

Records Manager's Awareness of AI and its Role in Enhancing Records Management in Oman: Current Reality and Future Prospects

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ABSTRACT: Artificial intelligence (AI) contributes to improving the efficiency of managing, storing, and accessing records and information in institutions, and enhancing their security. This study aimed to explore the level of awareness of AI among records management officials in Omani institutions, as well as to identify the challenges they may face in its use. The study employed a mixed methodology that included a questionnaire and semi-structured interviews with records management officials. The sample consisted of 50 records managers from 20 institutions. Descriptive statistical analysis (means and percentages) was used to examine the levels of awareness, use, and challenges related to AI among the records managers. Content analysis was also used to interpret open-ended responses and identify areas for AI adoption in records and information management. The results showed that records managers have a high level of awareness of the benefits of AI, with an average score exceeding 4.0 (80%) on a five-point scale. However, the use of AI technologies in records management remains limited, with an average of 3.1 (62%), due to several challenges, including insufficient funding and technical support, and concerns about potential job losses resulting from AI adoption. This study contributes to supporting policymakers and records management specialists in developing the policies and regulatory frameworks necessary to adopt artificial intelligence technologies safely, with the aim of improving records management systems and providing training programs to enhance the technical skills of records specialists and keep pace with the requirements of digital transformation.

Keywords: Artificial intelligence, Digital awareness, Records managers, Electronic records management systems (EDRMS), Omani institutions.

I. INTRODUCTION

The world is witnessing a growing trend toward adopting AI systems to enhance institutional performance and improve service delivery. AI technologies offer promising opportunities for more effective management of archival institutions and record collections. Electronic Records Management Systems (ERMS) are defined as software systems used within institutions to manage digital records throughout their lifecycle, from creation and classification to storage, access control, archiving, and retrieval. These systems facilitate access to records, maintain their integrity, and enhance operational efficiency within institutions according to specific technical and security standards [1]. In this study, ERMS refers to all digital systems and applications adopted by Omani institutions both public and private to organize and manage their administrative records in a way that ensures efficiency and compliance with approved standards.

The research conducted by Saleh [2] demonstrates how AI technology improves records management systems through its enhancements of indexing and classification and search functions while enabling users to manage substantial records collections. The Omani government has launched several initiatives to implement digital records management projects, including the "Wusool" system, which establishes unified standards for accessing, storing, and exchanging digital data according to records types among various Omani entities and institutions. The system offers an electronic alternative that streamlines administrative activities related to records management, enhancing their efficiency and effectiveness, while also protecting sensitive records from unauthorized access and preventing loss [3]. To implement records management technologies, institutions that manage their records management activities need to develop specific strategies that align with their needs in this area, and to qualify records managers and enhance their technical skills through training that includes new technologies such as AI [4].

The level of awareness, competencies, and understanding of record management professionals in relation to the use of AI techniques in their practice still needs to be studied; indeed, their knowledge about this technology is limited to its basic aspects only, whereas no use is made of AI in the process of records management. The current gap prevents records managers from fully leveraging AI. Accordingly, this study aims to assess the level of familiarity with AI technologies among records management officials in Omani institutions, identify the main obstacles hindering their effective application in records management, and offer practical suggestions to support institutions in adopting these technologies within their digital records management systems. In this context, the study poses the following research questions:

- RQ1: What is the level of knowledge among records managers in Omani institutions regarding AI technologies, and how has this knowledge influenced the provision of records management services?
- RQ2: To what extent do records managers utilize AI technologies in their professional duties?
- RQ3: What are the most significant challenges that hinder the effective adoption of AI technologies in developing digital records management systems within Omani institutions, from the perspective of records managers?
- RQ4: What areas require increased awareness of AI technologies within records departments in Omani institutions, from the perspective of records managers?

This study addresses a contemporary issue of increasing importance in the field of records and archives management: the need to develop the knowledge and skills of records managers in light of the rapid expansion of AI technologies. Enhancing the awareness and professional skills of records managers is crucial to ensuring the effective application of these technologies in digital records management practices. This study also provides Omani institutions (particularly those subject to the Records and Archives Law) with insights into how to develop strategic plans to enhance workforce competencies and improve the quality of services provided by records management departments. Furthermore, the study aims to enrich the literature on AI and records management. The National Records and Archives Authority of Oman can utilize the findings of this study to develop training programs for records management professionals and to encourage research activities related to records and archives management [5]. Furthermore, a review of the existing literature reveals that most pilot studies on the application of AI in records management have been conducted in developed countries, while studies on AI applications in records management remain limited, both in Oman and other developing countries. Therefore, this study explores how Omani records managers are aware of and utilize AI systems to enhance their records management practices. The study also contributes to highlighting the institutional, technical and human challenges associated with the application of artificial intelligence in records management, and provides recommendations to support officials in developing secure and effective AI-based records management systems.

II. LITERATURE REVIEW

Regarding AI awareness among records managers, the literature indicates that they must possess a basic understanding of AI, as this is a prerequisite for the successful implementation of AI-enhanced records management. This is especially true given the rapid digital transformation in institutions, which necessitates

the development of advanced applied competencies, including data analysis, algorithm understanding, and decision-making skills [6]. Canning and Jaillant [7] emphasize that records managers must develop a cognitive awareness of AI capabilities, and that its successful implementation requires aligning professional practices with new digital environments. Mojapelo and Marutha [8] point out that many institutions do not fully leverage AI technologies due to a lack of skills among their staff, despite its increasing importance in supporting information management, storage, and processing strategies. Furthermore, records managers in most institutions lack the technical skills and knowledge required to successfully implement AI tools, hindering workflow efficiency improvements, enhanced decision-making capabilities, and improved service quality. The study by Arias Hernández & Rockembach [9] concurs, identifying a lack of skills and knowledge in AI as a major challenge to its adoption in archival work. This gap is even more pronounced in developing countries, where AI understanding remains largely theoretical, with limited opportunities for practical application. In contrast, archivists in developed countries, such as Sweden, possess advanced knowledge and skills in AI, along with an awareness of the ethical implications of its use, enabling them to employ these technologies more sustainably in archival work [10].

