The Indonesian Journal of Computer Science
www.ijcs.net
Volume 14, Issue 2, April 2025
https://doi.org/10.33022/ijcs.v14i2.4775

Critical Success Factors for the Implementation of an EDRMS in the Government of The Gambia: A PMBOK 7th Edition Approach

Fatoumatta Binta Jallow[1], Teguh Raharjo[2], Ni Wayan Trisnawaty[3], Bob Hardian Syahbuddin[4]
fatoumatta.binta@ui.ac.id[1], teguhr2000@gmail.com[2], ni.wayan05@ui.ac.id[3], hardian@cs.ui.ac.id[4]
[1,2,3,4] Faculty of Computer Science, University of Indonesia, Depok, Indonesia

Article Information

Received : 4 Mar 2025
Revised : 20 Mar 2025
Accepted : 15 Apr 2025

Keywords

EDRMS, PMBOK, public sector, project management, digital transformation

Abstract

The successful implementation of an Electronic Document and Records Management System (EDRMS) in the public sector faces significant challenges, particularly in developing countries like The Gambia. Poor system integration, data security risks, resistance to change, and lack of leadership support hinder adoption. This study applies the PMBOK 7th Edition framework to identify critical success factors (CSFs) for EDRMS implementation. Using a Systematic Literature Review (SLR), this research analyzes key factors, including system compatibility, cybersecurity, legal compliance, and stakeholder engagement. Findings indicate that a structured project management approach enhances adoption by ensuring effective integration, risk mitigation, and user acceptance. The study provides practical recommendations for policymakers and IT managers to optimize digital record management strategies. Future research should explore case studies and emerging technologies such as AI and blockchain to strengthen EDRMS adoption.

A. Introduction

An Electronic Document and Records Management System (EDRMS) is a computerized system that facilitates the management of electronic documents throughout their entire lifecycle, from creation to final disposal. It plays a crucial role in modern electronic government environments by enabling efficient document storage, retrieval, security, and compliance with regulatory requirements. An effective EDRMS ensures document control and provides seamless access to records for government officials and stakeholders, improving transparency and accountability in public administration [1].

Automated information capture, hierarchical file classification, and security controls enhance transparency and accountability in government operations. As digital governance expands globally, EDRMS is a core tool for improving efficiency, reducing operational costs, and elevating service quality. Advancements in artificial intelligence (AI), workflow automation, enhanced security, and stricter regulatory compliance further drive the development of document management systems (DMS) [2].

ISO 15489-1:2016 emphasizes the importance of records management systems in ensuring that information is systematically recorded, stored, and accessible following organizational needs. This standard establishes fundamental records management principles, including authenticity, reliability, integrity, and usability. Organizations can ensure that their electronic systems support secure, efficient, and regulation-compliant document management, facilitating administrative modernization and reducing reliance on physical records [3].

Additionally, EDRMS incorporates robust security features to ensure the integrity and confidentiality of government records, which is crucial for enhancing accountability and trust within public institutions. Several countries, including Croatia, Germany, and Australia, have successfully implemented EDRMS to improve document and records management within their respective governmental organizations. However, despite its advantages, the adoption of EDRMS faces challenges, particularly in terms of user resistance and low adoption rates among employees. Research highlights that adoption factors operate at both organizational and individual levels, with most studies focusing on the organizational perspective [4].

Implementing ERDMS in the public sector is driven by the need for efficient document management, regulatory compliance, and increased transparency. ERDMS facilitates creating, using, and maintaining records in manual and electronic formats, ensuring streamlined and systematic workflows [4]. Recognizing its potential benefits, the Gambian government has integrated ERDMS into its broader e-government strategy to enhance governance processes and service delivery. However, challenges such as poor IT infrastructure, limited technical expertise, and bureaucratic inertia continue to hinder full adoption. Despite progress, incomplete ERDMS implementation has led to workflow disruptions, approval delays, document misplacement, and inefficiencies in information retrieval, emphasizing the need for further improvements [5].

The Gambia Ministry of Communications and Digital Economy E-Governance Academy (EGA) emphasizes the need for public sector commitment to the e-government strategy and suitable infrastructure, policies, strategies, and

procedures. A robust e-records management system is crucial for e-government effectiveness. To overcome these challenges, the Gambian government must understand the issues underlying ERDMS implementation and identify which elements, including organizational, technological, and user solutions, may impact its success. Addressing these issues will help the government realize the necessary steps to implement ERDMS successfully [6].

The public procurement sector successfully implemented EDRMS through incremental implementation, stakeholder management, risk mitigation, and scope control. By adopting a two-layered architecture, the project team ensured a gradual transition without disrupting existing workflows, aligning with agile project management principles. Effective stakeholder engagement and change control minimized resistance, while structured metadata integration enhanced information retrieval and compliance. By balancing legal, technical, and operational requirements, the project demonstrated how structured project management methodologies can optimize workflow efficiency, data handling, and stakeholder acceptance in large-scale EDRMS deployment [7].

The PMBOK 7th Edition framework is suitable for addressing EDRMS implementation challenges in The Gambia because it prioritizes adaptability, value delivery, and stakeholder collaboration, making it ideal for complex, large-scale digital transformation projects. Unlike traditional waterfall-based methodologies, which follow a rigid, linear process, PMBOK 7 introduces a principle-driven approach that allows for incremental implementation, iterative improvements, and risk-based decision-making—critical factors in overcoming technical constraints, bureaucratic resistance, and infrastructure limitations in The Gambia [8].

Additionally, PMBOK 7 integrates governance, compliance, and performance measurement, ensuring that EDRMS aligns with ISO 15489-1:2016 records management standards and national e-government strategies. Its focus on continuous learning and flexibility allows project teams to adapt to evolving user needs, regulatory changes, and technological advancements, ensuring sustainable EDRMS adoption in a challenging public sector environment [3].

