IOSR Journal Of Humanities And Social Science (IOSR-JHSS)
Volume 24, Issue 8, Ser. 5 (August. 2019) 90-95
e-ISSN: 2279-0837, p-ISSN: 2279-0845.
www.iosrjournals.org

Effect of Network Accessibility on Record Maintenance in Technical and Vocational Education and Training Institutions in Kenya: (A Case Study of Nyandarua Institute of Science and Technology)

Pauline W.Kariuki[1], Dr. Stanley Githinji[2], Dr. Salome Mathangani[3]
[1]*Master of Science in Information Science, KeMU,Kenya.*
[2]*Ph.D Senior Lecturer, Faculty of Science and Technology, KeMU, KENYA.*
[3]*Ph.D, Senior Lecturer, Faculty of Science and Technology, KeMU,KENYA.*
Corresponding Author: Pauline W.Kariuki

Date of Submission: 03-08-2019 Date of Acceptance: 19-08-2019

I. INTRODUCTION

The physical appearance and content are the major characteristics that describe a record. Physical appearance is tangible while contents are intangible aspects of a record. The format, size and contents of records differ significantly according to [1] According to [2] a record is a document generated and made available to a relevant person or entity while executing their day to day duties and maintained for present and future use. [3] stated that a record is a representation of the organization's memory and forms the basis for decision making as well as the last line of defense in case of legal suit. On the other hand, [4] described a record as information generated in a form that is easy to reproduce and use in running the day to day business affairs of an organization. That a record is a piece of information generated, obtained or availed so as to commence, execute and finalize an activity. From the aforementioned definitions, it can be concluded that a record is the aftermath, outcome or final output of a business activity which is used as a basis for gauging employee performance and ensuring that each and every person is held accountable. The organizations employees generate or obtain records to act as proof of execution of assigned tasks and responsibilities which form part of their work in the organization [5].

Statement of the Problem

Effective record maintenance contributes to preservation of evidential, legal, financial, administrative as well as educational records which contribute to the day to day decision making, accountability, service delivery, acting as a reference point and upholding the ethics and governance of the institution[6].

Records maintenance has in the recent past received increasing support and attention in global world as governments embrace information technologies in the management of their corporate records. [7]

A World Bank supported study shows that East Asia countries such as China, South Korea and Malaysia al so achieved their industrialization because they invested heavily in Vocational Training, attaining a 50%percent enrolment compared to other disciplines. [8]

In most African countries Institutions of Higher learning embarked on reforms aimed at creating government machineries which will enable effective records maintenance.

According to [9], the most prevalent challenge facing tertiary institutions in Kenya is fragmentation and therefore the provision of connectivity will go a long way in curbing the challenge by enabling such institutions integrate data.

Reforms in Technical and Vocational education and Training were also targeting to broaden the uptake to their enrolment rate over one million student.[10]. Maintenance of records has been a problem in Nyandarua Institute of Science and Technology due to the difficulties encountered in tracing and retrieving records, the records available have been in poor state and in some cases cannot be traced at all [11]

The process of records accessibility is not easy due to the long time taken causing dissatisfaction to the students. The rapid increase in the number of students at Nyandarua Institute has also led to a corresponding increase in the volume and complexity of students' records due to the reforms in Technical and Vocational education and Training which are targeting to broaden the uptake to their enrolment rate over one million student. [10].This has caused problems in decision-making process and causing ineffectiveness when serving the

students. The study seeks to address these challenges with an aim of proposing a platform for effective record maintenance.

II. OBJECTIVE

The study aimed at addressing the challenges of network accessibility on record maintenance in Technical, Vocational and Education Training institutions.

