experts from E-GA, RAMD, ICT units and RMUs.

2. Technical Convergence

Technical convergence relates to the interfacing/interoperability between the e-government and ERM systems (Ambira 2017). At this particular stage, the platforms for managing electronic records and those of e-government are linked to ensure seamless management of electronic records in support of e-government through the following:

- *Data sharing* – which refers to mechanisms for push and pull of data from the e-government platforms to the electronic records systems and vice versa. At this stage decisions should be made which data should

be shared across the e-government and ERM platforms, their formats, modes of authentication and the significance of the data.

- *Systems interoperability.* This would involve interfacing of the e-government application service with the database for the EDRMS. The objective of interoperability is to achieve data exchange that is scoped in the data sharing element above.
- *Metadata harmonization.* During metadata harmonization, a set of terms for describing records within the e-government, electronic records and business systems is standardised. During data interchange between e-government and electronic records systems, data is exchanged based on linked database fields. The fields are defined to accept data of certain formats and field lengths. Therefore harmonization of metadata becomes important to achieve the seamless interchange of data.
- *E-data/records authentication.* Mechanisms for authenticating data and electronic records must be put in place to eliminate consumption of services based on forged or fraudulent records. The objective of this stage is to ensure accurate data is captured and used to dispense government services. This element will be important in enhancing transparency and accountability.

- *Records security and integrity.* The security and integrity of records overtime must be established across e-government and ERM systems to ensure the records remain valid and reliable.
- *Electronic records preservation.* In order to avoid alteration of e-records, preservation of records generated as a result of e-government services should be done at the ERM backend side. Email archiving systems can be interfaced with ERM to enhance preservation of emails.
- *Integration of facilities and equipment.* harmonization ICT infrastructures across e-government and ERM systems must be conducted so as to ensure uniform operating level to achieve operational resilience and economy in ERM and e-government. This integration would include both hardware and software harmonization. Stable and reliable technological facilities and equipment would ensure smooth management of e-records throughout the ERM continuum. The government therefore must ensure that facilities such as EDRMS and digital repositories are available to ensure long-term preservation and access to electronic information overtime.
- *Skills specification.* Minimum skills and competencies for managing electronic records must be set for both records management staff and IT professionals in public offices. This would help into linking the required expertise in ERM and support of e-government setup. All staff involved in managing-records need to be equipped with e-records

management skills and they should work in partnership with the ICT department from the designing, implementation and operationalization stages of the record keeping system so that records keeping functionalities are included.

6.5.4 E-government Outputs

The e-government outputs refers to expected e-services from government to stakeholders including citizens, employees, and business entities. At this stage, the service levels and desired qualities are defined. This would include scope of information to be provided, formats of information output, channels of accessing information e.g. Internet and mobile computing, information/data output standards, target consumers of each service. Monitoring and evaluation mechanisms should also be defined under this element.

6.5.5 Responsibilities for Implementations

It is suggested that the implementation of this model in public office shall be a joint responsibility between the e-Government Agency (e-GA), Heads of Public institutions and Parastatals in collaboration with the Records and Archives Management Department (RAMD). This task should not be left to junior supporting staff including records management officers (RMOs), Office secretaries and the IT staff.

6.6 Areas for Further research

Research is a process and has to go on as a way of answering and generating questions. In the course of this research, a number of issues have been revealed but need further attention as presented below.

1. The findings of this study have indicated some light on the training needs of the records custodians, action officers, IT staff and office secretaries in e-records management. Based on this fact, there is a need for more specific research on training needs of the employees in the public sector of Tanzania designed for improving the management of e-records for effective e-service delivery.
2. Unavailability of approved electronic records management systems for public sector records has been identified as one of the major challenges inhibiting effective management of digital records and e-government implementation in Tanzania. There is therefore a need for a research to determine what would be ideal functional requirements for suitable software for managing electronic records in Tanzania.
3. It has emerged in this study that there existed no policies, standards and guidelines across the government institutions in Tanzania to support management of electronic records and implementation of e-government initiatives. There is therefore a need for a further research to determine the adoption/development of best practice policies, standards and guidelines for effective ERM and e-government implementation within the Tanzania public service.