In Oman, a gap exists between the theoretical knowledge of records managers regarding AI technologies and their ability to apply them practically in records management and archiving. This highlights the need for systematic capacity-building programs and specialized institutional support systems. The successful implementation of AI technologies in institutions is linked to employee attitudes and their acceptance or resistance to these technologies due to fear of job loss or weak management support. Furthermore, some institutions may lack clear policies regulating the use of AI in records and information management [11]. Resistance to change, insufficient training, and weak institutional integration represent key challenges to AI adoption.

Regarding the benefits of AI in records management, AI technologies are essential tools capable of transforming records management. They contribute to improving the operational efficiency of archival systems by mimicking human cognitive processes, including learning, reasoning, and decision-making in light of changing data [12, 13, 14]. AI is a driving force behind automating core records management tasks, encompassing various stages of the record lifecycle, from initial capture and indexing to metadata creation, storage, and retrieval. AI-based systems also improve information flow by delivering accurate and rapid results, enhancing access to institutional knowledge resources [15, 16]. AI technologies contribute to improving classification, archiving and information retrieval in electronic records management. Furthermore, AI enables institutions to efficiently handle massive amounts of data, thereby improving data availability and expanding knowledge generation opportunities within archival institutions [17, 18, 19]. It also helps optimize resource utilization and reduce reliance on manual labor, allowing records managers to focus on more advanced tasks such as data analysis, quality control, and service development. Ahmadov and Mahmudov [4] emphasize that technologies like NLP, ML, and OCR contribute to record digitization, data mining, and productivity enhancement. AI plays a role in transforming unstructured data into analyzable data for producing reports.

On the other hand, AI systems contribute to enhancing digital preservation processes by ensuring the continuity of storage and accessibility for various forms of digital content, including texts, visual materials, and multimedia [20]. Despite numerous studies addressing the advantages of AI, research on its applications in archival institutions remains limited. Furthermore, the current literature lacks sufficient studies demonstrating how Omani institutions utilize AI to improve service quality, enhance operational performance, and support decision-making processes.

Regarding the challenges of adopting AI in records management, the use of AI technologies to support records management systems in institutions is increasing. However, their optimal implementation faces financial, technical, organizational, professional, and legal challenges. Some institutions may lack the financial resources to invest in AI infrastructure, acquire specialized software, or fund related research and development activities [22, 21]. Many developing countries also suffer from limited resources allocated to digital transformation, which limits their ability to develop AI-based capabilities. In addition to financial

challenges, limited digital infrastructure within institutions and the absence of standards for processing unstructured data and handwritten records are among the most significant obstacles to implementing AI solutions in records management. Issues of system reliability, accuracy, and performance may also present additional challenges be hindering the adoption of AI-based records management systems [23]. Lin & Zou [24] point to legal and security challenges related to data privacy and system reliability, while Arias & Rockembach [9] emphasize that the lack of human and financial resources, weak training, and inadequate institutional integration are among the most prominent obstacles. Usama [25] also points to the need to adapt AI to complex archival tasks.

On the other hand, the absence of governance frameworks leads to the failure or incompleteness of AI projects. The lack of an institutional plan for implementing these technologies limits their growth and integration into operational processes [26]. A shortage of basic professional skills is also a major obstacle to AI adoption. Many records specialists lack the necessary knowledge to handle these technologies, analyze data, and use digital systems, which negatively impacts organizational performance and increases employee resistance to technological change [27]. The successful adoption of AI is also linked to the level of awareness among management regarding its strategic dimensions. A weak understanding of its benefits by senior management may lead to insufficient resource allocation for its implementation, thus slowing its adoption within institutions [28]. Canning & Jaillant [7] emphasize that senior management support and the involvement of archiving experts in designing AI solutions are crucial for successful implementation.

III. METHODOLOGY

This study adopted a mixed-methods approach to achieve its objectives, combining quantitative and qualitative methods to provide a more comprehensive and in-depth understanding of the phenomenon under investigation. This approach is of great importance because it allows for more accurate and richer results by combining multiple types of data, exceeding what can be achieved using either quantitative or qualitative methods alone [29]. The quantitative part of the study focused on measuring the level of awareness of records managers regarding artificial intelligence (AI) technologies, the extent of their use in their daily work, and the challenges they face when employing these technologies to improve electronic records management. This section covers the first three objectives of the study. In contrast, the qualitative part focused on exploring areas that need development, particularly identifying shortcomings in awareness and understanding of AI technologies among employees in records management departments of Omani institutions, which is related to the fourth objective of the study. Regarding the limitations of the study, its scope was limited to assessing the awareness of records managers regarding AI technologies and their role in improving records management in Omani institutions.

Data were collected from the records and archives departments of (20) Omani institutions between March and May 2025. The study population consisted of records and archives specialists working in Omani institutions subject to the provisions of the Records and Archives Law issued by Royal Decree No. (60/2007 [5]). The study relied on a random sample of (50) records managers in governmental and private institutions to ensure adequate representation of the study population and enhance the generalizability of the results (see Table 1). The selection of institutions considered the diversity of their operational activities and their level of adoption of electronic record management systems, thus enabling the measurement of specialists' familiarity with artificial intelligence technologies and their level of use in record management. The sample size was determined in accordance with the nature and objectives of the study, which adopted a mixed (quantitative and qualitative) approach. Quantitatively, the sample size of (50) participants is suitable for descriptive exploratory studies that aim to measure the level of awareness and practices and identify the challenges associated with adopting artificial intelligence technologies. Qualitatively, a (10) Semi-structured interviews were conducted with records specialists from (10) different institutions. This number was deemed sufficient based on the principle of data saturation, as subsequent interviews did not yield any significant new information or patterns. Participants were selected using purposive sampling to ensure representation

of diverse institutions in terms of work nature and experience, thereby enhancing the reliability of the results and contributing to the achievement of the study's objectives.

Table 1. Institutions included in the study.

