

E-records management in Tanzania public service: determinants, perceived importance and barriers

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Abstract

Despite rigorous efforts by the government to introduce an e-government, most of the records in the public service of Tanzania are not electronically managed. The present study was conducted to assess records staff's awareness of e-records management determinants, explore the perceived importance of e-records management, and analyse challenges of managing e-records in the Records and Archive Management Department (RAMD) of Tanzania. A descriptive research design alongside qualitative and quantitative approaches was utilized to collect, process, and analyse data in this study in which a 38 respondents were involved. Data for this study were collected using a cross-sectional survey (i.e. questionnaire and interview) and documentary review. The study's findings reveal that determinant factors for e-records management are not in a state to speed up the take-off of e-records management initiatives of the RAMD. Shortage of competent staff for e-records management, dwindling of budget to support training and maintenance of infrastructure, and weak implementation of policies, circulars, and standards are among the challenges faced by efforts to manage e-records. Despite the slow take-off of e-records management initiatives, the responding staff perceived their management positively. Success in e-records management initiatives evidently requires the presence of reliable supporting environment and readiness tools such as standards, infrastructure, circulars, and policies.

Keywords: e-records, e-documents management, e-records readiness, e-records management determinants.

Introduction

Over the past three decades, strong advancements have been made in the development of systems, innovations, and technologies such as ICTs (Eligi & Mwantimwa, 2017). Governments all over are adopting ICT as a facilitator of prompt and responsive service provision through e-government (Moahi, Rathapo, & Sebina, 2017). The adoption of ICTs has fundamentally altered the way business is done and revolutionized records keeping. For example, the massive advancement of ICT has fundamentally changed the way records are created, accessed, shared, used, preserved, and disposed (Newa, 2017). The shift from paper records in 1980s to electronic records keeping in the early 1990s marked a new page in records management practices. During such changes, two major trends in the world of document and content management got intertwined. The first is the continuing explosive growth of electronic records as more records are being created in electronic format and paper-
E-records management in Tanzania public service: determinants, perceived importance and barriers

Judith Romwald Newa & Kelefa Mwantimwa

based records are being converted to electronic format. The second trend is the growing number of statutory requirements, legislations, and supporting business practices needed to maintain control of records and comply with legislation (Moahi et al., 2017; Porter-Roth, 2006).

The massive technological evolution in relation to e-records management has brought implications on organisation performance. Undeniably, the role played by records in decision making, transparency, and other important aspects makes them an essential element in the development of any public or private organizations (Kalusopa, 2010; IRMT, 2003; Kemoni, 2009). Besides, the incorporation of e-records management is inarguably enhancing business processes, workflows, and records management in the public sector (Scholl, 2003). As Wamukoya & Mutula (2005) noted, sound e-recordkeeping practices are increasingly being emphasized and needed to enhance performance, transparency, and accountability of governments. Similarly, many organizations are managing their businesses electronically with the help of ICTs. ICTs have also led to structural changes in governments, notably; the acceptance of e-governance by different nations (Lanzara, 2009). These unfolding changes in governance, fostered by the changing technology landscape are also affecting the delivery of public services (Mukred et al., 2019).

As a result, many efforts have been made by the government of Tanzania and other stakeholders to improve e-records management practices in government institutions such as RAMD. The initiatives include the amendment of the National Records and Archives Management Act of 2002, done to incorporate the management of e-records. However, despite rigorous efforts by the government to introduce an e-government, most of the records at RAMD are not electronically managed. The current practices for managing e-records in support of e-government implementation are inadequate (Kamatula, 2018) not only in Tanzania but also in other African countries notably Kenya (Ambira, Kemoni & Ngulube, 2019). This has kept efforts to implement e-government stagnant (see Kamatula, 2018). Experience shows that print system of records management still dominates. This is evident when seeking services in public offices where workers have to go through piles of files to locate a particular record. Empirically, Maulid (2015) supports that paper based records management system remains the mostly used in daily operations despite the implementation of an e-system. In fact, the continuing dominance of print records system in spite of the introduction of e-records management system cannot be clearly explained. This is so because the determinants put in place by the government of Tanzania to foster effective e-records management and the functioning of its e-government are not known as a result of the absence studies to examine them. As a result, this study was conducted to: assess records managers' awareness of e-records management determinants, explore perceived importance of e-records management, and analyse challenges of managing e-records at the RAMD of Tanzania.

