

Office Administration Digitalization Based on Information Systems: A Systematic Literature Review

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Digital transformation has become a primary focus in the modernization of office administration, with recent studies indicating that technologies such as Document Management Systems (DMS), Enterprise Content Management (ECM), e-office, Optical Character Recognition (OCR), digital signatures, and blockchain are capable of improving document management efficiency and strengthening bureaucratic transparency. This study aims to identify key technologies in administrative digitalization, assess the effectiveness of their implementation, and map the challenges faced by various organizations. The approach employed is a Systematic Literature Review of 22 scholarly articles published between 2015 and 2024, sourced from Scopus, Google Scholar, DOAJ, and SpringerLink through processes of identification, screening, eligibility assessment, and synthesis of findings. The results indicate that information systems enhance administrative efficiency, including accelerating document disposition by up to 45%, reducing document loss, improving search accuracy, and establishing digital audit trails that reinforce accountability. Supporting technologies such as OCR and blockchain have been shown to improve the security and integrity of digital documents. However, significant challenges remain, particularly low levels of employees' digital literacy, resistance to change, limited infrastructure, and misalignment between technological design and organizational operational conditions. These findings conclude that information systems play a critical role in the transformation of office administration; however, their success is highly dependent on organizational readiness, the strengthening of human resource competencies, and internal policy support. Future research needs to explore cross-sector implementation models and evaluate the long-term effectiveness of digital technologies in document governance.

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INTRODUCTION

The rapid development of information technology over the past two decades has brought fundamental changes to how organizations worldwide manage work processes, internal communication, and administrative services. Schwab argues that the world is currently in the phase of the Fourth Industrial Revolution, characterized by the advancement of technologies such as artificial intelligence, cloud computing, big data, the Internet of Things (IoT), and process automation, which significantly influence how organizations operate (Schwab, 2016). This transformation requires organizations to undertake digital transformation not only in the industrial and business sectors but also in office administration, which has long served as the backbone of managerial processes. The Digital Adoption Index report published by the World Bank reinforces this urgency by showing that the level of digital technology adoption is a key indicator in measuring a country's capacity to compete in the global era (World Bank, 2016). The OECD further emphasizes that the ability of public and private institutions to leverage digital technology, particularly in information management processes, is an essential prerequisite for improving the quality of modern governance (OECD, 2020a).

In Indonesia, the commitment to digital transformation is reflected in the Electronic-Based Government System (SPBE) policy regulated under Presidential Regulation Number 132 of 2022. This policy encourages the integration of digital technology across various government administrative services. The Ministry of Communication and Informatics reports that more than seventy percent of government institutions have adopted digital-based administrative services such as e-office applications, electronic archiving systems, and digital correspondence systems (Kementerian PAN-RB, 2023). This improvement is also reflected in the Information and Communication Technology Development Index (IP-TIK) report by Statistics Indonesia, which shows that the use of technology in public administration continues to exhibit a positive trend in accelerating services, enhancing transparency, and improving information flow efficiency (BPS, 2022). This condition clarifies that digital transformation is no longer an optional choice but a strategic necessity for organizations to maintain effectiveness and service quality in the long term.

In the context of office administration, the modernization of document and correspondence management has become a strategic issue that receives significant attention. The United Nations, through its E-Government Survey report, emphasizes that document digitalization is a key indicator of public service maturity, as it affects speed, efficiency, security, and the organization of administrative information (United Nations, 2022). Studies

indicate that administrative problems often arise from inefficient manual document management, such as misplacement of archives, delays in information distribution, and slow document retrieval processes (Kisworo, 2023). Heeks further notes that conventional administrative systems are prone to errors, data duplication, and limitations in document tracking, thereby hindering overall administrative service effectiveness (Heeks, 2008).

The utilization of Information Systems (IS) emerges as a strategic solution to address these challenges. Technologies such as Document Management Systems (DMS), Enterprise Content Management (ECM), e-office, and cloud-based systems enable organizations to store, manage, classify, and track documents digitally with higher levels of security and accuracy compared to manual systems. Provost and Fawcett assert that data-driven systems can enhance documentation accuracy and support more precise and efficient decision-making processes (Provost & Fawcett, 2013a). Westerman and his team find that organizations implementing systematic digitalization can improve operational efficiency up to twofold compared to those still relying on manual processes (Westerman et al., 2014). Similarly, Brynjolfsson and McAfee demonstrate that organizations capable of optimally leveraging information technology experience significant growth in productivity and competitiveness (Brynjolfsson & McAfee, 2014). Therefore, IS is no longer viewed merely as an operational support tool but as a strategic instrument in the modernization of office administration.