No.	Institution Name
1	Projects, Tenders and Local Content Authority
2	State Audit Institution
3	Oman Food Investment Holding Company (Nitaj)
4	Oman Liquefied Natural Gas LLC (Oman LNG)
5	Oman Broadband Company
6	Vodafone Oman
7	Muscat Clearing and Depository Company (SAOC)
8	Oman Airports
9	Asyad Ports – a subsidiary of the Sultanate of Oman's integrated logistics and transportation group. The Arabic word <i>Asyad</i> means "leaders" or "masters".
10	Nama Electricity Distribution Company
11	Social Protection Fund
12	Oman Medical Specialty Board (OMSB)
13	Environment Authority
14	Public Authority for Special Economic Zones and Free Zones
15	Telecommunications Regulatory Authority (TRA)
16	Consumer Protection Authority
17	Ministry of Information
18	Ministry of Justice and Legal Affairs
19	Ministry of Health
20	An institution from the military and security sector

Table 2 provides a summary of the samples collected for this study, which included 50 participants from 20 Omani institutions. Demographic data for the participants indicated that around 72% of the sample had a degree either at the bachelor or master level. The data also showed that the majority of the participants had had previous experience working with digital records management systems, and thus they had high levels of both educational credentials and expertise as it related to their ability to provide credible opinions and assessments regarding the effects of AI technologies on records management practices. In addition to the above, there was also a large number of the records managers who participated in this study who had been working in the field of records management for ten years or more, and therefore their opinions regarding the effects of implementing AI technologies on records management systems are considered credible by those providing data for this study (Figure 1).

Table 2. Distribution of the study sample.

No.	Variable	Category	Frequency	Percentage
1	Gender	Male	34	68%
		Female	16	32%
		General Diploma (High School)	6	12%
2	Educational Qualification	Diploma	8	16%
		Bachelor's Degree	27	54%
		Master's Degree	9	18%

No.	Variable	Category	Frequency	Percentage
3	Years of Service	Less than 5 years	11	22%
		From 5 to less than 10 years	4	8%
		From 10 to less than 15 years	12	24%
		15 years and above	23	46%
		Employee	1	2%
4	Job Level	Records manager	26	52%
		Head of Section	18	36%
		Manager	5	10%

A primary focus of this study was to collect data related to records managers and department managers; these two groups made up 88% of the total number of participants. It was decided to select these two groups because they both had extensive experience working with digital records management systems, and had first-hand experience with the implementation of AI technologies in Omani government institutions.

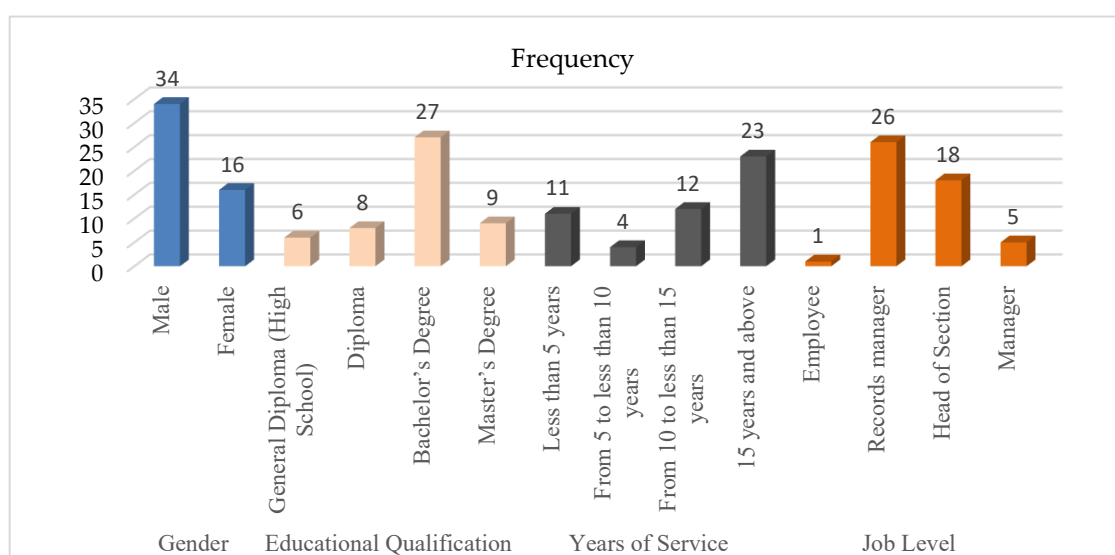


FIGURE 1. Distribution of the study sample.

The study relied on a questionnaire as the primary tool for collecting quantitative data and its ability to collect information, analyze the factors influencing the phenomenon under study, and explore participants' attitudes, perceptions, and viewpoints [30]. It was designed based on relevant literature and previous studies to ensure its axes and items aligned with the study's objectives. To ensure clarity and accuracy of terminology used in the questionnaire, its initial version was applied to a pilot sample of ten (10) records managers and IT specialists. The comments provided by the participants in the pilot group were considered, and any necessary adjustments were made to the terminology. Once the modifications had been made to the questionnaire, it was sent to the actual participants in the study. The questionnaire was divided into two major parts, with (26) questions in total. The first part consisted of collecting information about the participants' demographics, such as their gender, qualification, years of experience, place of work, and job title. The second part included the following five major areas:

- The level of awareness among records managers regarding AI technologies and their impact on records management in Omani institutions.
- The extent to which records managers utilize AI technologies in their work tasks.

- The challenges faced by records managers when implementing AI in their work environments.
- Areas that should be emphasized to increase AI awareness among records managers.
- Suggestions from records managers for improving records management systems using AI.

A five-point Likert scale was used to measure axes (a), (b), and (c). This scale is one of the most common methods for measuring perceptions, preferences, and ideas, especially among individuals with similar professional or personal backgrounds. The Likert scale is a popular measurement tool in quantitative research across fields such as psychology, behavioral sciences, education, medicine, and business studies, due to its flexibility in generating data that can be statistically analyzed and objectively interpreted, especially in questionnaire-based research [31].

The questionnaire contained the following response levels: Very High, High, Moderate, Low, and Very Low. To facilitate interpretation of results and ensure an accurate representation of participants' responses, the weighted mean values were analyzed and interpreted according to the scale shown in Table 3 below.

Table 3. The interpretation of the weighted mean in a five-point Likert scale.