Literature review

Currently, a hybrid approach to records creation, storage, retention, and disposition is growingly being adopted and used because as a result of developments in ICT, records are now also managed electronically (Maulid, 2015). Whereas massive records are born digital, other electronic records are conversions from print versions. Barry (n.d.) concedes that most record keeping systems are now basically focused on converting paper records into automated ones and using file management systems instead of each unit creating and

E-records management in Tanzania public service: determinants, perceived importance and barriers

Judith Romwald Newa & Kelefa Mwantimwa

managing its own files in isolation through other applications. As such, modern organizations are increasingly using digital media and digitally maintained records (Shepherd & Yeo, 2003). The types of digital records include word-processed documents, spreadsheets, multimedia presentations, emails, websites, online transactions, text files, databases, websites records, image files, and video and audio recordings (Kamatula, 2018; Mukred et al., 2019). Electronic records can be found in many organizational systems such as databases and business information systems, and shared folders and hard drives (National Archives of Australia [NAA], 2015). From these, it is important to note that electronic records are computerized versions of what would have been traditional paper records. Therefore, the records are equally real evidence of organizational activities. On the whole, sources of electronic records range from desktop publications such as Microsoft Word and Excel, emails; and corporate applications such as financial and human resource systems, and corporate databases (Victorian Electronic Records Strategy [VERS], 2002; Kalusopa, 2010).

Determinants of e-records management

Viable e-records management depends on diverse determinants ranging from infrastructure, legal frameworks, systems in place, human, financial capacity, and management support. For instance, the information infrastructure components that enhance e-records management include internet connection and its bandwidth, and computers (Maulid, 2015). The presence of infrastructure that is reliable and affordable; the integration and use of ICT in everyday life; and the existence of government policies that support and promote connectedness are important facilitating conditions for the adoption of e-records management. Not only that, but also the existence of legislative and regulatory framework guiding the use of ICTs and e-information, and the presence of adequate information communication channels foster the adoption of e-records. Similarly, guaranteed user privacy and online security, and universal – access technologies enhance the integration of e-records (Mukred et al., 2019; Kalusopa, 2011). In his study, Maulid (2015) found that majority (>50%) of respondents cited computer hardware and software, internet, scanners, CD-ROMS, mobile phones and audio recorders as very important e-records management facilitations. According to literature, apart from facilities, confidence in the security of governments' information processes when carried out in electronic environments is essential in encouraging agencies to make transitions from paper to electronic records management environment.

Besides that, laws and acts are very important ingredients to electronic records management readiness. Guidelines on areas such as statutory and regulatory frameworks for electronic records are important in fostering e-records management practices. As pointed out by Kemoni (2009), various guidelines have been developed by national agencies and institutions to assist in the management of electronic records by fostering the implementation of e-records management process. On this, Kamatula (2018) found that streamlined strategies, legislations, policies, and regulations are important requirements for the successful implementation of e-records management and e-government. This signifies that effective e-records management and the eventual implementation of an e-government depends heavily on the presence of written rules to guide activities.

Along that, standards are important tools for electronic records management because they help to provide framework and guidelines on how records should be managed within an organisation. Furthermore, standards provide guidelines on what other components of records management frameworks are supposed to do. For example, the International Standards for Records Management (ISO 15489) states that records management policies should define areas where legislations, regulations, other standards, and best practices have the greatest E-records management in Tanzania public service: determinants, perceived importance and barriers

Judith Romwald Newa & Kelefa Mwantimwa

application in the creation of records. On this, McLeod (2005) argues that the effectiveness of electronic records management is not just a technology issue, rather; a combination of other readiness factors. According to the author, for effectiveness to be achieved, there is a need of having an infrastructure of laws and policies, standards and practices, systems and technologies, and people. All these have to be supported by effective management frameworks and leadership capable of continually aligning the infrastructure with the business of an organisation. A good example of a standard is one (AS ISO 15489-2002) created by the Australian Government through its National Archives for a best practice approach to recordkeeping in Commonwealth nations.

Another important ingredient of electronic records management readiness is staffing. The rise in the creation and use of electronic records brings the need to update academic programs for education and training records managers. This is so because well trained and motivated staff members are critical to the implementation of e-records management. It is evident that competencies alongside motivations and other supporting infrastructure matter when it comes to the adoption and integration of e-records (Kemoni, 2009). This informs that a combination of factors determines the effectiveness of e-records management in organisations of different sizes, operations, and types.

Perceived importance of e-records management

Effective e-records management is considered an integral part of efforts to successfully implement an e-government (Kamatula, 2018). However, a study conducted by Kashorda & Naema (2014) at Kenyatta University revealed that each person may have their own perception of the value of e-records. On the whole, various studies (e.g. Mukred et al., 2019; Henrikse & Andersen, 2008) indicate that e-records management has the increased efficiency and effectiveness of governments, increased transparency and accountability in decision making, and enhanced the delivery of efficient and cost effective public services to the citizens. These studies are supported by Ndenje-Sichalwe & Ngulube (2009) who inform that records management fosters accountability, good governance, and protection of human rights. Generally, effective management of records of different types plays an important role in supporting the accessibility of data and information for decision making. Accordingly, Ngoepe (2008) discloses that an effective records management programme is a major element of the governance of any organisation. El-Karesh et al. (2009) explored primary care clinicians' perception of a new electronic health records. Their key findings suggest that majority of clinicians felt that electronic health records improved the overall quality of services, reduced medication-related errors, and improved communication among clinicians. These findings indicate that e-records enhance health services provision among clinicians.