This study contributes to developing EDRMS implementation strategies by identifying CSFs specifically relevant in the Gambian government context. Additionally, it evaluates the effectiveness of the PMBOK 7th Edition framework in addressing challenges associated with large-scale EDRMS deployment in the public sector. This research aims to bridge the gap between theoretical frameworks and practical implementation by providing empirical insights and offering valuable recommendations for policymakers, IT managers, and project teams to enhance EDRMS adoption and governance in government institutions.

B. Research Method

1. Literature Review

Systematic Literature Review (SLR) is a structured research method to identify, evaluate, and synthesize relevant studies in a specific field. According to Kitchenham and Charters, SLR is "a means of identifying, evaluating, and interpreting all available research relevant to a particular research question, topic area, or phenomenon of interest" [9]. SLR follows a rigorous and transparent process that ensures reproducibility and minimizes bias. By following a systematic

approach, SLR provides a comprehensive and unbiased overview of existing research, helping researchers build a solid foundation for future studies.

The study implements an SLR protocol to accomplish the research objectives and address the research questions. This study adheres to the SLR framework established by Kitchenham and Brereton. The SLR process consists of three primary phases: planning the review, executing the review, and presenting the findings [10]. This study summarises the CSF faced in EDRMS implementation within the public sector. Therefore, in the planning phase, this study includes the "EDRMS implementation" keyword in the search string and specifies questions related to EDRMS implementation for quality assessment purposes. Figure 1 illustrates the proposed research design.

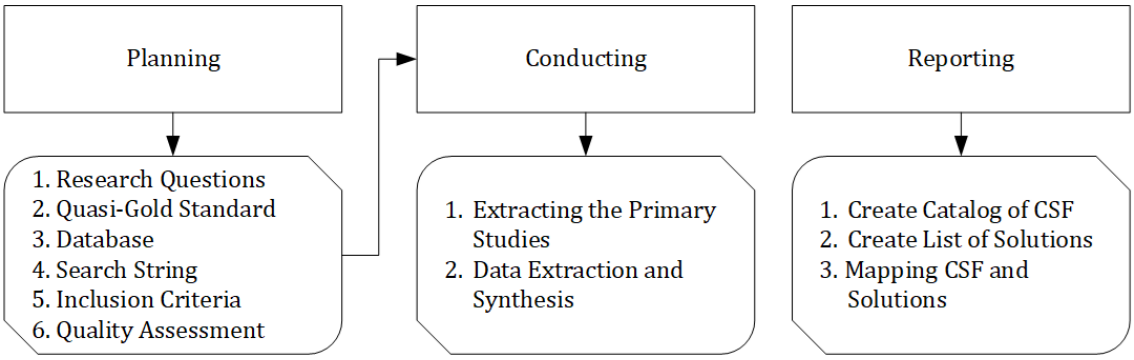

Figure 1. Research Design

The first stage of conducting an SLR entails developing a comprehensive strategy to initiate the review process. This strategy includes several key components, such as formulating research questions, identifying Quasi-Gold Standard papers, selecting appropriate databases, constructing practical search strings, defining inclusion criteria, and establishing quality assessment measures. The following section will explain these steps to ensure a thorough understanding of their implementation. The research questions are formulated based on the specific objectives of the current study. The research question of this study is: What are the critical success factors for the effective implementation of EDRMS in The Gambia's public sector?

Quasi-Gold Standard (QGS) is a method in SLR used to evaluate and improve the quality of literature search by comparing search results against a collection of primary reference studies. The QGS methodology serves as an approach to combine manual and automated search methods to assess the effectiveness of the search procedure. QGS guides the formulation of important keywords and their appropriate alternatives. Research This research selected several high-quality studies that were considered the most relevant and credible in the research topic, namely [11], [12], [13], [14] and [15].

This study examines seven well-known subscription-based digital databases—Scopus, Science Direct, ACM Digital Library, Emerald Insight, IEEE Xplore, Google Scholar, and SpringerLink—to provide access to a diverse selection of scholarly publications. This study chose these databases for their strong reputation as trustworthy and extensive academic literature sources. This study

follows the guidelines established by Kitchenham et al. [9] and Kitchenham and Brereton [10] to develop an effective search strategy. First, this study compiles a comprehensive list of primary keywords. Next, this study identifies alternative terms, including synonyms and related words. The search process utilizes the Boolean operator 'OR' to incorporate these alternatives, while the 'AND' operator connects the main terms to refine the results. This study constructs a search string that integrates all relevant terms by combining key terms from different categories, as shown in Table 1.

Table 1. Category and Key Terms

No	Category	Key Terms
1	Core Technology	"Electronic Record Document Management System" OR "ERDMS*" OR "Electronic Record" OR "Government Records Management" or "Digital Records Management" OR "Document Management System*
2	Implementation Context	"Public Sector" OR "Government Agencies" OR "E-Government" OR "Developing Countries"
3	Challenges and Barriers	"Challenges" OR "Barriers" OR "Issues" OR "Obstacles" OR "Adoption Barriers" OR "Implementation Challenges"
4	Project Management	"IT Project Management" OR "Project Management" OR "ICT Project Management"
5	Success Factors	"CSF" OR "Critical Success Factor" OR "Success Factor" OR "Barriers" OR "Challenge"

Following the SLR Kitchenham methodology, the inclusion and exclusion criteria for this study on the implementation of EDRMS in the public sector in The Gambia are as follows:

1. Inclusion criteria: This study selects research on EDRMS implementation in the public sector, focusing on adoption, challenges, success factors, and best practices. It includes empirical and theoretical studies, particularly those integrating project management methodologies. This study considers only peer-reviewed sources published in English between 2019 and 2025 to ensure credibility, relevance, and accessibility.
2. Exclusion criteria: This study excludes irrelevant, outdated, non-peer-reviewed, and non-English studies. Only recent (2019–2025) publications with empirical or theoretical contributions on EDRMS in the public sector are considered, with the most comprehensive version selected in cases of duplicates.