Review of Literature on Related Past Studies

The day to day business applications such as electronic mail and those used to create documents online and which can be accessed once the user has a web browser are availed by cloud computing platforms but he software and data are domiciled at the service provider's servers[12].The Kentucky Enterprise Architecture and Standards Committee (EASC) describe cloud computing as a method of computing in which highly expandable Information Technology-enabled capabilities are provided as a service to many diverse users with Internet Technology. According to some scholars, cloud computing does not necessarily refer to one terminology describing a trend in service delivery but rather the shift of application services into the internet and enhanced application of the internet to utilize many services which were earlier on obtained from the organization's data centre [13]. According to [14] any organization contemplating adoption of loud computing must first of all ensure that all the stakeholders including the vendor have a common understanding of the conditions necessary for an efficient, secure and cost effective cloud Computing platform because it is may be a big challenge to establish the recordkeeping consequences of adopting a cloud computing infrastructure without having a clear understanding of the exact nature of the cloud computing. The record lifecycle of routinely generated records and transactions which commences from generation, application, maintenance, storage or disposal of records is controlled in an efficient and systematic manner by records management system. Therefore, records management thrives on regular reviews where some records are retained and others disposed so as to ensure cost effective organizational processes which meet legal and regulatory thresholds as well as promote corporate accountability.

III. Methodology

Research methodology entailed the study of research design, determination of target population, sampling procedure and sample size, data collection methods, instrument validity and reliability, techniques for data processing.

Research Design

According to [15], research design is the outline plan or scheme that will be used to generate answers to the research problems. It is basically the overall structure and plan of investigation. [16] describes a research design as a general plan or strategy for conducting a research study to examine specific testable research questions of interest. Finally, descriptive research design is the blue print for the collection, measurement and analysis of data. It is a plan and structure of investment conceived so as to obtain answers to research questions The most common research designs include causal design which is used to measure what impact a specific change will have on existing norms and assumptions[15] Mixed methods approach involves combining of qualitative and quantitative research and data in a research study. It was the most suitable approach for this study, based on the fact that collecting diverse types of data best provides a more complete understanding of a research problem, and neutralizes the bias and weaknesses of either quantitative or qualitative alone [16]. Quantitative research is used to quantify the problem by way of generating numerical data. The quantitative approach is justified because it enabled the researcher to measure the various variables in this study. According to [17] the reliability and validity of the quantitative data will be determined more objectively because the collected data will not be inferred subjectively through sensation or intuition. Further, it enabled the researcher to numerically demonstrate the different trends, attitudes, and opinions of the participants relating to the research questions. It employed structured questions in the interviews and presented the analyzed data in numeric form through the use of tables, charts or figures.

The qualitative approach utilized semi structured questions to collect in-depth information in the interviews and presented the analyzed data in form of statements and phrases. Due to the emphasis on real life experience, qualitative data is well suited for explaining the meaning participants place on the processes under study. The rich data that is provided through the qualitative approach enabled this study in presenting vivid descriptions nested in real life context. According to [18], qualitative approach has been advocated as the best strategy for discovery or exploring a new area. Further, qualitative data are useful when one need to supplement or validate quantitative data from the same setting. This approach examined the effect of network accessibility on record maintenance, established the effect of cost of cloud computing, examined the effect of shared infrastructure and determined the effect of network security on record maintenance in Nyandarua Institute of Science and Technology.

This study triangulated both the qualitative and quantitative data in order to provide a comprehensive and rich analysis of the data. "Triangulation will enable confirmation and corroboration of both types of data, elaborate or develop analysis providing richer details, and initiate new lines of thinking"[19] .The interpretation of the overall results was used to draw conclusions and inferences on whether or not the research questions were supported.

Target Population

The target population of the study consisted of teaching staff who keep student records of performance, the records officer is in charge of the institution archives, the heads of department keep all departmental records including those of students and lecturers, the principal and the deputy keep all the administrative institutions records, the registrar maintains academic records of all the students, he finance officer maintains the financial records of the institution, procurement records including tenders and stock records are maintained by the procurement officer while the quality assurance officer maintains important records of procurement activities. The total target population of the study was 125 members of staff. The results of the study are generalized to this population, because they all have significant traits in common

.Population is an entire group of individuals, events or objects having common or observable features.[21]defines target population as the total collection of elements about which the researcher wishes to make some inferences. The target population contains members of a group that a researcher is interested in studying and the results of the study are generalized to this population, because they all have significant traits in common [22]. According to [23] the target population for a survey is the entire set of units for which the survey data are to be used to make inferences. Thus, the target population defines those units for which the findings of the survey are meant to generalize.

Sample Population

Category	Frequency
Teaching Staff (Lecturers)	111
Records officer	1
Heads of departments	7
Principal	1
Deputy Principal	1
Registrar	1
Finance officer	1
Procurement officer	1
Management representative	1
TOTAL	**125**

Source: Nyandarua Institute of Science and Technology (2018).

