Legislation Used to Apply Artificial Intelligence for the Management of Records at the Council for Scientific and Industrial Research in South Africa

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Abstract

This study sought to investigate how legislation can be applied in the use of artificial intelligence (AI) for records management at the Council for Scientific and Industrial Research (CSIR), South Africa. The legislative framework does not only include the major element of legislation, but also the administrative, political, organisational, social and economic circumstances or arrangement, which make the legislation available, accessible, enforceable and effective. The legislative framework is the heart of attainment of commercial goals in all corporate industries, including archives and records management particularly using AI and robotic machines. AI refers to a robotic machine that has the capability for automated digitisation, automated classification, and records storage and retrieval. A convergent mixed-methods research was conducted, and data were collected, using interviews and questionnaires data collection techniques. Data was collected from sampled population of one portfolio manager, one records manager, three professional repositories and indexers, two archives technicians and one data librarian. Questionnaire was administered to three professional repositories and indexers, two archives technicians and one data librarian. Interviews was conducted to one portfolio manager and one records manager. Data were analysed thematically and statistically and presented in tables and figures. The study revealed that the CSIR utilised the South Africa legislative framework to manage their records. The study concluded that the CSIR should ensure that their legislative framework is reviewed to allow them to effectively apply AI for records management. The study proposed a framework to guide the application of the legislations when using AI for records management at the CSIR. It is trusted that the proposed framework will serve as a guideline for the implementation of legislation when utilising AI in the archives and records management industry.

Keywords: Artificial Intelligence, Legislative Framework, Records Management, Council for Scientific and Industrial Research

Introduction and Background of the Study

The legislative framework does not only include the major element of the legislation, but also the administrative, political, organisational, social and economic circumstances or arrangements, which make the legislation available, accessible, enforceable and effective (Rundle, 2009). The legislative framework is the heart of attainment of commercial goals in all corporate industries, including archives and records management (Marutha, 2019; National Policy Institute, 2019). Any development in records management must be attained in overall realisation that records are created in an institutional setting and based on a national legislative and regulatory framework (Katuu and Van der Walt, 2016; Marutha, 2019). The legislative framework has a credible

influence on how records are managed in any country, with those that are generated and saved in networked environments (Ngoepe and Saurombe, 2016). Netshakhuma (2019) states that effective archives and records management is directed by a comprehensive legislative framework which explain records to prevent uncertainty about the scope of the accountability at the National Archives. Each records management division, whether it be at a private or public institution, needs a proper legislative framework to manage its records effectively and efficiently through the adoption and application of artificial intelligence (AI). Weckerk and McDonald (2007); West (2015); Kalaiselvan et al. (2021); Marcu and Marcu (2021) define AI as a margin of computer science that focuses on the construction of intelligent machineries that function like human intelligence (HI). Iron Mountain (2019b) refers to AI as the process of working with robotic machines to do the jobs better, produce greater competencies and drive economic evolution. In this study, AI refers to a programmed robotic machine and AI-powered computer programs that are capable of automatically carrying out a difficult sequence of activities in the area of archives and records management (Iron Mountain, 2019a). In the context of this study, the term AI refers to a robotic machine that has the capability for automated digitisation, automated classification, and records storage and retrieval (Ripcord Company, 2019). However, effective legislation is needed for the better usage of AI for the management of records at CSIR in South Africa.

The statutory and regulation framework also comprises the Promotion of Access to Information Act 2 of 2000 (PAIA); Protection of Personal Information Act 4 of 2013; and Electronic Communication and Transaction Act 25 of 2000 (ECTA). This study further acknowledges the role that is played by the Constitution of the Republic of South Africa in archives and records management in South Africa. It is a constitutional right for records to be managed and retrieved by the South African public. All institutions, including the CSIR, manage and regulate their archives and records management services through National Achieves and Records Service of South Africa (NARSSA) policy guidelines and directives (section 13 of NARSSA Act 43 of 1996). NARSSA is an institution that gives guidelines and legislative frameworks to records management

practitioners across all public and provide institutions in South Africa to manage their records. The Constitution of the Republic of South Africa gives birth to all the legislative frameworks in the country; and all the legislative frameworks are developed by the Constitution of the Republic of South Africa (NARSSA 43 of 1996). Hence this study intends to investigate the legislation that can be used to apply AI for the management of records at CSIR in South Africa. A framework is also proposed to provide guidance on how the legislation can be used to apply AI for the management of records at CSIR in South Africa. CSIR is a research institute responsible for research production and innovation in South Africa. Its headquarters is based in Pretoria, South Africa.

Contextual Setting

CSIR is a superlative African research and innovation organisation started through the Scientific and Industrial Council Act, No. 33 of 1945, of South Africa. Section 4(d) of the Act, states that the function of the CSIR will be to publish information regarding its operations and create facilities for the storage, collection and distribution of information regarding the research. The CSIR undertakes directed, multidisciplinary research and high-tech invention that subsidises the development of the quality of life for South Africans (CSIR, 2018). The organisation makes a positive contribution to sustaining the government's initiatives via absorbed research relating to the country's developmental priorities, the institution's directives and its science, engineering and technological capabilities (CSIR, 2018). The key subjects that the CSIR pursues to engage via numerous interferences comprise: generating a vivacious economy and employment prospects; structure an accomplished state that is willing to steadily convey first-class services for all South Africans; and subsidise the improvement of socio-economic infrastructure like energy, transport, water resources and information communication technology (ICT) networks (CSIR, 2018).