To evaluate the quality of the selected articles, we applied a quality checklist (QC) developed by Kitchenham and Brereton [10]. This assessment aimed to determine the relevance and significance of each study in terms of the research objectives. A set of questions, presented in Table 2, was used to validate the quality of the articles. Each study was then assessed based on these questions and categorized into one of three ratings: Yes (Y), Partial (P), or No (N), with corresponding scores. Articles that fully met a checklist criterion were assigned Y=1, while those that did not address it were marked N=0. Studies that partially met the criteria received a P rating of 0.5.

Table 2. Category and Key Terms

No	Quality Criteria	Question
1	Research Aim	Does the study clearly define its objectives and research questions?
2	Relevance	Is the study directly related to EDRMS implementation in the public sector?
3	Research Methodology	Is the research methodology (qualitative, quantitative, mixed-methods) clearly stated and justified?
4	Data Validity	Are the data collection and analysis methods valid and reliable?
5	Theoretical Foundation	Does the study provide a solid theoretical background or framework?
6	Empirical Evidence	Does the paper present empirical findings (case studies, experiments, or surveys) to support its claims?
7	Project Management Aspects	Does the study discuss project management methodologies such as IT governance in EDRMS implementation?
8	Results and Findings	Are the study's findings clearly stated and aligned with the research objectives?
9	Recency	Is the study published within the last five years (2019–2025) to ensure up-to-date relevance?

This study selected primary studies in three stages. First, this study identified two articles as QGS papers to develop the search string. The finalized search string was applied across selected electronic databases in the second stage, yielding 152 articles. These were then filtered according to predefined inclusion criteria, narrowing the selection to 65 articles. Next, this study reviewed the titles and abstracts of the remaining studies and conducted a quality assessment. Fifteen studies met the quality criteria and formed the final analysis.

In the final phase, this study presents the review findings through a comprehensive catalog outlining the identified challenges. Additionally, this study maps these variables to establish a foundational framework for formulating recommendations and conclusions. This approach ensures a systematic and structured presentation of the results, enabling a clear understanding of the insights and implications derived from the review process. Table 3 shows the final result.

Table 3. Selected Studies

Journal Code	Title	Publication Year	Source of Database
P1	Critical Success Factors for Adopting Electronic Document Management Systems in Government Units [11]	2022	IEEE Xplore
P2	Evaluation of Electronic Document Management (EDM) systems for construction organizations [12]	2019	IEEE Xplore
P3	Implementing EDRMS in public procurement: a retrofit approach [7]		Science Direct
P4	Electronic health record authentication and authorization using Blockchain and QR codes [16]	2024	Science Direct
P5	The adoption of electronic records management system (ERMS) in the Yemeni oil and gas sector: Influencing factors [13]	2020	Emerald Insight
P6	Integration of records management systems at a South African water utility company [17]	2021	Emerald Insight

Journal Code	Title	Publication Year	Source of Database
P7	Applicability of electronic document management system (EDMS) for the cost management of mega construction projects in Sri Lanka [14]	2023	Emerald Insight
P8	Review of digital record management needs for academic libraries [18]	2020	Emerald Insight
P9	Implementation of electronic records management systems Lessons learned from Tlokweng land Board-Botswana [15]	2020	Emerald Insight
P10	Investigating the Use of Electronic Documents in the Jordanian Construction Projects [19]	2020	Springer Nature Link
P11	The Implementation Guidelines of Digital Document Management System for Malaysia Public Sector: Expert Review [20]	2020	Google Scholar
P12	Document Management System – A Way to Digital Transformation [21]	2022	Google Scholar
P13	A Requirement Gathering Framework for Electronic Document Management Systems [22]	2022	Google Scholar
P14	Management's support and implementation of electronic document and records management systems in government departments [23]	2021	Google Scholar
P15	Managing Document Management Systems' Life Cycle in Relation to an Organization's Maturity for Digital Transformation [24]	2023	Google Scholar

2. Theoretical Framework

According to Creswell (2018), a theoretical framework is a foundational structure that guides research by providing a lens through which a study is conceptualized and interpreted. It consists of existing theories and models that explain relationships between variables and help justify the research approach. Researchers define hypotheses and constructs in quantitative research, whereas qualitative studies use theoretical frameworks to offer interpretative perspectives. Scholars integrate theoretical and conceptual elements in mixed-methods research to support data analysis and interpretation [25].

This theoretical framework supports this research by integrating EDRMS, PMBOK 7th Edition, and Kitchenham's SLR methodology. This research aims to identify the main challenges in implementing EDRMS in the public sector and design a PMBOK 7th Edition-based solution that suits the needs of a developing country like the Gambia. Several studies between 2019 and 2025 have explored the challenges associated with implementing EDRMS in the public sector of developing countries. For instance, a study in Namibia highlighted that factors such as management support, resource commitment, and user buy-in significantly impact EDRMS implementation success. The research emphasized that addressing these factors requires effective change management strategies to ensure system acceptance and utilization [26].

Another study compared EDRMS adoption in Namibia and Zimbabwe, identifying barriers and enablers in their public sectors. The findings underscored the importance of tailored implementation strategies that consider specific organizational contexts to enhance system adoption [27]. Additionally, research in Nigeria examined the obstacles to e-service adoption at the local government level,

revealing challenges such as unstable economies and inadequate infrastructure. These insights are pertinent to understanding the broader context of EDRMS implementation in similar environments [28]. Figure 2 shows the theoretical framework for this study.