Range-Value	Scale	Verbal Interpretation
4.21 – 5.00	5	Very High
3.41 – 4.20	4	High
2.61 – 3.40	3	Moderate
1.81 – 2.60	2	Low
1.00 – 1.80	1	Very Low

To address the study in greater depth, the final two sections, (d) and (e), included open-ended questions, allowing participants to express their thoughts and experiences in their own words. To ensure the questions' relevance and alignment with the study's objectives, the questionnaire was reviewed by three academic experts specializing in records management and information technology from Sultan Qaboos University (Oman), Cairo University, and Beni Suef University (Egypt). Their feedback was incorporated, and some questions were revised for greater clarity and precision. The questionnaire's reliability was also confirmed using Cronbach's alpha coefficient. Table 4 shows a reliability score of 0.880, a high score indicating the questionnaire's strength.

Table 4. Reliability testing of the questionnaire using Cronbach's alpha.

Reliability Statistics	
Cronbach's Alpha	N of Items
.880	18

IV. ETHICAL CONSIDERATIONS IN THE STUDY

The study adhered to the ethics of scientific research by obtaining approval from the Electronic Records Management System Department at the National Records and Archives Authority. This approval, granted at the official request of the Assistant Dean for Postgraduate Studies and Scientific Research at the College of Arts and Social Sciences, Sultan Qaboos University, facilitated the researchers' work and enabled the implementation of data collection tools (questionnaires and semi-structured interviews) according to established procedures. Informed consent was obtained from all participants before their inclusion in the study, clearly outlining the research objectives and nature, and emphasizing that participation was entirely voluntary with the right to withdraw at any time without repercussions. The principle of strict confidentiality and privacy was also upheld. Data was used solely for scientific research purposes, without disclosing any information that could reveal the identity of participants' record managers or their institutions. Data was

encrypted to ensure confidentiality. In accordance with institutional/national guidelines, formal approval from the Institutional Review Board (IRB) was not required for this type of low-risk study.

V. RESULTS

1. RECORDS MANAGEMENT SYSTEMS AND APPLICATIONS IN OMAN

Integrated information systems and applications used by government institutions in Oman for electronic records management are based on digital transformation policies and the Records and Archives Law. The primary purposes of these systems are increased efficiency in managing records, their safe storage and retrieval, legal documentation, and the exchange of records in electronic form between governmental institutions.

The analysis demonstrates that the national electronic record management system named "Wusool" constitutes the basic platform for the management of electronic records in Oman. The system was launched on October 10th, 2022, by the National Records and Archives Authority, in cooperation with the Ministry of Transport, Communications and Information Technology. This is due to the system's ability to provide essential features such as record lifecycle management, secure electronic records exchange, access control, and electronic signature capabilities. Moreover, the results of the study demonstrate that multiple government and semi government institutions possess their internal records management systems adjusted to their particular requirements. Internal records management systems are utilized for classifying, retention scheduling, and digitizing records before being uploaded to the national platform. In addition, regulation and consultancy services have been introduced to make sure that local systems comply with national and international standards.

The summary of the types of records management systems used in Oman is provided in Table 5 below.

Table 5. Types of records management systems in Oman.

System/Application	Domain	Main Objective
Wusool	National records management system	Manage records lifecycle, electronic exchange, electronic signature, support Oman Vision 2040 digital transformation
Institutional/Internal Records Management Systems	Intra-entity systems	Implement classification, retention schedules, and records preservation according to NRAA policies
Electronic Signature & Verification	Digital authentication	Support legal validation of digital records
Accreditation & Consultancy Services	Regulatory & technical support	Ensure local systems comply with national standards and best practices

2. RECORDS MANAGERS' AWARENESS OF AI TECHNOLOGIES

Records managers recognize the importance of using AI to deliver new services within their field to decision-makers and organization staff (Table 6). This idea received a "high" rating, with an average score of 4.28. The second most popular idea was "AI to improve services or enhance the records management experience," with an average score of only 4.14. Their enthusiasm then dropped even further when it came to understanding how AI works in practice, with their rating falling to 3.22.

Table 6. Awareness of AI by records managers.

N	Statement	Very High	High	Medium	Low	Very Low	Mean	Statement Trend	Statement Rank
1	I have knowledge of AI technologies and their uses in general.	4	17	24	4	1	3.38	High	4
2	I have knowledge of the uses of AI technologies in the field of records management.	4	10	30	5	1	3.22	Medium	5
3	AI technologies contribute to raising the level of work quality in records departments.	12	30	8	0	0	4.08	High	3
4	AI technologies contribute to providing better services in records departments.	13	31	6	0	0	4.14	High	2
5	AI technologies can be employed to improve the experience of benefiting from records in institutional activities.	15	27	8	0	0	4.14	High	2
6	AI technologies can develop new services in the field of records management.	18	28	4	0	0	4.28	Very High	1
	Total	66	143	80	9	2			
	Percentage (%)	%22	%47.6	%26.7	%3	%0.7			
	Overall Mean for the Axis	3.87							
	General Trend of the Axis Statements	High							

3. EMPLOYING AI-POWERED RECORDS MANAGERS IN PERFORMING THEIR JOB DUTIES IN OMANI INSTITUTIONS

Table 7 shows that records managers in Omani institutions use AI technologies at an average level of 3.1. 40% reported frequent use, while 30% reported very limited use. The statement "AI technologies facilitate my work tasks" received the highest score (3.70), indicating that records managers recognize how AI can simplify processes, even if it is not yet fully integrated into their records and Information Departments. Conversely, the statement "I use AI in my daily work" received the lowest score (2.66), confirming that the daily use of AI is not yet a common practice in Omani institutional records Departments.

Table 7. Use of AI by records managers.

No.	Statement	Very High	High	Medium	Low	Very Low	Mean	Statement Trend	Statement Rank
1	I use AI technologies in my daily work.	1	10	17	15	7	2.66	Medium	5
2	I find that AI technologies facilitate	7	27	11	4	1	3.70	High	1

No.	Statement	Very High	High	Medium	Low	Very Low	Mean	Statement Trend	Statement Rank
	the performance of my work tasks.								
3	I use AI technologies to analyze data related to my field of work.	4	12	14	17	3	2.94	Medium	4
4	I use AI technologies to improve the services provided in my field of work.	2	17	18	9	4	3.08	Medium	3
5	I use AI technologies to innovate new services in my field of work.	6	15	13	12	4	3.14	Medium	2
Total		20	81	73	57	19			
Percentage (%)		%8	32.4 %	%29.2	22.8 %	%7.6			
Overall Mean for the Axis							3.1		
General Trend of the Axis Statements								Medium	

The overall average for both AI awareness and usage among registry managers was 3.49, indicating a medium to high level of engagement with AI technologies. However, the results reveal a clear gap between awareness (average = 3.87) and actual usage (average = 3.10), suggesting that while registry managers recognize the importance of AI technologies, their practical application remains limited due to several institutional and operational constraints (Figure 2).