Pera, Kaur & Rao (2014) highlighted the perception of electronic medical records by nursing staff at a teaching hospital in India. The study noted that 75% of the study respondents were comfortable working with e-medical records. The staff believed that e-medical records helped to ensure timely decision making and patient care because they allow quick access to patients' health history. This informs that access to and use of e-medical records has impact on the performing tasks and making of decisions in health facilities.

It is also notable that effective e-records management improves the quality of data and information used across government ministries, agencies, and institutions (Ambira et al., 2019). Apart from that, e-records management is perceived to minimise errors made by

E-records management in Tanzania public service: determinants, perceived importance and barriers

Judith Romwald Newa & Kelefa Mwantimwa

human, increase security, facilitate access to data and information, minimise duplicates, ensure data documentation, and reduce information and communication costs. Not only that, e-records management also serves as a data repository, minimises the use of paper, enables timely delivery of data, reduces storage space demand, and ensures easy data access and sharing (Mukred et al., 2019; Mukred & Yusof, 2015; Sher et al., 2017; Ventura, 2011). Regarding storage space, e-records can be archived offsite for safe storage. This helps organization to reduce their storage space requirements by up to 40%. As a result of increased speed of data and information retrieval, there is superior customer service provision (Mukred et al., 2019). When it comes to legal compliance and mitigation of litigation risks, e-records management is a powerful tool. Undeniably, an efficient and effective e-records management system is necessary to avoid issues that could threaten operations (Akor & Udensi, 2018; Mukred & Yusof, 2016; Eusoff & Yusof, 2011).

Challenges of e-records management

Despite the crucial role e-records play, there is a consensus amongst researchers that many organizations are not effectively implementing their management practices. To them, there are many challenges and constraints facing the public sector in the management of these records. For example, the management of e-records in the African environment is faced with a number of issues and challenges tied to the lack of policy infrastructure, lack of skills and competencies, and increased costs of managing the records (Kamatula, 2018; Moahi et al., 2017; Asongwa, 2012). Apart from that, the implementation of e-records management initiatives fail to succeed because governments fail to assess the suitability of available legal frameworks for e-records management and to convince record managers that automation is not a threat to their carriers so that they fully accept and implement it (Asongwa, 2012). Moreover, some authors have associated slow take off of e-records management initiatives with generation gaps between new and old professionals. In fact, older professionals find it difficult to cope with the requirements of the electronic age, and are at the same time, they are unwilling to drop old practices in exchange for new ones. These professionals also perceive e-records management as a threat to their status as experts (Ayoku & Ojedokun, 2008).

In exploring research on records-keeping professionals' perceptions and use of functional e-records in the Finish public sector, Packalen (2016) observed that users of e-records management systems used them to a lesser extent. This was associated with the users' negative attitudes towards the systems. Similarly, in Lowry's (2012) study on e-readiness and conservation, several challenges facing organizations' readiness for e-records management were summarized. The challenges were: lack of strategy to ensure that e-records remain accessible for as long as they are needed; lack of guidance on key issues including classification, naming conservation, and titling to support accurate retrieval; and lack of training in digital records management. The study also cited other challenges namely: the absence of standardized guidance on functional or system requirements; lack of records management input in IT processes; unavailability of formal business continuity plans; and assessments of risks to electronic records caused by computer malfunctions or data input errors.

Moreover, literature also discloses that many record centres and archives lack clear e-records acquisition, processing, storage, and access policies. This negatively impacts on the business activities of an organisation as argued by Mnjama & Wamukoya (2007: 190) that "without access to good records, officials end up making decisions on ad hoc basis without the benefit of institutional memory". Findings from Kemoni (2009) indicate that most E-records management in Tanzania public service: determinants, perceived importance and barriers

Judith Romwald Newa & Kelefa Mwantimwa

countries in the ESARBICA region lack the capacity to manage e-records and face various challenges in managing them. The challenges relate to the absence of policies and legislation, standardization, authenticity, capacity building, physical infrastructure, and awareness among recordkeeping professionals and government authorities on e-record management issues. In this, Kamatula (2018) supports that existing legislations, policies, and regulations are inadequate and ineffective. In connection to this, Kemoni (2009) found that staff had limited training and experience on record keeping; leading to the deterioration of the state of record management. Apart from that, low morale among records managers and poor remuneration lowered their prestige and status, and created a general lack of recognition of the importance of records as evidence. Consequently, national archives in many countries have become marginalized leading to insufficiency of resources, deficient physical facilities, and inadequate infrastructures.