Despite the substantial benefits of IS, three interrelated research gaps remain underexplored. First, most prior studies emphasize the technical implementation of digital tools, while few critically analyze how IS specifically reconfigures document and correspondence management as the core of administrative work (Ayaz & Yanartaş, 2020). Second, the literature is dominated by single sector evidence, particularly government, so cross sectoral comparison among public, education, business, healthcare, and nonprofit settings is scarce (Heeks, 2008). Third, existing reviews rarely integrate competing adoption and success theories into a single explanatory framework, leaving the conditions for successful digitalization theoretically fragmented. Addressing these gaps, the present review contributes a theory integrated, cross sectoral synthesis and proposes the Digital Office Transformation (DOT) framework, thereby moving beyond the well established claim that “digital systems improve efficiency” toward explaining why and under what conditions they do so.

Furthermore, the advancement of digital technology has driven a paradigm shift in modern administrative management. Organizations are not only required to automate administrative processes but also to integrate data analytics, artificial intelligence, and IS

capabilities to support strategic decision-making. Cross-system data integration, for instance between DMS, human resource information systems, and performance management systems, becomes a key factor in enhancing operational effectiveness across organizations. Westerman highlights that digital leaders possess significant competitive advantages due to their ability to integrate technology with adaptive governance (Westerman et al., 2014). This indicates that IS implementation in office administration is not solely about technical efficiency but also about structural transformation in how organizations organize and manage administrative information.

In addition to technological factors, governance and digital policy aspects play a central role in the success of information system implementation. The OECD emphasizes that digital transformation must be supported by a robust policy framework, including data protection regulations, system interoperability standards, and digital document governance procedures (OECD, 2020a). In line with this, Heeks shows that many failures in technology implementation in developing countries are caused by misalignment between organizational needs, human resource capacity, and policy readiness (Heeks, 2008). Therefore, IS implementation must be supported by strategic planning that not only focuses on technological aspects but also on strengthening organizational capacity, work culture, and internal policy support.

Considering this complexity, a comprehensive, structured, and evidence based approach is required. The Systematic Literature Review (SLR) method is relevant for identifying patterns, trends, research gaps, and future directions. Kitchenham and Charters emphasize that SLR provides a methodological framework ensuring quality, traceability, and objectivity (Kitchenham & Charters, 2007). This article analyzes the role of information systems in the digital transformation of office administration, focusing on key technologies, the effectiveness of IS implementation, barriers and challenges, and future development opportunities, while offering both conceptual and practical contributions to modern administrative governance.

- RQ1. Which information system technologies are most frequently applied in the digitalization of office administration?
- RQ2. How effective is the implementation of these technologies in improving administrative efficiency, transparency, and document integrity?
- RQ3. What challenges and contextual factors influence the success of digital office administration across sectors?

METHOD

This study employs a Systematic Literature Review (SLR) conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta Analyses (PRISMA) 2020 statement and informed by the guidelines of (Kitchenham & Charters, 2007). The review protocol was defined prior to the search and comprises four explicit stages: identification, screening, eligibility, and inclusion, as visualized in the PRISMA flow diagram (Figure 1).

Search Strategy and Search String

A systematic search was performed across five databases (Scopus, Google Scholar, the Directory of Open Access Journals (DOAJ), Semantic Scholar, and SpringerLink), covering publications from 2015 to 2024. The following Boolean search string was applied to the title, abstract, and keyword fields and adapted to each database's syntax: (*“digital office” OR “electronic office” OR “office information system”*) AND (*“document management system” OR “DMS” OR “enterprise content management” OR “ECM” OR “correspondence management”*) AND (*“digital administration” OR “administrative digitalization” OR “digital transformation”*).