Sample and Sampling Technique

A sample is a subset of the population and should be a typical representation of the larger group. Depending upon the size and type of the population and the type of study, different methods are available to help identify a fair sample, such as random sampling which this study adopted. A sample is the number of items selected to represent the whole population [20]. [21] on the other hand, define sample size as the subject on which the measurement is being taken as the unit of study. A sampling design is the method of selecting items to be observed for given study [22] (Kothari, 2004). [21] stated that there are two main types of sampling namely probability and non-probability sampling and difference between the two types is whether or not the sampling selection involves randomization. Randomization occurs when all members of the sampling frame have an equal opportunity of being selected for the study. [15] further stated that probability sampling uses randomization and takes steps to ensure all members of a population have a chance of being selected whereas non-probability sampling does not rely on the use of randomization techniques to select members. Probability sampling techniques include random sampling where everyone in the entire target population has an equal chance of being selected and Stratified Sampling where the researcher identifies the different types of people that make up the target population and works out the proportions needed for the sample to be representative [23].

The researcher used a census of all the teaching staff, HODs and the administrative staff that added up to 125respondents. The 7 heads of departments were purposively sampled because they keep departmental records and were therefore capable of providing valid responses on adoption of cloud computing on record maintenance.

Data Collection Methods

Information that went into the writing of this study was gathered through primary and secondary data collection methods. The primary research was conducted through the use of face to face interviews. The study proceeded to use secondary research to collect data. This was done through an in-depth study of books, journals and articles written by scholars on past and present factors affecting cloud computing. The following is the data collection method that was used for this study:

Interviews

"An interview is the verbal conversation between two or more people with the objective of collecting relevant information for the purpose of research" (Kothari, 2009). There are two types of interviews: structured and unstructured interviews. Structured interviews are those where the questions and the answer categories have been predetermined by the interviewer, whereas, unstructured interviews neither the questions nor the answer categories are predetermined [25] This study used semi-structured interviews, and the list of questions to be covered was derived from the objectives and research questions.

Semi structured interviews were well suited for this study due to the following advantages of using them as data collection instruments. In cases of misunderstandings, the researcher can clarify or explain the questions by repeating or rephrasing them. It can be used as a guide or starting point to allow the respondent to express their opinions on a wide range of issues as the respond to questions unlike other data collection methods. The researcher can explore additional questions to fulfill the research objectives.

Face to face interviews also have a large number of potential advantages for qualitative data. Face to face interviews allow the researcher to receive an immediate response to their questions unlike sent questionnaires which may result in delays in the data collection process. Both the researcher and respondent can explore the meaning of the questions to ensure proper understanding, and clarify the answers to resolve any ambiguities. It allows the researcher to explore cause and effect of an event, that is, to examine why individuals or organizations behave the way that they do. Face to face interviews provides a personal contact between both parties, thereby creating a friendly and more personal touch on the data collection process. The speed at which a large quantity of rich data is collected during face to face interviews is improved. Face to face interviews was used to collect data from all the respondents in the census inquiry of this study. The quantitative data was collected by asking a few closed ended questions followed by open ended questions in the semi-structured interview.

The researcher used questionnaires as the data collection instrument since the research was quantitative. The questionnaire was subjected to reliability and validity test.[15] stated that a research instrument is reliable if it gives similar results after several tests.[16] states that a research instrument has validity if it measures what it purports to measure. According to [16] reliability refers to consistency or stability of measurement of a research instrument. A test is reliable to the extent that whatever it measures, it measures it consistently. There are three major categories of reliability for most instruments; test-retest, equivalent form, and internal consistency where each measures consistency a bit differently and a given instrument need not meet the requirements of each. Test-retest measures consistency from one time to the next. Equivalent-form measures consistency between two versions of an instrument. Internal-consistency measures consistency within the instrument that is, consistency among the questions.