The CSIR houses a huge number of records due to the rising number of research projects that are driven by economic development and the social infrastructure developments that are taking place in South Africa (Matroko, Mniki and Van Deventer, 2007). Besides, many records are usually transferred

from different organisations such as the Department of Science and Technology and Armscor in South Africa to the CSIR just because of the strategic position of the Council in the country. Currently, there are many records deposited at CSIR to support the researchers in South Africa (Matroko et al. 2007). For reliable access and permanent storage of records, the CSIR manages its records both manually and electronically to ensure that researchers always have access to records (Van Deventer, 2011). Numerous efforts have been made to ensure that records are managed by various devices for their permanency and for the advantage of researchers who need effective and efficient access to scientifically managed records.

Purpose and Objectives of the Study

The purpose of this study was to investigate how legislations can be applied when using AI for records management at the CSIR in South Africa. The following were the objectives; to:

- assess legislations that can be applied to use AI for the management of records at the CSIR.
- propose a framework for the application of legislations to use AI for records management at the CSIR

Literature Review

Legal framework does not include only the major element of the legislation itself, but also the administrative, political, organisational, social and economic circumstances or arrangement, which make the legislation available, accessible, enforceable and effective (Rundle, 2009; National Policy Institute, 2019). Legislative framework is the heart of the attainment of commercial goals in all corporate industries, including archives and records management (Marutha, 2019). Any development in the management of records must be attained in overall cognisance that records are created in an institutional setting and based on a national legislative and regulatory framework (Katuu and Van der Walt 2016; Marutha 2019). Legislative framework has an incredible influence on how records, together with those that are generated and saved in networked environments, are managed in any country (Ngoepe

and Saurombe, 2016). Netshakhuma (2019) states that effective archives and records management is directed by a comprehensive legislative framework that explains records to evade uncertainty about the scope of the accountability at the national archives. Every records management division, whether in a private or a public institution, needs proper policy and legal framework to manage its records effectively and efficiently. Hence this study takes into cognisance the legislation to ensure there is effective management of records in both the public and private institutions; this also include the CSIR. Legislation plays a crucial role in using AI for the management of records at CSIR. However, the current legislative framework in South Africa has to be reviewed so that they can infuse the application of AI in manging records in CSIR (Modiba, 2021).

Constitution of the Republic of South Africa

Chapter 2, section 32, sub-section 1 of the Constitution states that everybody has the right to retrieve information under the custody of the state and any information held by another individual and that is obligatory for the exercise or protection of any rights (Constitution of the Republic of South Africa, 1996). The utilisation of AI would ensure that individuals requesting information are provided with this information quicker and easier by using robotics to access it because AI ensures that access to information occurs at a high speed. Requestors of information would also be able to perform their respective functions on time because of this speed of access (Tom, Keane, Blaze, Pasquale, Chiang, Lee and Lee, 2020).

Section 5 of the Constitution deals with the operational parts of private regional legislative capabilities regarding the archives and records management. Part A of Schedule Five of the Constitution gives both the provincial and national archives the mandate and responsibility to manage and preserve records. The Constitution mandates public archives repositories in South Africa to regulate records management in governmental bodies (national departments, provincial departments, municipalities and statutory bodies). This mandate emanates from Jenkinson's assertion that the primary role of the archivist or records manager is to manage the records, while the secondary role is to make

records accessible to the users. This mandate charges public archives repositories with a statutory regulatory role concerning the management of records in governmental bodies, as well as preservation of records of enduring value to be used or retrieved by the public as a whole (Modiba et al. 2019). The constitution then gave birth to several pieces of legislation in South Africa that are authorised and accountable for the management and preservation of records in South Africa (Constitution of the Republic of South Africa, 1996).

The National Archives and Records Services of South Africa Act

In terms of section 13(iii), it is the responsibility of the National Archivist to assess the conditions subject to which electronic records are managed (NARSSA 1996). Therefore, in the application of AI for records management, the National Archivist would advise which records management activities would be managed through AI. According to this Act, an electronic records system refers to any records system in which information is created electronically and stored via computer technology (NARSSA, 1996).

Section 13 also addresses the administration and management of public records. It specifies that subject to the requirements of this NARSSA Act and charges the National Archivist with the appropriate management and maintenance of public records under the care of governmental bodies (NARSSA, 1996). For the application of AI to be effectively adopted and applied to manage records, organisations must comply with the NARSSA Act to make sure that the management of records is suitable and effective. The application of AI should be linked to and should not contravene the NARSSA Act to ensure that records are managed properly and effectively, hence this act has been reviewed in this study. The application of AI could ensure that the CSIR complies with the act by making records accessible as quickly as possible, managing records effectively, preserving records in the cloud storage and keeping records safe by ensuring that they are not destroyed, misplaced or lost. Accordingly, Ripcord Company (2019) alluded that AI and robotic machines are used to manage records.

Promotion of Access to Information Act

Section 29 of this Act addresses issues related to access to and methods of access to electronic documents. If a requestor is given a notice of access, it becomes the responsibility of the information officer to locate the record and give it to the requestor (PAIA, 2000). The information officer would use AI such as robotics and connected software to locate and retrieve the requested information for the requestor. The requestor might also search for the information by himself in the records on the database that is linked to a robot and, when retrieved, the record would appear on the screen of the computer (Kruhse-Lehtonen and Hofmann, 2020).