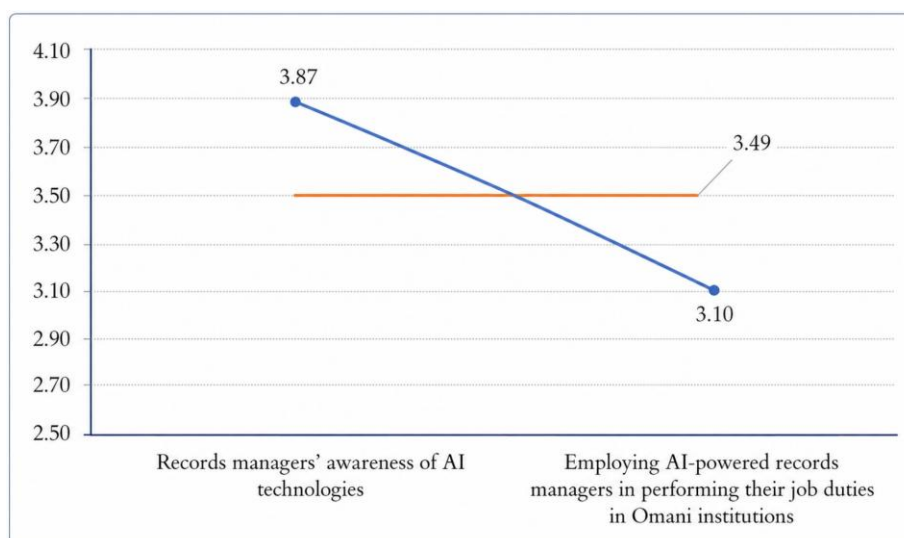


FIGURE 2. Overall mean of awareness and use of AI.

The study results showed that the level of awareness of AI applications among the participants was relatively high ($M = 3.87$, $SD = 0.51$), while the level of usage was moderate ($M = 3.10$, $SD = 0.84$), indicating

a gap between cognitive perception and actual application of these technologies. Internal reliability results also demonstrated a good degree of consistency in the scales, with Cronbach's alpha coefficients of 0.826 for the awareness scale and 0.867 for the usage scale. Regarding statistical relationships, Pearson's test results showed a statistically significant positive correlation between awareness and usage ($r = 0.422$, $p = 0.002$) (Table 8), a finding further supported by Spearman's results ($r = 0.419$, $p = 0.002$), reflecting a moderate correlation between the two variables. The linear regression analysis also showed that awareness explains a proportion ($R^2 = 0.178$) of the variance in usage, with statistical significance for the model ($p = 0.002$), indicating that awareness contributes to predicting usage. However, a large portion of the variance (82.2%) is due to other potential factors such as training, institutional support, digital skills, and technical infrastructure, which confirms that the adoption of AI applications requires a multi-factor interaction that goes beyond the level of awareness alone.

Table 8. Descriptive, correlational, and regression analysis of artificial intelligence awareness and usage.

Variable / Indicator	Mean (M)	Standard Deviation (SD)	Statistical Result
Awareness	3.87	0.51	High level
Usage	3.10	0.84	Moderate level
Pearson correlation (r)	0.422	—	Positive moderate relationship
Significance level (p)	0.002	—	Statistically significant ($p < .05$)
Coefficient of determination (R^2)	0.178	—	Explains 17.8% of variance in usage

4. CHALLENGES FACING THE APPLICATION OF AI TECHNOLOGIES IN ENHANCING ELECTRONIC RECORDS MANAGEMENT SYSTEMS IN OMANI INSTITUTIONS

Table 9. Challenges of applying ai in electronic records management.

No.	Statement	Very High	High	Medium	Low	Very Low	Mean	Statement Trend	Statement Rank
1	The records department is supported with adequate financial resources that enable it to purchase the requirements for applying AI technologies.	2	9	27	8	4	2.94	Medium	4
2	The records department is supported with adequate technical resources that enable it to apply AI technologies effectively.	2	9	28	5	6	2.92	Medium	5
3	The institution has laws and policies regulating the use of AI technologies in records management.	6	10	15	13	6	2.94	Medium	4
4	The records department and senior management have concerns regarding security and privacy in adopting AI technologies in records management.	10	16	19	3	2	3.58	High	1

No.	Statement	Very High	High	Medium	Low	Very Low	Mean	Statement Trend	Statement Rank
5	Records staff have adequate technical skills that enable them to use AI technologies correctly.	3	15	24	6	2	3.22	Medium	2
6	Records staff receive appropriate training to enhance their capabilities for using AI technologies effectively.	3	7	22	14	4	2.82	Medium	6
7	Records staff have concerns that AI technologies might replace records managers in institutions.	5	12	22	8	3	3.16	Medium	3
Total		31							
Percentage (%)		.8%8	%22.3	%44.9	16.3%	%7.7			
Overall Mean for the Axis									
General Trend of the Axis									
Statements									
Percentage (%)		.8%8	%22.3	%44.9	16.3%	%7.7			
Overall Mean for the Axis							3.08		
General Trend of the Axis Statements								Medium	

The challenges associated with implementing AI in electronic records management systems in the Sultanate of Oman are perceived to be of moderate difficulty overall ($M=3.08$) and by individual categories (Table 9). Records management/security issues were identified as being of the greatest concern ($M = 3.58$) to respondents. However, there was some concern about the ability of records managers and the potential for job loss due to the use of AI to assist with records management and processing ($M = 3.16$). Relative to the mean overall score, respondents felt that a lack of technical skills ($M=3.22$) and a need for further training ($M=2.82$) was a challenge in implementing AI in electronic records management systems. Overall, the perceived challenges to the successful implementation of AI in Omani institutions included security, skill gaps between current employee skill levels and those required to effectively deploy AI, and the need for additional training programs for current employees.