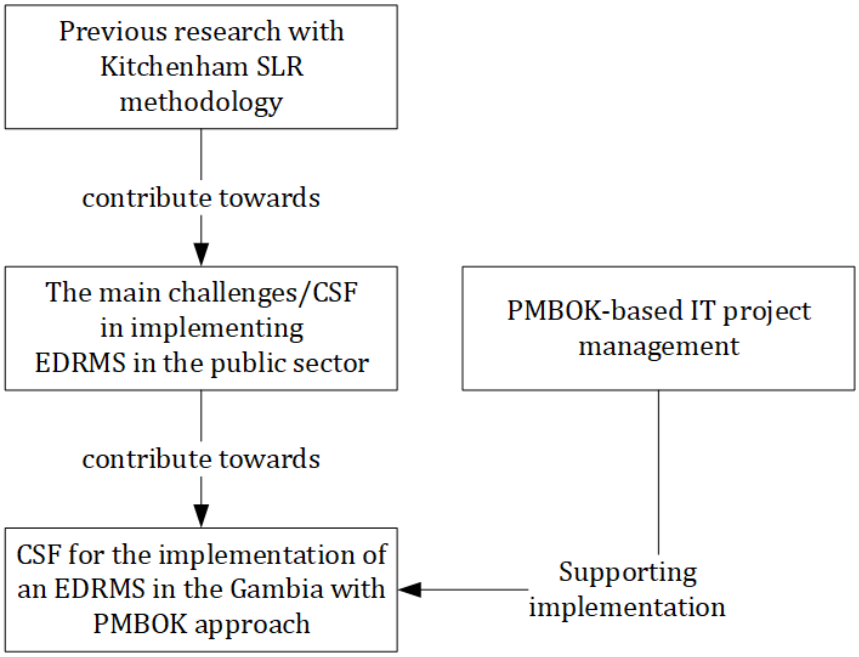

Figure 2. Theoretical Framework

C. Result and Discussion

1. Overview of Studies

This study analyzed 15 previous studies from the SLR to identify factors, challenges, and obstacles in each journal. This study applied open and axial coding techniques in NVIVO 12 to categorize and analyze the data, enabling a comprehensive understanding of the underlying patterns and relationships within the data. Through this analysis, this study identified 56 categories and 183 factors from the 15 previous studies.

This study applied thematic analysis to examine the identified categories and factors. The analysis revealed that some categories and factors shared similar meanings. Consequently, this study renamed the categories and factors to ensure consistency in terminology. The thematic analysis identified 12 new naming categories and 12 new naming factors. The next step involves mapping each new category and factor across the 15 research papers. Table 4 shows the mapping of categories and factors in selected studies.

Table 4. Categorization and Factor Mapping in Selected Studies

Category	Factor	Journal Code
Adoption & Change Management	Change Management & Adaptability	P3 P9
	Collaboration & Communication Strategies	P2
	Compliance & Legal Alignment	P2

Category	Factor	Journal Code
	Data Security & Access Control	P2 P4
	Leadership & Executive Support	P9
	Standardization & Accuracy	P2
	Training & Awareness	P9
	Usability & Accessibility	P3 P4
Cost & Resource Management	Auditability & Transparency	P2
	Change Management & Adaptability	P2
	Collaboration & Communication Strategies	P9
	Resource Allocation & Availability	P12
	Risk & Cost Management	P7
Environmental & Sustainability	Auditability & Transparency	P5
	Collaboration & Communication Strategies	P5
	Compliance & Legal Alignment	P5
	Data Security & Access Control	P5
Human Resource & Training	Change Management & Adaptability	P12 P13
	Collaboration & Communication Strategies	P14
	Resource Allocation & Availability	P14
	Training & Awareness	P11 P12 P13 P14
Legal & Compliance	Auditability & Transparency	P4 P6 P7 P9
	Compliance & Legal Alignment	P1 P3 P4 P6 P7 P8 P9 P11 P13
	Data Security & Access Control	P11 P14
	Efficiency & Optimization	P13 P14
	Risk & Cost Management	P8
Management & Organizational	Auditability & Transparency	P9
	Change Management & Adaptability	P1 P5 P6 P7 P8 P9 P10 P12 P15
	Collaboration & Communication Strategies	P5 P6 P7 P13 P15
	Compliance & Legal Alignment	P8
	Efficiency & Optimization	P12
	Leadership & Executive Support	P5 P6 P7 P10 P11 P12 P13 P15
	Resource Allocation & Availability	P5 P6 P9
	Standardization & Accuracy	P5
	System Integration & Compatibility	P1
	Training & Awareness	P6 P8 P10 P11
Performance & Benefits Evaluation	Change Management & Adaptability	P13
	Collaboration & Communication Strategies	P2
	Efficiency & Optimization	P2
	Leadership & Executive Support	P13
	Standardization & Accuracy	P2
Planning & Project Management	Change Management & Adaptability	P12
	Collaboration & Communication Strategies	P10
	Compliance & Legal Alignment	P10
	Risk & Cost Management	P12
	Standardization & Accuracy	P10
Process &	Auditability & Transparency	P2

Category	Factor	Journal Code
Optimization	Change Management & Adaptability	P2
	Efficiency & Optimization	P3 P15
	Resource Allocation & Availability	P15
	Usability & Accessibility	P15
Security & Data Protection	Compliance & Legal Alignment	P2
	Data Security & Access Control	P2 P3 P4
	Standardization & Accuracy	P3
System & Technological	Change Management & Adaptability	P6 P7 P12 P15
	Collaboration & Communication Strategies	P15
	Data Security & Access Control	P1 P4 P5 P6 P7 P8 P9 P10 P13
	Efficiency & Optimization	P3 P6 P7 P12 P15
	Leadership & Executive Support	P15
	Resource Allocation & Availability	P8
	Risk & Cost Management	P8 P15
	Standardization & Accuracy	P4 P5 P15
	System Integration & Compatibility	P1 P3 P4 P5 P6 P8 P9 P10 P11 P14 P15
	Usability & Accessibility	P5 P7 P8 P9 P10 P12 P13
	Change Management & Adaptability	P12
Work Environment & Culture	Collaboration & Communication Strategies	P12
	Compliance & Legal Alignment	P12

This study analyzed the mapping results presented in Table 4 to identify the most frequently occurring factors in previous studies. Based on this analysis, this study selected 13 key factors for further examination. Table 5 presents an overview of the identified categories and factors discussed throughout this study, ordered by the most frequently occurring factors. This selection ensures a focused and comprehensive analysis of the most relevant factors influencing the research context.