Inclusion and Exclusion Criteria

To improve reproducibility, the inclusion and exclusion criteria were operationalized explicitly. Studies were included when they were peer reviewed articles published between 2015 and 2024, focused on information systems in office, document, or correspondence administration, had full text available, and were empirical or methodologically grounded reviews. Conversely, studies were excluded when they were not related to office administration, had no available full text, were opinion pieces without a clear methodology, were duplicate records, or did not discuss information systems clearly.

Study Selection (PRISMA Flow)

The initial search identified 35 records. After removing duplicates and records outside the inclusion window, the remaining articles were screened by title and abstract, and those clearly irrelevant were excluded. The remaining articles were assessed for eligibility through full text review against the criteria above, yielding 22 articles included in the synthesis. Figure 1 summarizes this process.

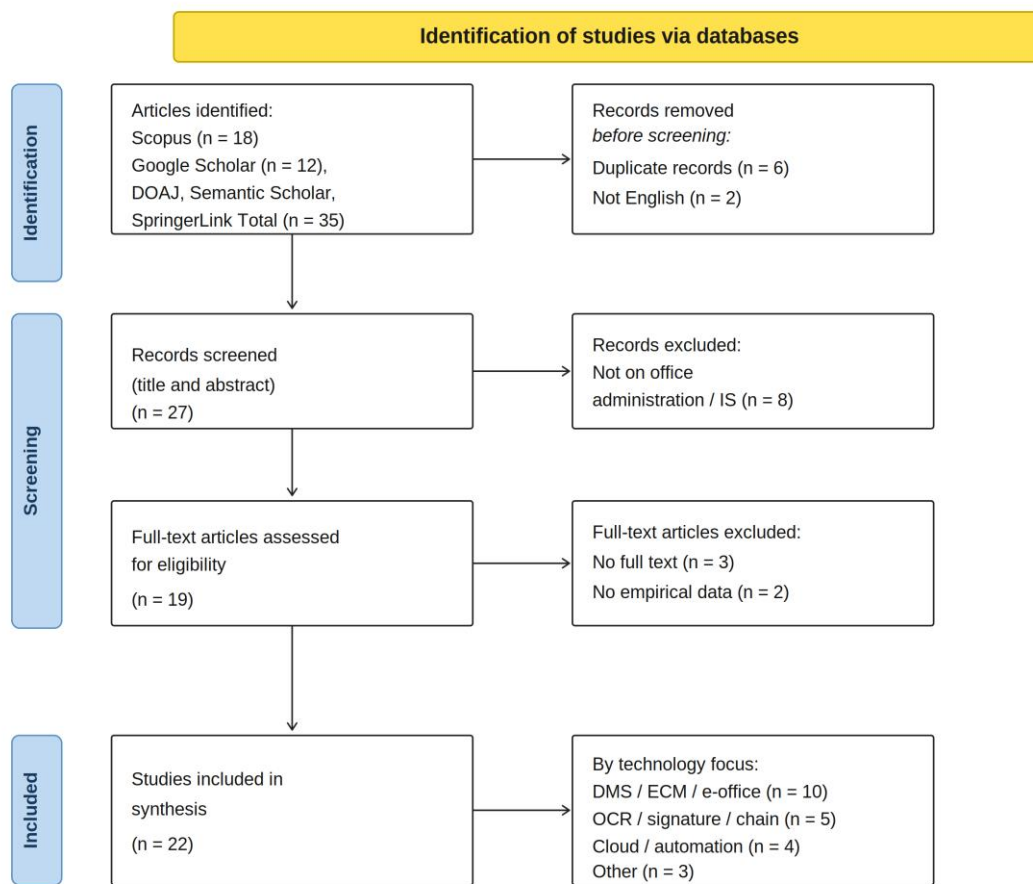


Figure 1. PRISMA 2020 Flow Diagram

Quality Appraisal

Each included study was appraised on four dimensions adapted from CASP and Kitchenham checklists: (1) clarity of research aim, (2) appropriateness of method, (3) clarity of reported findings, and (4) relevance to office administration digitalization. Each dimension was scored 0 to 1 (maximum 4). Studies scoring at least 3 were retained for full synthesis; all 22 included studies met this threshold, with scores ranging from 3 to 4.