5. ASPECTS THAT NEED TO BE EMPHASIZED TO RAISE AWARENESS ABOUT AI AMONG RECORDS MANAGERS IN OMANI INSTITUTIONS

The responses to the analysis indicate five principal themes: training and qualifications; security and privacy; awareness; legislation, regulation, and ethics; and technical and institutional integration (see Figure 3). From a priority standpoint, training and qualifications received a weight of 37%, security and privacy 20%, awareness 17%, legislation, regulation, and ethics 15%, and technical and institutional integration 12%. On training and qualifications, the majority of participants acknowledged the criticalness of this theme in supporting increasing levels of awareness and providing effective means to utilize AI technologies. There was broad agreement on the necessity to move past general workshop-style training to specialized and application-based training that includes hands-on experience with AI applications such as intelligent indexing, data mining, and automated analytics. On awareness, it was found that a solid understanding of AI technologies is essential for records managers to increase their levels of acceptance of this technology and

that there is evidence of many negative perceptions, specifically that AI will threaten rather than support employment. With respect to ethical considerations, legislative frameworks, and regulation, the participants acknowledged the significance of responsible adoption of AI, particularly with regards to privacy, algorithmic bias and plagiarism. While technical/institutional integration received the lowest percentage of 12%, participants still consider this aspect to be important as it aligns institutional strategies (i.e., AI technologies) with existing electronic records management systems (EDMS), thereby increasing efficiency of the records storage/retrieval processes. All things considered, it is clear that there is a need for a multi-dimensional approach in records managers' effective awareness of AI through capacity building, security awareness, ethical/governance/compliance, and institutional system integration.

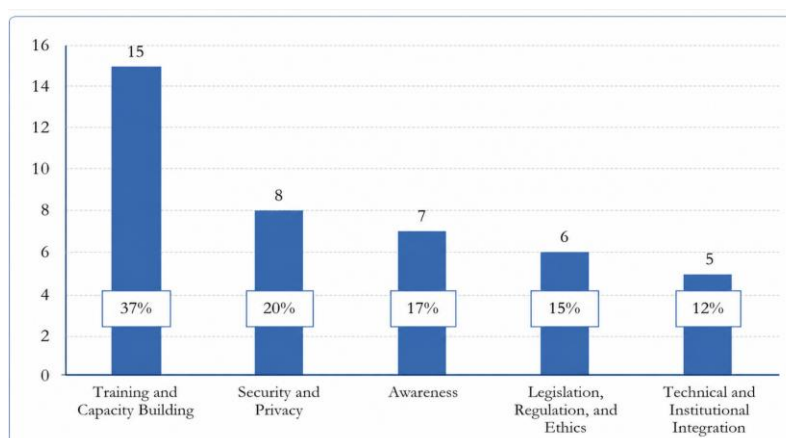


FIGURE 3. Distribution of participants according to the aspects that need to be focused on to increase awareness about AI technologies among records managers.

6. ASPECTS SUGGESTED BY RECORDS MANAGERS TO ENHANCE ELECTRONIC RECORDS MANAGEMENT SYSTEMS USING AI TECHNOLOGIES IN OMANI INSTITUTIONS

The 20 individuals who participated gave answers to a survey question based on this content area. Their feedback was broken down and signs of 5 major themes emerged from their submissions: AI and Records Management Systems Integration; Training/Workshops; Privacy/Data Security; Institutional Support (Financial/Technical); and Ethical Regulations of Technology/Localization. According to the outcomes indicated in Figure 4, the highest response from all respondents was about integrating AI with Records Management Systems (40%). Other responses were for Training/Workshops (25%), Privacy/Data Security (20%), Institutional Support (10%) and Ethical Regulations of Technology/Localization (5%).

The integration of AI with records management systems, findings show an emerging focus on creating dedicated AI-based archiving solutions that integrate with existing infrastructures; combined with concerns over a weak digital infrastructure and the need for prior digital transformation. Participants indicated the expected key applications include intelligent classification, advanced search capabilities and digitizing paper-based records. Moreover, training and workshop, there was also consensus around the theme of training and workshop; that the primary form of training should consist of continuous, practical, and hands-on methods to develop the applied competency of records managers in relation to AI technologies. Furthermore, data privacy and security, participants noted the requirement to strengthen protection systems for sensitive records, as well as ensuring that the systems are contextually appropriate to use across multiple areas. Institutional support for effective implementation of AI was considered critical, in terms of both financial and technical resources, as limitations in these areas have been a barrier to successful use of AI technologies. Finally, ethics and regulatory considerations, although cited less frequently; ethical and regulatory considerations were mentioned, to establish dedicated governance structures for AI in records

departments, establish dedicated AI units, as well as to improve negative perceptions of AI and elevate AI from being viewed as a threat, to being viewed as a supportive tool.

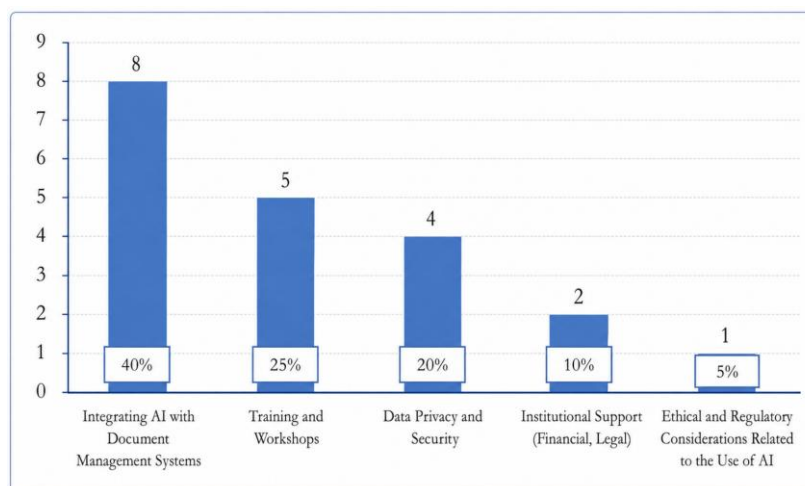


FIGURE 4. Proposed aspects for ai-based records management in Omani institutions.