Table 5. Identified Categories and Factors for Analysis

Category	Factor	Journal Code
System & Technological	System Integration & Compatibility	P1 P3 P4 P5 P6 P8 P9 P10 P11 P14 P15
	Data Security & Access Control	P1 P4 P5 P6 P7 P8 P9 P10 P13
	Usability & Accessibility	P5 P7 P8 P9 P10 P12 P13
	Efficiency & Optimization	P3 P6 P7 P12 P15
	Change Management & Adaptability	P6 P7 P12 P15
Human Resource & Training	Training & Awareness	P11 P12 P13 P14
Legal & Compliance	Compliance & Legal Alignment	P1 P3 P4 P6 P7 P8 P9 P11 P13
	Auditability & Transparency	P4 P6 P7 P9
Management & Organizational	Change Management & Adaptability	P1 P5 P6 P7 P8 P9 P10 P12 P15
	Leadership & Executive Support	P5 P6 P7 P10 P11 P12 P13 P15
	Collaboration & Communication Strategies	P5 P6 P7 P13 P15

Category	Factor	Journal Code
	Training & Awareness	P6 P8 P10 P11

2. Categories and Factors of Implementation of the EDRMS

Table 5 presents the identified categories and factors derived from previous research that yielded the most significant influence on those studies. This study selected these categories based on their substantial impact and relevance to the research context. Four categories emerged as the most influential: System and Technological, Human Resource and Training, Legal and Compliance, and Management and Organizational. These categories play a critical role in shaping the findings and provide a strong foundation for further analysis and discussion in this study. Following the identification of categories and factors in Table 5, Table 6 summarizes the research findings based on the mapping results. This summary highlights key insights and their impact, ensuring a structured analysis of the mapped factors.

Table 6. Summary of Research Findings Based on Mapped Categories and Factors

Factor	Summary of Research Findings
Category: System & Technological	
System Integration & Compatibility	• Effective EDRMS implementation requires robust IT infrastructure, seamless integration, and user-friendly functionality. • Government units must ensure technological readiness for adoption. Integrating EDRMS with Enterprise Resource Planning (ERP), Electronic Content Management (ECM), and back-office systems enhances efficiency and service delivery. • Compatibility with legacy systems, digital libraries, and procurement platforms ensures operational continuity. • Secure access mechanisms, such as QR codes for medical records, must comply with security and legal standards. • Adaptability to technological advancements supports long-term sustainability. Information and communication technology (ICT) integration in records management improves efficiency and effectiveness.
Data Security & Access Control	• Effective EDRMS implementation requires robust cybersecurity measures, data protection strategies, and compliance with security standards to safeguard electronic records. • Organizations must ensure secure access controls, encryption, and data governance policies to protect sensitive information, including healthcare, academic, and land records. • Blockchain infrastructure must efficiently handle large-scale data while secure remote access and adequate server capacity enhance system reliability. • Clearly defined access rights and security protocols strengthen data protection, ensuring confidentiality and integrity in digital record management.
Usability & Accessibility	• Successful EDRMS implementation depends on ease of use, intuitive design, and user adoption. • Organizations must ensure the system enhances business performance by providing a user-friendly interface, seamless navigation, and efficient search functionality. • An intuitive design facilitates adoption among staff, improving overall productivity and system usability.

Factor	Summary of Research Findings
Efficiency & Optimization	• Effective EDRMS implementation requires structured data storage that complies with legal documentation standards while supporting seamless organizational operations. • Automating document and transaction workflows enhances operational efficiency, ensuring a smooth transition during system adoption.
Change Management & Adaptability	• Effective EDRMS implementation requires seamless data exchange between ERP and ECM systems, supported by adequate network, server, and database capacity. • Optimizing DMS functionalities enhances processes, ensuring efficient system integration and performance.
Category: Human Resource & Training	
Training & Awareness	• Successful EDRMS implementation requires continuous training programs for all user levels, ensuring proper system utilization. • Equipping staff with the necessary knowledge and skills enhances proficiency in records management, improving overall efficiency and system effectiveness.
Category: Legal & Compliance	
Compliance & Legal Alignment	• Effective EDRMS implementation requires strict compliance with legal and regulatory frameworks at national and international levels. • Organizations must align the system with industry-specific laws, such as the General Data Protection Regulation (GDPR), Health Insurance Portability and Accountability Act (HIPAA), and national archival regulations, ensuring proper records management, retention, and disposal. • Clear policies and standardized workflows guarantee adherence to procurement, intellectual property, and data protection regulations. • Raising employee awareness of compliance requirements also strengthens policy enforcement, ensuring a legally compliant and adaptable EDRMS framework.
Auditability & Transparency	• Effective EDRMS implementation requires robust tracking and monitoring mechanisms to ensure accountability, compliance, and secure record management. • Organizations must implement access verification for medical records, project documentation audit trails, and land transaction tracking systems. • These measures enhance transparency, security, and regulatory adherence in records management.
Category: Management & Organizational	
Change Management & Adaptability	• Successful EDRMS implementation depends on employee awareness, adaptability, and executive support. • Organizations must provide adequate training and implement structured change management strategies, such as Kotter's model and ADKAR, to facilitate a smooth transition. • Addressing resistance to digital transformation and ensuring organizational preparedness enhance adoption and long-term system effectiveness.
Leadership & Executive Support	• Successful EDRMS implementation requires strong leadership commitment, clear vision, and strategic direction from top management. • Executives must actively support, monitor, and allocate resources to ensure seamless system adoption and integration. • Encouraging peer support and user engagement further strengthens implementation, driving long-term success.
Collaboration & Communication Strategies	• Successful EDRMS implementation relies on collaboration, peer influence, and staff involvement. • Organizations must foster cooperation between IT and business units, align system functionalities with operational needs, and encourage interagency

Factor	Summary of Research Findings
	collaboration. • Engaging employees through continuous training enhances adoption, ensuring effective document management processes.
Training & Awareness	• Successful EDRMS adoption requires continuous training and awareness programs to enhance user proficiency and engagement. • Organizations must equip employees, librarians, and archive staff with the necessary skills for digital preservation while fostering a culture of digital document management through targeted awareness campaigns.