Reliability and Validity of the Research Instruments

Testing for reliability and validity is a complex task but significant in reducing the likelihood of getting the wrong results. "Reliability is a measure of the degree to which a research instrument would yield the same results or data after repeated trials" [24].Validity refers to the suitability or meaningfulness of the measurement. It is the extent to which an instrument measures what it purports to measure [15]. Validity requires that an instrument is reliable, but an instrument can be reliable without being valid. The researcher will test content validity through the expert judgment of the supervisor. This type of validity addresses how well the items developed to operationalize a construct, provide an adequate and representative sample of all the items that might measure the construct of interest. Construct validity will also be tested. Construct validity is a judgment based on the accumulation of evidence from numerous studies using a specific measuring instrument [24].

Pilot Study

Pilot testing is very significant to scientific research, and studies that neglect it run the risk of collecting useless data. Pilot study entails carrying out a preliminary test of data collection instruments to make revisions to the instruments to guarantee that suitable questions are asked, the accurate data will be collected, and the data collection methods will function [25] Pilot was conducted at Nyeri Technical Institute by administering questionnaires to 10 respondents. The Cronbach's alpha coefficients were obtained from the SPSS

Version 25.0 to determine the internal consistency of the questionnaire in measuring the cost effectiveness, data security, shared infrastructure and network accessibility of the cloud computing system. The variable on network accessibility had a Cronbach's alpha score of 0.809, cost of cloud computing with an alpha score of 0.788, shared infrastructure with a score of 0.756 while network security had a Cronbach's alpha score of 0.788.

IV. RESULT DISCUSSION AND CONCLUSION

The respondents' opinion on the effect of network accessibility on record maintenance at Nyandarua Institute of Science and Technology was sought. The variables that were considered for network accessibility in this study were; use of manual records, accessibility of manual records, record maintenance in e-mail and goggle platforms and adoption of cloud computing to manage record maintenance. The study sought to determine if the Institutions promoted the use of cloud computing that is a determinant to effective record management. The respondents were required to indicate their opinion by choosing the following; Strongly Disagree, Disagree, Neutral, Agree and Strongly Agree.

The study sought to determine whether Nyandarua Institute of Science and Technology maintained manual records. The majority of the respondents (58%) agreed while (42%) strongly agreed. None of the respondents disagreed implying that the institutions maintained manual records. The Institution's emphasis on making records easily accessible was realized since when they were asked if manual records were not easily accessible. The majority of the respondents 56% agreed, 40% strongly, 3% were neutral and only 1% disagreed. These findings implied that the Institution encouraged employees to maintain electronic records since they were not easy to access by unauthorized persons. The aspect of whether the institutions records were maintained in email and goggle platforms were tested and many of the respondents at 49% agreed, 39% strongly agreed, 7% were neutral and 5% disagreed with the statement. Therefore, these results implied a belief among Nyandarua Institute of Science and Technology employees that records in cloud platforms such as emails and goggle were easy to maintain unlike in manual platforms. The study sought to establish whether electronic records were more accessible as opposed to manual records. The majority of the respondents 54% strongly agreed and 46% agreed. The findings implied that Nyandarua Institute of Science and Technology emphasized on cloud computing with the aim of achieving record maintenance.

Respondents' opinion on network accessibility

		Respondents Opinion				
NETWORK ACCESSIBILITY	**%**	**SA**	**A**	**N**	**D**	**SD**
Nyandarua Institute maintains manual records	**%**	42	58	0	0	0
Manual records are not easily accessible	**%**	40	56	3	1	0
Electronic records are not easily accessible to unauthorized persons	**%**	39	49	7	5	0
Most records for the institution are kept in e-mail, goggle drive and platforms	**%**	58	40	2	0	0
It is easier to access electronic than manual records	**%**	54	46	0	0	0
Cloud computing enhances records accessibility	**%**	22	37	12	8	21
Adoption of Cloud computing facilitates record maintenance to a large extent	**%**	54	46	0	0	0

REFERENCES

Proceedings Papers:

[1]. Lupșe, O.-S., M.M. Vida, and L. Tivadar.(2012). *Cloud computing and interoperability inhealthcare information systemsinthe First International Conference on Intelligent Systemsand Applications (INTELLI2012)*. 2012.

Chapters in Books:

[2]. Cornwell Management Consultants..*et al.*,(2001)*Developing health information systems in developing countries: the flexiblestandards cloud records.* MIS Quarterly, 2007: p. 381-402.