4. It has also been revealed in this study that the RAMD has been unable to render advices and services regarding public sector e-records management due to inadequate staff knowledge, skills and facilities necessary for ERM and digital archives. In addition, the adequacy of curriculum on records management in public institutions was doubted. There is therefore a need for a thorough research to determine the capability of RAMD and adequacy of curriculum for records programmes in Tanzania.

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APPENDICES

APPENDIX 1: LIST OF GOVERNMENT MINISTRIES PRIOR TO TANZANIA NATIONAL ELECTIONS OF 2015

S/N	Name of Ministry
1	Ministry of Agriculture, Food Security and Cooperatives
2	Ministry of Communication, Science and Technology
3	Ministry of Community Development, Gender and Children
4	Ministry of Defence and National Service
5	Ministry of East African Cooperation
6	Ministry of Education and Vocational Training
7	Ministry of Energy and Minerals
8	Ministry of Finance and Economic Affairs
9	Ministry of Foreign Affairs and International Co-operation
10	Ministry of Health and Social Welfare
11	Ministry of Home Affairs
12	Ministry of Industry and Trade
13	Ministry of Information, Culture, Youth and Sports
14	Ministry of Justice and Constitutional Affairs
15	Ministry of Labour and Employment
16	Ministry of Lands, Housing and Human Settlement
17	Ministry of Livestock Development and Fisheries
18	Ministry of Natural Resources and Tourism
19	Ministry of Transport
20	Ministry of Water and Irrigation
21	Ministry of Works
22	Ministry of Good Governance
23	Ministry of Public Service Management
24	Ministry of Social Relations and Co-ordination
25	Ministry of Environment
26	Ministry of Union Affairs
27	Ministry of Investment and Empowerment
28	Ministry of Policy, Co-ordination and Parliamentary Affairs
29	Ministry of Regional Administration and Local Government

**APPENDIX 2. MINISTRIES UNDER THE NEW GOVERNMENT (PRESIDENT
MAGUFULI'S ADMINISTRATION).**

S/N	Name of Ministry
1	Ministry of Regional Administration, Local Government
2	Ministry of Civil Service and Good governance
3	Ministry of Union Affairs and Environment
4	Ministry of Policy, Parliamentary Affairs, Labour, Employment, Youth and the Disabled
5	Ministry of Agriculture, Livestock and Fisheries
6	Ministry of Constitutional Affairs and Justice
7	Ministry of Defence and National Service
8	Ministry of Education, Science, Technology and Vocational Training
9	Ministry of Energy and Minerals
10	Ministry of Finance and Planning
11	Ministry of Foreign Affairs, East African Community, Regional and International Cooperation
12	Ministry of Health, Community Development, Gender, Seniors and Children
13	Ministry of Home Affairs
14	Ministry of Industry, Trade and Investment
15	Ministry of Information, Culture, Arts and Sports
16	Ministry of Lands, Housing and Human Settlements
17	Ministry of Natural Resources and Tourism
18	Ministry of Water and Irrigation
19	Ministry of Works, Transport and Communication

APPENDIX 3: ETHICAL CLEARANCE LETTER



Department of Information Science

College of Human Sciences

Date: 22 April 2014

Proposed title: A framework for e-records and e-government implementation in the Tanzania Public Service

Principal investigator: Gwakisa Andindilile Kamatula

Student number: 50103857

Reviewed and processed as: Class approval (see paragraph 10.7 of the UNISA. Guidelines for Ethics Review)

Approval status recommended by reviewers: Approved

The Research Ethics Committee of the Department of Information Science in the College of Human Sciences at the University of South Africa has reviewed the proposal and considers the methodological, technical and ethical aspects of the proposal to be appropriate to the tasks proposed. Approval is hereby granted for Gwakisa Andindilile Kamatula, (50103857) to proceed with the study in strict accordance with the approved proposal and the ethics policy of the University of South Africa.

In addition, the candidate should heed the following guidelines:

- To only start this research study after obtaining informed consent from the interviewees
- To carry out the research according to good research practice and in an ethical manner
- To maintain the confidentiality of all data collected from or about research participants, and maintain security procedures for the protection of privacy
- To notify the committee in writing immediately if any adverse event occurs.

Kind regards

A handwritten signature in black ink, appearing to be "SC Ndwandwe", written over a horizontal line.