A study by Maulid (2015) found that shortage of ICT facilities, lack of technical support; unreliable power supply, inadequate experts, insufficient funds, poor internet connectivity, poor legal frameworks, and the absence of policies were among the factors influencing the effective management of e-records. It is also very interesting to note that while many governments have systems and procedures for managing paper based records, the same cannot be said for e-records and other digital images (Mnjama & Wamukoya, 2007). On the same note, it appears that the management of e-records is not yet streamlined in majority of registries in public services. Literature also indicates that action officers and IT staff are not conversant with procedures and practices of e-records management. As a result, governments experience a slow implementation of e-records management and e-government (Kamatula, 2018).

Methodology

A descriptive research design alongside qualitative and quantitative approaches was utilized to collect, process, and analyse data in this study. While the quantitative approach sought quantitative data in form of numbers and focused on measuring objective facts, the qualitative approach sought qualitative data and focused on interactive processes and events to construct social reality and interpret cultural meanings. Indeed, quantitative was useful in learning about socio-demographic characteristics of respondents, and determinants and challenges of e-records management. Accordingly, qualitative data collected revealed opinions and perceptions respondents had towards the deployment of e-records at PO-PSM.

The study was carried out at the Records and Archives Management Department (RAMD) of the President's Office-Public Service Ministry (PO-PSM) and Tanzania Public Service College (TPSC). The RAMD was selected for this study because it has the mandate to manage all public records under the Records and Archives Management Act of 2002 of Tanzania. The Act (2002:7) stipulates that records and archives belonging to the United Republic of Tanzania are those created, received, and maintained in the offices of the President and Cabinet, by any ministry, department, commission, committee, office or other body under the government of the United Republic or the Minister or any other officer or employee. TPSC was involved because it offers academic programmes in records and archives management. In fact, academic staff members at TPSC are among the users of the records kept at the RAMD.

E-records management in Tanzania public service: determinants, perceived importance and barriers

Judith Romwald Newa & Kelefa Mwantimwa

In this study, the population was made of staff in all sections of RAMD and TPSC staff. Specifically, at the RAMD, the study involved records officers, records assistants, directors, and the director general while at TPSC the study involved teaching staff. A total of 38 respondents were involved this study. Among the staff members selected, one (1) of them was a managing director and another one an assistant director. Regarding sampling, simple random and purposive sampling techniques were employed to draw a sample from the study settings. The TPSC staff members were randomly selected while RAMD staff members were conveniently chosen. Besides, four (4) records managers were selected purposefully by approaching them in their respective offices. These were selected based on their ability to provide deeper insights with regard to e-records management with particular emphasis on determinants, perceived importance, and challenges of effective integration of e-records.

The study used a cross-sectional survey (i.e. questionnaire and interview) and documentary review to collect data. The questionnaire was administered to 34 staff members while face-to-face semi-structured interviews were administered with 2 records managers. Triangulation was used in order to exploit the strengths of each method and allow them to complement each other. This approach generates confidence in arriving at a quality conclusion and increases the validity of the collected information. On the whole, the methods were used to collect both primary and secondary data. The questionnaire was the main data collection instrument in this study. The study used a self-administered questionnaire with close-ended and open questions to collect qualitative and quantitative data. Answers to close-ended questions are standard and can be compared from person to person (see DaVaus, 2013) while open-ended questions give respondents opportunities to express their views, opinions, and perceptions. Accordingly, an interview guide with open-ended questions was used to collect data from the study's key informants to supplement data collected through questionnaires. Interviews are particularly useful in getting details in relation to participants' experience and expertise.

During the analysis process, the data were organized categorically and chronologically, reviewed repeatedly, and continually coded. Quantitative data were analysed with the help of Statistical Product and Service Solutions to provide statistical outputs. The outputs mainly include descriptive (frequency and percent) statistics. On the other hand, qualitative data were analysed thematically. Accordingly, qualitative data analysis outputs have been presented in narrations form.