Data Extraction and Thematic Synthesis

A standardized extraction form captured authors, year, objectives, method, IS technology, organizational context, key findings, challenges, and recommendations. Following Braun and Clarke's thematic synthesis logic, extracted data were coded openly, grouped into candidate themes, and refined iteratively. The process produced four analytical themes: (1) IS as transformational infrastructure, (2) transparency, accountability, and audit trails, (3) security and integrity of digital documents, and (4) implementation challenges and contextual variation.

RESULTS AND DISCUSSIONS

Descriptive and Trend Analysis of the Corpus

Before the thematic synthesis, a descriptive analysis of the 22 included studies was conducted. Publications increased over the review period, with the largest share appearing in 2020 to 2022 (13 of 22 studies), reflecting accelerated interest following the wider adoption of electronic government and remote work practices. Methodologically, the corpus is dominated by case studies and surveys, followed by experimental and review designs. In terms of technology focus, DMS/electronic office and ECM appear most frequently (10 studies), followed by security oriented technologies such as OCR, digital signatures, and blockchain (5 studies), and then cloud/workflow automation (4 studies). Geographically, evidence is concentrated in Indonesian and broader Asian contexts, underscoring the need for wider cross country comparison. A keyword cooccurrence reading clusters the literature around three hubs: “document management,” “transparency/accountability,” and “security/integrity,” which directly informs the four themes below. Future work could deepen this with VOSviewer or Biblioshiny bibliometric mapping.

The analysis of the 22 articles reveals a consistent pattern regarding the role of information systems in supporting the digitalization of office administration. All reviewed studies focus on how information technology assists organizations in improving work efficiency, accelerating service processes, and strengthening the security and accuracy of document and correspondence management. Variations such as DMS, ECM, electronic office, workflow automation, and cloud based archiving emerge as the primary components across organizational contexts. Table 1 summarizes the authors, methods, technological focus, and key findings of the analyzed articles.

Table 1. Summary of 22 Articles Key Findings

No	Sources	Research Title	Method	Main Technology	Key Findings
1	Rahman (2020)	Implementation of Digital Correspondence System	Case Study	E-Office	Correspondence disposition becomes more structured and internal delivery time is reduced by up to 45%.
2	Karim et al. (2021)	DMS in Public Administration	Survey	DMS	DMS improves document accessibility and reduces the risk of

3	Sari & Nugroho (2019)	Cloud-Based Document Management	Mixed	Cloud, OCR	archive loss due to centralized storage. Digital archiving becomes faster and more efficient, particularly in converting physical documents into digital format through OCR.
4	Wijaya (2018)	Adoption of Office Information System	Case Study	OIS	Office information systems enhance service transparency and administrative accountability.
5	Lestari & Widayati, (2022)	Digital Transformation Workflows	Survey	Workflow Automation	Workflow automation reduces manual workload and accelerates the completion of routine administrative tasks.
6	Mahmud (2020)	Electronic Archiving System	Observation	E-Archive	Archival management becomes more organized and easily retrievable through electronic archiving systems.
7	Hanif et al., (2019)	User Acceptance in Digital Office	UTAUT	DMS, Office	IS adoption is influenced by perceived usefulness, ease of use, and technological support.
8	Abdullah (2022)	Administrative Efficiency via Digital Record	Review	Digital Record	Digital records reduce writing errors, data duplication, and improve documentation accuracy.
9	Yuliana (2017)	Barriers to E-Document	Qualitative	E-Document	Major barriers include low digital literacy and employee resistance to system changes.
10	Putri & Hakim (2020)	E-Letter Management System	Experimental	E-Letter	Digital correspondence systems accelerate outgoing mail processes by approximately 35%