Mr SC Ndwandwe
Chairperson: Research Ethics Committee
Department of Information Science
Tel + 2712 429 6037



University of South Africa
Preller Street, Muckleneuk Ridge, City of Tshwane
PO Box 392 UNISA 0003 South Africa
Telephone: +27 12 429 3111 Facsimile: +27 429 12 429 4150
www.unisa.ac.za

APPENDIX 4: REQUEST FOR DATA COLLECTION AT PO-PSM

Tanzania Public Service College (TPSC),
P.O. Box 1051,
MTWARA.
21st July, 2015.

The Permanent Secretary,
President's Office, Public Service Management,
P.O. Box 2483,
DAR ES SALAAM.

Sir,

RE: Request to conduct a research at the President's Office, Public Service Management (PO, PSM).

The above caption refers.

I, Gwakisa Kamatula who is an employee at the Tanzania Public Service College (TPSC) and currently a PhD student at the University of South Africa has decided to write a thesis on the topic "***A Framework for e-Records and e-Government Implementation in the Tanzania Public Service***". In this study PO, PSM has been sampled as one of the five key respondents. This therefore, requires that I conduct interviews to some of your staff and critically examine the current status of electronic records management and e-government implementation in the Tanzania Public Service. Moreover, I would like to personally observe current practices and determine a framework under which electronic records are generated and managed in support of e-government initiatives.

Kindly assist me by allowing some of your officials purposely sampled at PO, PSM to be interviewed in less than an hour per each tool and respondent from the **1st of August, 2015**. Any information they will give will be used for academic purposes only and will be kept confidential and anonymous.

It is hoped that the results of this study will assist in completing my Doctoral study as well as assisting the Government of Tanzania to develop a best practice framework for the management of e-records and e-government implementation. Attached please find an ethical clearance letter from the University of South Africa for your important reference.

Your assistance will be highly appreciated. If clarifications are needed, I can be contacted using contact details below:

Yours Sincerely,

Gwakisa Kamatula
Tanzania Public Service College
Cell: 0755 853 477/ 0713 070 370
Email:gkamatula@gmail.com

**APPENDIX 5: A LETTER OF PERMISSION TO CONDUCT RESEARCH AT
PO-PSM**

THE UNITED REPUBLIC OF TANZANIA

PRESIDENT'S OFFICE

Telegrams "UTUMISHI", DSM.
Telephone: 2118531/4
Fax: 2131365



PUBLIC SERVICE MANAGEMENT,
P.O. Box 2483,
DAR ES SALAAM.

In reply please quote:

Ref. No. AB.252/287/01
Mr. Gwakisa Kamatula,
Tanzania Public Service College,
Po. Box 1051,
MTWARA.

21st July, 2015

**RE : ACCEPTANCE FOR COLLECTING DATA ON "A FRAMEWORK
FOR e-RECORDS AND e-GOVERNMENT IMPLEMENTATION IN THE
TANZANIA PUBLIC SERVICE"**

Refer to your letter dated on 21st July, 2015 on the subject above.

Kindly be informed that you have been accepted to collect data for the Thesis on Topic 'A framework for e-Records and e-Government Implementation in the Tanzania Public Service' at this office. The said student should report to the Department of Administration and Personnel for further instructions.


S. K. Abdallah

**For: Permanent Secretary
(PUBLIC SERVICE MANAGEMENT)**

C.c Mr. Gwakisa Kamatula

APPENDIX 6: REQUEST FOR DATA COLLECTION AT RAMD

Tanzania Public Service College (TPSC),
P.O. Box 1051,
MTWARA.
21st July, 2015.

The Director General,
President's Office, Public Service Management,
Records and Archives Management Division (RAMD),
P.O. Box 2006,
DAR ES SALAAM.

Sir,

RE: Request to conduct a research at RAMD.

The above caption refers.

I, Gwakisa Kamatula who is an employee at the Tanzania Public Service College (TPSC) and currently a PhD student at the University of South Africa has decided to write a thesis on the topic "***A Framework for e-Records and e-Government Implementation in the Tanzania Public Service***". In this study RAMD has been sampled as one of the five key respondents. This therefore, requires that I conduct interviews to some of your staff and critically examine the current status of electronic records management and e-government implementation in the Tanzania Public Service. Moreover, I would like to personally observe current practices and determine a framework under which electronic records are generated and managed in support of e-government initiatives.

Kindly assist me by allowing some of your officials purposely sampled at RAMD to be interviewed in less than an hour per each respondent from the **1st of August, 2015**. Any information they will give will be used for academic purposes only and will be kept confidential and anonymous.