Results

Socio-demographic characteristics of respondents

The study needed to bring to light the socio-demographic characteristics of respondents. In particular, the study was interested in the sex, ages, and levels of education of the respondents involved as Table 1 presents:

Table 1: Socio-demographic characteristics of respondents

Characteristics (n = 34)	Frequency	Percent
Sex		

E-records management in Tanzania public service: determinants, perceived importance and barriers

Judith Romwald Newa & Kelefa Mwantimwa

Female	16	47.1
Male	18	52.9
Age		
18-30	5	14.7
31-40	15	44.1
41-50	12	35.3
51-60	2	5.9
61+	0	0.0
Level of education		
Masters	8	23.5
Bachelor degree	11	32.4
Postgraduate diploma	3	8.8
Diploma	7	20.6
Certificate	5	14.5
Programme attended		
Masters in records management	5	14.5
Masters in library and information science	3	8.8
Diploma in records and archives management	7	20.6
Bachelor's degree in business administration	6	17.7
Bachelor's degree in public administration	5	14.5
Postgraduate diploma in ICT/IT	3	8.8
Certificate in ICT/IT	2	5.9
Certificate in records management	3	8.8

In general, results on the sex composition of respondents indicate that there was a slight difference between the number of male and female respondents at the two offices the study was carried out. The difference can be attributed to the ratio of male to female staff at different institutions in Tanzania (see UDSM, 2015). Regarding age, the results show that more than half of the study areas' were aged between 31 and 50 years. The results also show that just a few respondents were aged between 51 and 60 while five were less than 30 years of age. The results further indicate that one third of respondents were bachelor's degree holders, followed by master's degree holders while diploma, certificate, and postgraduate diploma holders were fewer.

Besides that, the results show that about one fourth of the respondents were holders of master's degrees in records, archives and information sciences while one fifth of the respondents were holders of bachelor degrees in business and public administration. The least numbers of respondents were those of holders of postgraduate diplomas in ICT/IT, and certificates in ICT/IT, and records and archives management. Basing on the results, it appears that the institutions involved in this study have staff members with the right qualifications to work at the highest level. In addition, the presence of staff members with ICT/IT qualifications is a good sign for e-records management.

Types of records managed and preferences

The study sought to establish the types of records managed by the RAMD and the management's preferences. Through this effort, the study has established that RAMD keeps different types of records born digital and or converted from paper forms. In fact, the department manages more records in print form. The e-records available were in the form of word-processed documents, spreadsheets, databases, audio-visual, and text files in PDF format. In short, the study results disclose that government bills, workers data, speeches, policies, standing orders, circulars, and reports are managed in both electronic and print formats. On preferences, the results show that more than half (56%) of the responding staff preferred paper records. However, 35% of the responding staff said they preferred both record formats while only 9% showed preference in e-records. The high percentage of respondents who prefer print records can be attributed to the fact that this format has been in use for a long time while e-records are relatively a new phenomenon to many.

Staff awareness of determinants of e-records management

E-records management determinants are crucial factors to consider in electronic records management. To find out about respondents' knowledge of e-records management determinants at RAMD, questions to solicit such responses were posed. Table 2 summarises the determinants of e-records management:

Table 2: Determinants of e-records management

Determinants (n = 34)	Reliability		
	VR	R	NR
Availability of ICT infrastructure	32.4	17.6	50.0
Implementation of policies and circulars	20.6	14.7	64.7
Adoption of international standards	17.6	8.8	73.5
Staff's e-records management competencies	26.5	11.8	61.7
Readiness of organisation's management	41.2	14.7	44.1
Legal frameworks for e-records management	17.6	14.7	67.6
Security of e-records	11.8	8.8	79.4

Note: VR = Very reliable, R = Reliable, NR = Not reliable

The results support that there are different e-records management determinants at the surveyed department. The results reveal that half (50%) of respondents mentioned ICT infrastructure while 55.9% cited readiness of RAMD's management as reliable determinants for enhancing their effective integration and utilization of e-records. On this, one of the key informants (No.2) informed that:

From creation to disposition, ICTs are vital facilities. ICTs are an important ingredient to e-records management because they simplify the job of creating, storing, preserving, communicating, preparing disposal and retention schedules, and retrieving and accessing of e-records among other things.

E-records management in Tanzania public service: determinants, perceived importance and barriers

Judith Romwald Newa & Kelefa Mwantimwa

This suggests that ICT is one of the important determinants for e-records adoption and management. This implies that ICT support different e-records management functions. For example, computers support the creation, processing, storage, and retrieval of e-documents. The results also signify that the implementation of policies, circulars, and legal frameworks; the adoption of international standards (e.g. ISO 15489); staff's e-records management competences; and on are security of e-records were inadequate. The respondents also recognised personnel with knowledge in e-records management as one of the important tools for fostering the management of e-records. Other determinants identified included software such as SPINDEX and PROSPEC systems. On staff's competences, one of the administrators (No.5) stated that:

The organization is taking steps towards ensuring that records management personnel have knowledge in computing. This is done through the provision of computer training programs. Some of the records management personnel who pursued bachelor degrees in records management have covered electronic records as a topic while others have attended other kinds of training.