11	Tamara (2021)	Digital Signature for Security	Experimental	Digital Signature	and improve document traceability. Digital signatures enhance document authentication and prevent forgery and unauthorized access.
12	Park & Lee, (2019)	Workflow Optimization	Case Study	Automation	Automation reduces administrative process bottlenecks and improves inter-departmental coordination.
13	Siregar (2020)	Integration of E-Office–HRIS	Integration	E-Office, HRIS	System integration accelerates internal approval workflows and increases transparency in HR administrative processes.
14	Chu & Wang (2018)	Cloud Collaboration	Survey	Cloud	Cloud-based document collaboration improves team productivity and cross-departmental file access.
15	Dewi et al., (2022)	Organizational Readiness	Analysis	Digital IS	Organizational readiness for digitalization is influenced by human resource competence and technological budget availability.
16	Zhang et al., (2021)	Electronic Records Management	Review	ERMS	ERMS enhances the integrity, security, and long-term sustainability of information.
17	Nugraha (2018)	Evaluation of E-Surat	Evaluation	E-Surat	E-surat systems make disposition processes faster, more transparent, and easier to track.
18	Santoso & Hapsari, (2020)	Digital System Filing	Case Study	Digital Filing	Digital filing reduces physical archive storage space by up to 60% and improves storage efficiency.

19	Park & Lee (2019)	Blockchain Document Authenticity	for Experimental	Blockchain	Blockchain provides an additional layer of security to prevent document manipulation and strengthen audit trails.
20	Anwar (2020)	Mobile-Based Document Access	Development	Mobile DMS	Users can securely access documents anytime, increasing work flexibility.
21	Rosita (2022)	Administrative Transparency	Survey	E-Office	Digital audit trails enhance transparency and accountability in administrative processes.
22	Fernandez (2019)	Enterprise Content Management	Mixed	ECM	ECM integrates various types of documents and content into a centralized, manageable platform.

A Proposed Conceptual Framework: Digital Office Transformation (DOT)

To address the fragmentation of adoption and success theories noted in prior reviews, this study proposes the Digital Office Transformation (DOT) framework. The framework links four theoretical lenses into a single causal logic. At the input stage, the Technology Acceptance Model (TAM) and UTAUT explain individual level adoption through perceived usefulness, perceived ease of use, social influence, and facilitating conditions. At the organizational stage, Digital Capability Theory explains how infrastructure, competence, and governance convert adoption into capability. At the outcome stage, the DeLone & McLean IS Success Model captures system quality, information quality, use, and net benefits, operationalized here as efficiency, transparency, accountability, and document integrity. The framework posits that digital office transformation is successful only when individual acceptance, organizational capability, and governance readiness are aligned; misalignment at any stage reproduces the design reality gap described by (Heeks, 2006).

Information Systems as Transformational Infrastructure in Modern Administration

The SLR findings indicate that DMS, ECM, and e-office applications function as the backbone of digital administration. These technologies accelerate administrative work, restructure document workflows, simplify bureaucracy, and reduce repetitive manual activities.

Digital correspondence systems can reduce document disposition time substantially (Rahman, 2020), while Karim et al. (2021) identify that DMS addresses chronic issues such as document loss and inconsistent storage formats.

A critical comparison across studies, however, reveals inconsistency in reported efficiency gains: improvements range widely (for example, about 35% for outgoing mail processing in (Putri & Hakim, 2020), versus up to 45% for disposition in (Rahman, 2020), and 60% storage reduction in (Santoso & Hapsari, 2020). These divergences are not contradictions in direction but reflect differences in baseline maturity, process scope, and measurement, because studies measuring single subprocesses report larger relative gains than those measuring end to end workflows. Through the DOT lens, the largest gains cluster where organizational capability is already moderate, supporting the claim that technology alone does not determine outcomes.

From the perspective of Digital Capability Theory, integrating DMS and ECM strengthens the organizational operational backbone, namely the core infrastructure enabling adaptive responses to dynamic work environments. Information systems create standardized, flexible, and consistent work structures, allowing employees to access documents anytime, collaborate across units, and complete tasks efficiently. This shifts administrative personnel toward more strategic functions such as information analysis and service coordination.

Transparency, Accountability, and Digital Audit Trail Mechanisms

Digital traceability is a major contribution of information systems. E-office applications record all document related activities, from receipt and disposition to completion, within transparent digital audit trails. (Rosita, 2022) shows that digital audit trails enable more accurate monitoring and reduce reliance on manipulation prone manual records. Within the IS Success Model (DeLone & McLean, 2003), audit trails enhance system quality and information quality, reducing data errors and process delays. For public organizations, traceability supports compliance with SPBE standards and OECD governance principles (OECD, 2020b); PAN-RB), 2023).