It is hoped that the results of this study will assist in completing my Doctoral study as well as assisting the Government of Tanzania to develop a best practice framework for the management of e-records and e-government implementation. Attached please find an ethical clearance letter from the University of South Africa for your important reference.

Your assistance will be highly appreciated. If clarifications are needed, I can be contacted using contact details below:

Yours Sincerely,

Gwakisa Kamatula
Tanzania Public Service College
Cell: 0755 853 477/ 0713 070 370
Email:gkamatula@gmail.com

**APPENDIX 7: PERMISSION LETTER TO CONDUCT RESEARCH AT THE
RECORDS AND ARCHIVES MANAGEMENT DEPARTMENT
(RAMD)**

**THE UNITED REPUBLIC OF TANZANIA
PRESIDENT'S OFFICE**

Telephone: (+255) 22 2152875
Fax: : (+255) 22 2151279
Email: ramd@nyaraka.go.tz



Records and Archives Management Department,
3 Vijibweni Street,
P.O. Box 2006,
DAR ES SALAAM.

In reply please quote:

Ref. No. EA.22/243/01/139

24th July, 2015

Gwakisa Kamatula,
Tanzania Public Service College (TPSC),
P.O. Box 1051,
MTWARA.

RE: REQUEST TO CONDUCT RESEARCH

Please refer your letter of 21st July, 2015.

2. The President's Office, Records and Archives Management Department is pleased to inform you that you have been accepted to conduct your research as per your request.
3. The department will provide you with the necessary support.

A handwritten signature in blue ink, appearing to read 'J. G. Marandu'.

J. G. Marandu

For: **ACTING DIRECTOR**
(RECORDS AND ARCHIVES MANAGEMENT DEPARTMENT)

APPENDIX 8: REQUEST FOR DATA COLLECTION AT E-GA

Tanzania Public Service College (TPSC),
P.O. Box 1051,
MTWARA.
21st July, 2015.

The Chief Executive Officer,
Electronic Government Agency (e-GA),
President's Office, Public Service Management,
P.O. Box 4237,
DAR ES SALAAM.

Sir,

RE: Request to conduct a research at e-GA.

The above caption refers.

I, Gwakisa Kamatula who is an employee at the Tanzania Public Service College (TPSC) and currently a PhD student at the University of South Africa has decided to write a thesis on the topic "***A Framework for e-Records and e-Government Implementation in the Tanzania Public Service***". In this study e-GA has been sampled as one of the five key respondents. This therefore, requires that I conduct interviews to some of your staff and critically examine the current practices of electronic records management and determine a framework under which they are being generated and managed in support of e-government initiatives in the Tanzania Public Service.

Kindly assist me by allowing some of your officials purposely sampled at e-GA to be interviewed in less than an hour per each respondent from the **1st of August, 2015**. Any information they will give will be used for academic purposes only and will be kept confidential and anonymous.

It is hoped that the results of this study will assist in completing my Doctoral study as well as assisting the Government of Tanzania to develop a best practice framework for the management of e-records and e-government implementation.

Attached please find an ethical clearance letter from the University of South Africa for your important reference.

Your assistance will be highly appreciated. If clarifications are needed, I can be contacted using contact details below:

Yours Sincerely,

Gwakisa Kamatula
Tanzania Public Service College
Cell: 0755 853 477/ 0713 070 370
Email: gkamatula@gmail.com

**APPENDIX 9: A LETTER OF PERMISSION TO CONDUCT RESEARCH AT
THE TANZANIA E-GOVERNMENT AGENCY (e-GA)**



**THE UNITED REPUBLIC OF TANZANIA
PRESIDENT'S OFFICE, PUBLIC SERVICE MANAGEMENT
e-GOVERNMENT AGENCY**

Samora, Avenue, ExTelecoms House, 2nd Floor, P.O Box 4273, Dar es Salaam, Tel: +255222129868/74, Fax: +255222129878,
General eMail: info@ega.go.tz, CEO eMail: ceo@ega.go.tz, Website: www.ega.go.tz



In reply please Quote:

Ref: DA.228/310/01/36

28th July, 2015

Mr. Gwakisa Kamatula,
Tanzania Public Service Collage,
P.O Box 1051,
MTWARA.