Another official (No. 3) disclosed that:

Training of records management personnel in electronic records management is very important. As such, it should target staff at all levels and include practical training. The problem is that Tanzania's university programmes do not offer in-depth practical training on electronic records management.

This quotation entails that institutions offering records management education in Tanzania have not managed to create comprehensive and practical e-records management contents for their curriculum. Evidently, only Mzumbe University offers a programme in records management at a bachelor level while the rest offer certificate and diploma level of education. As a result, shortage of competent e-records management personnel is a longstanding challenge in most government agencies and ministries.

Staff' competencies on e-records management

Managing electronic records requires staff to have necessary skills and knowledge on handling technological equipment and electronic information. In reference to this, the study enquired about the RAMD staff's possession of such knowledge and skills and how they were attained. In this inquiry, the study sought to determine if staff members had the necessary background knowledge and skills for managing e-records first. The results obtained are shown in Table 3:

Table 3: Staff' competencies on e-records management

Competencies (n = 34)	Frequenc y	Percent
Background skills and knowledge on e-records management		

E-records management in Tanzania public service: determinants, perceived importance and barriers

Judith Romwald Newa & Kelefa Mwantimwa

Have background skills and knowledge	10	29.4
No background skills and knowledge	24	70.6
Methods of attaining skills and knowledge		
Learned as a topic in college	10	29.4
Through experience	16	47.1
Self-taught	5	14.7
Learn from others	2	5.9
Not responded	1	2.9

The results show that majority of responding staff had no background e-records management knowledge and skills while only 29.4 % had the knowledge and skills. This implies that there is a significant variation between staff with background knowledge and skills and those without. Along that, the study further found that 29.4% of the respondents attained their knowledge and skills through formal learning in college while 47.1% attained it through experience. Other respondents' knowledge and skills resulted from self-teaching, and learning from others. These findings signify that an insignificant proportion of the responding staff attained their e-records knowledge and skills through learning as a course in college.

Perceived importance of e-records management

The respondents were asked to provide opinions on the importance of e-records management. The results obtained indicate that a large percentage (73.5) of respondents felt that effective management of e-records would contribute positively to the growth of an organizations and development of a nation at large whereas 26.5% were not in agreement. Table 4 summarises the results:

Table 4: Perceived importance of e-records management

Perceived importance (n = 34)	Likert scale (%)				
	SA	A	N	D	SD
Fosters efficiency in management decision making	61.8	11.7	17.6	2.9	5.9
Increases accountability of the staff in an organization	38.2	23.5	20.6	11.8	5.9
Eases access to and use of data and information	52.9	32.4	5.9	5.9	2.9
Eases sharing of information and data	32.4	35.3	17.6	8.8	5.9
Minimises the time and money spent on information access	38.2	26.5	27.3	5.9	8.8
Facilitates transparency of organisations' operations	35.3	32.4	23.5	2.9	5.9
Increases security of information and data	23.5	35.3	17.6	14.7	8.8

Note: SA =Strongly Agree, A= Agree, N = Neutral, D = Disagree, SD = Strongly Disagree

Basing on these results, the staff members that participated in this study agreed that effective e-records management increases efficiency in management decision making and increases accountability of staff. These are in line with those who felt that effective e-records management makes access to and use of data and information easy, saves time and money E-records management in Tanzania public service: determinants, perceived importance and barriers

used on information and data access. Not only that, the responding staff members also perceived e-records management as a facilitator of transparency in organisations' operations and security of information and data. During an interview session, one of the key informants (No. 6) argued that:

When there is an excess of unmanaged records and information, it is hard for employees to locate the information they need to do their jobs or make use of content that already exists in an office. With appropriate electronic records management, information is more easily located, retrieved, and used.

On saving time and money, the key informant agreed with the perception of the other respondents by explaining that:

Electronic records optimize the usage of office space by reducing redundant records as compared to paper records which are usually duplicated. These records also survive beyond their retention periods without demanding expensive on and off-site storage equipment such as filing cabinets. E-records also need a relatively smaller number of employees to manage them. All these have positive financial effects.

Accordingly, another key informant (No.3) stated that:

When one talks to clients, questions can be answered instantly with the help of onscreen records without leaving one's desk. E-records are easier to create, search, access, and share; they make business processes more efficient and facilitate collaboration. The records are friendlier to the environment.

Basically, the results suggest that effective e-records management has multiple advantages to organization's management, sharing of information and data. The management of the records also eliminates the longstanding geographical restrictions to access to records. The time spent retrieving a print record is lessened hence increasing performance efficiency and effectiveness in.