However, section 43 of this Act deals with the obligatory protection of research information of the third party and the protection of research information of public institutions (PAIA, 2000). The cloud storage in the organisation would be protected in such a way that no one without proper access to the records would be able to access them. Only the information officer would be able to grant access to records in their cloud storage. The records would be protected by encrypted security codes and passwords to ensure that the records are not accessed by anyone. AI security systems would ensure that records are protected against illegal and unauthorised access (Tom et al. 2020).

Protection of Personal Information Act

Chapter 2, section 4, of this Act is based on the lawful dispensation of personal information. The section indicates that when capturing personal information, the information officer should be responsible and accountable, and capture quality and reliable information, and safeguard the information processed (POPIA, 2013). Robotic machines would be able to digitise as many records as possible. The robot would only digitise the information that is provided by the information officer. Therefore, it is the responsibility of the information officer to digitise the required information and take full responsibility for the information they digitise through AI because they are the ones feeding the robot with what it needs to be digitised (Demaitre, 2020).

Section 5 of chapter 2 of the Act also plays a crucial role and should be considered when adopting AI for the management of records at the CSIR. This

section describes that data subjects, meaning the person whose data is captured, has the right to have his or her personal information captured in accordance with the circumstances of the lawful capturing of personal information. His or her personal information should be lawfully gathered and processed. A data subject would not have his or her personal information captured for the sake of straightforward marketing by means of an unsought automated communications act (POPIA, 2013). The information officer digitising the records should ensure that he or she captures the correct information about other persons.

Section 24 of the Act is about the correction of personal information and should also be considered during the implementation and utilisation of AI for the management of records. A data subject may, in the arranged way, ask an accountable party to fix or remove personal data about a data subject in its custody or under a regulation that is imprecise, inappropriate, unnecessary, out of date, inadequate, deceptive or has been obtained illegally. This also includes abolishing or removing a record of personal information about the data subject that the accountable party is no longer permitted to withhold in terms of section 14 of POPIA (2013). The robotic machines to be adopted and utilised for the management of records should be able to correct information that was incorrect when it was automated. The AI should be able to edit information captured so that it can autocorrect the information when requested (Davenport, 2019).

Electronic Communication and Transaction Act

Chapter IV, section 27 addresses the acceptance of electronic filing and issuing of a document. The Act states that any communal body that, pursuant to any law, accepts the filing of documents or has a need for records to be created and retained (ECTA, 2002), could adopt the utilisation of AI such as robotics, software and databases to ensure that records are filed electronically. Organisations would also use AI to issue documents to the users as they request them.

Part 2, section 10 deals with the responsibility of the Minister to establish the electronic transactions policy (ECTA, 2002). Public organisations should ensure that they establish and develop policies that would assist in the utilisation of the 4IR technologies such as AI, robotics, big data, blockchain, internet of things and web of things in the public sector (Manda and Dhaou, 2019). Such policies on electronic transactions assist institutions such as the CSIR to swiftly manage their records through AI.

Problem Statement

The problem that led to this study is that, without reviewed records management, legislation, including the adoption and application of AI, records will not be managed effectively (Modiba, et al. 2019; Modiba, 2021). CSIR is not yet using AI for the management of records. Therefore, there are legislation in place to guide on the utilisation of AI for the management of records. Hence, there is a need for CSIR to conceptualise the legislative framework that can be suitable to incorporate the application of AI for the effective management of records. Without proper legislation CSIR might not be able to apply AI to manage its records effectively and efficiently.

Legislative framework will guide CSIR on how to use AI for the management of records. With legislation in place CSIR will be able to adopt the use of AI and robotic machine to manage records effectively and efficiently. The legislative framework will guide the records management practitioners to create, maintain, retrieve, store and dispose of records, using AI and robotics. Therefore, this study sought to investigate the legislations that can be used to apply AI for the management of records at CSIR in South Africa. This study further recommends a framework to guide the records management practitioners at CSIR on how to use the legislative framework to utilise AI for the management of records at CSIR in South Africa.

Research Methodology

A convergent mixed-methods research was conducted, and data were collected, using interviews and questionnaires. The study was conducted from the perspectives of ontological pluralism and epistemic pragmatism. A convergent design was selected to allow researchers to collect qualitative and quantitative data from participants, analyse the data independently and combine the responses during data interpretation. The study further used parallel sampling as a technique to collect qualitative and

quantitative data from the same population, using different samples (Creswell and Creswell, 2018; Creswell and Plano-Clark, 2018).

This study was conducted among records managers and records management practitioners. They provided information about their knowledge, expertise and expectations of using AI for records management. This study focused on this staff because they are more knowledgeable about legislation applicable for the AI and records management. The population of the study consisted of a sample size of eight respondents currently employed by CSIR. The respondents were one portfolio manager, one records manager, three indexers, two archives technicians and one data librarian. The portfolio manager and records manager contributed qualitative data to the study through interviews. The interview questions were structured, and the interview was conducted through Microsoft Teams since data was collected during Covid 19 pandemic. During the interview the participants were asked about their views on the usability of AI for the management of records at CSIR.

Three professional repositories and indexers, two archives technicians and one data librarian contributed quantitative data to the study through questionnaires. The researcher used both open and close ended questions to answer questions on the usability of AI for the management of records at the CSIR. Open ended questions allowed the respondents to express themselves on the usability of AI for the management of records at CSIR.