Re: REQUEST TO CONDUCT A RESEARCH AT eGA

Please make reference to your letter dated 21st July 2015 regarding the above subject.

2. I am pleased to inform you that your request has been granted. However your requested to avail this Office with research tools to be used, the type and number of respondents you will interview in order to enable our Office to arrange for the logistics of the exercise.

Thank you for your continued cooperation.

H.Badi

For **CHIEF EXECUTIVE OFFICER**

APPENDIX 10: REQUEST FOR DATA COLLECTION AT TCRA

Tanzania Public Service College (TPSC),
P.O. Box 1051,
MTWARA.
21st July, 2015.

The Chief Executive Officer,
Tanzania Telecommunications Regulatory Authority (TCRA)
President's Office, Public Service Management,
P.O. Box 4237,
DAR ES SALAAM.

Sir,

RE: Request to conduct a research at TCRA.

The above caption refers.

I, Gwakisa Kamatula who is an employee at the Tanzania Public Service College (TPSC) and currently a PhD student at the University of South Africa has decided to write a thesis on the topic "***A Framework for e-Records and e-Government Implementation in the Tanzania Public Service***". In this study e-GA has been sampled as one of the five key respondents. This therefore, requires that I conduct interviews to some of your staff and critically examine the current practices of electronic records management and determine a framework under which they are being generated and managed in support of e-government initiatives in the Tanzania Public Service.

Kindly assist me by allowing some of your officials purposely sampled at e-GA to be interviewed in less than an hour per each respondent from the **1st of August, 2015**. Any information they will give will be used for academic purposes only and will be kept confidential and anonymous.

It is hoped that the results of this study will assist in completing my Doctoral study as well as assisting the Government of Tanzania to develop a best practice framework for the management of e-records and e-government implementation.

Attached please find an ethical clearance letter from the University of South Africa for your important reference.

Your assistance will be highly appreciated. If clarifications are needed, I can be contacted using contact details below:

Yours Sincerely,

Gwakisa Kamatula
Tanzania Public Service College
Cell: 0755 853 477/ 0713 070 370
Email: gkamatula@gmail.com

APPENDIX 11: AN E-MAIL PRINT-OUT FROM AMBIRA PERMITTING THE RESEARCHER TO ADAPT HIS FRAMEWORK FOR E-RECORDS IN SUPPORT OF E-GOVERNMENT IN KENYA

Print

<https://mg.mail.yahoo.com/neo/launch?action=showLetter&umid=...>

Subject: Re: Permission to adapt your framework
From: gwakisa kamatula (gkamatula9@yahoo.com)
To: cleophasambira@gmail.com;
Date: Friday, February 17, 2017 1:55 PM

Thanks Dr.
Good day!

On Friday, February 17, 2017 11:50 AM, cleophas ambira <cleophasambira@gmail.com> wrote:

Dear Kamatula,

Your email refers.

I have NO objection to your adoption of my proposed model for your study.

Best wishes as you move to completion.

Regards,

Cleophas

On Feb 17, 2017 10:51, "gwakisa kamatula" <gkamatula9@yahoo.com> wrote:

Dear Dr. Ambira

Based on the fact that we conducted similar studies in different countries; and that your proposed framework for e-records in support of e-government in Kenya addresses all key aspects that mine was supposed to cover, my supervisor (who was also your second supervisor-Prof. Kemoni) thought that I should adapt your framework with slight changes though. In order to conform with copyright issues, I am kindly asking you to write me an official email allowing me to adapt your piece of work. The email will form part of appendices in my thesis.
Thank you!

APPENDIX 12: PRE-TEST CHECKLIST OF INTERVIEW SCHEDULES

- i. Action officers Service;
 - ii. Records personnel
 - iii. System Administrators/IT staff,
 - iv. Records and Archives Management Department (RAMD) senior officers (Directors, Archivists)
 - v. E-GA officers
1. Are there any questions with typographical errors? If Yes, please specify them on the schedules;
 2. Are there questions with misspelt words? If Yes, please indicate them on the schedules;
 3. Do you understand the concepts of e-government and e-records? If Yes, please explain
 4. Are the words used appropriate? If Not, please indicate them
 5. Are there any questions that are ambiguous or unclear? If Yes, please indicate them on the schedules
 6. Do the questions on the interview schedules adequately cover the study objectives? If Not, provide your suggestions
 7. Do the questions on the interview schedules flow? If Not, please provide some suggestions
 8. Do you find the number of questions/the length of schedules adequate?
 9. Is the instrument layout clear? If Not, provide some suggestions
 10. Please provide any suggestions that would improve the effectiveness of the interview schedules (kindly indicate them on the schedules)