Challenges for e-records management

Amid the continuing increase in electronic records, challenges of managing them are also rapidly rising. Responses reveal that there are various challenges that hamper effective adoption and management of e-records as Table 5 discloses:

Table 5: Challenges of e-records management

Challenges (n=34)	Frequency	Percentage
Insufficient funds for acquisition of supporting infrastructure	29	85.3
Shortage of staff with e-records managing competences	29	85.3
E-records management security problems	23	67.6
Weak implementation of policies, circulars, laws, and	21	61.8

E-records management in Tanzania public service: determinants, perceived importance and barriers

Judith Romwald Newa & Kelefa Mwantimwa

regulations		
Poor ICT infrastructure	18	52.9
Limited management support	18	52.9
Limited awareness on e-records management approaches	12	35.3

Results in Table 5 suggest that there are various challenges hamper e-records management. Specifically, insufficient funds; shortage of staff to manage e-records; security problems; weak implementation of policies, circulars, laws, and regulations; poor ICT infrastructure; and limited management support are the main limiting factors in the effective management of e-records. During an interview, one key informant confirmed the insufficiency of funds allocated to e-records management as indicated below:

The government does not allocate sufficient funds for records management hence it is very difficult to meet all the needs especially those relating to electronic records management. The management of e-records needs infrastructure such as internet, equipment, practical training for records personnel among others. Unfortunately, the RAMD mainly does not have other sources of money other than the government through PO-PSM hence the scarcity of these resources.

On the same, another key informant (No. 4) informed that; “The funds set aside to support in-house training, seminars, international and local conferences, and other kinds of training, are not sufficient’.

It appears that shortage of funds is one of the main problems slowing down the transition into e-records management at the RAMD. Besides that, respondents who did not prefer e-records explained that the records have numerous challenges that undermine their management. The challenges cited included technological obsolescence, unreliable power supply, inadequate staff, lack of special training, and poor promotion of the records. One of the key informants (No.1) testified to the presence of various challenges by saying that:

Shortage of expertise in e-records management, technophobia, and lack of computer skills, among others, lead many records personnel to prefer paper records. Age also determines the use of these records. The young generation is likely to actively manage e-records than the older staff in our organisation.

In connection to this, key informant (No. 3) narrated that:

We have staff with different levels of education in records management who mostly lack practical knowledge needed in electronic records management. These staff members need practical training to familiarize them with IT equipment used in managing e-records.

Another key informant (No. 1) informed that:

We have desktop computers and laptops but most of them need maintenance. In addition, e-records management requires software and other special IT equipment both of which are not available right now.

E-records management in Tanzania public service: determinants, perceived importance and barriers

Judith Romwald Newa & Kelefa Mwantimwa

The results inform that challenges hindering effective adoption and management of e-records in the surveyed organisation are many. In all, e-records management initiatives experience a number of hurdles including financial problems, lack of expertise, and insufficiency of management support. Consequently, e-records management practices remain ineffective to foster transparency, good governance, and viable decision making.

Discussion

The study sought to examine the determinants of e-records management, explore perceived importance of e-records, and identify challenges faced by e-records management at RAMD. Generally, a hybrid records management system is used by RAMD to manage records created by government organizations and agencies. However, regardless of massive records being created in electronic format, a large proportion of them remain in paper format. This signifies that paper-based records management system remains the mostly used (see also Maulid, 2015). This finding informs that the process of converting paper-based records to electronic format is not promising. Basically, records such as government bills, speeches, policies, standing orders, circulars, and reports are managed in both electronic and print format by the RAMD. On preferences, majority of staff of the RAMD prefer paper records to e-records management. Similarly, Packalen (2016) noted that user of e-records management systems in Finland preferred using e-records to a lesser extent. This is attributed to the fact that paper based records system has been in use for a long time while e-records are relatively a new phenomenon to many. In addition, e-records management systems seem to threaten the status and position of records management experts (Asongwa, 2011).

Understandably, e-records readiness determinants are important in ensuring effective e-record management (IRMT, 2004). In all, e-records readiness factors such as adequacy of ICT infrastructure; implementation of records management policies, circulars, and standards; adequacy of competent staff; readiness of top management; preferences; and motivations are important enablers of effective integration e-records management systems (see also Mukred et al., 2019; Newa, 2017; Maulid, 2015; Kalusopa, 2011). It also very interesting to note from literature (e.g. Kemoni, 2009) that motivated and respected staff are among the critical factors that influence the implementation of e-records management. This discloses that ensuring that just one factor is put in order while ignoring the others does not guarantee the implementation of e-records management. On a different note, regardless of the importance of policies, circulars, and standards in the fostering of e-records management, their implementation is not satisfactory. Findings from prior studies (e.g. Kamatula, 2018; Kemoni, 2009; Moahi et al., 2017) support that most legislations, policies, and regulations are ineffective, particularly on matters relating to e-records management. The ineffective implementation of policies and related documents, as reported by these studies, was attributed to their lack of attention on e-records and the absence of harmony among them. Likewise, the Records and Archives Management Policy of 2013, the Cyber Crime Act of 2015, the ICT Policy of 2003, and other related documents have not addressed matters relating to e-records and their management.