Findings of the Study

Electronic Records Management Activities Dealt with by Legislative Framework

The legislative framework deals with electronic records management activities in various ways. Based on this statement, the respondents were asked in a questionnaire about electronic records management activities attended to by the legislative framework. The legislative framework at the CSIR was applied to discharge electronic records management activities, as indicated in figure 1. 5 (83%) respondents indicated that the legislative framework was used for the creation of records; 6 (100%) indicated it was used for the retrieval of records; 5 (83%) indicated it was used for the storage of records; 5 (83%) indicated it was used for records maintenance and 6 (100%) indicated it was used for the safety and security of records.
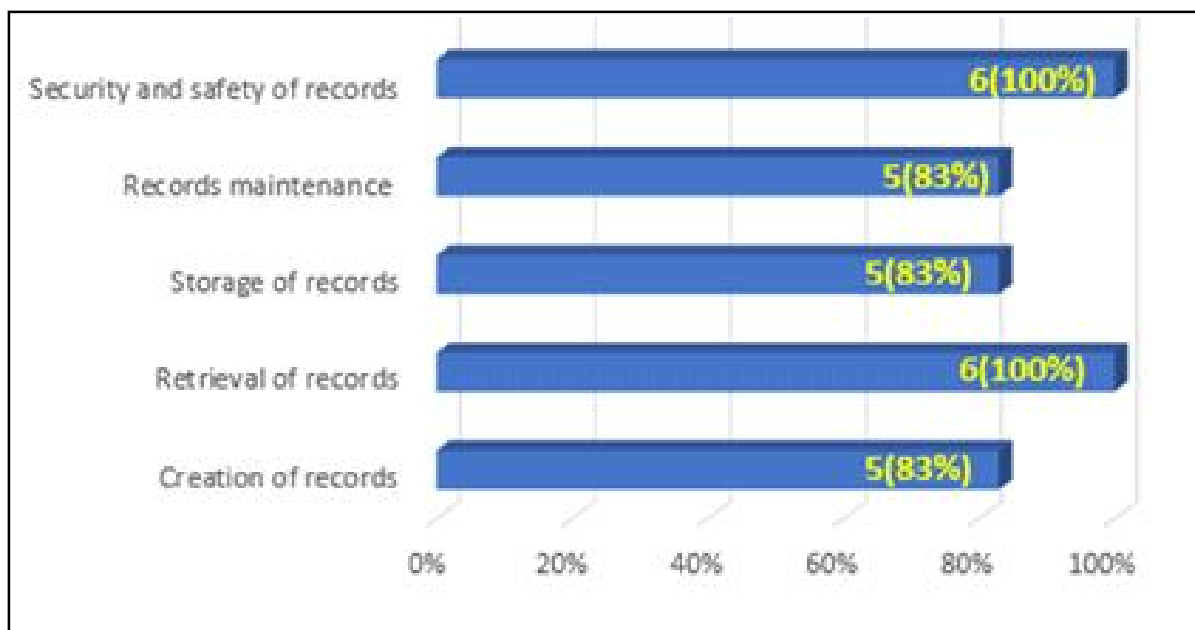

Figure 1: Electronic records activities addressed by legislative framework (N=6)

The participants interviewed were also asked about the application of a legislative framework to manage electronic records at the CSIR. They identified the legislative framework used at the CSIR for records management. They also explained how the legislative framework was used to manage records effectively and efficiently. They responded as follows:

Participant 1 stated that, "CSIR is a governmental body so it has to comply with the National Achieves and Records Service of South Africa Act to ensure that CSIR achieve the principle of good management of records, for CSIR to perform its duties as specified in the Scientific Research Council Amendment Act and also ensure accountability, integrity and principles that comes with good records management".

Participant 2 stated: "Legislative framework used to guide the CSIR to comply with all the requirements to ensure there is good records management practice".