3. Mapping Research Findings to PMBOK 7th Edition Project Performance Domains

The successful implementation of an EDRMS requires a comprehensive approach that aligns with established project management frameworks. The PMBOK 7th Edition, developed by the Project Management Institute (PMI), introduces Project Performance Domains as key areas contributing to project success. These domains provide a structured methodology for managing project complexities, ensuring value delivery, and addressing critical factors such as stakeholder engagement, risk management, and performance measurement [8].

This section systematically maps the research findings on EDRMS implementation to the eight Project Performance Domains, offering a deeper understanding of how best practices in project management can enhance system adoption, efficiency, and long-term sustainability. By aligning the identified challenges and success factors with PMBOK 7th Edition principles, this analysis provides insights into the critical components that influence EDRMS deployment within governmental institutions.

In the initial phase of the study, researchers identified twelve critical factors as determinants of successful EDRMS implementation within government institutions. However, after mapping these factors onto the PMBOK 7th Edition Project Performance Domains, the analysis revealed fourteen distinct factors. This increase reflects the nuanced and comprehensive nature of the PMBOK framework, which disaggregates certain areas—such as auditability, transparency, and change management—into more specific components, as shown in Table 7.

By distinguishing between technological or system-related aspects and human/organizational elements, the framework offers a more granular perspective that enhances our understanding of project performance. Consequently, this refined mapping aligns the research findings with a well-established project management paradigm and provides a more robust basis for developing targeted best practices for effective EDRMS implementation.

The mapping analysis reveals that effective system integration, robust security, and enhanced usability hinge on the Project Work and Delivery domains through technical best practices like automation and human-centered design. Meanwhile, the Stakeholders and Team domains secure essential leadership support, effective communication, and change management via strategies such as Kotter's model and role-based training. Moreover, the Planning and Measurement domains ensure legal compliance and performance tracking using real-time dashboards and audits. In contrast, the Uncertainty domain emphasizes the need for adaptability and innovation to achieve long-term sustainability.

Table 7. Detailed Mapping of Research Factors to PMBOK 7th Edition Project Performance Domains with Best Practices

No	Factor	Project Performance Domain	Justification	Best Practices
1	System Integration & Compatibility	Project Work	Ensuring seamless system integration, interoperability with existing systems (ERP, ECM), and technological readiness supports effective project execution.	• Define precise system requirements and ensure compatibility testing before deployment. • Utilize incremental deployment strategies (e.g., pilot testing) to mitigate integration risks. • Establish a cross-functional integration team for a smooth transition.
2	Data Security & Access Control	Delivery	Secure access control, encryption, and data protection policies ensure the safe deployment of EDRMS and compliance with legal standards.	• Implement a risk-based security framework to address threats proactively. • Ensure multi-factor authentication (MFA) and role-based access controls. • Conduct regular security audits and penetration testing.
3	Usability & Accessibility	Project Work	Intuitive system design, ease of navigation, and user-friendly interfaces promote system adoption and operational efficiency.	• Use human-centered design (HCD) principles to enhance user experience. • Conduct usability testing with end-users before full implementation. • Implement progressive user onboarding with interactive tutorials.
4	Efficiency & Optimization	Project Work	Automating document workflows and structured data storage improves efficiency and organizational performance.	• Leverage business process automation (BPA) to optimize workflows. • Establish performance benchmarks to track efficiency gains. • Ensure process standardization across departments for consistency.
5	Change Management & Adaptability (System & Technological)	Development Approach & Life Cycle	System flexibility, technological adaptation, and infrastructure readiness are essential for supporting long-term sustainability.	• Select an iterative development approach (Agile/Hybrid) to accommodate evolving needs. • Establish a technology roadmap to align with long-term digital transformation strategies. • Conduct regular system reviews to ensure adaptability.
6	Compliance & Legal Alignment	Planning	Ensuring alignment with regulations such as GDPR, HIPAA, and national laws	• Integrate compliance requirements into project

No	Factor	Project Performance Domain	Justification	Best Practices
			is a key aspect of project planning and governance.	planning from the start. • Conduct legal risk assessments and document compliance policies. • Develop a regulatory change monitoring system to stay updated.
7	Auditability & Transparency	Planning & Delivery	Implementing monitoring mechanisms, access verification, and audit trails ensures accountability, security, and regulatory compliance.	• Implement real-time tracking mechanisms and digital audit trails. • Ensure data integrity through blockchain-based record verification. • Conduct periodic compliance audits with third-party validation.
8	Training & Awareness	Team	Continuous training programs enhance staff competency and system usability, ensuring effective team development.	• Develop a role-based training program tailored for different user levels. • Implement gamification to improve user engagement in training. • Use knowledge-sharing platforms to enhance continuous learning.
9	Leadership & Executive Support	Stakeholders	Strong leadership commitment, resource allocation, and strategic direction are essential for stakeholder engagement and project success.	• Establish a Project Governance Board with executive sponsorship. • Define KPIs for leadership engagement to ensure accountability. • Encourage visible executive involvement in training and feedback sessions.
10	Collaboration & Communication Strategies	Stakeholders	Encouraging interdepartmental cooperation and communication strengthens system adoption and operational alignment.	• Use collaborative tools (e.g., Microsoft Teams, Slack, Asana) for transparent communication. • Schedule regular cross-functional meetings to align priorities. • Establish clear communication protocols for project updates.
11	Change Management & Adaptability (Human & Organizational)	Team	Addressing employee resistance, fostering adaptability, and implementing structured change	• Apply Kotter's 8-Step Change Model for structured transformation. • Use stakeholder feedback loops to address resistance