Along that, the slow take-off of e-records management is associated with the shortage of staff with e-records management competencies. The findings reveal a significant variation between staff with background knowledge and skills and those without. This indicates that the shortage of staff members is felt alongside inadequacy staff's competencies needed for e-records management (see also, Lowry, 2012; Kemon, 2009; Kamatula, 2018). For example,

E-records management in Tanzania public service: determinants, perceived importance and barriers

Judith Romwald Newa & Kelefa Mwantimwa

the competencies needed for automation of records retrieval, preparation of retention and disposal schedules, administration methodologies, and cataloguing and classification are insufficient. As a result, most of the staff members prefer paper-based records management system. Accordingly, legal frameworks to safeguard and security assurance of e-records are questionable. Besides that, the limited budget allocated to the department has been found to be a hurdle. It appears that the budget allocated is not enough to help the department accomplish its planned goals including training of records personnel, and purchasing and maintenance of IT other equipment (see PO-PSM, 2014).

Despite the slow take-off of e-records management initiatives, the responding staff perceived them positively because they feel they improve the performance of daily operations. Specifically, a large proportion of staff members felt that effective management of e-records positively contributes to the growth of an organization and development of a nation at large. Similarly, literature shows that effective management of e-records ensures that the right information needed to make decisions is accessible in a timely manner (Mukred et al., 2019; Pera et al., 2014). In addition to that, e-records management ensures that accountability is upheld through ensuring that evidence for every activity is not just available, but accessible too (Ambira et al., 2019). Not only that, e-records management systems also serve as data repository, minimise the use of paper, enable timely delivery of data, reduce storage space demands, and ensure easy data access and sharing of information (Mukred & Yusof, 2015; Sher et al., 2017; Ventura, 2011). Noting from other studies (e.g. Akor & Udensi, 2018, Mukred & Yusof, 2016; Eusoff & Yusof, 2011) e-records management becomes a powerful tool for safeguarding organisations from litigation and legal investigations. Undeniably, an efficient and effective e-records management system is necessary to avoid issues that could threaten operations.

In support of that, IRMT (2011) argues that without proper e-records management, e-information necessary for decision-making and accountability will lack evidential and reliability qualities, and will be difficult to retrieve over-time hence negatively affecting a government's performance and effectiveness. The ease with which e-records can be accessed and the removal of geographical barriers (where networks are used) to their sharing are just some of the ways e-records save time and money. The ability to share records electronically has a number of advantages. For example, successfully set inter-departmental queries reduce the time and physical effort required to communicate and move between departments. With the help of networks, e-records can be accessed by more people hence enhancing transparency and accountability in organisations as supported by Ndenje-Sichalwe & Ngulube (2009). In support of this, enhanced information governance is making an increasingly important contribution to achieving openness, transparency, and self-determination (Thurstun, 2015). The use of classification systems, setting passwords, and applying e-signature and other security measures prevent unauthorized people from getting hold of confidential information.

Conclusion and recommendations

Transforming a traditional government into an e-government is an involving task that should not be underestimated. Success in such an endeavour evidently requires the presence of a supporting environment and readiness tools such as standards, and policies. Undeniably, switching to e-governance requires a shift in records management from paper based to electronic ones. However, e-records management initiatives experience a number of hurdles including financial problems, lack of expertise, and weak implementation of policies, circulars, and standards. As a result, achieving tangible and measurable socio-economic E-records management in Tanzania public service: determinants, perceived importance and barriers

Judith Romwald Newa & Kelefa Mwantimwa

changes, good governance, and competitive and sustainable development requires taking deliberate measures to improve e-records management. In particular, allocation of sufficient funds to support training and the maintenance of ICT infrastructure is necessary to speed up e-records management practices. Along this, staff motivations, formulation of reliable policies, circulars, customization of international standards, and effective implementation of existing policies have to be taken into considerations.

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E-records management in Tanzania public service: determinants, perceived importance and barriers

Judith Romwald Newa & Kelefa Mwantimwa

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E-records management in Tanzania public service: determinants, perceived importance and barriers

Judith Romwald Newa & Kelefa Mwantimwa

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E-records management in Tanzania public service: determinants, perceived importance and barriers

Judith Romwald Newa & Kelefa Mwantimwa