South Africa Legislative Framework Used to Manage Records at the CSIR

Organisations in South Africa make use of legislative frameworks to manage their records effectively. Such legislative frameworks are used to provide guidance on how records should be managed. Hence, the respondents were requested in the questionnaire to identify the South African legislative framework that was used to manage records at the CSIR. Figure 2 indicates that 1 (17%) respondent said that the CSIR used the Constitution; 4 (67%) indicated that they used Promotion of Access to Information Act (PAIA); 1 (17%) confirmed that they used the Promotion of Administrative Justice Act, 3 of 2000 (PAJA); 5(83%) said that they used the NARSSA Act; 4 (67%) indicated that they used the Protection of Information Act, 84 of 1982 and 5 (83%) indicated that they used Act Protection of Personal
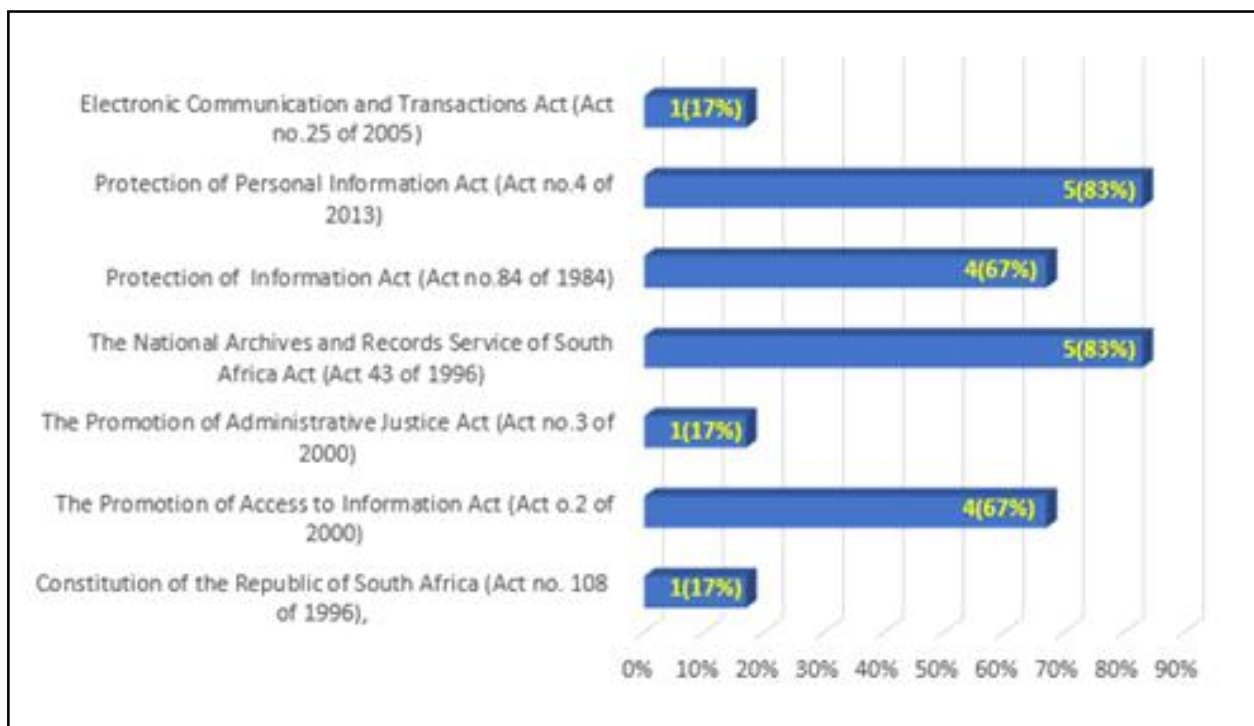

Figure 2: South African legislative framework used to manage records at CSIR (N=6)

Information (POPIA) and 1 (17%) said they used the ECTA.

The participants interviewed were asked about the South African legislative frameworks used for records management at the CSIR. They identified that the CSIR used the South African legislative framework for records management. The responses were as follows:

Participant 1 stated that the CSIR used the following as legislative framework to manage their records: The National Archives and Records Service of South Africa Act, 43 of 1996; the Promotion of Access to Information Act, 2 of 2000; the Protection of Information Act, 84 of 1984; the Protection of Personal Information Act, 4 of 2013; the Electronic Communication and Transactions Act, 25 of 2005; the Scientific Research Council Amendment Act, 71 of 1990 and the Copyrights Act, 98 of 1978.

Participant 2 stated that the CSIR used the following legislative framework: The National Archives and Records Service of South Africa Act, 43 of 1996; the Promotion of Access to Information Act, 2 of 2000; the Protection of Information Act, 84 of 1984; the Protection of Personal Information Act, 4 of 2013; the Electronic Communication and Transactions Act, 25 of 2005; the Scientific Research Council Amendment Act, 71 of 1990; the Copyrights Acts, 98 of 1987; the King IV report on corporative governance and the Spatial Data Infrastructure Act, 54 of 2003, as legislative framework to manage records.

Utilisation of a Legislative Framework to Manage Records at the CSIR

A legislative framework can be used to ensure that records are properly managed. Hence, the respondents were asked in the questionnaire to indicate how the CISR apply the legislative framework for records management. Figure 3 shows that 4 (67%) respondents said that the CSIR used the legislative framework for policy development; 3 (50%) indicated decision-making; 2 (33%) highlighted problem-solving; 4 (67%) said it was used for developing a records management framework; 4(67%) indicated that it was used for developing electronic systems; and 3(50%) indicated that the legislative framework was used to implement training
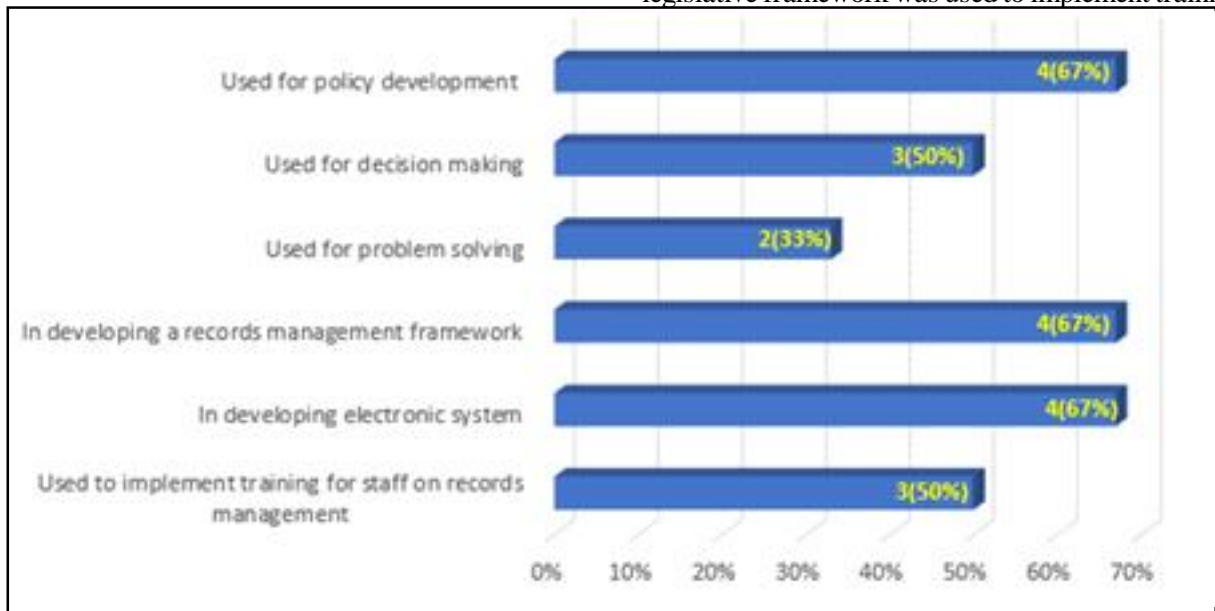