No	Factor	Project Performance Domain	Justification	Best Practices
			management strategies (Kotter's model, ADKAR) is essential for successful adoption.	early. • Establish Change Champions within departments to advocate adoption.
12	Performance Monitoring & Evaluation	Measurement	Continuous assessment using key performance indicators (KPIs) ensures that EDRMS meets expected outcomes.	• Implement OKRs (Objectives and Key Results) to track adoption success. • Use dashboards for real-time monitoring of system performance. • Conduct bi-annual performance reviews to ensure alignment with goals.
13	Adaptability to Technological Advancements	Uncertainty	Future-proofing the system by ensuring adaptability to emerging technologies supports long-term sustainability.	• Develop an innovation framework to assess and integrate new technologies. • Use modular architecture to allow scalable upgrades. • Conduct technology foresight workshops to anticipate future trends.
14	Addressing Resistance to Change	Uncertainty	Managing resistance through structured approaches minimizes project risks and ensures smoother adoption.	• Conduct psychological safety training to ease digital transition concerns. • Use behavioral change strategies (nudge theory, incentives) to encourage adoption. • Create feedback loops to address concerns and improve user buy-in.

D. Conclusion

This study identifies critical success factors for implementing an EDRMS in the Gambian public sector using the PMBOK 7th Edition framework. The findings highlight that system integration, data security, usability, legal compliance, leadership support, and change management are crucial in successful EDRMS adoption. By aligning these factors with PMBOK's project performance domains, this study provides a structured approach to overcoming implementation challenges. The results suggest that effective system integration and data security measures enhance operational efficiency, while firm leadership and training programs improve user adoption. Additionally, aligning EDRMS policies with international standards such as ISO 15489-1:2016 ensures legal compliance and transparency.

The study should further emphasize key recommendations the Gambian government can implement directly. For instance, a phased approach to EDRMS implementation is advisable, initially focusing on strengthening IT infrastructure and workforce training before fully integrating the system with broader e-government initiatives. Moreover, adopting the PMBOK 7-based change management approach can help mitigate organizational resistance and enhance stakeholder engagement throughout the implementation process.

Implications for Practitioners. For government institutions and IT project managers, this study offers actionable recommendations to facilitate the adoption of EDRMS. Implementing a phased approach to system integration, strengthening cybersecurity frameworks, and prioritizing change management strategies will enhance project success. Additionally, engaging stakeholders through continuous training and leadership involvement can mitigate resistance and improve system usability.

Implications for Academics. From an academic perspective, this research contributes to the discourse on digital transformation in the public sector by bridging theoretical frameworks with practical implementation strategies. Future research can explore case studies of successful EDRMS deployments, evaluate the long-term impact of digital transformation policies, and integrate emerging technologies such as artificial intelligence and blockchain for enhanced document management and security.

Additionally, a reflection on the study's limitations should be included, such as constraints related to the number of analyzed studies or potential biases in literature selection. Since this research primarily relies on an SLR, its scope is inherently limited to accessible academic publications, which may not fully capture country-specific challenges in developing nations like The Gambia. Furthermore, selection bias may arise due to a preference for high-impact journal articles, potentially overlooking insights from local studies or government reports not indexed in major academic databases.

For future research, it is recommended that case studies or interviews with key stakeholders in the Gambian public sector be conducted to gain deeper insights into the real-world challenges and success factors of EDRMS implementation. Additionally, exploring emerging technologies such as artificial intelligence and blockchain for digital document management could provide valuable directions for enhancing EDRMS adoption and effectiveness.

E. References

[1] D. H. A. Gani, I. K. A. Kadir, A. A. Rahman, and A. M. Yunus, *Electronic Document Management System in Electronic Government Environment*, vol. 133. 2024. doi: 10.15405/epsbs.2024.05.48.

[2] "Council Post: The Future Of Document Management Software." Accessed: Feb. 25, 2025. [Online]. Available: https://www.forbes.com/councils/forbestechcouncil/2023/04/24/the-future-of-document-management-software/

[3] International Organization for Standardization, "ISO 15489-1 Information and documentation -- Records management -- Part 1: Concepts and Principles." Accessed: Feb. 25, 2025. [Online]. Available: www.iso.org

[4] A. Ab Aziz, Z. M. Yusof, and U. A. Mokhtar, "Electronic Document and Records Management System (EDRMS) Adoption in Public Sector – Instrument's Content Validation Using Content Validation Ratio (CVR)," *J. Phys. Conf. Ser.*, vol. 1196, no. 1, p. 12057, 2019, doi: 10.1088/1742-6596/1196/1/012057.

[5] T. G. National Audit Office, "The Gambia Annual Performance Report." p. 10, 2019. [Online]. Available: https://www.undp.org/sites/g/files/zskgke326/files/2022-08/TheGambiaAnnualReport.pdf

[6] "The National Development Plan (2018-2021) | United Nations in The Gambia." Accessed: Feb. 28, 2025. [Online]. Available: https://gambia.un.org/index.php/en/98394-national-development-plan-2018-2021

[7] M. Rebuglio, P. E. De Magistris, A. Carlin, and A. De Marco, "Implementing EDRMS in public procurement: A retrofit approach," *Procedia Comput. Sci.*, vol. 239, pp. 541–546, 2024, doi: 10.1016/j.procs.2024.06.204.