VI. DISCUSSION

1. RECORDS MANAGEMENT SYSTEMS AND APPLICATIONS IN OMAN

The National Records and Archives Authority developed Wusool to assist Omani institutions with their records management needs. The system allows institutions to design their own records management systems which fulfill their specific requirements. The Wusool system enables different government offices to manage digital information which results in some offices achieving high efficiency while other offices show lower performance. The Authority demonstrates its entire records management capacity which goes beyond email to showcase the complete capabilities of the organization. The Wusool solution serves as Oman's national records management system which helps institutions achieve digital transformation while important record-keeping practices including archiving are implemented by institutions. The Wusool system requires improved governance and oversight because it currently lacks sufficient reliability and performance with different platforms and needs this process to establish itself as a complete national system for all institutions in Oman.

Basically, the Wusool system uses cutting-edge technologies that will enhance its functionality over time. It will be able to enhance performance using AI technology with the completion of next-generation AI capabilities. Wusool will shift from a passive platform to a self-sufficient, intelligent fast decision-maker, using AI to process information quickly, and efficiently as a result of AI being integrated. The development of Wusool into a more effective system will occur through its implementation of automatic security monitoring deep semantic search capabilities and predictive analytics and smart records classification system.

Moving to a digital form of governance is no longer just about computerizing operations; it is about becoming more intelligent through the application of automation. Wusool is at the center of this change. Other industries use alternative records management systems to recordkeeping due to their ability to provide flexibility in how corporations manage records, but this flexibility actually interferes with the national effort to create unified records through their integration and standardizations. Collaboratively, the various stakeholders should work together to develop nationally recognized standards that will ensure the successful implementation of digital initiatives within this specific project. The two main drivers of Records

Management System use in Oman are: (1) The technology already in place and (2) The organization's ability to adopt and implement new technologies.

2. *AI AWARENESS AMONG RECORDS PROFESSIONALS*

The professional relationship with AI technologies and AI specialists suffers from a fundamental disconnect within the field of records management. While most professionals in this field acknowledge the importance of AI technologies, they utilize them only minimally in their daily work. Many professionals may have some theoretical knowledge of the benefits of AI but cannot apply these benefits effectively to their job functions. According to Angenendt [10], AI technologies can be utilized to improve our information processing capabilities. However, there are some studies, including those conducted by Balogun [32], Jaillant & Rees [22], and Mojapelo and Marutha [8] that all found that the biggest obstacle for professionals is that they lack sufficient practical experience in using AI technologies, thus hindering implementation of AI technology solutions.

Many records managers are interested in AI but they don't understand how these systems work due in large part to missing key training modules from their educational programs. In order to help records professionals make the transition from theoretical knowledge to practical use of AI, they need to receive training that includes hands-on experience with actual AI research projects. Until users have direct experience with AI technologies, the effectiveness of records management systems will continue to be limited.

3. *AI ADOPTION IN RECORDS MANAGEMENT PRACTICES IN OMANI INSTITUTIONS*

Previous studies demonstrate that AI enhances records management efficiency because of two main advantages which include better precision and reduced human error rates [20, 24]. AI applications need to execute classification and storage and retrieval operations to complete their records extraction tasks. However, the average level of AI use in records management reflects structural and organizational challenges, including limited technological infrastructure and a shortage of trained personnel [21]. Despite a relatively high level of awareness among records managers, institutional support in terms of training and infrastructure remains inadequate.

The difference between the awareness level which measured 3.49 and the actual usage which measured 3.1 shows that AI exists at an early development stage because people understand its value. The institutions which handle records management in Oman need to implement training programs and allocate funds for records management tasks according to their responsibilities.

4. *CHALLENGES FACING AI IMPLEMENTATION IN RECORDS MANAGEMENT SYSTEMS*

Security and privacy concerns are preventing businesses from implementing AI capabilities in Records Management Systems. Existing training processes do not meet the most basic requirements to support AI and modern technologies in Records and Information-Managing Systems, as there is an observed Training Competency Gap (3.22) and Skills Gap (2.82).

In their studies on how training programs can improve companies' ability to digitally transform, Elsayw et al [33] found that training facilitators provide moderate levels of support if they trust someone else to support the change process. Participants demonstrated a high level of resistance (greater than 3.00) to adopting new work habits, along with using different tools to facilitate their learning during the workshop training sessions. Additionally, there were positive capacity-building results by using AI applications as part of the training, which led to lower levels of resistance toward adopting change. The use of AI-based records management and governance will enhance their effectiveness [13], [26]. Overall, institutions' total challenges result in a moderate average from the survey results. (Mean = 3.08). However, institutions face multiple obstacles to implementing AI technologies in records management due to security-related issues, insufficient financial and technological resources, and a lack of skill sets amongst their employees. As such, there is a critical need for institutions to commit to and invest substantial resources to develop the required infrastructure as well as human capital.

5. AWARENESS-RAISING PRIORITIES FOR AI IN RECORDS MANAGEMENT

The human element is the primary driver of AI adoption; investment in human capital is essential for any progress, as Tsabedze [11] emphasized, stressing the need for strong digital skills to ensure successful digital transformation. On the other hand, a lack of trust in or understanding of AI presents a significant obstacle. Both Omigie et al [34] and Modiba [13] highlighted this point; resistance and limited understanding can hinder rapid technology adoption. Therefore, institutions must work to change their employee culture; otherwise, they will face considerable difficulties in managing and leveraging their data and information. According to the study conducted by Schellnack-Kelly and Modiba [14] have shown that the existence of adequate governance is an essential element for entities to be able to have accountable and transparent operation of AI systems and the protection of users' data. In their study, they also noted that institutions must develop strategic planning for the implementation of AI due to the lack of similar digital maturity between different institutions.