Figure 3: Utilisation of legislative framework for management of records at CSIR (N=6)

for staff in records management.

Gaps Identified in the Legislative Framework for Records Management

There are gaps in the legislative framework that will obstruct organisations in giving guidance on how records should be managed at organisations. Based on this statement, the respondents were asked to describe the gaps in the legislative framework used at the CSIR by means of open-ended questions in a questionnaire. Some respondents identified the gaps in the legislative framework used to manage records, while others did not identify any gaps in the legislative framework. The responses were as follows:

> Respondent 1 stated that "Policies are not compatible with electronic records management system".

> Respondents 2 stated that "There is no enforceable and governance of legislations at CSIR".

> Respondent 3 stated that "There is not compliance of legislations at CSIR".

> Respondent 4 stated that "Policies do not cover effectively the electronic records".

> Respondent 5 stated that "There is no gap in the legislation".

> Respondent 6 stated that 'I am not certain about what can be added in the legislation".

The participants were also asked about the gaps in the legislative framework. They stated that no gaps were identified in the legislative framework used to manage records. The responses were as follows:

Participant 1 stated that "There is no gaps on the legislative framework"

Participant 2 stated that "The legislative framework has no gaps".

Improvements to the Legislative Framework used for Records Management

The legislative framework should be improved regularly so that it could provide effective guidance on records management to organisations. Hence,

the respondents were asked about required improvements to the legislative framework for records management by means of open-ended questions in a questionnaire. The respondents mentioned that the legislative framework should be improved to infuse the adoption of new ICT in records management. The responses were as follows:

> Respondent 1 stated that: "Legislative framework should include the investigation and adoption of a suitable electronic records management system".

> Respondent 2 stated that: "CSIR should conduct workshops about the legislative framework".

> Respondent 3 stated that: "CSIR should enforce compliance of legislative framework within the employees".

> Respondent 4 stated that: "I am not sure about the improvements that can be added on the legislative framework at CSIR".

> Respondent 5 stated that: "There is no improvement needed on the legislative framework".

> Respondent 6 did not answer the question.

The interviewed participants were also asked about improvements that could be made to the legislative framework. They indicated that no improvements have to be made to the current legislative framework, since it covers all the critical components of records management in the country. The responses were as follows:

> Participants 1 stated: "No improvement is needed on the legislative framework".

> Participant 2 stated that: "The legislative framework needs no improvement".

Document analysis indicated that the NARSSA Act does not deal with the adoption, implementation and utilisation of information technology in records management.

Discussion of the Results

Application of Records Management Legislative Framework

The legislative framework plays a crucial role in any institutional activity, especially in the records management industry by ensuring that records are effectively managed. The literature review shows that legislation provides guidance and direction as to how records should be created, kept and maintained for future institutional and individual employee accountability (Marutha, 2019). The literature further indicates that the legislative framework provides guidance as to how records are captured, transmitted, used, stored, indexed, retrieved, controlled, retained; and employees of any institution must comply with the relevant legislations to ensure that services are provided adequately (Katuu and Van der Walt, 2016). South Africa also has its own legislative frameworks in the field of records management; and the CSIR utilises them to ensure that their records are managed effectively and efficiently.

The records management industry establishes and develops policies through the legislative framework that best manages the records in South Africa (Netshakhuma, 2019). Therefore, the CSIR used the national policy framework developed by the industry to establish and develop its own records management policy. The six respondents and participants indicated that they are aware of the legislative framework that is used to manage records at the CSIR. They articulated that such legislative frameworks apply to records management practice at the CSIR. The CSIR uses the legislative framework because it is the heart of achievement of business goals in all business sectors, including the archives and records management industry (Marutha, 2019).

The CSIR also uses the legislative framework because it has a tremendous impact on how records must be attained in overall realisation that such records have been created in an organisational setting based on a national legislative and regulatory framework. The participants further alluded that the CSIR always uses the legislative framework for information governance to ensure the authenticity of records and that the CSIR meets the legal requirements for records retention and disposal. They also indicated that the legislative framework ensures that the CSIR, as a public organisation, complies with the national legislative framework drafted and compiled by means of policy and strategic

documents.