Books:

[3]. Plummer, D.C. et al., (2008).*Cloud computing: Defining and describing an emerging phenomenon.*Gartner, June, 2008.

Chapters in Books:

[4]. Armbrust, M., et al., *A view of cloud computing.* Communications of the ACM, 2010.53(4):p. 50-58.

Journal Papers:

[5]. Ramandeep& Kumar.(2013). A Study on Security Requirements in Different Cloud Frameworks. *International Journal of Soft Computing and Engineering (IJSCE). Volume-3, Issue-1, pp. Pp 133-136.*

[6]. Nakpodia. E. D. (2011). Student's records: Challenges in the management of student personnel in Nigerian tertiary institutions. *Prime Research journal on Education (PRE).*Vol. 1(3), pp. 044-049, May 27th, 2011 www.primejournal.org/PRE

Proceedings Papers:

[7]. UNDP (2012). (2012). *Assessing Progress in Africa toward the Millennium Development Goals, 2012.* Statistics Division of the United Nations, Addis Ababa,

[8]. Ministry of Education,Science and Technology.(2018). *The Information Communication and technology Policy.*Government printers, Nairobi.

[9]. Nyandarua Institute of Science and Technology (2018*) Maintenance of records has been a problem in Nyandarua Institute of Science and Technology due to the difficulties encountered in tracing and retrieving records, the records available have been in poor state and in some cases cannot be traced at all,2018.*

[10]. Niklas Luhmann (2013).Introduction to Systems Theory, Polity. The Realization of the Living.Springer Science & Business Media.

[11]. De Borja.(2013). *"Cloud Times," How Cloud Computing Will Affect Healthcare in 2013,* p. 1, 13 January 2013.

[12]. Gleick (2007) Cloud Computing and Developing Nations. Communications of the ACM, 53, 5, 18-20.

Books:

[13]. Mugenda, O. Mugenda (2009). *Research Methods*: Quantitative and Qualitative Approaches. Nairobi: ACTS.

[14]. Lavkaras (2008) Systems Thinking, Systems Practice: Includes a 30-Year Retrospective. Wiley

[15]. Creswell, 2014). *Cloud basics for Non profits and Libraries*. Benefits and drawbacks of cloud computing. Green technology,Techsoup. USA

[16]. Amaratunga, Baldry, Sarshar and Newton (2002),*Driving Organizational Performance Through ICT Deployment," ANADACH Group,* Telehealth Society of Kenya, Nairobi, 2012.

[17]. Cooper R.D. and Schindler, P.S. (2008). *Business Research Methods.*10th edition.McGraw-Hill Publications. New York, United States.

Chapters in Books:

[18]. Kombo and Tromp (2006), A head in the clouds.*Journal of Business Cloud records, pp. 1-2, 2009*.Cloud Computing with Related Enabling Technologies," *International Journal of Cloud Computing and Services Science, pp. 40-49, 2013*

Books:

[19]. Cooper and Emory (2001),*Business Research Methods.*10th edition.McGraw-Hill Publications. New York, United States

[20]. Gorman and Clayton, 1997).*Negotiating multiple rationalities in the process of integrating the information systems of disease specific health programmes.* The Electronic Journal of Information Systems in Developing Countries, 1997.

[21]. (Pratt, 2008). *Construct validity will also be tested. Construct validity is a judgment based on the accumulation of evidence from numerous studies using a specific measuring instrument*

Journal Papers:

[22]. Kaur&Ateriya.(2012). A study on security requirements in different cloud frameworks. International.*Journal of soft computing and engineering: Vol 3, Issue 1, pp. Pp 133-136.*

[23]. Kambil, A. (2009). A head in the clouds.*Journal of Business Cloud records, pp. 1-2, 2009*.Cloud Computing with Related Enabling Technologies," *International Journal of Cloud Computing and Services Science, pp. 40-49, 2013*

Pauline W.Kariuki. " Effect of Network Accessibility on Record Maintenance in Technical and Vocational Education and Training Institutions in Kenya: (A Case Study of Nyandarua Institute of Science and Technology)." IOSR Journal of Humanities and Social Science (IOSR-JHSS). vol. 24 no. 08, 2019, pp. 90-95.