6. PROPOSED ASPECTS FOR ENHANCING AI-BASED RECORDS MANAGEMENT SYSTEMS

The integration process between AI systems and records management systems needs institutions to implement records management technologies and information systems technologies to reach their digital maturity stage [35]. Schellnack-Kelly and Modiba [14] identify insufficient infrastructure together with different organizational readiness levels as the main barriers that block AI implementation. The organization needs to focus on training programs and workshop sessions because they represent important methods for developing human capital which supports digital transformation efforts. Al-Labban [6] and Balogun [32] established the requirement for training programs which should develop AI skills needed for records management. The rising data security problems show that people have become more aware about the dangers which AI poses when it processes sensitive information according to Tsabedze [11] and Mousa [20] who reported their findings. The sustainable implementation of AI requires institutional support which includes both financial resources and technical resources. According to Jaillant and Aske [22] the limited resources of institutions prove to be the main obstacle which prevents them from achieving their digital transformation goals. The study participants proposed that specialized AI units should be established which demonstrates that records professionals now recognize the necessity for structured governance mechanisms that will enable them to work together across technical, legal, and professional areas while implementing AI solutions in records and information management.

7. FINAL INTEGRATIVE PERSPECTIVE

The study results show that Omani institutions require an all-encompassing approach to successfully implement AI for their records management systems. The solution requires institutions to develop their digital framework and build specialized training programs and create legal and ethical rules and provide sufficient funding resources. Institutions need to establish dedicated departments for AI project management because this structure will improve their ability to work together among all technical and legal and administrative functions. The combination of these measures establishes the necessary framework for institutions to implement AI technology in records management systems in a sustainable and responsible and efficient manner.

8. LINKING FINDINGS TO RECOMMENDATIONS

The study's findings indicate a number of overlapping gaps in the adoption of AI technologies for records management in Omani institutions, which directly impacts the formulation of the proposed recommendations. The data showed that the level of training provided to employees was relatively low ($M = 2.82$), while the level of technical skills was only average ($M = 3.22$). This reflects a gap in practical capabilities that limits the effective use of AI technologies, supporting the recommendation to develop specialized training programs that focus on practical and experiential application rather than solely on theory.

The results also revealed that the levels of institutional support, both financial ($M = 2.94$) and technical ($M = 2.92$), were at average levels, indicating limited infrastructure to support AI applications. This underscores the need for increased institutional investment in financial and technical resources to ensure the workplace is ready for digital transformation and the adoption of modern technologies. Regarding regulatory aspects, security and privacy concerns ranked highest among the challenges ($M = 3.58$), reflecting a high level of sensitivity to data protection in the context of records management. This justifies the move towards developing clear regulatory and legislative frameworks that ensure the safe and responsible use of artificial intelligence technologies.

Regarding regulatory aspects, security and privacy concerns ranked highest among the challenges ($M = 3.58$), reflecting a high level of sensitivity to data protection in the context of records management. This justifies the need to develop clear regulatory and legislative frameworks that ensure the safe and responsible use of AI technologies.

The results also revealed a significant gap between the level of awareness of AI technologies ($M = 3.49$) and their actual use ($M = 3.10$), indicating that theoretical knowledge does not automatically translate into practical application. Therefore, it is crucial to strengthen the link between awareness and application through supportive work environments and hands-on experiences that contribute to transforming knowledge into practice. Finally, the results showed a moderate level of employee anxiety about the possibility of being replaced by AI technologies ($M = 3.16$), which constitutes a psychological barrier to adopting these technologies. Accordingly, the study highlights the importance of implementing awareness programs that reshape prevailing perceptions of AI as a tool to enhance efficiency, not a replacement for human talent. Based on the above, it is clear that the conclusions and recommendations in this study are derived directly from the analytical results, which enhances its reliability and supports its applicability in records management environments in Omani institutions.

VII. RECOMMENDATIONS

Based on these findings, the study recommends the following:

- Providing specialized training programs and practical workshops for records managers, focusing on the practical applications of AI technologies in records management, to bridge the gap between theoretical knowledge and practical application.
- Engaging employees in practical experiments to test AI tools and evaluate their effectiveness.
- Developing policies and regulatory frameworks that enhance security safeguards, ensuring a balance between leveraging AI and protecting sensitive records and data.
- Ensuring that Omani institutions adopt funding plans and provide a supportive digital infrastructure to enable the effective operation of AI technologies.
- Implementing awareness programs that highlight AI as a tool to enhance employee efficiency, not a threat to their jobs, while emphasizing its role in improving work quality and the management of records and services provided to officials and the public.
- Establishing internal regulations that comply with ethical and digital standards, defining responsibilities and limitations, and ensuring the safe use of AI technologies in managing records and information within the organization.

VIII. CONCLUSION

Omani institutions in charge of storing and managing records must acknowledge the value of exploring AI as a solution to enhance their records processes and support employee decisions related to their records. Unfortunately, adoption efforts for AI solutions within Omani institutions remain slow. Numerous challenges inhibit institutions from fully implementing AI in their records processes. For example, there are security issues associated with implementing AI within records systems. There are also insufficient funds available to purchase and implement AI into records systems; a lack of technical support, employees have

received little to no formal training on how to utilize AI in managing records, and many employees still do not support the use of AI in records processes due to a reluctance to digitize or adopt new technologies. These factors create considerable obstacles for institutions if they wish to deploy AI within their records management systems, especially since no definitive regulations exist within the Omani market that guarantee the safe use of AI and its related technologies in managing records.

Therefore, Omani institutions should take significant steps toward facilitating the use of AI technologies to enhance records and information management by educating their employees on how to effectively leverage AI technologies to accomplish their work. As part of the efforts to bring AI technologies into all institutions, they should establish policies to protect the privacy of individuals' information, provide safety measures to ensure the security and accuracy of records, and allocate adequate funding toward upgrading current digital document management systems. Additionally, records centers within Omani institutions should work towards encouraging records managers to develop a better understanding of AI technologies, as well as to increase their levels of confidence in AI technologies as solutions intended to simplify and improve the efficiency of the management of records through proper governance strategies, from making records available as quickly as possible, to ensuring that institutions can realize the maximum value from all records.

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Conceptualization, S.S.M.A. and E.S.E.; methodology, S.S.M.A. and E.S.E.; validation, S.S.M.A. and E.S.E.; formal analysis, S.S.M.A.; investigation, S.S.M.A. and E.S.E.; resources, S.S.M.A.; data curation, S.S.M.A.; writing—original draft preparation, S.S.M.A.; writing—review and editing, E.S.E.; supervision, E.S.E.; project administration, E.S.E. All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

Data Availability Statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

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