Electronic Records Management Activities Dealt with by the Legislative Framework

The Legislative Framework also involves details on how organisations manage their electronic records (Marutha, 2019). The policy indicates that electronic records refer to any document that is created electronically – e-mails, minutes or reports. The policy indicates that such records could be stored in the electronic records management system (ERMS) for proper management. Such records could be accessed and retrieved easily when required by the users. The policy further indicates that paper-based records could be digitised and converted to digital records. Many organisations have converted or are in the process of converting their paper-based records into digital records as well as legislative policy stipulating how such a process could be undertaken (Netshakhuma, 2019). The policy also guides on how electronic records could be accessed and retrieved; how records should be stored in the server or cloud and on how electronic records should be maintained.

Six of the respondents confirmed that the legislative framework is used at the CSIR to provide guidelines on the retrieval of records and to ensure that records are secured and saved as confirmed. Five respondents stated that the legislative framework is also used for the creation, storage and maintenance of records. Electronic records refer to records that are created on a computer by, for example, typing and sending emails (Flynn, 2001). The policy indicates the manner in which electronic records should be created, stored, maintained and disposed of at the CSIR. This means that records management practitioners rely on the policy and refer to it to ensure that records are properly managed.

The participants articulated that the CSIR, as a government body, must comply with the National Achieves and Records Service of South Africa Act (Act 43 0f 1996) to ensure that it achieves the principle of sound records management. Therefore, the CSIR has a responsibility of performing its duties, as specified in the Scientific Research Council Amendment Act (Act 71 of 1990). The CSIR further ensures that there is accountability, integrity and principles that come with sound records management by ensuring that records are effectively managed.

The participants also alluded that the legislative framework is used to provide guidance to the CSIR when it comes to meeting all the requirements to ensure that there is sound records management practice. The researcher observed that CSIR records management does not effectively deal with the management of electronic records. The document analysis indicated that the electronic management system does not deal properly with the electronic records management systems.

South African Legislative Framework used to Manage Records at the CSIR

The literature study has shown that South African legislative framework assists institutions in managing their records to such an extent that the employees rendering records management services are accountable (Ngoepe and Saurombe, 2016). According to the literature study, even though the colonial state failed to establish an effective archives and records management framework (Katuu and Van der Walt, 2016) there has been rapid development of such legislative frameworks to be utilised by government and private bodies (Marutha, 2019). Hence, the CSIR uses the National Archives and Records Service of South Africa Act 43 of 1996 and Protection of Personal information Act (Act 4 of 2013), as indicated by the five respondents. The National Archives and Records Service of South Africa Act 43 of 1996 plays a pivotal role in the industry by ensuring that records are effectively managed. Institutions also have to ensure that personal information is protected as they disseminate information among their users.

Four respondents (the majority) indicated that the CSIR uses the PAIA and the Protection of Information Act (Act 84 of 1984). However, the CSIR must ensure that the right to information is not abused by enforcing the Protection of Information (Act 84 of 1984). Only one respondent indicated that the CSIR uses the Constitution of the Republic of South Africa (Act 108 of 1996), the Promotion of Administrative Justice Act (Act 3 of 2000) and the Electronic Communication and Transactions Act (Act 25 of 2005).

Most of the participants articulated that the CSIR uses the following legislative frameworks for records management: The National Archives and Records Service of South Africa Act (Act 43 of 1996), The PAIA, Protection of Information Act (Act 84 of 1984), Protection of Personal Information Act (Act 4 of 2013), ECTA, Scientific research council amendment acts 71 of 1990 and the Copyrights Act 98 of 1978 . A minority of participants also mentioned King 4 reports on corporative governance and Spatial data infrastructure Act 54 of 2003. The researcher observed that the CSIR uses the South African legislative framework to manage the records. The document analysis further revealed that the CSIR uses the South African legislative framework to manage the records effectively.

Utilisation of the Legislative Framework to Manage Records at the CSIR

The legislative framework is used to ensure that organisations in the records management industry develop policies to ensure that there is a records management framework in place when records are managed, and services provided (Netshakhuma, 2019). Organisations use the legislative framework to develop a policy framework that could be used for the effective and efficient management of records (Marutha, 2019). The CSIR also uses the South African legislative framework, such as the NARSSA Act 43 of 1996, to develop policy framework, like the CSIR records management policy, to ensure that their records are properly managed. For electronic records, organisations, such as the CSIR, also use ECTA Act 25 of 2002 as framework to ensure that the electronic records are properly managed. Hence, the CSIR uses the legislative framework for policy development, a records management framework and an electronic system, as stated by four respondents.

The legislative framework plays a significant role in ensuring that records management policies are formulated and specifies how such policies should be implemented. However, a legislative framework is used to implement training for staff in records management, as indicated by three respondents. The legislative framework also indicates how policies should infuse training in how records are managed at the organisations. The researcher observed that the legislative framework is used to develop the CSIR records management policy. The document analysis report further indicated that national legislative frameworks are used to develop the CSIR records

management policy.

Gaps Identified in the Legislative Framework for Records Management

Gaps in the legislative framework will have an impact on the implementation and enforcement of legislations in records management. Gaps in the legislative framework will also affect the quality of records management services the organisation provides (Marutha, 2019; Netshakhuma, 2019). However, the respondents indicated that the policies do not include the compatibility of the electronic records management system. Therefore, the CSIR might not be able to manage its electronic records effectively, since the policy does not clearly cover issues related to the utilisation of ERMS and new technology for records management.