Thank you for your time in pre-testing the research instruments. Please let me have your feedback using the following email: gkamatula@yahoo.com or +255755853477

APPENDIX13: INTRODUCTORY LETTER TO RESPONDENTS

Dear respondent

I am Gwakisa Kamatula, a PhD student at the University of South Africa (UNISA). I am currently pre-testing my interview schedules on my study titled ***A Framework for e-Records and e-Government implementation in the Tanzania Public Service.*** This is in partial fulfilment for the requirements for Doctor of Literature and Philosophy (DLitt et Phil) in Information Sciences.

The study aims to establish the importance of e-records readiness for successful implementation of e-government initiatives in Tanzania. The study further seeks to establish whether the Public Service in Tanzania has a sound electronic records management system in support of e-government. The expected output of this study is the development of a sound framework for effective management of e-records and implementation of e-government programme in the Tanzanian Public Services.

The study focuses on the Public Service of Tanzania. No deception is involved and the study involves no risks of respondents. All responses will be treated as confidential and in no case will responses from individual respondents be identified.

If you require any clarification pertaining to the study, please feel free to contact me on: +255 755 853 477 or gkamatula9@yahoo.com or gkamatula@gmail.com or my supervisor Prof. Henry Kemoni at hkemoni@yahoo.com

Thank you.

Date of Interview----- Place of Interview-----

APPENDIX 14: INTERVIEW SCHEDULE FOR ACTION OFFICERS

Department	
Designation	
Number of years in the current position	
Highest level of academic qualification	

1. What are the functions of your Dept/Ministry?
2. What are the objectives of e-government?
3. What kind of e-government strategy exists within the public service?
4. To what extent does e-government strategy (if any), address e-records as a result of e-service delivery?
5. How does e-government strategies support or hinder e-workflow in your office?
6. What kind of government services are available online?
7. Please comment on the existence of the following forms of e-government interaction in Tanzania:
 - a) Government to government
 - b) Government to citizen
 - c) Government to business
 - d) Government to employees
8. What factors explain the current form of e-government interaction?
9. Please comment on the status of the following maturity phase of e-government as they apply to Tanzania.
 - a) Information
 - b) Interaction
 - c) Transaction
 - d) Transformation
10. What factors explain the current state of e-government maturity phase in Tanzania?

11. What resources and skills would your Ministry/Department require so that you can effectively manage e-records and successfully implement e-government?
12. Does your office have a regular budget to support records and information management programmes and staff training?
13. What kind of training does the Records and Archive Management Department (RAMD) in the management of electronic records in your Ministry/Department/Agency?
14. What kind of challenges does your office face in managing e-records?
15. How do these challenges undermine the implementation of e-government?
16. What recommendations would you propose in order to enhance the management of e-records in support of e-government implementation in Tanzania?

Thank you

APPENDIX 15: INTERVIEW SCHEDULE FOR RECORDS STAFF

Department	
Designation	
Number of years in the current position	
Highest level of academic qualification	

1. Do you handle any e-records in your registry? If Yes, please state them
2. In your daily discharge of duties, do you ever manage official e-records?
3. If Yes, to (1) above, what kind of electronic records are generated and received at your office?
4. Are you involved in the management of e-records during their continuum? If Yes, please explain the extent of involvement with regard to the following:
 - a) creation aspect
 - b) capture aspects
 - c) organizing aspects
 - d) pluralism
5. What kind of storage (if) any is available for e-records?
6. How are e-records classified in terms of:
 - a) security levels
 - b) arrangement and organization
7. What kind of strategy is in place for the long-term preservation of e-records?
8. How are electronic records with enduring value archived?
9. What kinds of audit trail systems exist for e-records?
10. How do you keep track of e-records alteration, deletion or removal from storage?
11. How do you deal with e-records which are not being used or required?
12. What kind of application software do you have for managing e-records?
13. How does the current status of e-records management promote or hinder e-government implementation?
14. What laws are you aware of that govern e-government services in Tanzania?
15. What kind of policies or guideline are in place regarding e-records and e-government issues?