[8] Project Management Institute, *A Guide to the Project Management Body of Knowledge (PMBOK® Guide) – Seventh Edition*. Newtown Square, PA: Project Management Institute, 2023. [Online]. Available: https://www.pmi.org/standards/pmbok

[9] B. Kitchenham and S. M. Charters, "Guidelines for performing Systematic Literature Reviews in Software Engineering Guidelines for performing Systematic Literature Reviews in Software Engineering EBSE Technical Report EBSE-2007-01 Software Engineering Group School of Computer Science and Ma," no. October 2021, 2007.

[10] B. Kitchenham and P. Brereton, "A systematic review of systematic review process research in software engineering," *Inf. Softw. Technol.*, vol. 55, no. 12, pp. 2049–2075, 2013, doi: 10.1016/j.infsof.2013.07.010.

[11] E. Ziemba, T. Papaj, and D. Descours, "Critical Success Factors for Adopting Electronic Document Management Systems in Government Units," in *Proceedings of the 17th Conference on Computer Science and Intelligence Systems, FedCSIS 2022*, 2022, pp. 809–813. doi: 10.15439/2022F227.

[12] H. Fernando, T. Hewavitharana, and A. Perera, "Evaluation of Electronic Document Management (EDM) systems for construction organizations," in *MERCon 2019 - Proceedings, 5th International Multidisciplinary Moratuwa Engineering Research Conference*, 2019, pp. 273–278. doi: 10.1109/MERCon.2019.8818768.

[13] B. Hawash, U. A. Mokhtar, Z. M. Yusof, and M. Mukred, "The adoption of electronic records management system (ERMS) in the Yemeni oil and gas sector: Influencing factors," *Rec. Manag. J.*, vol. 30, no. 1, pp. 1–22, Jan. 2020, doi: 10.1108/RMJ-03-2019-0010.

[14] L. S. D. Rathnayaka, B. K. Malsha Nadeetharu, and U. Kulatunga, "Applicability of electronic document management system (EDMS) for the cost management of mega construction projects in Sri Lanka," *J. Financ. Manag. Prop. Constr.*, vol. 29, no. 2, pp. 314–330, Jan. 2024, doi: 10.1108/JFMPC-01-2023-0005.

[15] L. Shonhe and B. Grand, "Implementation of electronic records management systems: Lessons learned from Tlokweng land Board-Botswana," *Rec. Manag. J.*, vol. 30, no. 1, pp. 43–62, Jan. 2020, doi: 10.1108/RMJ-03-2019-0013.

[16] D. Dobre and A. Vasilateanu, "Electronic health record authentication and authorization using Blockchain and QR codes," *Procedia Comput. Sci.*, vol. 239, pp. 1784–1791, 2024, doi: 10.1016/j.procs.2024.06.358.

[17] M. Ngoepe and V. Mello, "Integration of records management systems at a South African water utility company," *Glob. Knowledge, Mem. Commun.*, vol. 70, no. 8–9, pp. 801–816, Jan. 2021, doi: 10.1108/GKMC-08-2020-0125.

[18] M. H. Rahman, "Review of digital record management needs for academic libraries," *Libr. Hi Tech News*, vol. 37, no. 3, pp. 21–22, Jan. 2020, doi: 10.1108/LHTN-11-2019-0083.

[19] M. D. Ayoush and H. S. Ahmad, "Investigating the Use of Electronic Documents in the Jordanian Construction Projects BT - The 10th International Conference on Engineering, Project, and Production Management," K. Panuwatwanich and C.-H. Ko, Eds., Singapore: Springer Singapore, 2020, pp. 165–174. doi: https://doi.org/10.1007/978-981-15-1910-9_14.

[20] A. A. Aziz, Z. M. Yusof, U. A. Mokhtar, and D. I. Jambari, "The implementation guidelines of digital document management system for malaysia public sector: Expert review," *Int. J. Adv. Sci. Eng. Inf. Technol.*, vol. 10, no. 1, pp. 198–204, Feb. 2020, doi: 10.18517/ijaseit.10.1.10443.

[21] S. Jordan, S. S. Zabukovšek, and I. Š. Klančnik, "Document Management System – A Way to Digital Transformation," *Naše Gospod. Econ.*, vol. 68, no. 2, pp. 43–54, 2022, doi: 10.2478/ngoe-2022-0010.

[22] O. Gokhool and S. D. Nagowah, "A Requirement Gathering Framework for Electronic Document Management Systems," in *IBSSC 2022 - IEEE Bombay Section Signature Conference*, 2022, pp. 1–6. doi: 10.1109/IBSSC56953.2022.10037540.

[23] I. Ndebele, "Management's support and implementation of electronic document and records management systems in government departments," 2021. doi: https://doi.org/https://doi.org/10.51415/10321/3799.

[24] S. Sternad Zabukovšek, S. Jordan, and S. Bobek, "Managing Document Management Systems' Life Cycle in Relation to an Organization's Maturity for Digital Transformation," *Sustainability (Switzerland)*, vol. 15, no. 21. 2023. doi: 10.3390/su152115212.

[25] J. W. Creswell and J. D. Creswell, *Research design : qualitative, quantitative,*

and mixed methods approaches. 2018.

[26] A. N. T. Karlos and C. T. Nengomasha, "Change Management: a Critical Factor for Successful Implementation of an Electronic Document and Records Management System (Edrms): a Namibian Case Study," *J. Stud. Humanit. Soc. Sci.*, no. SE-Articles, pp. 85–105, Dec. 2018, [Online]. Available: https://journals.unam.edu.na/index.php/JSHSS/article/view/1092

[27] C. T. Nengomasha and A. Chikomba, "Status of EDRMS implementation in the public sector in Namibia and Zimbabwe," *Rec. Manag. J.*, vol. 28, no. 3, pp. 252–264, Jan. 2018, doi: 10.1108/RMJ-08-2017-0023.

[28] K. Oseni, "Barriers Facing E-Service Adopting and Implementation at Local Environment Level in Nigeria," *SSRN Electron. J.*, 2024, doi: 10.2139/ssrn.4796196.