The respondents further indicated there are no enforceable legislations and governance at the CSIR. This might be because there has been a lack of training in how policies are enforced and implemented at organisations. Some respondents indicated they are not sure about the gaps in the legislative framework at the CSIR; and the interviewed participants articulated that there are no gaps in the legislative framework, since it is reviewed via consultations with the public or stakeholders.

Improvement in the Legislative Framework for Records Management

The improvement of the legislative framework will assist the organisations in ensuring that they have well-structured policies in place that will ensure effective and efficient records management (Katuu and Van der Walt, 2016). Legislation often must be improved to ensure there are no gaps that will obstruct the quality of records management services provided by organisations (Ngoepe and Saurombe 2016). Hence, the respondents indicated that the legislative framework should include the adoption and utilisation of a suitable electronic records management system; the CSIR should conduct workshops about the application of a legislative framework in records management; and enforce compliance with the legislative framework by its employees to ensure that they implement the CSIR policy framework for proper records management.

The legislative framework should include

guidelines on implementing ERMS for the proper management of electronic records. However, some respondents are unsure about improvements that could be made to the legislative framework in South Africa. The participants articulated that no improvement to the legislative framework is needed, because legislative frameworks are often reviewed through extensive consultation with the public and records management practitioners in the industry. The researcher also observed that the CSIR records management policy covers important aspects of records management services, since it has recently been revised.

Conclusion

In conclusion, legislation plays an integral role in records management at the CSIR. The CSIR uses legislation, such as National Archives and Records Service of South Africa Act 43 of 1996, Protection of Personal Information Act (Act 4 of 2013), PAIA, Protection of Information Act (Act 84 of 1984) and the Electronic Communication and Transaction Act (Act 23 of 2000) to ensure that records are managed effectively. The CSIR should use the legislative framework to ensure that digital records are completely managed through AI. However, the CSIR must also ensure that legislation is applied and that such legislation is compliant when managing and providing digital records management services. Training intervention and programmes on the application of AI for the management of digital records at CSIR.

Records management practitioners are aware of the legislative and policy framework used to manage records at the CSIR. The legislative framework is applicable to records management practice at the CSIR. The CSIR used the South Africa legislative framework; the National Archives and Records Service of South Africa Act 43 of 1996; the Protection of Personal Information Act (Act .4 of 2013); the Protection of Information Act (Act 84 of 1984) and the PAIA to manage its records. The legislative framework was used to develop the CSIR's policy framework, electronic systems and records management framework.

Recommendations

Based on the findings of this study, the CSIR' legislative framework should include the application of AI for the management of records. The proposed frame work is as follows:

Proposed Framework

This framework is recommended so that it provides guidance to the records management practitioners at CSIR on the policies that can be used to apply AI for the management of records. The study proposed a framework to apply to the legislations as guideline for the utilisation of AI for records management at the CSIR (see figure 4). The framework is based on AI and the South African legislative framework
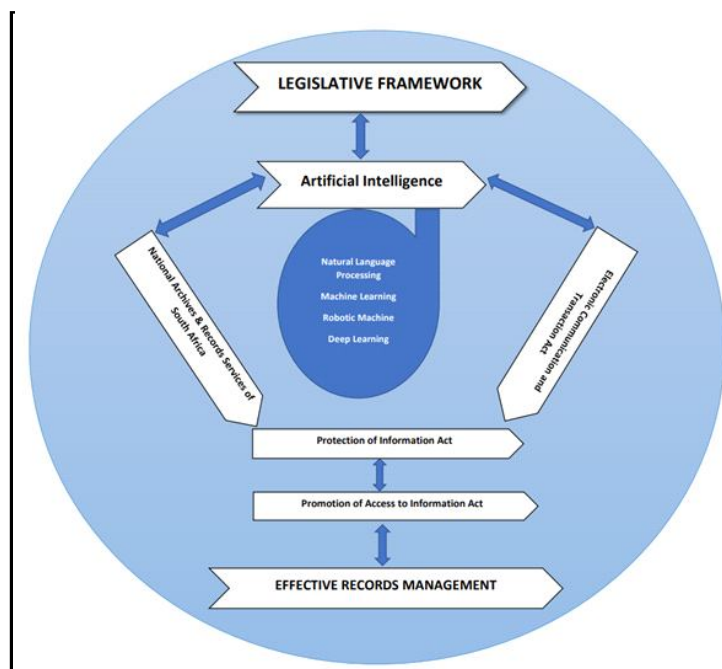

Figure 4: Framework to apply the legislations to utilise artificial intelligence for the management of records

This model articulates legislations that can be applied to use AI for records management at the CSIR in South Africa. The legislations emanate from the Constitution of South Africa, 1996. These are the legislations that can guide when applying and using AI for records management at the CSIR. Such legislations include the National Archives and Records Services of South Africa, for the effective management of records. However, AI and robotics should be infused in South African legislations to ensure that such technological resources are used effectively for records management. Legislations such as the Protection of Personal Information Act, Protection of Information Act, Electronic Communication and Transaction Act and the Promotion of Access to Information Act can also infuse AI to ensure that as much as possible information is provided, but that such information is protected through encrypted security passwords. If infused and applied properly in the South African legislations, AI and robotics will assist in providing effective records management services at the CSIR in South Africa.

which are known to guide the management of information or records.

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