16. To what extent does the current e-records legal framework promote or hinder e-government implementation?
17. What were your entry qualifications into this job?
18. What kind of formal training (if any) do you have in e-records management?
19. Please comment on the adequacy or inadequacy of your training with regard to the management of e-records
20. What skills would your office or you in particular require so that you can effectively manage e-records in support of e-government?
21. How does the current levels of staff training promote or hinder e-government implementation?
22. Explain the level of involvement of RAMD in the management of electronic records of your Ministry /Department?
23. What challenges do you face in managing e-records?
24. What recommendations would you propose to enhance the management of e-records in support of e-government implementation in Tanzania?

Thank you

APPENDIX 16: INTERVIEW SCHEDULE FOR SYSTEM ADMINISTRATORS/IT STAFF

Department	
Designation	
Number of years in the current position	
Highest Academic qualification	

1. What is the mandate of your unit?
2. Is your Unit concerned with management of e-records during their continuum? If
 Yes, please explain the extent of involvement with regard to the following:
 - a) creation aspect
 - b) capture aspects
 - c) organizing aspects
 - d) pluralism
3. How does the management of e-records support e-government?
4. Explain the e-government initiatives (if any) that are taking place in the
 Ministry/Department/Agency?
5. What e-government services are currently online?
6. What kind of electronic systems do you currently have running in the
 organization?
7. What strategies do you use to ensure accessibility of electronic information
 overtime?
8. What security standards does your office have in place on issues associated with
 online transactions?
9. Who is responsible for overseeing the design and implementation of electronic
 information systems?
10. How does the designed body identified above relate with the records
 management unit?

11. What forms of electronic records are generated and / or received?
12. What application software do you use in managing e-records?
13. Which business functions have been automated in your
Ministry/Department/Agency?
14. What measures do you have in place measures to ensure the security and
integrity of electronic records ?
15. How do you ensure transmission of data is secure?
16. What are the challenges that users of the system encounter which could impact
on e-records creation and maintenance?

Thank you

**APPENDIX 17: INTERVIEW SCHEDULE FOR NATIONAL ARCHIVES
DIRECTOR/ASSISTANT DIRECTORS/ARCHIVISTS.**

Department	
Designation	
Number of years in the current position	
Highest level of academic qualification	

1. What is the mandate of the National Archives?
2. Is the National archives involved in advising Ministries/Departments and Agencies to manage e-records? If Yes, please explain
3. Please comment on the status of e-records management in the Public Service of Tanzania in the following aspects:
 - a) Strengths
 - b) weaknesses
 - c) Opportunities
 - d) Threats
4. Are there any ERMS running in the Public Service? if Yes, please explain
5. Where there are no ERMS, what system exist for the management of electronic records?
6. How is the National Archives preparing the Ministries and Departments to manage e-records in support of e-government?
7. What challenges does the National Archives face with regards to e-records management in support of e-government implementation in the public service?
8. What recommendations would you make to enhance effective e-records management and e-government implementation in the public service?

Thank you

**APPENDIX 18: INTERVIEW SCHEDULE FOR THE TANZANIA ELECTRONIC
GOVERNMENT AGENCY (EGA) OFFICERS**

Department	
Designation	
Number of years in the current position	
Highest academic qualification	

1. What is the role of EGA?
2. What are the objectives of e-government?
3. What is e-GA's action plan to ensure effective implementation of e-government in Tanzania?
4. What are the current levels of e-government interaction?
5. What e-government maturity level is the country in currently?
6. How does your office support e-government implementation strategies within the public service?
7. What strategies has your office put in place to bring awareness to the majority Tanzanians about e-government transformation?
8. What kind of services can citizens access online through your website?
9. To what extent does the current e-records management status support or undermine e-government implementation strategy?
10. To what extent does the current national ICT policy give guidance on issues pertaining to e-records and e-government?
11. What are the challenges that e-GA face in rolling out e-government strategy?
12. What strategies are in place for the long term preservation of e-records which are a direct product of e-government?
13. Describe the challenges (if any) of preserving electronic records?

14. How do these challenges undermine the management of e-records?
15. What are your recommendations to enhance the management of e-records in support of e-government in Tanzania?
16. What kind of training are you offering to Ministries/Departments/Agencies in the area of managing e-records?
17. What procedures and policies are in place for the disposal of e-records that are no longer to support e-government?

Thank you