Security and Integrity of Digital Documents as a Technical Pillar

The security of digital documents is a critical pillar of modern administration. Supporting technologies such as OCR, digital signatures, and blockchain ensure document integrity and authentication. OCR accelerates digitization of physical archives and enables text

based search that is valuable for organizations with large archival volumes. Digital signatures provide identity validation and ensure documents cannot be altered after authorization, reducing forgery risk and accelerating approvals. (Lee et al., 2021) introduce blockchain as advanced authentication, recording every modification in an immutable distributed ledger, offering new opportunities for legal documents, academic certificates, and business contracts.

Critically, the security benefits reported in the corpus derive mainly from experimental or pilot settings for example, (Tamara, 2021; Lee et al., 2021) rather than large scale deployments. The literature therefore tends to overstate readiness: blockchain's integrity guarantees are robust technically but face cost, interoperability, and legal recognition constraints that the included studies rarely quantify. This tension, strong technical promise versus limited organizational evidence, marks an important gap for future, deployment based research.

Implementation Challenges and Contextual Variation

Despite clear benefits, IS implementation faces complex challenges spanning human resource readiness, organizational culture, and infrastructure. (Heeks, 2006) explains the design reality gap, that is, the mismatch between system design and real world conditions that often causes failure. Yuliana (2017) and Hanif et al., (2019) show that low digital literacy and resistance to change are major barriers; many employees perceive IS as added burdens rather than enablers. Through TAM, these barriers map to low perceived ease of use and usefulness. Infrastructure constraints such as unstable connectivity, limited server capacity, and inadequate updates compound the problem. (Dewi et al., 2022) stress that sustainability requires sufficient funding and management support, consistent with (Bank, 2016) findings that transformation is effective only with long term investment in infrastructure and training.

Comparing contexts, the corpus shows distinct sectoral logics. In the public sector, digitalization prioritizes transparency, traceability, and accountability; in education, it centers on academic record management and accreditation readiness; in business, it emphasizes cost efficiency and information security (Nations, 2022) notes that effectiveness depends on technological maturity, organizational culture, and sector specific needs. Consequently, a uniform model is inappropriate: the DOT framework predicts that the binding constraint differs by sector, namely capability in the public sector, acceptance in education, and governance in business, implying sector tailored implementation strategies.

Toward Data Driven and Policy Oriented Administration

Overall, information systems act as drivers of policy and data driven management. DMS and ECM generate structured administrative data underpinning process evaluation, bottleneck identification, and objective decision making, consistent with data driven governance (Provost & Fawcett, 2013b). Dashboards and analytics enable organizations to detect anomalies, map workloads, and act promptly. Beyond technical efficiency, digitalization reshapes organizational culture toward more collaborative, agile, and innovative structures, with leaders acting as digital champions (OECD, 2020b). Strengthening IT governance, which covers storage standardization, data security, access authorization, and disaster recovery, remains essential; without it, risks of data breaches and weak control increase. With sound governance, digitalization both accelerates processes and strengthens the integrity and reliability of information

CONCLUSION

This systematic literature review concludes that information systems play a highly strategic role in driving the digital transformation of office administration, as they are capable of accelerating work processes, improving documentation accuracy, strengthening transparency, and ensuring document integrity through the utilization of technologies such as DMS, ECM, e-office, OCR, digital signatures, and blockchain. The synthesis of 22 articles indicates that information systems do not merely function as automation tools, but serve as the primary infrastructure that reconstructs organizational work mechanisms toward more efficient, responsive, and accountable governance.

Theoretically, this review's contribution is the integrative Digital Office Transformation (DOT) framework, which unifies TAM, UTAUT, the IS Success Model, and Digital Capability Theory to explain not only that, but under what conditions, information systems succeed in office administration. Practically, the framework identifies the sector specific levers, namely acceptance, capability, and governance, that organizations must strengthen for optimal digitalization. Future research should: (1) empirically validate the DOT framework across public, education, business, healthcare, and nonprofit sectors; (2) evaluate the long term, deployment scale effectiveness of blockchain and OCR in document governance; and (3) extend the descriptive trend analysis into a full bibliometric study using tools such as VOS viewer or Biblioshiny.

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